



DEPARTMENT OF THE NAVY

U.S. NAVAL SUPPORT ACTIVITY

PSC 817 BOX 1

FPO AE 09622-0001

NAVSUPPACT NAPLES INST 5090.9

N4

- 5 AUG 2013

NAVSUPPACT NAPLES INSTRUCTION 5090.9

From: Commanding Officer, U.S. Naval Support Activity, Naples, Italy

Subj: NATURAL AND CULTURAL RESOURCES MANAGEMENT USER'S GUIDE FOR  
U.S. NAVAL SUPPORT ACTIVITY, NAPLES, ITALY

Ref: (a) Environmental Final Governing Standards for Italy  
(b) OPNAVINST 5090.1C

Encl: (1) Natural and Cultural Resources Management User's Guide  
of Apr 11

1. Purpose. To promulgate and integrate natural and cultural resources requirements into all levels of activity management through the implementation of enclosure (1).

2. Policy. Per reference (a) and (b), enclosure (1) provides procedures to be implemented to mitigate, if applicable, any adverse impacts and or effects on natural resources, endangered species, and cultural and historical resources. Each department and tenant command whose operations have the potential to impact natural and/or cultural resources shall familiarize themselves with, and implement use of enclosure (1).

A handwritten signature in black ink, appearing to read "C. S. Gray", is positioned above the printed name.

C. S. GRAY

NAVSUPPACT NAPLES INST 5216.4AA

Lists: I through IV

Electronic via NAVSUPPACT NAPLES web site:

[https://www.cnrc.navy.mil/regions/cnrcnafswa/  
installations/nsa\\_naples/about/departments/administration\\_n1/  
administrative\\_services/instructions.html](https://www.cnrc.navy.mil/regions/cnrcnafswa/installations/nsa_naples/about/departments/administration_n1/administrative_services/instructions.html)

# **NAVAL SUPPORT ACTIVITY NAPLES AND NAVAL SUPPORT ACTIVITY NAPLES DETACHMENT GAETA**

## **NATURAL AND CULTURAL RESOURCES MANAGEMENT USER'S GUIDE**



**Prepared for:  
Naval Facilities Engineering Command (NAVFAC) Atlantic  
And  
NAVFAC Europe Africa Southwest Asia**

**Prepared by:  
Tetra Tech, Inc.  
Fuchstrasse 1  
67688 Rodenbach, Germany**

**April 2011**

**Contract No. N62470-08-D-1008/X030**

# **NSA NAPLES AND NSAND GAETA NATURAL AND CULTURAL RESOURCES MANAGEMENT USER'S GUIDE**

## **Chapter 1**

---

### **Introduction**

- 1.1 Introduction**
- 1.2 User's Guide Description**
- 1.3 General Guidelines on Management Process**
- 1.4 Site History**

## **Chapter 2**

---

### **Natural Resources**

---

### **Regulatory Guidelines**

- Final Governing Standards 2.1**
- Italian Laws and Regulations 2.2**
- European Union Laws 2.3**
- International Conventions and Treaties 2.4**

## **Chapter 3**

---

### **Cultural Resources**

---

### **Regulatory Guidelines**

- 3.1 Final Governing Standards**
- 3.2 Italian Laws and Regulations**
- 3.3 European Community Resolutions, Recommendations, and Directives**
- 3.4 International Laws and Treaties**
- 3.5 World Heritage Convention**

## Chapter 4

### Training Opportunities

---

- 4.1 Training Opportunities Introduction
- 4.2 **Natural Resources**
- 4.3 **Cultural Resources**

## Chapter 5

### Area Profiles

---

- 5.1 Physiographic Description and Climate of NSA Naples
- 5.2 **Natural Resources in the NSA Naples Area**
- 5.3 **Cultural Resources in the NSA Naples Area**
- 5.4 Physiographic Description and Climate of NSAND GAETA
- 5.5 **Natural Resources in the NSAND GAETA**
- 5.6 **Cultural Resources in the NSAND GAETA**
- 5.7 Environmental Effects Abroad

## Chapter 6

### References

---

- 6.1 General References
- 6.2 **Natural Resources References**
- 6.3 **Cultural Resources References**

## Appendices

---

- Appendix A Glossary of Italian Terms
- Appendix B ROND and Environmental Checklist
- Appendix C IUCN Red List, Annex II and IV of Habitats Directive
- Appendix D Natural Resources Regulations
- Appendix E Cultural Resources Regulations
- Appendix F Natura 2000 Data Forms



# CHAPTER 1

## INTRODUCTION

<b>1.1</b>	<b>Introduction</b>	<b>3</b>
<b>1.2</b>	<b>User's Guide Description</b>	<b>6</b>
	1.2.1 Purpose of User's Guide	
	1.2.2 User's Guide Content	
	1.2.3 How to Proceed	
<b>1.3</b>	<b>General Guidelines on Management Process</b>	<b>14</b>
	1.3.1 Step 1: Review the U.S. and Italy Defense Cooperation Agreement	
	1.3.2 Step 2: Review Background Materials	
	1.3.3 Step 3: Review Development Constraint Maps	
	1.3.4 Step 4: Complete Record of Negative Decision and Environmental Impact Assessment Checklist	
	1.3.5 Step 5: Consult with U.S. Installation Commander	
	1.3.6 Step 6: Consult with NAVFAC Atlantic and EURAFSWA	
	1.3.7 Step 7: Check with the Regional and Local Authorities, if Required	
<b>1.4</b>	<b>Site History</b>	<b>18</b>
	1.4.1 NSA Naples	
	1.4.2 NSAND GAETA	

This page intentionally left blank.

## INTRODUCTION

### 1.1

The Cultural and Natural Resources Management User's Guide (User's Guide) is provided as a tool to ensure the proper management of cultural and natural resources associated with Naval Support Activity (NSA) Naples and NSAND GAETA in Italy, as required by the Final Governing Standards for Italy (FGS-Italy).

During the preparation of this plan, NSA Naples and NSAND GAETA site visits were conducted during 1 through 5 February 2010 and 17 through 19 May 2010 to observe the current condition of the cultural and natural resources, respectively, for each area. Additional research and interviews were conducted throughout the process in order to update the regulatory requirements and known resources associated with the natural and cultural resources at each location.

The FGS-Italy are environmental requirements developed by comparing and adopting the more protective requirements of the United States (U.S.) Department of Defense (DoD) Overseas Environmental Baseline Guidance Document (OEBGD); Italian national, regional, and local environmental laws and regulations; and applicable international agreements (e.g., European Union [EU]). The FGS-Italy are the single definitive source of environmental compliance criteria applicable to DoD components at installations in Italy. Component policy may impose additional requirements.

The FGS-Italy cover many different environmental areas as listed below. The latest revision of the FGS-Italy occurred in 2008, although not all of the chapters were revised. The actual revision date of each chapter is reflected below:

- Air emissions (2008)
- Drinking water (2008)
- Wastewater (2002)
- Hazardous material (2008)
- Waste management (2008) (includes solid and medical wastes)
- Petroleum, oil, and lubricants (POL) (2002)
- Pesticides (2002)
- Historic and cultural resources (2002)
- Natural resources and endangered species (2002)
- Polychlorinated biphenyls (PCBs) (2002)
- Asbestos (2002)
- Lead-based paint (2002)
- Spill prevention and response planning and spill cleanup (2002)
- Underground storage tanks (2002)

U.S. Forces at all installations in Italy are required to be in compliance with the FGS-Italy for environmental protection. However, in accordance with Chapter 1 (FGS-Italy), the FGS-Italy does not apply to:

- DoD installations that do not have more than de minimis potential to affect the natural environment, or for which the DoD components exercise control over only on a temporary or intermittent basis;
- Operations of U.S. military vessels or the operations of U.S. military aircraft, or off-installation operational and training deployments. However, it does apply to support functions for U.S. military vessels and U.S. military aircraft provided by the DoD Components, including management or disposal of off-loaded waste or material;

- Facilities and activities associated with the Naval Nuclear Propulsion Program, which are covered under Executive Order (EO) 12344 and conducted pursuant to 42 U.S.C. 7158;
- The determination or conduct of remediation to correct environmental problems caused by DoD's past activities, conducted in accordance with DoD Instruction (DoDI) 4715.8, Environmental Remediation Overseas; and,
- Environmental analyses conducted under EO 12114.

At leased facilities operated and maintained by others, DoD components may opt to require compliance with the FGS by the lessor or contractor. In any case, lessors and contractors must fully comply with Italian legal requirements.

The presence of DoD forces in Italy is governed by the Status of Forces Agreement (SOFA), which was ratified into Italian law in November 1955 by Law No. 1335. The U.S. and Italy have also entered into a Bilateral Infrastructure Agreement (BIA), a Memorandum of Understanding (MOU), and, at some installations, Technical Arrangements, which address installation use, construction, and project planning, among other things. The majority of land utilized by the U.S. military in Italy is ceded for use by the Italian military. Generally, U.S. funding pays for the maintenance and upgrading of these facilities, which are required to go through the host nation project approval process. Property that is leased does not go through the host nation approval process. The responsibility of meeting Italian standards and regulations lies with the owner of the leased property.

Although the U.S. Navy participates in activities sponsored by the North Atlantic Treaty Organization (NATO) forces in Italy, NATO activities and

facilities are not controlled by the U.S. government. Therefore, compliance with the FGS-Italy is not required. However, environmental managers are encouraged to follow sound environmental management practices when participating in NATO activities and using NATO facilities. In particular, it is recommended that environmental managers complete the planning process for all facilities designed and constructed by the U.S. Navy for NATO use.

## USER'S GUIDE DESCRIPTION

## 1.2

### PURPOSE OF USER'S GUIDE

### 1.2.1

This User's Guide has been prepared as a reference guide to primarily assist natural and cultural resource managers, as well as Public Works Officers (PWOs), facility planners, and environmental specialists working at NSA Naples and NSAND GAETA in complying with the FGS-Italy of July 2008 (U.S. Naval Forces Europe 2008); EO 12114, *Environmental Effects Abroad of Major Federal Actions*; DoDI 4715.5, *Management of Environmental Compliance at Overseas Installations*; DoD 6050.7, *Environmental Effects Abroad of Major Department of Defense Actions*; and Office of the Chief of Naval Operations Instruction (OPNAVINST) 5090.C, Appendix E, *Procedures for Conducting Environmental Planning for Major Navy Actions Outside of the U.S. and U.S. Territories and Possessions*. This User's Guide does not provide guidance for compliance with all chapters of the FGS-Italy; rather its focus is limited to historic and cultural resources (FGS-Italy Chapter 12 [latest revision 2002]), natural resources and endangered species (FGS-Italy Chapter 13 [latest revision 2002]), and environmental effects abroad of major federal actions (EO 12114).

*This User's Guide is an update of the one prepared in 1996 and updated in 2004, and it reflects the July 2008 revision of the FGS-Italy. This User's*

*Guide provides updated natural and cultural resources information for NSA Naples and NSAND GAETA and an updated approach to evaluating the environmental effects of proposed projects in Italy.*

The requirements of the FGS-Italy for natural and cultural resources may aid in satisfying EO 12114 requirements. For example, the documentation required for some projects under EO 12114, DoD 6050.7, and OPNAVINST 5090.C may require an evaluation of potential impacts on natural and cultural resources within and in the vicinity of the proposed project location. To evaluate such impacts, background materials and inventories must typically be reviewed or conducted to provide up-to-date information on natural and cultural resources. The compilation of these inventories is also required by FGS-Italy Chapters 12 and 13 for cultural and natural resources, respectively. Since these areas are closely related, this User's Guide offers an integrated approach toward compliance with the specific requirements of the FGS-Italy and EO 12114 guidelines.

Understanding the requirements of the FGS-Italy and EO 12114 guidelines is important for the development and implementation of a systematic approach to project planning and reviewing in order to best satisfy mission needs while protecting the environment. Project plans can be modified if sensitive issues, such as endangered species or archaeological artifacts, are identified early in the planning process. Thus, knowledge of existing standards or regulations enables:

- More efficient use of time and money;
- Improved relations with local communities; and
- Compliance with standards and regulations.

**USER'S GUIDE CONTENT****1.2.2**

This User's Guide provides relevant information on historical and cultural resources, natural resources and endangered species, the FGS-Italy, and EO 12114. It describes:

- Instructions to proceed toward FGS-Italy compliance, including whether/how/when? to consult with Italian authorities, and recommendations for resources management;
- Relevant regulations and legal processes for cultural resources, natural resources, and environmental effects abroad;
- Training and environmental awareness opportunities;
- An explanation of requirements related to EO 12114, DoD 6050.7, and OPNAVINST 5090.C, Appendix E; and
- Detailed information on the regional setting, background, developmental constraints, and natural and cultural resources for all sites at NSA Naples and NSAND GAETA.

This guide divided into the following sections:

**Chapter 1 – Introduction:** Describes general layout of the User's Guide and includes general site history information. Also provides the general natural and cultural management process for new projects.

**Chapter 2 – Natural Resources Regulatory Guidelines:** Provides applicable local, state, and EU natural resource laws and regulations as they apply to the sites covered within this User's Guide.

**Chapter 3 – Cultural Resources Regulatory Guidelines:** Provides applicable local, state, and EU cultural resource laws and regulations as they apply to the sites covered within this User's Guide.

**Chapter 4 – Training Opportunities:** Provides available educational resources for natural and cultural resource managers.

**Chapter 5 – Regional Setting:** Provides general information concerning the regions of the NSA Naples and NSAND GAETA sites, including specific site descriptions and any known natural and cultural information for each location. Also included, are FGS-Italy compliance and management recommendations for both natural and cultural resources. The last section provides Environmental Effects Abroad guidance.

**Chapter 6 – References:** Lists resources used throughout the preparation of this guide.

For convenience, Table 1-1 provides a summary of the natural and cultural resource status the management recommendations for each site included in this guide. The complete descriptions can be found in Chapter 5.

This User's Guide has been designed to be user-friendly with detailed tables and figures summarizing the issues at NSA Naples and NSAND GAETA. Some of the features that make the document easier to use include:

- Frequent cross-references within the text;
- A glossary containing definitions of other technical terms used throughout the report (Appendix A);

- Tables listing where to find more information about natural and cultural resources at NSA Naples and NSAND GAETA; and
- Satellite imagery (2009) to help determine locations within the landscape and assess potential impacts on natural and cultural resources (provided electronically).

Table 1-1: Summary of Findings:

Facility	Onsite Natural Resources	Onsite Cultural Resources	Recommendations	Location in Text
<b>Camaldoli Transmitter Site</b>	Native and non-native landscaping; No known protected species or habitats.	No known important resources; Site in complete protection zone limiting any future development.	<ol style="list-style-type: none"> <li>1. Create and maintain a list of onsite vegetation and associated maintenance schedule</li> <li>2. Utilize, when possible, native, drought-tolerant vegetation</li> <li>3. Ensure any future development does not further affect view to and from mountain</li> <li>4. Any proposed future development should be coordinated through Comune di Napoli via proper chain of command.</li> </ol>	Section 5.2.1 & 5.3.1
<b>Capodichino</b>	Completely developed with non-native landscaping; no known protected species or habitats.	Two aqueduct lines (1627 & 1631), 18 finds including shards and glass; Site in complete protection zone limiting any future development.	<ol style="list-style-type: none"> <li>1. Create and maintain a list of onsite vegetation and associated maintenance schedule</li> <li>2. Utilize, when possible, native, drought-tolerant vegetation</li> <li>3. Future development in area of aqueducts greater than 6.6-foot (ft) (2-meter [m]) depth, activities must be monitored</li> <li>4. Ensure no unauthorized digging for cultural materials, minerals, or fossils.</li> <li>5. Any proposed future development should be coordinated through Comune di Napoli via proper chain of command.</li> </ol>	Section 5.2.2 & 5.3.2
<b>Carney Park</b>	Mostly developed for sports fields; no known protected species or habitats; Native and non-native vegetation; Non-native includes: stone pine, common walnut, black poplar, acacia, eucalyptus, and spruce Native species near eastern/northeastern edge: chestnut, oaks, hornbeam, Montpelier maple, field maple, elm, ash, dogwood, butcher's broom Birds commonly found: house sparrow, black bird, quail, European turtle dove, song thrush, common skylark	No known designated resources of importance; Site in complete protection zone limiting any future development.	<ol style="list-style-type: none"> <li>1. Create and maintain a list of onsite vegetation and associated maintenance schedule</li> <li>2. Utilize native, drought-tolerant vegetation for future landscaping (i.e. stone pine, black poplar, common walnut)</li> <li>3. Avoid future development of site.</li> <li>4. Any future development below 6.6 ft (2 m) must be monitored</li> </ol>	Section 5.2.3 & 5.3.3

Facility	Onsite Natural Resources	Onsite Cultural Resources	Recommendations	Location in Text
<b>Gricignano Support Site</b>	Completely developed with native and non-native vegetation; No known protected species or habitats.	While cultural remains have been found, there are no known designated resources of importance; The installation is considered archaeologically sensitive.	<ol style="list-style-type: none"> <li>1. Create and maintain a list of onsite vegetation and associated maintenance schedule</li> <li>2. Utilize, when possible, native, drought-tolerant vegetation</li> <li>3. Excavation reports and GPS coordinates should be maintained</li> <li>4. Develop plan to further explore areas with little or no deep-foundation construction in cooperation with Archaeological Superintendency through proper chain of command</li> <li>5. Any excavation below 3.3 ft (1 m) should be monitored</li> <li>6. Ensure no unauthorized digging for cultural materials, minerals, or fossils</li> </ol>	Section 5.2.4 & 5.3.4
<b>Lago Patria Receiver Site</b>	Completely developed with support buildings and structures, cement and asphalt; No known protected species or habitats.	No known designated resources of importance; Site in area of high archaeological potential.	<ol style="list-style-type: none"> <li>1. For any future landscaping, create and maintain a list of vegetation and associated maintenance schedule</li> <li>2. Utilize, when possible, native, drought-tolerant vegetation</li> <li>3. Any excavation at the facility should be monitored</li> <li>4. Ensure no unauthorized digging for cultural materials, minerals, or fossils</li> <li>5. Limit further building or development</li> </ol>	Section 5.2.5 & 5.3.5
<b>Olde Mill Inn</b>	Mostly developed with native and non-native trees and shrubs; No known protected species or habitats.	No known designated cultural resources of importance.	<ol style="list-style-type: none"> <li>1. Create and maintain a list of onsite vegetation and associated maintenance schedule</li> <li>2. Utilize native, drought-tolerant vegetation for future landscaping (i.e. Italian cypress, Phoenician juniper)</li> <li>3. Ensure no unauthorized digging for cultural materials, minerals, or fossils</li> </ol>	Section 5.5.1 & 5.6.1
<b>Port of Gaeta Complex</b>	Completely developed with few native and non-native landscaping; No known protected species or habitats; Because it is along the shoreline, the area is protected under Galasso Law as a sensitive natural resource	No known designated cultural resources of importance	<ol style="list-style-type: none"> <li>1. Utilize native, drought-tolerant vegetation for future landscaping</li> <li>2. Coastal marine habitats should be protected in accordance with U.S. Navy standard operating procedures</li> <li>3. Activities on pier should be planned to minimize impacts on adjacent waters</li> <li>4. Ensure no unauthorized digging for cultural materials, minerals, or fossils</li> </ol>	Section 5.5.2 & 5.6.2

**HOW TO PROCEED****1.2.3**

Table 1-2 provides the real estate status of the U.S. Navy facilities in Italy covered by this User's Guide. Facilities that are leased to (indirectly controlled), but not operated or maintained by, the U.S. military, are required to be in compliance with the portions of the FGS-Italy that affect health and safety. Owners of facilities under contract or lease to the U.S. military are required to fully comply with all Italian legal requirements. However, environmental managers are encouraged to complete the planning process for all facilities to be able to monitor the progress of subcontractors and determine project constraints at the beginning. For facilities that are ceded for use to the U.S. Navy, new and ongoing activities are required to comply with the applicable FGS-Italy regulations.

**Table 1-2. U.S. Navy Activities in Italy – Real Estate Status**

<i>Facility</i>	<i>Leased</i>	<i>Ceded <sup>(1)</sup></i>	<i>Other/Comments</i>
<b>NSA Naples</b>			
Camaldoli Transmitter Site	X		
Capodichino		X	
Carney Park	X		
Gricignano Support Site	X		
Lago Patria Receiver Site		X	NATO Compound
<b>NSAND GAETA</b>			
Olde Mill Inn	X		
Port of Gaeta Complex		X	NATO Compound

Note: <sup>(1)</sup> Ceded for use by the Italian Ministry of Defense to the U.S. Navy

For new proposed projects or mission changes, the following steps should be used as a general guideline for natural and cultural resource managers:

1. Review the U.S. and Italian BIA;
2. Review background materials;

3. Review development constraint maps;
4. Complete the Record of Negative Decision (ROND) and Environmental Impact Assessment (EIA) checklist (Checklist);
5. Consult with the U.S. Installation Commander regarding the Checklist's outcome and allow the Commander to determine whether further action is required;
6. If deemed appropriate by the U.S. Installation Commander, consult with Naval Facilities Engineering Command, Atlantic (NAVFAC Atlantic) and NAVFAC Europe Africa Southwest Asia (EURAFSWA); and
7. If deemed appropriate by the U.S. Installation Commander, check with regional and local authorities via the Italian Base Commander.

## GENERAL GUIDELINES ON MANAGEMENT PROCESS

### 1.3

#### STEP 1: REVIEW THE U.S. AND ITALY BIA

#### 1.3.1

The BIA of 1954 regulates the utilization, function, consignment, and construction with U.S. funds of infrastructure of interest to U.S. Forces stationed in Italy. The agency responsible for the construction of U.S.-funded infrastructure is the Construction Mixed Commission, which is divided into two sections, the Italian Section and the U.S. Section. Since the BIA establishes that infrastructure established with U.S. funds will eventually be consigned to the Italian government, the construction of infrastructure is considered to be executed on behalf of the Italian government.

The Defense General Staff Directive "SMD PI-Infra 11/78," signed in 1979 and also referred to as the "*Direttiva*," governs the submission of projects. The document is broken down into chapters, which define the various types

of project classification criteria. Strictly to the *Direttiva*, all new construction projects, regardless of whether they are executed by contractor or troop labor, or if they are U.S. pre-financed projects eligible for NATO funding, are subject to prior authorization by the Construction Mixed Commission. Differently, all construction projects not entailing changes to the cubic capacity or the use of the infrastructure must only be notified to the Construction Mixed Commission (Table 1-2).

**Table 1-2. Construction Mixed Commission Process Projects IAW the *Direttiva***

<p><b>Chapter 1 Projects – require preapproval under the Construction Mixed Commission</b></p> <ul style="list-style-type: none"> <li>• New construction projects.</li> </ul>
<p><b>Chapter 2 Projects – require only notification to the Construction Mixed Commission</b></p> <ul style="list-style-type: none"> <li>• Construction projects not entailing changes to the cubic capacity or the use of the infrastructure (please note that although in theory these projects “require only notification,” nevertheless also in this case we need to wait for the Italian Section of the Construction Mixed Commission to write back to us to express their concurrence with our project’s classification as a Chapter II).</li> </ul>
<p><b>Chapter 3 Projects</b></p> <ul style="list-style-type: none"> <li>• Construction projects pre-financed with U.S. funds, but not yet included in infrastructure programs of the NATO Alliance.</li> </ul>
<p><b>Chapter 5 Projects</b></p> <ul style="list-style-type: none"> <li>• Construction projects for which the U.S. Forces propose to employ military personnel. Please note that the employment of U.S. military personnel in construction work shall be considered as an exception due to technical reasons or for the need to train U.S. military units.</li> </ul>

However, please note that additional requirements have since arisen that are not covered by the *Direttiva*, to include environmental and cultural heritage requirements. Therefore, for an in-depth Construction Mixed Commission

guideline, please contact NAVFAC EURAFSWA, Code 09M for assistance (DSN 626 7722 – Comm: 081 568 7722).

**STEP 2: REVIEW BACKGROUND MATERIALS** **1.3.2**

To successfully identify natural and cultural resource issues at NSA Naples and NSAND GAETA, proper planning and research is critical. Chapter 5 provides general and site specific background information on natural resources, cultural resources, and environmental effects abroad, respectively. Additional sources of information are listed in Chapter 6, Literature Cited and References.

**STEP 3: REVIEW DEVELOPMENT CONSTRAINT MAPS** **1.3.3**

Area and site maps, including satellite imagery and Geographic Information Systems (GIS) maps, are available through the NAVFAC EURAFSWA Real Property office. These maps should be updated routinely and can be used to identify sensitive areas that would constrain development on or near NSA Naples and NSAND GAETA.

**STEP 4: COMPLETE RECORD OF NEGATIVE DECISION AND ENVIRONMENTAL IMPACT ASSESSMENT CHECKLIST** **1.3.4**

The Checklist is a detailed checklist of project impacts and their significance (Appendix B). It screens potential impacts on land use, water resources, natural resources (vegetation, wildlife, special-status plant and wildlife species), visual resources, cultural resources (archaeological and architectural), transportation, noise and odor impacts, and public health and safety. After identifying potential impacts, each impact is evaluated. The final form can be used for the ROND, or to support development of an Environmental Review (ER), or Environmental Study (ES). Results and findings should be coordinated with the U.S. Installation Commander for

further determination on how to proceed. Details on this process are provided in Chapter 5.

### **STEP 5: CONSULT WITH U.S. INSTALLATION COMMANDER** **1.3.5**

Once the previous steps have been completed, discuss the results with the U.S. Installation Commander to determine if further action is required.

### **STEP 6: CONSULT WITH NAVFAC ATLANTIC AND EURAFSWA** **1.3.6**

If any questions or issues arise during the first four steps of this process, specialists at NAVFAC Atlantic and EURAFSWA should be consulted. Natural and cultural resource specialists can assist environmental managers in resolving issues and can help provide expertise on specific questions. In addition, staff at NAVFAC Atlantic and EURAFSWA can validate and confirm the results of environmental managers.

Contacts at NAVFAC Atlantic are:

NAVFAC Atlantic Natural Resources Contact: David James	Tel: 757-322-4883 Email: <a href="mailto:david.m.james@navy.mil">david.m.james@navy.mil</a>
NAVFAC Atlantic Cultural Resources Contact: Bruce Larson	Tel: 757-322-4885 Email: <a href="mailto:bruce.larson@navy.mil">bruce.larson@navy.mil</a>

Contacts at EURAFSWA are:

EURAFSWA Regional Environmental Manager Contact: Ken Isaac	Tel: 39-081-568-7715 Email: <a href="mailto:ken.isaac@eu.navy.mil">ken.isaac@eu.navy.mil</a>
---	---

### **STEP 7: CHECK WITH THE REGIONAL AND LOCAL AUTHORITIES, IF REQUIRED**

**1.3.7**

Italian government offices may be able to provide further specific information on natural and cultural resources on or near each facility.

Coordination with the Italian Base Commander is required prior to any communications with Italian civil or military agencies. Consultations with

Italian authorities should be coordinated through EURAFSWA and/or NAVFAC Atlantic prior to initiating contact.

The U.S. Installation Commander must first be contacted prior to any communication with Italian authorities. The U.S. Installation Commander will contact the Italian Base Commander to coordinate contact with local authorities.

## **SITE HISTORY**

**1.4**

### **NSA NAPLES**

**1.4.1**

Activity in Naples began in June 1951 with the activation of the Allied Forces Southern Europe, commanded by Admiral Robert B. Carney (the namesake of what is now called Carney Park). In October 1951, an onshore naval support unit was established to support the ongoing NATO activities, and in 1953, the support unit became part of the U.S. Naval forces.

Naval Support Activities were originally conducted at Agnano; however, in 1982, damage resulting from an earthquake caused the eventual relocation of the operational and support facilities to Capodichino, where runways are shared with the civilian airport. Subsequently, a Support Site was constructed on leased land in Gricignano to provide housing, schools, and community support to the U.S. Navy personnel and their families.

The Morale, Welfare, and Recreation Command (MWR) established the Carney Park outdoor recreational facility in 1966 in support of the U.S. Navy personnel stationed in the Naples area. It is named after Admiral Robert B. Carney, Commander-in-Chief of the NATO forces in Southern Europe during 1951 through 1953 and Chief of Naval Operations during 1953 through 1954.

**NSAND**

**GAETA**

**1.4.2**

U.S. Navy activities began in Gaeta in 1967 upon the arrival of the U.S. Sixth Fleet flagship. The installation operated as a detachment of NSA Naples until January 1994, when the independent command NSAND GAETA was established. The installation continues to operate on the port of Gaeta in conjunction with the Italian Navy, with recreational facilities available at the nearby Old Mill Inn complex.

This page intentionally left blank.



## **CHAPTER 2**

# **NATURAL RESOURCES REGULATORY GUIDELINES**

<b>2.1</b>	<b>Final Governing Standards (FGS)</b>	<b>22</b>
2.1.1	Protective Actions	
2.1.2	Management Programs	
2.1.3	Inventories	
2.1.4	Personnel Expertise and Training	
<b>2.2</b>	<b>Italian Laws and Regulations</b>	<b>34</b>
2.2.1	Italian Governmental Structure	
2.2.2	Italian Environmental Laws	
2.2.3	National Laws Pertaining to Natural Resources	
2.2.4	Local Laws Pertaining to Natural Resources	
<b>2.3</b>	<b>European Union (EU) Laws</b>	<b>45</b>
<b>2.4</b>	<b>International Conventions and Treaties</b>	<b>47</b>

This page intentionally left blank.

The following chapter describes the FGS-Italy regulatory requirements that govern the management of natural resources within NSA Naples and NSAND GAETA. Brief descriptions of the Italian laws and regulations, EU laws, and international laws and treaties are also provided.

## FINAL GOVERNING STANDARDS (FGS)

## 2.1

Chapters 12 and 13 of the FGS-Italy (2008) are the **principal regulatory drivers** behind the development of the User's Guide for NSA Naples and NSAND GAETA and are designed to **provide specific standards for environmental protection at DoD installations operating in Italy**. These standards, in conjunction with applicable DoD and service policies and applicable HN laws, provide the complete source of environmental protection practices for U.S. installations operating in Italy.

The FGS-Italy currently in effect are dated July 2008, however, the latest revisions of Chapters 12 and 13 were January 2002. The FGS-Italy are prepared, taking into account the requirements of the OEBGD and applicable Italian national, regional, and local environmental laws and regulations, as well as EU laws ratified into Italian law, using "the more protective standard to establish the FGS unless a specific international agreement with the host nation establishes a different standard applicable to U.S. installations," as specified in DoDI 4715.5, Section 6.3.3.1.

Applicable Italian and EU laws and regulations are summarized in Sections 2.2 to 2.4.

The OEBGD (DoD Policy 4715.5-G, 1 May 2007) requires implementation of uniform conservation standards for natural resources at DoD installations and facilities in foreign countries. Specifically, the OEBGD provides criteria, standards, and management practices to be used by DoD Environmental Executive Agents (EEAs) in determining the applicable governing standards in accordance with DoDI 4715.5, *Management of Environmental Compliance at Overseas Installations* (1996).

DoDI 4715.5 requires the following:

- Establishment and maintenance of an environmental baseline guidance document.
- Establishment of the EEA for environmental matters in each foreign country where DoD operations are conducted at installations or facilities.
- The EEA to evaluate, determine, and issue host-nation FGS-Italy and periodically revalidate them.
- DoD components conducting such operations overseas are responsible for complying with the host nation FGS-Italy.

Chapter 13 of the FGS-Italy outlines the requirements for plans and programs needed to ensure the protection, enhancement and management of natural resources and any biological species declared endangered or threatened

by the U.S. or Italian government. This includes all threatened and endangered species of plants and animals existing on properties under DOD control. The FGS-Italy requires that all installations have:

1. Natural resource management plans and programs for installations with significant land or water areas;
2. Current listings of threatened or endangered species and natural habitats of community interest;
3. Personnel trained in the management of natural resources; and
4. Protective actions to maintain and protect natural resources.

Definitions of natural resource terms provided by the FGS-Italy are listed in Table 2-1. Criteria for natural resources and endangered species are provided in Table 2-2.

**Table 2-1. Definitions of FGS-Italy (2008) Natural Resource Terms**

<p><b>Conservation</b> – Planned management, use, and protection; continued benefit for present and future generations; and prevention of exploitation, destruction, and/or neglect of natural resources. Conservation includes the necessary measures to be adopted for maintaining or restoring the natural habitats and any wild fauna and flora species at a favorable status of conservation.</p>
<p><b>Conservation status of species</b> - The sum of influences acting on the species of concern that may affect the long-term distribution and abundance of its populations within the EU territory. The conservation status of species is considered favorable when:</p> <ul style="list-style-type: none"> <li>• The trend of the population of species shows continuity</li> <li>• The natural distribution area of species is neither being reduced nor is likely to be reduced for the foreseeable future</li> <li>• There is, and will probably continue to be, a sufficiently large habitat to maintain its population on a long-term basis</li> </ul>
<p><b>Italian Protected Species</b> - Any species of flora or fauna listed or designated by Italy, because the species continued existence is, or is likely to be, threatened and is therefore subject to special protection from destruction or adverse modification of associated habitat.</p>
<p><b>Management Plan</b> – A document describing natural resources, their quantity, condition, and actions to ensure their conservation and good stewardship.</p>
<p><b>Natural Habitat</b> - Terrestrial or aquatic zones that may be identified on the basis of their geographic, abiotic and biotic, totally natural, or seminatural characteristics.</p>
<p><b>Natural Habitat of Interest for the European Community</b> - Any natural habitat included in the Ministry of Environment's Service for the Protection of Natural Resources list titled "Natural Habitat Types of Community Interest Whose Conservation Requires the Designation of Special Areas of Conservation" that:</p> <ul style="list-style-type: none"> <li>• Is a risk to disappear within their natural distribution area</li> <li>• Has a reduced distribution area following a regression or because their distribution area is intrinsically restricted</li> <li>• Exhibits typical characteristics of one (or more) of these five biogeographical regions: Alpine, Atlantic, Continental, Macaronesic, and Mediterranean</li> </ul>
<p><b>Natural Resource</b> – All living and inanimate materials supplied by nature that are of aesthetic, ecological, educational, historical, recreational, scientific, or other value; any physical, geological, geomorphological, or biological formation that has relevant natural and environmental value.</p>
<p><b>Natural Resources Management</b> – Action taken to protect, manipulate, or alter natural resources in harmony to meet present and future human needs.</p>
<p><b>Priority Natural Habitat</b> - The natural habitat for which the EU has a special responsibility due to the importance of its natural distribution area and that is at risk of disappearing. These habitats are marked with an asterisk (*) in the Ministry of the Environment's list of "Natural Habitat Types of Community Interest Whose Conservation Requires the Designation of Special Areas of Conservation".</p>
<p><b>Significant Land or Water Areas</b> – Land or water area that is normally 500 or more acres outside the cantonment area; areas of smaller size are included if they have natural resources that are especially vulnerable to disturbance.</p>
<p><b>Site of Community Importance (SCI)</b> – A site (defined as a geographically defined area whose extent is clearly delineated) which, in the biogeographical region(or regions) to which it belongs, contributes significantly to the maintenance or restoration at a favorable conservation status of a natural habitat or of a species and may also contribute significantly to the coherence of the EU ecological network denominated "Natura 2000" and/or contributes significantly to the maintenance of biological diversity within the biogeographic region(or regions) considered. For animal species ranging over wide areas, Sites of Community Importance shall correspond to the places within the natural range of such species that present the physical or biological factors essential to their life and reproduction.</p>

**Species of Community Interest** – Species within the EU that are:

- Endangered (except those species whose natural range is marginal in that territory and which are not endangered or vulnerable in the western paleoartic region)
- Vulnerable (i.e., believed likely to move into the endangered category in the near future if the causal factors continue operating)
- Rare (i.e., with small populations that are not at present endangered or vulnerable, but are at risk; the species are located within restricted geographical areas or are thinly scattered over more extensive range)
- Endemic and requiring particular attention by reason of the specific nature of their habitat and/or the potential impact of their exploitation on their habitat and/or the potential impact of their exploitation on their conservation status)

Such species are included in the Ministry of Environment's lists of "Animal and Plant Species of Community Interest Whose Conservation Requires the Designation of Special Area of Conservation," "Animal and Plant Species of Community Interest in Need of Strict Protection," and "Animal and Plant Species of Community Interest Whose Taking in the Wild and Exploitation May be Subject to Management Measures."

**Status of Conservation of a Natural Habitat** - Any factor that affects or may change the natural distribution, structure, and functions of a natural habitat, as well as the long-term survival of its typical species. The status of conservation of a natural habitat is considered "favorable" when:

- Its natural distribution area is stable or increasing
- Its structure and specific functions are unchanging
- The status of conservation of its typical species is favorable

**Threatened and Endangered Species** – Any species of flora or fauna listed in Table 13.1 or included in the Ministry of Environment's list of "Animal and Plant Species of Community Interest Whose Conservation Requires the Designation of Special Area of Conservation" and "Animal and Plant Species of Community Interest in Need of Strict Protection."

**Zone of Special Conservation (ZSC)** – A natural area that is geographically defined and has a delimited surface (including terrestrial or aquatic zones with geographic, abiotic and biotic, natural or seminatural [natural habitat] characteristics) that contributes to:

- The satisfactory conservation or restoration of at least one of the natural habitats included in the Ministry of Environment's list of "Natural Habitat Types of Community Interest Whose Conservation Requires the Designation of Special Areas of Conservation", or of at least one of the species of wild flora and fauna included in the Ministry of the Environment's list of "Animal and Plant Species of Community Interest Whose Conservation Requires the Designation of Special Areas of Conservation".
- The conservation of the bio-diversity in the Paleoartic region through the protection of the Alpine, Appenninic, and Mediterranean environments.

**Zone of Special Protection (ZSP)** - A territory that has a geographic location and an extension appropriate for the conservation, similar to a ZSC.

*Source: Navy Region Europe, Commander. July 2008. Environmental Final Governing Standards – Italy.*

## Table 2-2. FGS-Italy (2008) Criteria for Natural Resources and Endangered Species

### C13.1 Protection of Species and Habitats

Installations that have land and water areas shall take reasonable steps to protect and enhance known endangered or threatened species and Italian protected species and their habitat. An assessment of potential impacts will be completed for proposed projects located in or likely to have a significant effect on a ZSP or SCI (see C13.2). The assessment of potential impacts will be submitted to the Italian Base Commander to obtain approval from the Italian Ministry of Environment's Service for the Protection of Natural Resources prior to construction of the project. Projects with negative assessments may still be approved if determined to be in the overriding public interest, providing that compensatory measures are taken to protect the ZSP, SCI, and Animal and Plant Species of Community Interest.

The following activities are prohibited for Animal Species of Community Interest (see C13.2):

- The capture or killing of the species in its natural habitat
- The disturbance of the species during its reproductive cycle, hibernation, or migration
- The destruction or collection of eggs or nests
- The damage or destruction of the sites used for reproduction or rest

The following activities are prohibited for Plant Species of Community Interest (see C13.2):

- To pick up, collect, uproot, or destroy any specimen of the plant species
- To possess, transport, or trade any specimen of the plant species

Authorization is required for construction or renovation projects within a National park, Regional national park, nature reserve, or protected marine area. The request for authorization will be submitted to the Italian Base Commander who may, in turn, submit the request to the Park Authority (*Ente Parco*). An environmental impact analysis may be requested as part of the authorization process.

In addition, the following activities are prohibited within the Maddalena National Park:

- Capturing, killing, or disturbing animal species
- Collection or destruction of threatened or endangered plant species
- Collection of fossils or mineral samples
- Introduction of species that are not compatible with the local fauna
- Access to areas during reproduction or nesting periods
- Creation of quarries, or off-road motor vehicle transit

Hunting is prohibited on military property.

### C13.2 Protected Species and Habitats List

Installations shall maintain, or have access to, FGS Table 13.1, OEBGD Table C13.T2, and a current list of Italian protected species and protected habitats.

The Italian lists (maintained by the Ministry of Environment's Service for the Protection of Natural Resources) are titled:

- Animal and Plant Species of Community Interest Whose Conservation Requires the Designation of Special Areas of Conservation
- Animal and Plant Species of Community Interest in Need of Special Protection
- Zones of Special Protection
- Sites of Community Importance

Table 13.1 is included in this Chapter. OEBGD Table 13.2 and the Italian lists are available from the Environmental Executive Agent whenever a current list is needed.

### C13.3 Natural Resources Management Plans

Installations with significant land or water areas shall, after coordination with the Italian Base Commander or similar appropriate Italian authorities, develop natural resources management plans.

**C13.4 Initiate Surveys and Implement Plans**

Installations having natural resources management plans shall, after coordination with the Italian Base Commander or similar appropriate Italian authorities (for example, the Italian Ministry of the Environment's Service for the Protection of Natural Resources), and if financially and otherwise practical, and in such a way that there is no net loss of mission capability:

- Initiate surveys for endangered or threatened species and Italian protected species identification, or support Italian-initiated surveys
- Implement natural resources management plans

**C13.5 Notification**

The Italian Base Commander, or if there is no Italian Base Commander the U.S. Ambassador, will be notified (via the Component chain of command, who will also notify the Environmental Executive Agent) of the discovery of any endangered or threatened species and Italian protected species not previously known to be present on the installation.

**C13.6 Maintenance of Grounds**

Installations shall maintain grounds to meet designated mission use and ensure harmony with the natural landscape and/or the adjacent Italian facilities where practical.

**C13.7 Personnel Experience and Training**

Installations shall ensure that personnel performing natural resource functions have the requisite expertise in the management of their discipline (i.e., endangered or threatened species, Italian protected species, wetlands, soil stabilization). This may be in-house, contract, or through consultation with another agency. Government personnel directing such functions must have training in natural resources management.

**C13.8 Maintenance and Protection of Habitats**

Installations shall place emphasis on the maintenance and protection of habitats favorable to the reproduction and survival of indigenous plants, fish, and wildlife.

**C13.9 Consistency with Current Principles**

Land and vegetative management activities will be consistent with current conservation and land use principles (e.g., ecosystem protection, biodiversity conservation, and mission-integrated land use).

**C13.10 Protective Cover and Erosion Control**

Installations shall utilize protective vegetative cover or other standard soil erosion/sediment control practices to control dust, stabilize sites, and avoid silting of streams.

*Source: Navy Region Europe, Commander. July 2008. Environmental Final Governing Standards – Italy.*

The FGS-Italy requirements fit into four major categories:

1. Protective Actions
2. Management Programs
3. Inventories
4. Personnel Expertise and Training

General guidelines for compliance in these four categories are presented below. NSA Naples and NSAND GAETA compliance recommendations for each of the FGS-Italy requirements (C13.1 through C13.10) are addressed specifically in Chapter 5 of this User Guide.

### **PROTECTIVE ACTIONS**

### **2.1.1**

The FGS-Italy state that habitats should be maintained to protect threatened or endangered species and indigenous fish and wildlife. Land and vegetation management activities are expected to be consistent with current conservation and land use principles. Grounds should be maintained using vegetative covers or other soil erosion/sediment control practices with the objective of achieving harmony with the natural landscape. Essentially, the FGS-Italy requires activities to maintain the character of the landscape and refrain from causing any degradation that would imperil native animals and plants.

Additionally, proposed projects should be assessed through the Construction Mixed Commission Process to determine potential impacts to any Zones of Special Protection (ZSP) or Sites of Community Importance (SCI). The project

approval process should follow the steps summarized in Chapter 1 and detailed in Chapter 5, Section 5.7.

Some ZSPs, SCIs, or other protected features, such as National Parks or Regional Nature reserves, that are relevant to the NSA Naples and NSAND GAETA sites included in this User's Guide include:

- Camaldoli Transmitter Site (Naples) – located in the Urban Park of Camaldoli;
- Carney Park (Naples) – located within the Regional Park of Campi Flegrei; located within Natura 2000 proposed SCI of Monte Barbaro e Cratere di Campiglione;
- Lago Patria Receiver Site (Naples) – located 1.9 miles (3 kilometers [km]) west of Natura 2000 proposed SCI of Lago di Patria; located 3.7 miles (6 km) southwest of Natura 2000 proposed SCI of Pineta di Patria;

Chapter 5 of this User's Guide provides guidance that will assist in assessing the impacts of proposed projects.

## MANAGEMENT PROGRAMS

### 2.1.2

Per Section 13.3 of the FGS-Italy, installations with significant areas of land and water are required to, after coordination with the Italian Base Commander or similar appropriate Italian authority, have written natural resources management plans.

This User's Guide is designed to meet the natural resources management plan requirements as specified by the FGS-Italy. Chapter 5 provides site-specific natural resource information to assist in determining potential impacts of proposed projects along with management recommendations. Additional natural resource information for each activity, such as landscape maintenance schedules, should be kept with this User's Guide and updated as needed and appropriate.

### **INVENTORIES**

### **2.1.3**

Per the FGS-Italy, installations are required to maintain or have access to an updated list of protected species and habitats based on FGS Table 13.1, OEBGD Tables C13.T1 and C13.T2 (Table 2-3), as well as a current list of Italy-designated species which is available from NAVFAC EURAFSWA. The relevant Italy portions of the FGS-Italy and OEBGD tables are summarized in Table 2-3.

When financially or otherwise practical, the U.S. Installation Commander is also required to initiate surveys to identify endangered species on or in the vicinity of the installation or to assist with any surveys initiated by the Italian government (C13.4 of the FGS-Italy).

**Table 2-3. Threatened and Endangered Species in Italy and Listed on the FGS-Italy and OEBGD Tables**

<i>Common Name</i>	<i>Scientific Name</i>
<b>MAMMALS</b>	
Apennine Chamois	<i>Rupicapra rupicapra ornata</i>
<b>BIRDS</b>	
Eurasian Peregrine Falcon	<i>Falco peregrinus peregrinus</i>
Northern Bald Ibis	<i>Geronticus eremita</i>
<b>REPTILES</b>	
Green Sea Turtle	<i>Chelonia mydas</i>

Note: Only the species from FGS-Italy Table 13-1 and OEBGD Table C13.T1 relevant to NSA Naples and NSAND GAETA are included above. No plant species listed in OEBGD Table C13.T2 occur in Italy.

The Italian lists are maintained by the Ministry of Environment's Service for the Protection of Natural Resources. These lists can be obtained from the EEA (NAVFAC EURAFSWA) and include:

- Animal and Plant Species of Community Interest Whose Conservation Requires the Designation of Special Areas of Conservation
- Animal and Plant Species of Community Interest in Need of Special Protection
- Zones of Special Protection (ZSP)
- Sites of Community Interest (SCI)

Lists for the entire EU are included as Annexes II and IV to the European Commission's (EC) Council Directive 92/43/EEC, Habitats Directive (EC 2007) (Appendix C).

([http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index\\_en.htm](http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm))

- Annex II – (a) Animal and Plant Species of Community Interest Whose Conservation requires the Designation of Special Areas of Conservation (SAC)
- Annex IV – (b) Animal and Plant Species of Community Interest in Need of Special Protection

In addition, a global list of threatened species can be found through the International Union for Conservation of Nature (IUCN). The IUCN Red List of Threatened Species, provided in Appendix C, is considered the most comprehensive approach for the evaluation of plant and animal conservation status (<http://www.iucnredlist.org/>). Species included in the list are categorized according to specific criteria and are assigned the levels as described in Appendix C.

Due to the developed nature of most of the U.S. Navy facilities in Italy, and because there are no records of species found on any of the above lists occurring at any of the facilities, comprehensive surveys at each facility in Italy are not currently warranted. However, based on facility-specific information provided in Chapter 5 of this Guide, surveys may be warranted in sensitive areas on a project-by-project basis if development in these areas is ever proposed or if specific species protection status changes.

Should endangered species not previously known to occur on the installation be discovered in the future, then the appropriate Italian Base Commander should be notified using the proper installation chain of command.

### **PERSONNEL EXPERTISE AND TRAINING**

**2.1.4**

In accordance with the FGS-Italy, personnel managing natural resources must be properly trained. Training requirements and opportunities are discussed in Chapter 4.

The primary point of contact for management of natural resources at NSA Naples and NSAND GAETA is the natural resources manager at the Public Works Department, with additional support from NAVFAC Atlantic and EURAFSWA.

## **ITALIAN LAWS AND REGULATIONS**

**2.2**

While the FGS-Italy are the definitive standards and requirements applicable to environmental actions at NSA Naples and NSAND GAETA, it is important to understand the Italian laws and regulations that were used in creating the FGS-Italy. Below is a brief description of these laws and regulations. More comprehensive information can be found in Appendix D.

## ITALIAN GOVERNMENTAL STRUCTURE

### 2.2.1

Italy is a parliamentary republic, with centralized administrative structures:

- **National** (equivalent to the U.S. Federal government)
- **Regional** (equivalent to U.S. States)
- **Provincial** (equivalent to U.S. counties)
- **Municipal** (equivalent to U.S. cities)

Legal and executive power is shared among the national government and 20 regions, 94 provinces, and 8,102 municipalities. Figure 2-1 outlines the administration of natural resources in Italy. For natural resource issues, policy is generally made in Rome at the national level. Governments on a regional level are given many legislative and planning responsibilities for several environmental issues, including environmental permitting. The regional governments typically work in coordination with the Provincial and Municipal governments.

Two primary Italian Ministries responsible for natural resource management and protection as illustrated on Figure 2-1 are the Ministry for Agriculture and Forestry and the Ministry of the Environment, Land, and Sea.

### **Ministry for Agricultural, Food, and Forestry Policies**

This ministry assists in the management of natural resources through the Italian State Forestry Corps (*Corpo Forestale dello Stato*). The Forestry Corps manages and

protects forests in Italy, where many natural resources are found. Generally, the provincial coordinator (*coordinamento provinciale*) or the local station (*comando di stazione*) develops a forestry management plan that must be approved by the regional coordinator (*coordinamento regionale*). In contrast to the Ministry of the Environment, Land, and Sea, much of the administration of forests in Italy is handled at the regional level and below, rather than at the national level.

### **Ministry of the Environment, Land, and Sea**

The Ministry of the Environment, Land, and Sea is considered the most important national-level governmental body for the promotion, maintenance, and restoration of the environment and for the protection of natural resources from pollution, in accordance with Natura 2000, Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Ramsar Convention of Wetlands of International Importance, among others. This Ministry is also responsible for the sustainable development, protection of territory, pollution and industrial risks, international protection of the environment, appraisal of environmental impact, waste and cleanup, and protection of seas and inland waters.

Originally established in 1986 as the Ministry for the Environment and Territory, Presidential decree No. 140 (3 August 2009) established its reorganization and renamed it the Ministry of the Environment, Land, and

Sea. Ministerial Decree No. 135 (2 December 2009) outlines the current structure of the General Directorates of the Ministry:

- Directorate General for Protection of Natural Resources and Water
- Directorate General for Nature Conservation and the Sea
- Directorate General for Sustainable Development, Climate, and Energy
- Directorate General for Environmental Assessment
- Directorate General for General Affairs and Personnel

The natural resource administration for the areas where NSA Naples facilities are located is in the Naples province in the Campania Region. The organization of the natural resource administration governing the Naples area is provided in Figure 2-2. Most natural resource issues are handled by the Italian Forestry Corps (*Corpo Forestale*) at the regional or provincial level, while the central Ministry for Agriculture, Forestry, and Food Resources (*Ministero delle Risorse Alimentari, Agricole, e Forestali*) in Rome is primarily concerned with policy issues.

The regional coordinator of the Italian Forestry Corps for Naples is located in Naples (the regional and provincial capital).

Although much of the area around the NSA Naples facilities (e.g., Camaldoli, Carney Park, and Capodichino) is highly restricted for development purposes (Zone 1), there are also selected areas in which development is limited (Zone 2), and areas where development is virtually unrestricted (Zone 3) (Figure 5-1).

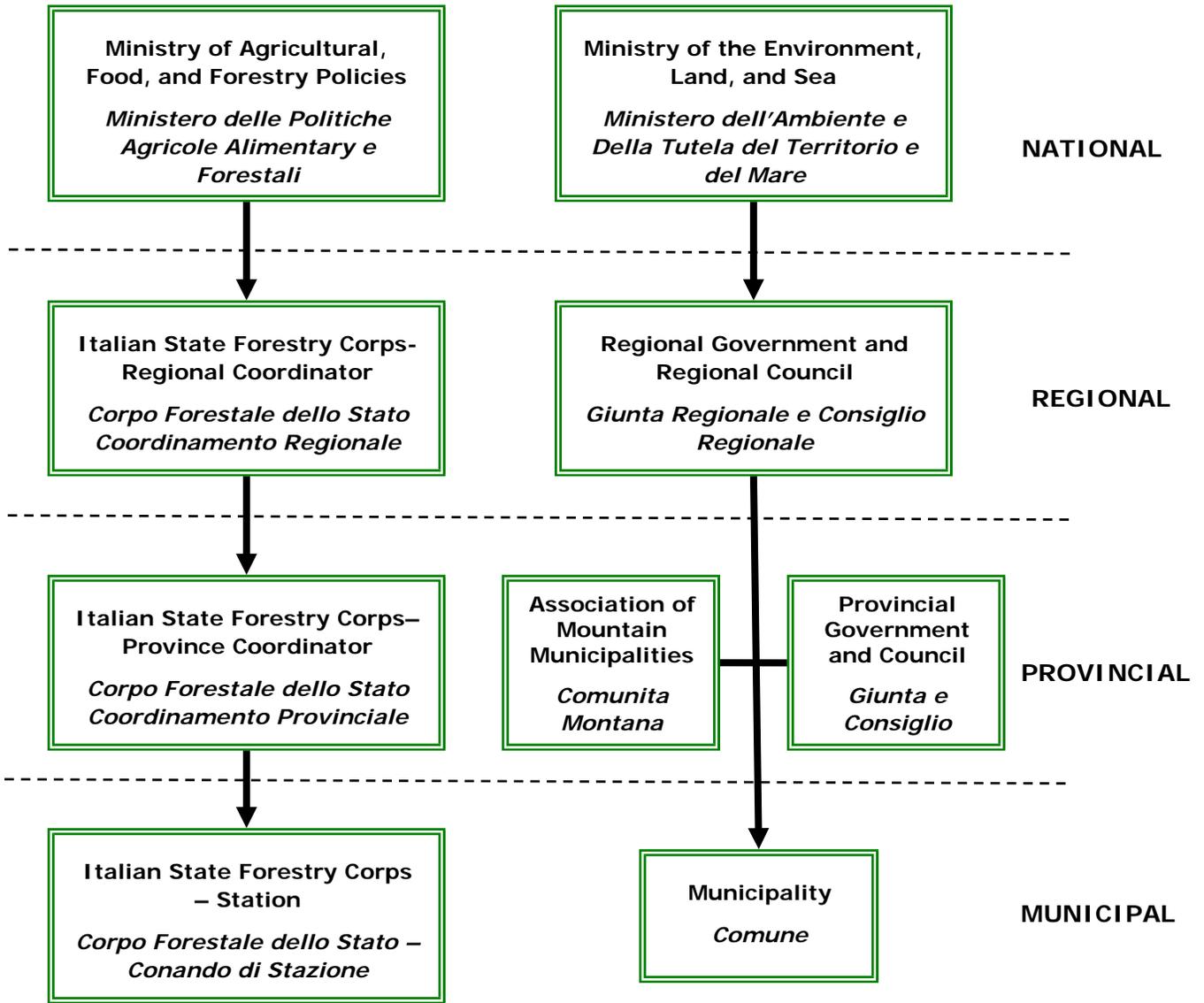
### ITALIAN ENVIRONMENTAL LAWS

### 2.2.2

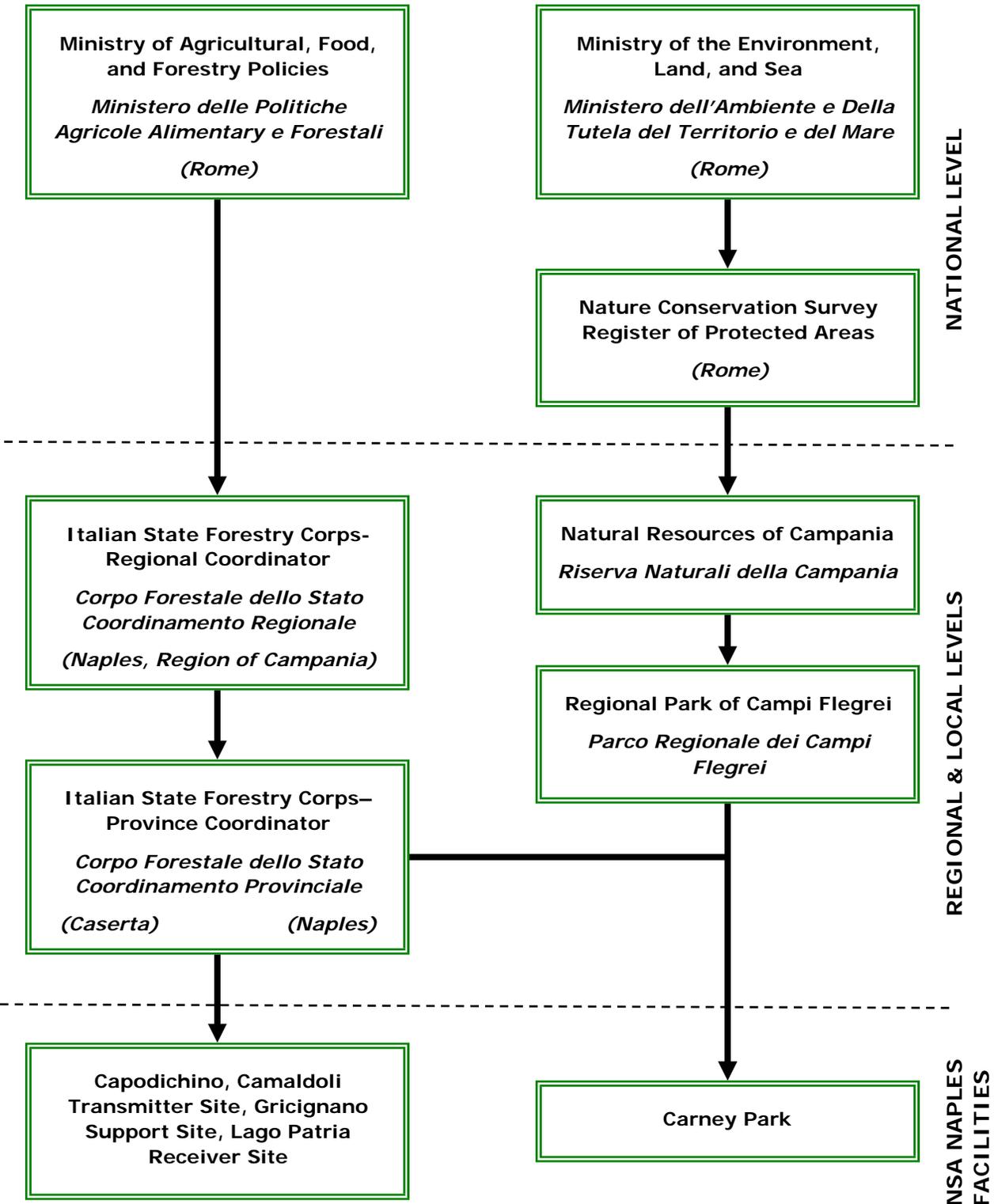
The numerous laws developed in Italy for the protection or management of environmental resources were taken into consideration during the development of the FGS-Italy. These laws, listed in Appendix D, are currently developed and enforced primarily by the Ministry of the Environment, Land, and Sea, as previously mentioned.

It should be noted that two of these natural resource protection laws, L. 1497/39 and L. 431/85 (Galasso Law), were recently unified along with the primary cultural resource protection law, L. 1089/39, into a single law referred to as the Testo Unico (DLeg 490/99). The purpose of unifying the three laws was to coordinate administrative reference and bring it into line with new political and administrative realities of the EU. In substance, the new law makes little modification to the regulations already in existence.

**Figure 2-1. Italian Governmental Structure for Natural Resource Protection in Italy**



**Figure 2-1. Italian Governmental Structure for Natural Resource Protection in Naples**



**NATIONAL LAWS PERTAINING TO NATURAL RESOURCES****2.2.3**

The Acts, Presidential Decrees, and Ministerial Decisions briefly summarized in this section are regulatory mandates passed by the Italian government to comply with national laws, the EU, and international conventions and treaties to protect and conserve the natural resources of Italy.

The Italian legislation on natural resources consists of two basic groups of laws: (1) the laws that protect landscapes, panoramic views, and other natural resources of unique value, and (2) the laws that regulate the management and conservation of protected areas such as natural parks and marine reserves.

- **DPR 616/77** – Title V, Planning and Utilization of the Territory – gives the State the responsibility of approving projects involving areas subject to zoning restrictions due to the presence of natural resources. The Regions were delegated to provide administrative controls for the protection of natural resources, their inventory, preservation, and relative sanctions.
- **L. 394/91** – “Framework Law on Protected Areas” established the regulations for the identification, designation, and management of natural protected areas to promote the conservation and the development of natural resources. Designated areas are subject to special protection and management.

- **DME of 2 December 1996** - "Classification of protected areas", integrates the above classification (of L. 394/91) with EU and International laws to further classify areas subject to special protection and management.
- **R.D.L. 3267/23** – "Rearrangement of legislation about woods and mountainous areas", or the "Forest Law", is the primary hydrogeological protection law for soils, most often referring to soils in hills and mountains. This law is important in preventing against erosion and landslide risks.

**The Register of Protected Areas** (Elenco delle Aree Protette) in Italy is an official directory containing administrative information and maps of protected areas set up in Italy either by the State or by the Regions. The directory was established in 1991 and is published and updated by the Ministry of the Environment, Land, and Sea's Nature Conservation Survey in Rome. The 2003 list can be found at:

[http://www.minambiente.it/opencms/export/sites/default/archivio/allegati/vari/elenco\\_ap\\_2003.pdf](http://www.minambiente.it/opencms/export/sites/default/archivio/allegati/vari/elenco_ap_2003.pdf).

## **Protection of Flora, Fauna, and Habitat**

The Italian legislation on the protection and conservation of species and their habitats is governed by the following regulations that implement international conventions: Paris 1950, Ramsar 1971, Geneva 1972, Washington 1973, Bern 1979, Bonn 1979, and EU Directives on the protection of endangered species both worldwide and in Europe.

- **DPR 448/76** implements the Ramsar Convention (2 February 1971) on the protection of wetlands as habitats for aquatic birds.
- **L. 812/78** implements the International Convention of Paris (18 October 1950) on the protection of wild birds.
- **L. 503/81** implements the Bern Convention (19 September 1979) on the preservation of the European wildlife and natural environment.
- **L. 42/83** implements the Bonn Convention (23 June 1979) on the protection of wild migratory fauna.
- **L. 127/85** implements the Geneva Protocol (3 April 1982) on the protected areas of the Mediterranean. This procedural-type law establishes general guidelines for the protection of important sea areas for both their natural and cultural relevance.

- **L. 394/91** is the framework law for natural reserves and establishes the regulations for identification and designations of natural protected areas.
- **L. 157/92** - Prohibits any activity intended to capture birds and wild animals or collect eggs, nests, and newly-born animals (especially of those species belonging to the endangered list).
- **DPR 17** May 1996 establishes the National Park Office and the standards to safeguard the Maddalena National Park (i.e., zoning of the park territory into areas with different degrees of protection).
- **DPR 357/97** implements EU Directive 92/43/EEC on the conservation of natural and semi-natural habitat and of wild flora and fauna. Gives Natura 2000 site management responsibility to the regions and autonomous provinces of Italy. They can, in turn, delegate the responsibility to the communities or provinces.

In addition to the laws identified above, forestry laws also exist that limit the number of trees, such as olive and cork trees, that can be cut and regulate their harvest. These trees have been used economically for thousands of years in the Mediterranean and are highly valued.

- **L. 475/45** prohibits the cutting down of olive trees (*divieto di abbattimento di alberi di olivo*)

- **L. 759/56** regulates the cultivation, protection, and exploitation of cork oaks (*coltivazione, difesa e sfruttamento della sughera*).

## EUROPEAN UNION (EU) LAWS

## 2.3

As a Member State of the EU, Italy is responsible for bringing into force any applicable EU directives, conventions, and treaties. Five directives and decisions of particular importance to the protection of flora, fauna, and their habitats include:

- **Directive 92/43/EEC on the Conservation of Natural Habitats of Wild Fauna and Flora** (21 May 1992, latest amendment in 2007 to expand the annexes), or the Habitats Directive, requires the designation of SACs for important species and habitats. In Italy, this EU Directive was implemented under Decree No. 357 of 8/9/97.
- **Directive 2009/147/EC on the Conservation of Wild Birds (formerly 79/409/EC)** provides for the protection and management of wild birds and their habitats by establishing Special Protection Areas (SPAs). Italian L. 157/92 implemented the Bird Directive in Italy in 11 February 1992.
- **Council Decision 82/461/EEC on the Conservation of Migratory Species** (24 June 1982) approves the Bonn Convention (1 November

**Habitats Directive**  
Protection of flora and fauna and their habitats

[http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index\\_en.htm](http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm)

**Birds Directive**  
Protection of birds and their habitats

[http://ec.europa.eu/environment/nature/legislation/birdsdirective/index\\_en.htm](http://ec.europa.eu/environment/nature/legislation/birdsdirective/index_en.htm)

**Bonn Convention**  
Global conservation of wildlife and habitats

<http://www.cms.int/>

1983) on wildlife and habitat conservation on a global scale. Italy Law 42/83 implements the Bonn Convention.

- **Council Decision 82/72/EEC on the Conservation of European Wildlife and Natural Habitats** (3 December 1981) approves the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention of 19 September 1979). Law 503/81 implements the Bern Convention in Italy.
- **Directive 97/11/EC of 3 March 1997 (amending Directive 85/337/EEC) on the assessment of the effects of certain public and private projects on the environment** prevents pollution and the disturbance of the environment by requiring EIAs prior to development consent is granted for public and private projects that may result in a potential negative impact to the environment.

#### **Bern Convention**

European conservation of wildlife and habitats

[http://europa.eu/legislation\\_summaries/environment/nature\\_and\\_biodiversity/l28050\\_en.htm](http://europa.eu/legislation_summaries/environment/nature_and_biodiversity/l28050_en.htm)

#### **Environmental Assessment**

Required prior to development approval

<http://ec.europa.eu/environment/eia/full-legal-text/9711.htm>

## **INTERNATIONAL CONVENTIONS AND TREATIES 2.4**

International conventions and treaties signed by Italy to protect threatened and endangered species and their habitat include:

- **Convention on Wetlands of International Importance**, or the Ramsar Convention, is an intergovernmental agreement for the global conservation and sustainable use of wetlands and

#### **Ramsar Convention**

Conservation of wetlands and their resources

<http://www.ramsar.org>

their resources. This convention was ratified in Italy by DPR 448/76.

- **The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)** (Council Regulation EEC/3626/82), as part of the Endangered Species Conservation Act of 1969, is an international agreement to ensure the international trade of flora and fauna does not threaten their survival. Italy was one of the original signers of this convention. L. 874/75 implements CITES and Decree of 31 December 1983 is the national regulation that provides enforcement of CITES in Italy.
- **Convention on Biological Diversity**, ratified by Italy through Law No. 124 of 14 February 1994, is the international effort to conserve biological diversity, to ensure the sustainable use of its components, and to provide the fair and equitable sharing of the benefits arising from their use.
- **Convention Concerning the Protection of the World Cultural and Natural Heritage**, known as the United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Convention, primarily functions to link the concepts of nature conservation and the preservation of

#### CITES

Regulation of trade of endangered flora and fauna

<http://www.cites.org/>

#### Biodiversity Convention

Conservation of global biological diversity

<http://www.cbd.int/>

#### World Heritage Convention

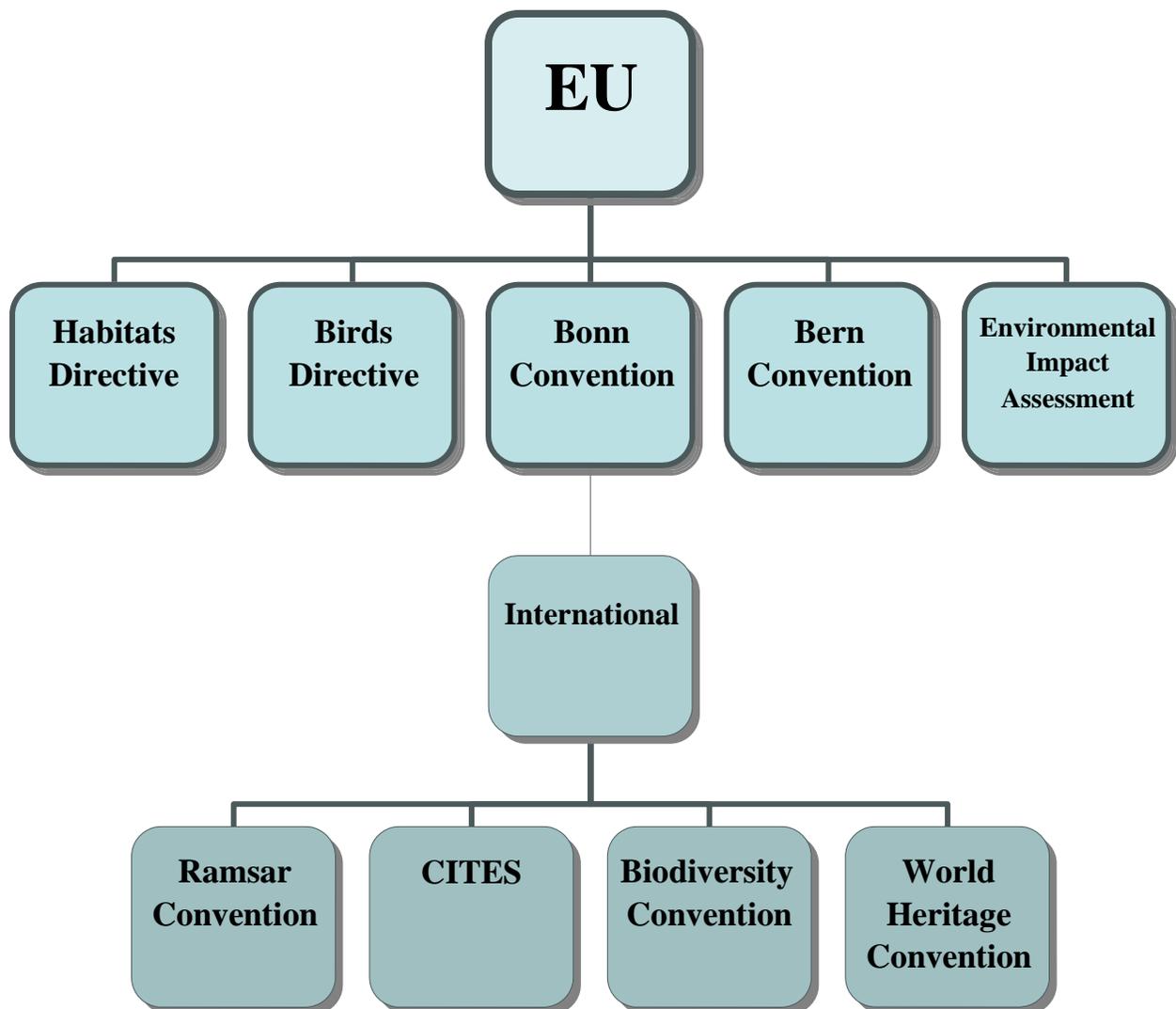
Defines natural or cultural sites to be protected on the World Heritage List

<http://whc.unesco.org/>

cultural properties. This Convention was ratified into Italy on 23 June 1978.

The relationship of the international conventions and EU directives and Decisions discussed in the preceding sections are presented in Figure 2-2.

**Figure 2-2: EU Decisions and Directives and International Conventions**



This page intentionally left blank.



## **CHAPTER 3**

# **CULTURAL RESOURCES REGULATORY GUIDELINES**

<b>3.1</b>	<b>Final Governing Standards</b>	<b>53</b>
3.1.1	Protective Actions	
3.1.2	Resources Management	
3.1.3	Planning	
<b>3.2</b>	<b>Italian Laws and Regulations</b>	<b>62</b>
3.2.1	Italian Cultural Resources Administration	
3.2.2	Italian Cultural Laws	
<b>3.3</b>	<b>European Community Resolutions, Recommendations, and Directives</b>	<b>74</b>
<b>3.4</b>	<b>International Laws and Treaties</b>	<b>75</b>
<b>3.5</b>	<b>World Heritage Convention</b>	<b>80</b>

This page intentionally left blank.

The following chapter describes the FGS-Italy regulatory requirements that govern the management of cultural resources within NSA Naples and NSAND GAETA. Brief descriptions of the regulatory requirements of Italian laws and regulations, EC resolutions, international laws and treaties, as well as the World Heritage Convention are provided.

### 3.1 FINAL GOVERNING STANDARDS

Chapter 12 of the FGS-Italy outlines the requirements for plans and programs needed to ensure the protection and management of cultural resources, including historic and prehistoric properties under DoD control. *Cultural resources* is a generic term commonly used to include buildings, structures, districts, archaeological sites, historic landscapes, cemeteries, and objects of significance in history, architecture, archaeology, engineering or culture. The term also includes associated documents and records.

Definitions of cultural resource terms used in Chapter 12 of the FGS-Italy are listed in Table 3-1. Specific requirements of the FGS-Italy for historic and cultural resources are provided in Table 3-2. Recommendations for FGS-Italy compliance at NSA Naples and NSAND GAETA are presented in Section 5 of this User's Guide. The FGS-Italy require that installations:

**Table 3-1. Definitions of FGS-Italy (2008) Cultural Resource Terms**

<p><b>Adverse effect</b> – Changes that diminish the quality or significant value of historic or cultural resources.</p>
<p><b>Archaeological Resource</b> – Any material remains of prehistoric or historic human life or activities. Such resources include, but are not limited to: pottery, basketry, bottles, weapons, weapon projectiles, tools, structures or portions of structures, pit-houses, rock paintings, rock carvings, intaglios, graves, human skeletal materials, or any portion of any of the foregoing items.</p>
<p><b>Historic and Cultural Resources Program</b> – Identification, evaluation, documentation, curation, acquisition, protection, rehabilitation, restoration, management, stabilization, maintenance, recording, and reconstruction of historic and cultural resources and any combination of the foregoing.</p>
<p><b>Historic or Cultural Resource</b> – Physical remains of any prehistoric or historic district, site, building, structure, or object significant in world, national, or local history, architecture, archaeology, engineering, or culture. The term includes artifacts, archaeological resources, records, and material remains that are related to such a district, site, building, structure, or object. The term also includes any property listed on the World Heritage List or on official Italian lists of protected areas.</p>
<p><b>Inventory</b> - To determine the location of historic and cultural resources that may have world, national, or local significance.</p>
<p><b>Material Remains</b> -Physical evidence of human habitation, occupation, use, or activity, including the site, loci, or context in which such evidence is situated including:</p> <ul style="list-style-type: none"> <li>• Surface or subsurface structures</li> <li>• Surface or subsurface artifact concentrations or scatters</li> <li>• Whole or fragmentary tools, implements, containers, weapons, clothing, and ornaments</li> <li>• By-products, waste products, or debris resulting from manufacture or use</li> <li>• Organic waste</li> <li>• Human remains</li> <li>• Rock carvings, rock paintings and intaglios</li> <li>• Rock shelters and caves;</li> <li>• All portions of shipwrecks;</li> <li>• Any portion or piece of any of the foregoing.</li> </ul>
<p><b>Preservation</b> - The act or process of applying measures to sustain the existing form, integrity, and material of a building or structure, and the existing form and vegetative cover of a site. It may include initial stabilization work where necessary, as well as ongoing maintenance of the historic building materials.</p>
<p><b>Protection</b> - The act or process of applying measures designed to affect the physical condition of a property by safeguarding it from deterioration, loss, attack, or alteration, or to cover or shield the property from danger or injury. In the case of buildings and structures, such treatment is generally temporary and anticipates future historic preservation treatment; in the case of archaeological sites, the protective measures may be temporary or permanent.</p>

*Source: Navy Region Europe, Commander. July 2008. Environmental Final Governing Standards – Italy.*

**Table 3-2. FGS-Italy (2008) Criteria for Historic and Cultural Resources**

<p><b>C12.1 Avoiding or Mitigating any Adverse Effects</b> U.S. Installation Commanders shall take into account the effect of any action on any property listed on the World Heritage List or on Italy's equivalent of the National Register of Historic Places (the Registro Nazionale dei Luoghi di Importanza Storica) for purposes of avoiding or mitigating any adverse effects.</p>
<p><b>C12.2 World Heritage List and Equivalent National Register</b> Installations shall have access to the World Heritage List and the Italian equivalent of the National Register of Historic Places (the Registro Nazionale dei Luoghi di Importanza Storica). Current copies of the lists will be available from the Environmental Executive Agent (Currently EURAFSWA).</p>
<p><b>C12.3 Personnel Expertise and Training</b> U.S. Installation Commanders shall ensure that personnel performing historic or cultural resource functions have the requisite expertise in world, national, and local history and culture. This may be in-house, contract, or through consultation with another agency. Government personnel directing such functions must have training in historic or cultural resource management.</p>
<p><b>C12.4 Resource Management</b> Installations shall, after coordination with the Italian Base Commander or similar appropriate Italian authorities, and if financially and otherwise practical:</p> <ul style="list-style-type: none"> <li>• Inventory historic and cultural resources under DoD control. An inventory shall be developed from a records search and visual/ground survey. The inventory of resources should be developed on the basis of political, military, literary, artistic, and cultural history and should include <ul style="list-style-type: none"> <li>- Properties of artistic, historic, archaeological, or ethnic interest</li> <li>- Paleontology, prehistoric artifacts, and primitive civilizations</li> <li>- Numismatic objects (e.g., coins, medals, etc.)</li> <li>- Rare and precious manuscripts, documents, books, and prints</li> <li>- Villas, parks, and gardens of artistic or historic value.</li> </ul> </li> <li>• Develop a plan for the protection and preservation of historic and cultural resources identified on the installation inventory and for mitigation of any adverse effects.</li> <li>• Establish measures sufficient to protect known historic or cultural resources until appropriate mitigation or preservation can be completed.</li> <li>• Establish measures sufficient to protect known archaeological resources until appropriate mitigation or preservation can be completed.</li> </ul>
<p><b>C12.5 Prevention of Adverse Actions</b> U.S. Installation Commanders shall establish measures to prevent DoD personnel from disturbing or removing historic or cultural resources without permission of the Italian Base Commander (who may consult with the Italian Ministry of Cultural and Environmental Resources).</p>
<p><b>C12.6 Planning for Major Actions</b> U.S. Installation Commanders shall ensure that planning for major actions includes consideration of possible effects on historic or cultural resources.</p>
<p><b>C12.7 Newly Discovered Resources</b> If potential historic or cultural resources not previously inventoried are discovered in the course of a DoD action, the U.S. Installation Commander and the Italian Base Commander (if appropriate) shall be notified immediately. The newly-discovered items will be preserved and protected pending a decision on final disposition by the U.S. Installation Commander. The decision on final disposition will be made by the US Installation Commander after coordination with the Italian Base Commander or similar appropriate Italian authorities (for example, the Italian Ministry of Cultural and Environmental Resources).</p>

Source: Navy Region Europe, Commander. July 2008. *Environmental Final Governing Standards – Italy*.

- Take action to protect cultural and archaeological resources;
- Have the necessary expertise and procedures in place to manage historic and cultural resources; and
- Conduct planning that considers possible effects on historic and cultural resources.

There are seven specific requirements which can be grouped into the following three main categories:

1. Protective Actions
2. Resources Management and Training
3. Planning

### 3.1.1

#### **PROTECTIVE ACTIONS**

Sections C12.1, C12.5, and C12.7 of the FGS-Italy detail the specific requirements to avoid and mitigate effects to listed sites as well as properly handle newly discovered historic and cultural resources. The FGS-Italy require installations to take into account the effect of any action on properties listed on the World Heritage List or on the Italian equivalent of the National Register of Historic Places; protect known cultural and archaeological resources from damage or loss; prevent DoD personnel from touching or removing archaeological resources without permission from the Italian Base Commander; preserve and protect any newly discovered resources pending final disposition by the U.S. Installation Commander after coordination with the Italian Base

Commander; and immediately notify the U.S. Installation Commander and Italian Base Commander if potential historic or cultural resources are found.

The FGS-Italy requires EEAs to establish measures to prevent DoD personnel from conducting unauthorized excavation. Although untrained personnel may consider this activity "harmless little pot hunting," it is a violation of Italian law. It is imperative that each activity issue a directive on unauthorized digging or other form of intrusive investigation to all personnel. Each activity must also issue a policy statement banning all unauthorized artifact recovery, including, but not limited to the following:

- Use of metal detection devices to recover metal objects;
- Mineral collecting;
- Fossil collecting;
- "Pot hunting;" and
- Taking any materials from underwater shipwrecks.

Base personnel are to be reminded that under Italian law it is a criminal offense to remove any artifacts. Personnel authorized to remove such artifacts are only those who have written permission from the appropriate Italian cultural resource administrations. If someone picks up what appears to be an artifact, it is their obligation to turn that material over to the Public Works Department Cultural Resource Manager, who should then notify the U.S. Installation Commander. The U.S. Installation Commander

will then notify the Italian Base Commander, who may notify the relevant Italian archaeological superintendency to assist the officer in charge of cultural resources in determining the next appropriate action.

At facilities where there are important cultural resources, a plan for protecting those resources must be developed. To meet this requirement, Chapter 5 identifies cultural resources on each base and outlines the protective measures to be taken. In addition, any planned activity or operation must not endanger any known cultural resources. The NAVFAC Atlantic or EURAFSWA archaeologist should also be consulted for further guidance along with the superintendencies which have administrative jurisdiction. Implementation of this protection plan will constitute compliance with FGS-Italy requirements.

*Personnel are to be reminded that if they find something they believe to be a cultural artifact, they are to follow the following procedures:*

- If the artifact/cultural resource is not threatened and will not be damaged by the current activity, it should be left in place and the Public Works Department (PWD) Cultural Resource Manager should be notified immediately. The PWD Cultural Resource Manager should immediately secure the area and then notify the U.S. Installation Commander to notify the Italian Base Commander within 24 hours of the discovery.*

- The Italian Base Commander will then notify the relevant archaeological or architectural superintendency. The PWD Cultural Resource Manager should then make arrangements for the Italian official, usually an inspector for the area, to view the artifact and its context and to determine the proper course of action for protection or mitigation, depending on the proposed activity potentially affecting the cultural resource.*
- *If the artifact/cultural resource is threatened and may be damaged by the current activity, the activity shall cease immediately and the PWD Cultural Resource Manager shall be notified immediately. The PWD Cultural Resource Manager should then secure the area and notify the U.S. Installation Commander to notify the Italian Base Commander within 24 hours of the discovery. The Italian Base Commander will then notify the relevant archaeological or architectural superintendency. The PWD Cultural Resource Manager should make arrangements for the Italian official to view the artifact and its context and to determine the proper course of action for protection or mitigation, depending on the proposed activity affecting the cultural resource. Usually the Italian authorities will send an inspector to assist in determining the next appropriate action. In cases of extreme threat (for example, potential damage by exposure to the elements or reasonable doubts regarding the security of the location), Italian law*

*does permit the discoverer to place archaeological finds in a secure location until they can be examined and turned over to an appropriate Italian official, but such action should be taken only in extreme circumstances and the original location, condition, and context of the finds should be documented thoroughly (e.g., photographs) and presented to the official along with the actual finds.*

Generally, an official report is filed with the superintendency following the examination of an archaeological find or other cultural resource by an Italian official. It is advisable that base personnel obtain a copy of the formal report by the Italian official and include it with a statement which describes the action that was taken and any other relevant documentation.

### 3.1.2

#### **RESOURCES MANAGEMENT AND TRAINING**

The FGS-Italy require that installations have expertise in cultural resources management, have access to the World Heritage List and the Italian equivalent of the National Register of Historic Places (*Registro Nazionale dei Luoghi di Importanza Storica*), and have measures in place to protect and preserve known and newly identified historic and cultural resources until appropriate mitigation or preservation can be completed. The FGS-Italy requires that installations inventory, when financially practical, historic and cultural resources in areas of DoD control.

A Ph.D. archaeologist with extensive experience throughout Italy and the NAVFAC Atlantic archaeologist participated in the preparation of this User's Guide, qualifying it as a document produced by experts. The primary point of contact for management of cultural resources at the installation is the cultural resources manager at the Public Works Department. Additional management support is provided from NAVFAC Atlantic and EURAFSWA cultural resources staff (Section 1.3).

The FGS-Italy also requires that historical or cultural resource personnel have the appropriate world, national, and local historical and cultural expertise. Training, which can be in-house or through contract or consultation with other agencies, should also include resource management, when appropriate. Cultural resource training opportunities for DoD personnel are discussed in Chapter 4.

The relevant Italian lists should be available from the EEA (NAVFAC EURAFSWA). The World Heritage List, which is maintained by UNESCO, is also available via the internet at:

<http://whc.unesco.org/en/list>

At U.S. Navy facilities in Italy, this document will suffice for compliance with the FGS-Italy. At sites where there are known cultural resources, information concerning relevant and known cultural resource investigations conducted by the U.S. Navy or the Italian government at each site is

provided, and directions for obtaining additional material necessary for compliance is provided.

### 3.1.3

#### **PLANNING**

Planning requirements of the FGS-Italy fall into two categories:

- Planning for the overall management and protection of historic, cultural, and archeological resources on the installation inventory, and
- Planning for major future projects or actions to ensure the consideration of possible adverse impacts on historic, cultural, or archeological resources in the decision-making process.

At the NSA Naples and NSAND GAETA facilities, this document will suffice for compliance with FGS-Italy planning requirements. It provides detailed discussions of existing cultural resources, as well as relevant cultural resource investigations conducted by the U.S. Navy and/or the Italian government with reference to current scholarship. This Guide presents the cultural resources on NSA Naples and NSAND GAETA facilities that require management by the U.S. Navy, and the Project Planning sections for each site included in this guide identifies particular issues that should be addressed when planning future projects. To ensure consideration of cultural resources, planners and PWOs should consult those sections in Chapter 5 when preparing planning documents, as those sections also suggest courses of action when planning future projects.

Guidance provided in this User's Guide addresses the need for the U.S. Navy to prepare environmental impact analysis during the planning phase of future projects or actions to comply with the analysis requirements of EO 12114, Environmental Effects Abroad. This process includes the evaluation of impacts on cultural resources, to satisfy the FGS-Italy requirement to consider the possible effects on cultural resources of proposed projects/actions. Planners and PWOs should consult Chapter 5 for guidance on developing the appropriate level of environmental impact analysis of proposed actions.

## 3.2 ITALIAN LAWS AND REGULATIONS

It has been said that Italy, which has the world's longest history of cultural resource administration, holds roughly 70 percent of the world's cultural resources, including archaeological sites, monumental buildings, and works in sculpture and painting. Although the FGS-Italy is the primary regulatory driver for cultural resources at NSA Naples and NSAND GAETA, an understanding of the fundamental laws that govern the protection and management of cultural resources is essential to proper behavior and civic responsibility in Italy.

### 3.2.1 ITALIAN CULTURAL RESOURCES ADMINISTRATION

The *Ministero per i Beni e le Attività Culturali* (Ministry for Cultural Resources and Activities [MIBAC]) is the primary

authority over the disposition and administration of cultural resources in Italy.

Cultural resources are administered by superintendencies, which are divided by territorial jurisdiction and which handle specific kinds of resources, such as archaeology, architecture, landscape, and historical and artistic resources. It is important to contact the appropriate superintendency for the appropriate resource. Figures 3-1, 3-2, and 3-3 outline the primary institutional relationships relevant to the areas of the U.S. Navy's facilities concentrating on NSA Naples, and NSA Gaeta, respectively.

Regional Directorates serve to bring the functioning of the Ministry throughout the whole of Italy into line with the administrative structure of Italy's autonomous regions. While some local superintendencies work through the regional directorates, others, such as the archaeological superintendencies at Naples, have a direct relationship with the ministry and are called 'special superintendencies'.

NSAND GAETA is located within the Italian Region of Lazio, while the NSA Naples facilities are located within the Italian Region of Campania. Within the Region of Campania, the U.S. Navy complex at Gricignano di Aversa is located within the Province of Caserta, while all other U.S. Navy facilities are located within the Province of

Naples. Each facility is located in a specific municipality (*comune*), and facilities within the Municipality of Naples are located in various districts or wards (*riione*).

### **Cultural Resources Administration for NSA Naples**

Cultural resource administration for the areas where NSA Naples facilities are located is varied because the facilities are in three municipalities and two provinces. As with all cultural resource administration on mainland Italy, archaeological resources are administered by one superintendency, and architectural, landscape, and ethno-anthropological resources by another. The central ministry in Rome is concerned primarily with policy issues.

Recent changes have shifted the jurisdiction for archaeological resources somewhat. Prior to September 2009, all archaeological resources in the NSA Naples area were under the jurisdiction of Archaeological Superintendency for the province of Naples and Caserta (*Soprintendenza per i beni archeologici di Napoli e Caserta*). Currently, resources in the province of Caserta are under the reorganized Superintendency for the Provinces of Salerno, Avellino, Benevento and Caserta (*Soprintendenza per i beni archeologici di Salerno, Avellino, Benevento, e Caserta*) in Salerno. The Gricignano Support Site is located in the province of Caserta and falls under this new authority. Capodichino, Carney Park, Camaldoli, and the Lago Patria Receiver Site still fall under the Naples office that formerly handled the area resources,

which is now known as the Special Archaeological Superintendency for Naples and Pompeii (*Soprintendenza Speciale per i Beni Archeologici di Napoli e Pompei*).

Architectural resource administration is split along the lines now followed by the archaeological administration. Capodichino, Carney Park, Camaldoli, and the Lago Patria Receiver Site are under the jurisdiction of the superintendency in Naples (*Soprintendenza per i beni architettonici e per il paesaggio, per il patrimonio storico, artistico e demoetnoantropologico di Napoli e Provincia*), while the Gricignano Support Site falls under the administration of the superintendency for the Province of Caserta (*Soprintendenza per i beni architettonici e per il paesaggio, per il patrimonio storico, artistico e demoetnoantropologico delle province di Caserta e Benevento*), which has its main office in the former Bourbon royal palace in Caserta (the *Reggia di Caserta*).

Local cultural resources are handled by the Office for Cultural Resources and the Environment (*Assessorato per Beni Culturali e Ambientali*) in the municipality office where each installation is located.

### **Cultural Resources Administration for NSAND GAETA**

Cultural resources in the area of Gaeta are administered by several governmental agencies, typically according to the nature of the resource. It is important to remember that although the U.S. Navy administration of facilities at Gaeta

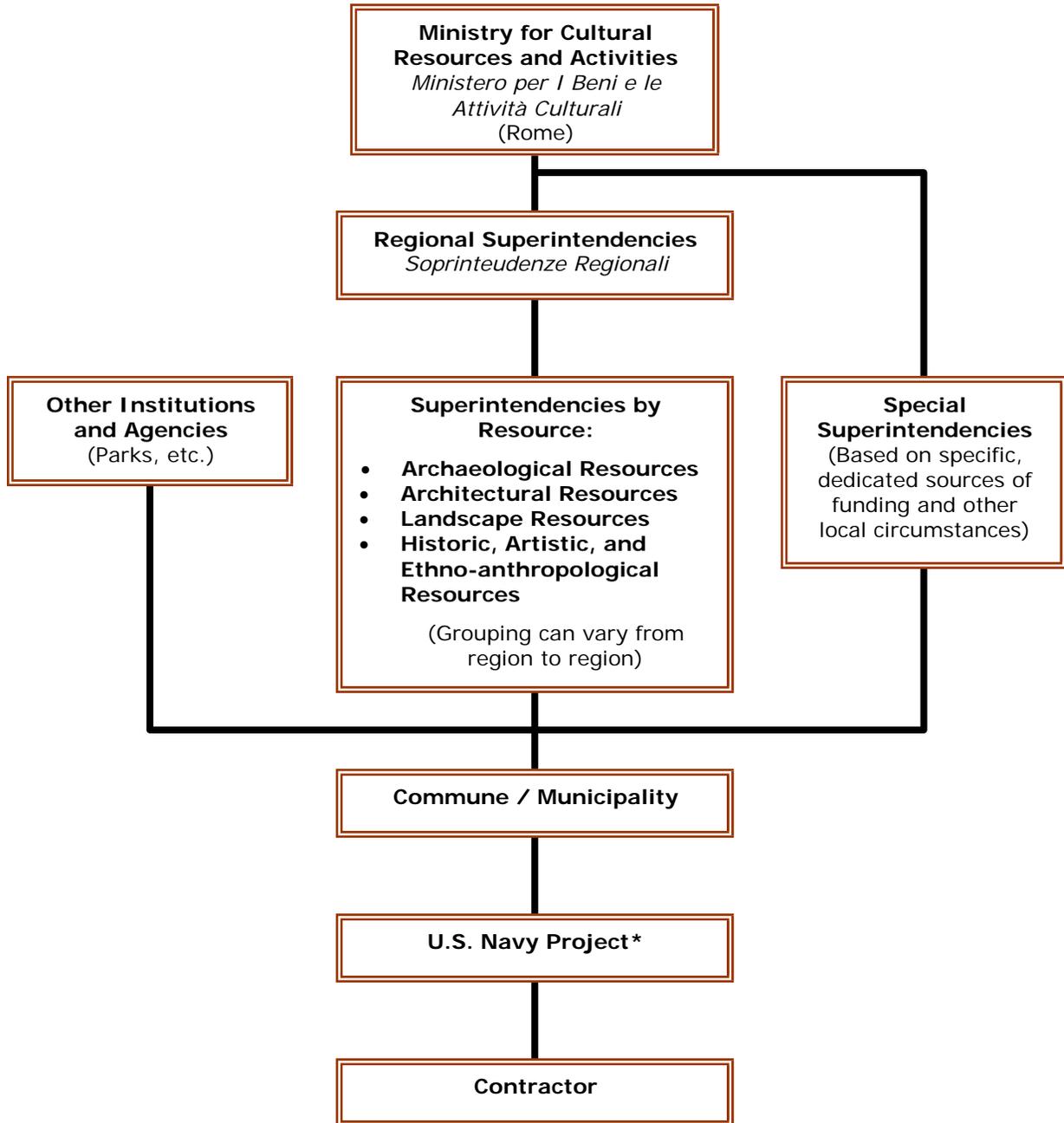
and Naples are unified, and the historical ties between the two cities are strong, the present structure of the Italian government separates the two locations by region (*regione*), with Gaeta in the Regione Lazio, while Naples is located in the Regione Campania. The principal agencies, or superintendencies, are those of the Italian state, which are part of the *Ministero per i Beni e le Attività Culturali*. All archaeological resources are administered by the *Soprintendenza per i Beni Archeologici del Lazio*. Architectural and landscape resources are administered by the *Soprintendenza per i Beni Architettonici e il Paesaggio del Lazio*. Resources of historic, art historic, or ethno-anthropological nature that are mostly mobile or intangible in substance are administered, instead, by the *Soprintendenza per i Beni Storici Artistici ed Etnoantropologici del Lazio*. Local matters are also addressed by the technical office of the City of Gaeta. The identification of alienable and inalienable properties, in particular, is available through the state *Ufficio del Demanio, Agenzia di Latina*.

---

In accordance with the *FGS-Italy*, contact between the U.S. Navy and the Italian government is to be handled by the Italian Base Commander. No direct contact with the Italian government should be made.

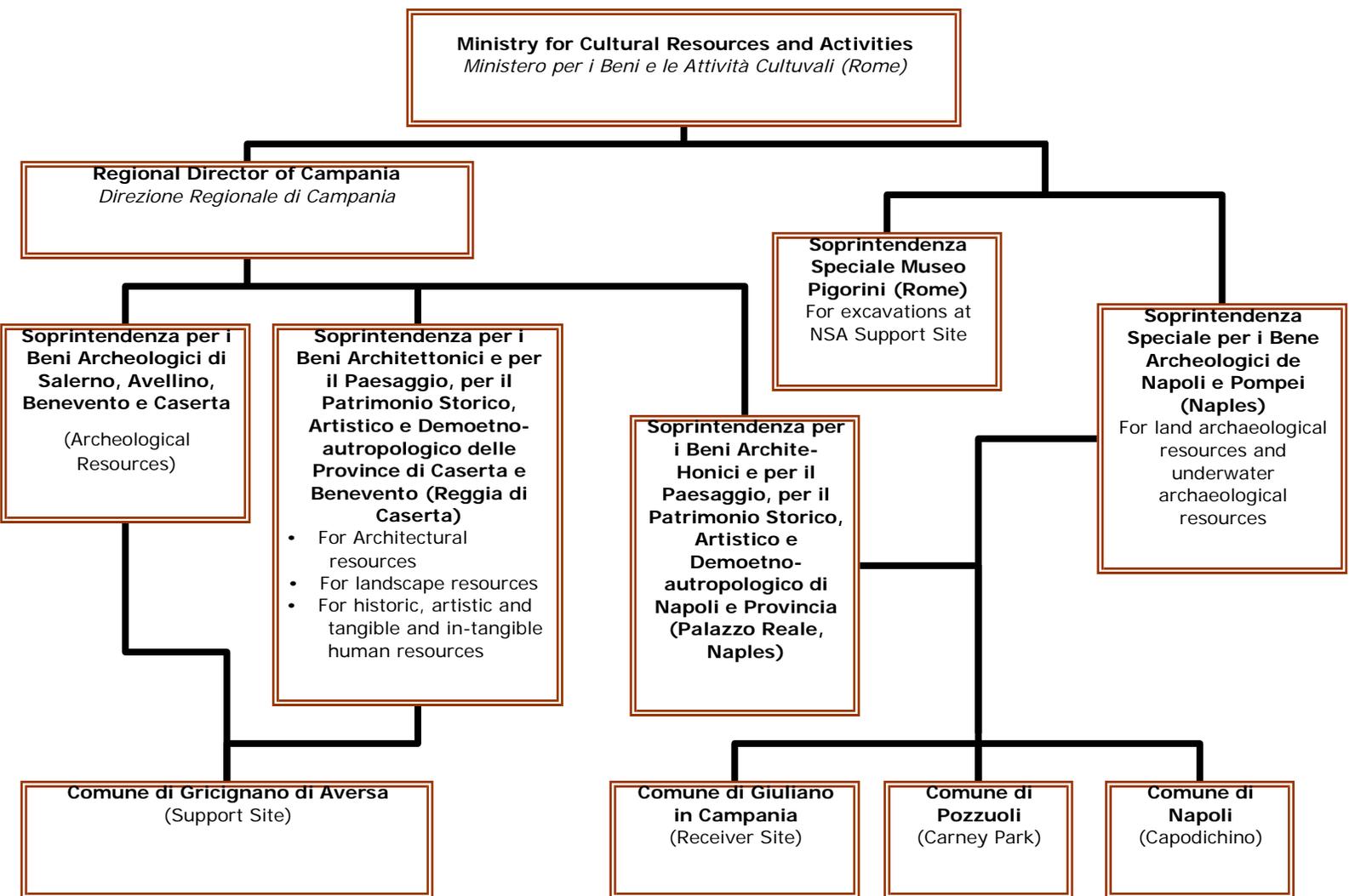
---

**Figure 3-1. General Diagram of Institutional Relationships for Cultural Resources in Italy**

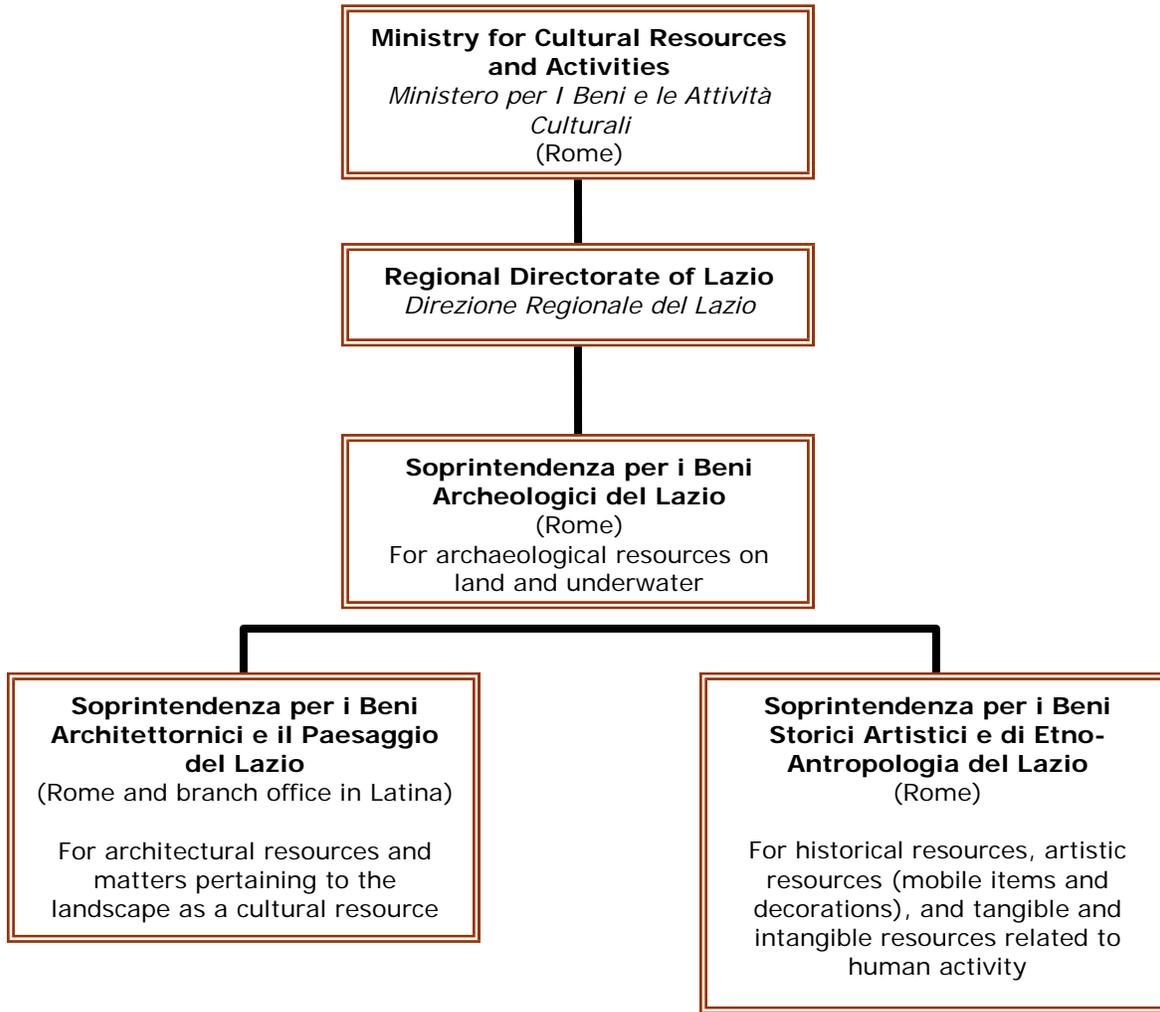


\*SOFA and Host Nation contracting protocol omitted

**Figure 3-2. General Diagram of Institutional Relationships for Cultural Resources at NSA Naples**



**Figure 3-3. General Diagram of Institutional Relationships for Cultural Resources at NSAND GAETA**



### 3.2.2

#### ITALIAN CULTURAL LAWS

The protection of cultural resources has been an element of the Italian constitution since 1947. Article 9 declares that 'the Italian Republic promotes the development of culture and scientific research. It protects the landscape and the historic and artistic heritage of the Nation' (Gazzetta Ufficiale n. 298, 27 dicembre 1947: «Art. 9. - La Repubblica promuove lo sviluppo della cultura e la ricerca scientifica e tecnica. Tutela il paesaggio e il patrimonio storico e artistico della Nazione»), thus identifying cultural and landscape resource management as one of the state's primary roles (see Alibrandi & Ferri 2001, pages 3-15 and Guzzo 2001).

Italian cultural resource legislation itself has been in a state of relative flux for the past ten years. While for decades, Italian law rested on the foundations of two laws enacted in 1939: L.1089/39 dealt with archaeological, architectural and artistic resources, and L.1497/39 dealt primarily with landscape as a cultural resource. The 1985 addition of a L.431/85, the so-called 'Galasso Law', put the earlier laws in the framework of environmental resource management, including a key provision about yet-to-be-discovered archaeological resources. In 1999, the earlier codes were revised and consolidated into a single, new law (the so-called '*Testo Unico*' L.490/1999).

A convenient reference source for many Italian national cultural heritage laws, as well as those of other countries,

is now available through the UNESCO Heritage Laws Database: <http://www.unesco.org/culture/natlaws>.

The present comprehensive cultural resources law is the so-called **'Legge Urbani' (D.L. 42/2004)** with amendments passed in 2006 (available through the UNESCO Heritage Laws Database described above). It takes into consideration a reordering of some aspects of Italy's overall governmental hierarchies. Designation as a resource remain as they were before: at least 100 years for archaeological finds and historical monuments, 200 years for maps, 75 years for means of transport, 25 years for historic photographs and films, 50 years for other items of antiquarian interest that are not specifically defined; no work of a living artist or structure having less than 50 years is eligible. While most people recognize that cultural and natural resources include archaeological monuments and sites, works of art, and historic buildings, many are not aware that the comprehensive law L.42/2004 also covers objects such as fossils and minerals. Unauthorized fossil hunting, shard or coin collecting, digging of any sort in a protected archaeological zone, or collection of archaeological finds from the sea floor is expressly prohibited and punishable by law.

---

*While Article 90, Paragraph 1 sets a limit of 24 hours from the moment of discovery to the time of notification, immediate notification is required in accordance with Chapter 13 of the FGS-Italy. This notification should be*

*initially directed to the Italian Base Commander through the U.S. Installation Commander.*

---

### **Vincoli (Restrictions)**

Areas protected by law either for their natural beauty or for the presence of cultural resources above or below ground are subject to what in Italy is called a *vincolo* (restriction or protection). It functions somewhat like an easement in American law in which the state claims an interest in the property. Usually development of properties that are under *vincolo* is highly restricted, but not impossible. Any proposed development or change to such properties must be submitted to the appropriate Italian superintendency for approval. The existence of *vincoli* on a base or near any proposed activity can have a significant effect on the way property may be used and can severely limit any proposed action.

The concept of a *vincolo* is often concerned not only with the specific cultural or natural resource which it is intended to protect but also with the context in which the cultural or natural resource exists. An area subject to a direct *vincolo* will often have an area around it subject to an indirect one (*vincolo indiretto or fascia di rispetto*) that regulates what may be done within the surrounding area in a slightly less stringent manner. Although property-owners of lands where specific monuments or archaeological sites are found are notified when *vincoli* are instituted, holders of property under *vincolo* as landscape are not. Often the

latter are unaware that they must contact the cultural and environmental resource administrations in the event of any planned construction or land transformations.

### **Local and Regional Laws**

Each Italian region and municipality also has its own laws concerning the treatment of natural and cultural resources. Most duplicate the national laws, creating *vincoli* on areas of architectural or archaeological interest, while some are derived from other legal instruments.

## **3.3**

### **EUROPEAN COMMUNITY RESOLUTIONS, RECOMMENDATIONS, AND DIRECTIVES**

Italy is a member of the EU and, as such, is subject to applicable EU laws and directives. Awareness of conventions, resolutions, and other affirmations by the Council of Europe also can help with the understanding of concepts and policies with regard to both cultural and natural resources.

In January 1975 the European Community called for member nations to comply with the World Heritage Convention of 1972 and to provide funding to create pilot preservation and public information projects. In 1986, following the signing of the Grenada Convention, the European Commission Council members resolved to implement the terms of the Convention. The European Convention on the Protection of the Archaeological Heritage of 1969 (London Convention) was revised at a

convention held in Valetta – La Valette, Malta in 1992 (Valetta Convention). Although the Valetta Convention is pan-European in character, the Italian State is reluctant to ratify its measures because they are less stringent than those currently prescribed by Italian law.

EU laws and directives of importance to the protection of cultural resources are included in Table 3-3.

### **3.4 INTERNATIONAL LAWS AND TREATIES**

Since 1954, Italy has been a signatory to most international treaties governing the protection of cultural resources, including most recently the Convention for Safeguarding of the Intangible Cultural Heritage (signed in Paris on 17 October 2003 and ratified by Italy on 30 October 2007) and the Convention on the Protection of the Underwater Cultural Heritage ('Underwater cultural Heritage Convention' signed in Paris on 2 November 2001 and ratified by Italy on 8 January 2010). Some treaties, like the UNIDROIT convention on the illicit commerce of cultural properties, are mentioned by name in the Italian comprehensive cultural resources law (see L.42/2004, Article 87). Many of these conventions can be consulted in English-language translation through the UNESCO website: [www.unesco.org/new/en/unesco](http://www.unesco.org/new/en/unesco) -- follow the homepage menu for 'Conventions & Recommendations', then on that webpage, look for the menu for the appropriate region – for Italy, the entry is 'Europe & North America' -- which will lead to another webpage where one may click on

ratified and non-ratified conventions by country. The Convention concerning the Protection of the World Cultural and Natural Heritage ('World Heritage Convention' signed in Paris on 16 November 1972 and ratified by Italy on 23 June 1978) is the most important treaty for FGS-Italy compliance because it is specifically cited in Chapter 12 of the FGS-Italy. The World Heritage and Underwater cultural Heritage conventions are described in Section 3-5, while the other treaties are summarized in Table 3-3.

**Table 3-3 Principal European and International Treaties Regarding Cultural Resources**

Year	Name	Description
1954 (1999)	Hague International Convention for the Protection of Cultural Resources during Wartime	The signatory nations agreed to avoid the destruction of opposing countries cultural landmarks during wartime. The text has been revised in a second protocol dated March 26, 1999.
1969	London Convention	The signatories agreed to delimit and protect sites and areas of archaeological interest and prohibit illicit excavation. Only trained personnel were to be permitted to conduct excavations. Proper control and conservation of recovered material was to be instituted and each nation was to establish a national inventory of all archaeological objects.
1970	Paris Agreement on Illicit Export of Cultural Materials	Often called the 'Paris Convention' (although there are many), the signatories of this document agree to forbid and prevent the illicit importation, export or transfer of cultural materials, ranging from archaeological materials to antique musical instruments to archives to ethnographic material.
1972	Paris Treaty on World Cultural and Natural Patrimony	This is the 'World Heritage Convention' and it is the treaty most directly related to the terms of FGS compliance; see section 3.3.1.

1985	Grenada Convention for the Protection of the Architectural Heritage of Europe	The Conventions requires that each signatory nation view the preservation of architectural heritage as an essential planning objective. It calls for each nation to promote programs for restoration and maintenance of historic buildings, encourage adaptive reuse of older buildings, and provide information and training programs in historic preservation. Furthermore, each signatory agreed to take statutory measures to protect the architectural heritage of each country; prevent demolition or dilapidation of such properties; enact statutes to permit compulsory purchase of historic properties; review proposed demolitions and alterations of historic buildings; review the design of new construction in historic areas.
1992	European Convention on Protection of Archaeological Heritage (revised)	The 'Valletta Convention' seeks an integrated approach to conservation through co-operation between archaeologists and planners. It presents guidelines for the control of archaeological fieldwork, the funding and publication of research including rescue archaeology, public access and awareness.
1993	European Commission Regulation 752/93	Together with European Council Directive March 15, 1993 this regulation implements elements of the 1992 convention in Valletta regarding the return of illegally exported cultural properties. It is the reference for many national laws that deal with the same subject.
1995	UNIDROIT Convention on Stolen or Illegally Exported Cultural Objects	This convention, signed in Paris on June 24, 1995 coordinates national efforts to combat the illegal export and import of cultural properties.
2000	European Landscape Convention	The 'Florence Convention' develops a holistic approach to the management of landscapes in Europe.

2001	Paris Convention on the Protection of the Underwater Heritage	A UNESCO-sponsored convention that coordinates the regulation of activities regarding the underwater cultural heritage among signatory parties in so-called 'international waters' (i.e., those beyond established national economic and/or ecological limits.
2003	Paris Convention for the Safeguarding of the Intangible Cultural Heritage	A UNESCO-sponsored convention, signed on October 17, 2003, that addresses traditions and/or figures (including persons) that are significant culturally as much for their activities as for the objects or other physical things that they may produce.
2003	Paris Convention on the Protection and the Promotion of the Diversity of Cultural Expression	A UNESCO-sponsored convention intended to safeguard national, regional, and local cultural traditions in the context of an increasingly globalized economy and society. The convention also protects the rights of immigrants to their own traditions in a foreign context.
2005	Convention on the Value of Cultural Heritage for Society	This treaty developed by the Council of Europe is a more theoretical reference for the protection of cultural heritage within current concepts of sustainable development, increase globalization, and awareness of cultural identity in social conflict.
various	Recommendations and Declarations	There are also many recommendations and declarations made by UNESCO that often precede the formulation of actual conventions. See the website <a href="http://www.unesco.org/new/en/unesco/">http://www.unesco.org/new/en/unesco/</a> under the menu 'Conventions & Recommendations' for a full listing of legal instruments relating to cultural issues.

## 3.5

### WORLD HERITAGE CONVENTION

The 1972 Paris Treaty on World Cultural and Natural Patrimony, better known as the World Heritage Convention, provides for the designation of properties of, “...outstanding universal value to mankind.” These cultural and natural properties constitute a legacy whose “...deterioration or disappearance is a harmful impoverishment of the heritage of all the nations of the world.” The convention puts forward the following principles:

- That each nation holds in trust for everyone those parts of the world heritage within its boundaries;
- That the international community has an obligation to support any nation in discharging this trust, if its own resources are insufficient;
- That the natural and built environment are inseparable; and
- That the importance of the world heritage transcends all political and geographical boundaries.

Parties to the Convention may nominate properties meeting specific criteria within their national boundaries to the World Heritage List. The committee also maintains the List of World Heritage in Danger, places endangered by natural and human actions. The World Heritage Fund provides technical and financial assistance to sites on the List of World Heritage in Danger and to other nations in need. The International Council on Monuments and Sites

serves as the adviser to the commission on technical matters concerning cultural heritage.

Italian law now gives priority to the conservation and protection of official World Heritage Sites (L.20/2006 published on March 10, 2006 – this is one of the amendments to the comprehensive cultural resources law L.42/2006). As of April 2009, World Heritage sites in Italy numbered roughly 44 (42 cultural, 2 natural; several site-entities group locations that are not contiguous geographically but that have cultural resources that are considered to be homogenous in terms of their significance). Additional information is provided in Appendix F.

### **Legislation and Underwater Cultural Resources**

On October 23, 2009, Italy ratified the Underwater Cultural Heritage Convention of UNESCO, which had been signed some eight years earlier. The new law accepts the regulations of the UNESCO convention for international waters beyond the 24-mile (19.3-km) limit and regulates the activities of Italian citizens and captains of Italian-flag vessels both in international waters and within the dual bands of other signatory nations. The law concerns both submerged features and related finds that were once on dry land and the remains of sea-faring vessels and/or their contents which were deposited on the sea-floor by accidental or deliberate sinking. Since the advent of flight, this also includes aircraft and spacecraft, as well as any

other kinds of material remains that made their way into the water and/or were buried beneath the sea-floor.



## CHAPTER 4

# TRAINING OPPORTUNITIES

4.1	Training Opportunities Introduction	85
4.2	<b>Natural Resources</b>	86
	4.2.1 Government Agencies	
	4.2.2 Universities and Non-Government Organizations	
	4.2.3 Overseas Training Opportunities	
	4.2.4 Local Training	
4.3	<b>Cultural Resources</b>	90
	4.3.1 Government Agencies	
	4.3.2 Universities and NGOs	
	4.3.3 Overseas Training Opportunities	
	4.3.4 Local Training	

This page intentionally left blank.

## **TRAINING OPPORTUNITIES INTRODUCTION 4.1**

Training opportunities for natural and cultural resource managers are available from several sources, both within the U.S. and Italy, including:

- Government agencies,
- Colleges and universities, and
- Private organizations.

This chapter attempts to summarize those training opportunities available to U.S. Navy personnel involved in the management of natural and cultural resources at NSA Naples and NSAND GAETA. It is not meant to be exhaustive and individuals should actively seek out training opportunities wherever and whenever they occur, if funding and time are available. Various DoD and civilian environmental conferences offer workshops and training courses in addition to seminars and literature on current topics in natural and cultural resource management and research.

## NATURAL RESOURCES

## 4.2

Table 4-1 lists names, addresses, telephone numbers, and internet addresses (if available) of agencies, academic institutions, or private organizations that offer natural resource training opportunities.

### GOVERNMENT AGENCIES

### 4.2.1

Government agencies offer the most comprehensive and cost effective training available. Training opportunities for DoD personnel can be found on the DoD Natural Resources Conservation Program (NRCP) website ([www.dodnaturalresources.net](http://www.dodnaturalresources.net)). Under the "Resources" tab, The DoD NRCP Workshop website ([www.dodworkshops.org](http://www.dodworkshops.org)) can be accessed, which provides information and links to various workshops and training opportunities concerning natural resource conservation and protection.

Another important resource is the Defense Environmental Network Information Exchange (DENIX) webpage ([www.denix.osd.mil](http://www.denix.osd.mil)), which can also be accessed through the DoD NRCP website. Through the DENIX site, under "Conferences and Training," upcoming training and conference opportunities are listed. Also, under the "Programs" tab, links to several information, guidance, and training sources are available.

**Table 4-1. Natural Resource Training Opportunities**

<b>U.S. Government</b>	
<b>DoD</b>	<b>Non-DoD</b>
<p><b>DoD's Natural Resources Conservation Program (NR Program)</b>            Email: <a href="mailto:DoDNRConservation@bah.com">DoDNRConservation@bah.com</a>            Website: <a href="http://www.dodnaturalresources.net">www.dodnaturalresources.net</a></p> <p><b>Defense Environmental Network &amp; Information Exchange (DENIX)</b>            Training and Education  <a href="https://www.denix.osd.mil/portal/page/portal/denix">https://www.denix.osd.mil/portal/page/portal/denix</a></p> <p><b>U.S. Navy Civil Engineer Corps Officers School (CECOS)</b>            Environmental Training Program            3502 Goodspeed Street, Suite 1            Port Hueneme, CA 93043-4336            Tel: 805-982-6524 DSN: 551-6524            Website: <a href="https://www.netc.navy.mil/centers/csfe/cecos/index.cfm">https://www.netc.navy.mil/centers/csfe/cecos/index.cfm</a>            Website: <a href="http://www.cecosweb.com/">http://www.cecosweb.com/</a></p> <p><b>U.S. Air Force Institute of Technology (AFIT)</b>            2950 Hobson Way            Wright-Patterson, AFB, OH 45433            Tel: 937-255-3636            DSN: 785-3636            Website: <a href="http://www.afit.edu/default.cfm">http://www.afit.edu/default.cfm</a></p> <p><b>Air Force Center for Environmental Excellence (AFCEE)</b>            Environmental Web University            Website: <a href="http://webu.brooks.af.mil/webu/">http://webu.brooks.af.mil/webu/</a></p> <p><b>U.S. Army Corps of Engineers (USACE)</b>            Learning Center            P.O. Box 1600            Huntsville, Alabama 35807            Tel: (256) 895-7421            Website: <a href="http://pdsc.usace.army.mil/">http://pdsc.usace.army.mil/</a></p> <p><b>USACE Europe District</b>            Resource Management            CMR 410 Box 9            APO AE 09049            DSN: 570-2663            Website: <a href="http://www.nau.usace.army.mil/">http://www.nau.usace.army.mil/</a></p>	<p><b>U.S. Fish and Wildlife Service</b>            National Conservation Training Center            698 Conservation Way            Shepherdstown, WV 25443-4024            Division of Training Tel: 304-876-7472            Website: <a href="http://training.fws.gov/">http://training.fws.gov/</a></p> <p><b>U.S. Department of the Interior</b>            1849 C Street, N.W.            Washington, DC 20240            Tel: 202-208-3100            Website: <a href="http://www.doi.gov/">http://www.doi.gov/</a>            DOI University            Website: <a href="http://www.doiu.nbc.gov/">http://www.doiu.nbc.gov/</a></p> <p><b>Bureau of Land Management (BLM)</b>            National Training Center            9828 N 31st Ave.,            Phoenix, AZ 85051            Tel: 602-906-5500            Fax: 602-906-5555            Website: <a href="http://www.ntc.blm.gov/">http://www.ntc.blm.gov/</a></p> <p><b>U.S. National Park Service</b>            Employee Development Division            Website:  <a href="http://www.nps.gov/training/edolist.htm">http://www.nps.gov/training/edolist.htm</a></p>
<b>Universities and Private Institutes</b>	
<p><b>Duke University</b>            Nicholas School of the Environment            The Duke Environmental Leadership (DEL) Program            (Continuing Education)            Box 90328            Durham, NC 27708-0328            Tel: 919-613-8000            Website: <a href="http://www.nicholas.duke.edu/del/index.html">http://www.nicholas.duke.edu/del/index.html</a></p>	<p><b>University of Wisconsin-Madison</b>            Center for Sustainability and the Global Environment            Nelson Institute for Environmental Studies            1710 University Avenue            Madison, WI 53726            Tel: 608-265-9119            Website: <a href="http://www.sage.wisc.edu/">http://www.sage.wisc.edu/</a></p>
<b>NGOs</b>	
<p><b>The Wildlife Society (TWS)</b>            5410 Grosvenor Lane, Suite 200            Bethesda, MD 20814-2144            Tel: 301-897-9770            Website: <a href="http://www.wildlife.org">http://www.wildlife.org</a></p>	<p><b>Wetland Training Institute, Inc.</b>            PO Box 31            Glennwood, NM 88039            Tel and Fax: 877-792-6482            Website: <a href="http://www.wetlandtraining.com/">http://www.wetlandtraining.com/</a></p>

For U.S. Navy personnel, Appendix P of the *Navy Environmental and Natural Resources Program Manual* (OPNAVINST 5090.1C, dated 30 October 2007) provides a somewhat comprehensive list of available formal and billet-specific training courses for various environmental disciplines, including a section specifically for natural resource managers and staff. Many of these required courses can be found through the U.S. Navy Civil Engineering Corps Officers School (CECOS) in Port Hueneme, California, which offers an extensive array of courses. CECOS offers courses in natural resources compliance, environmental management, environmental law, and environmental protection including a course that provides an introduction to the OEBGD and FGS. Courses are offered not only in the U.S., but also in overseas locations. Training courses can also be found through the Interservice Environmental Education Review Board (ISEERB) (<http://www.afit.edu/cess/ISEERB.cfm?tab=2>). Refer to Table 4-1 for additional website and contact information.

The U.S. Army Corps of Engineers (USACE) also conducts a comprehensive training program and offers numerous courses in natural resources management. Specific courses can be found in their annual training handbook known as the Purple Book which can be downloaded from their website (Table 4-1). Although most courses are given in the U.S., many agencies now offer distance learning via the internet.

**UNIVERSITIES AND NON-GOVERNMENT ORGANIZATIONS****4.2.2**

Universities and Non-Government Organizations (NGOs) are often good sources of continuing education courses offered to introduce staff to basic natural resource concepts. Refer to Table 4-1 for a partial list of universities and NGOs and their associated contact information.

**OVERSEAS TRAINING OPPORTUNITIES****4.2.3**

Although overseas training opportunities are limited, CECOS and USACE Europe District, do offer natural resource related courses in Europe. Refer to Table 4-1 for their websites and contact information.

One particular overseas training opportunity is the Joint Services European Command (EUCOM) Workshop, which is generally held biannually. This workshop covers natural and cultural resource sessions, as well as FGS and OEBGD sessions.

**LOCAL TRAINING****4.2.4**

There is no substitute for practical experience in the field. It is recommended that persons interested in natural resource management familiarize themselves with the natural resources that are accessible in the vicinity of a particular installation. Periodic visits to parks, reserves, and other natural and semi-natural areas with an in-depth

field guide are often the best way to develop a practical sense for the local natural history.

Some available field guides applicable to the NSA Naples and NSA Gaeta area are listed below. Additional references can be found in Chapter 6.

- Arnold, Nicholas, and Denys Ovenden. 2004. *Field Guide to the Reptiles and Amphibians of Britain and Europe*. Collins, London, United Kingdom.
- Gibbons, Bob. 1995. *Field Guide to Insects of Britain and Northern Europe*. The Crowood Press, Wiltshire, United Kingdom.
- Gibbons, Bob, and Peter Brough. 2008. *Guide to Wild Flowers of Britain and Northern Europe*. Philips, London, United Kingdom.
- MacDonald, David W., and Priscilla Barrett. 1993. *Mammals of Europe*. Princeton University Press, Princeton and Oxford.
- Svensson, Lars, Killian Mullarney, and Dan Zetterström. 2009. *Birds of Europe, Second Edition*. Princeton University Press, Princeton and Oxford.
- White, John, Jill White, and S. Max Walters. 2005. *Trees – A Field Guide to the Trees of Britain and Northern Europe*. Oxford University Press, Oxford, United Kingdom.

## 4.3 CULTURAL RESOURCES

Table 4-2 lists contact information for agencies, academic institutions, or private organizations that offer cultural resource training opportunities.

### 4.3.1 GOVERNMENT AGENCIES

Government agencies offer the most comprehensive and cost effective training available. Short courses are offered by agencies including: the Advisory Council on Historic Preservation in conjunction with the Naval School, CECOS (this is the DoD designated school for conservation training), and the National Park Service. Courses cover diverse topics including the identification, analysis, and evaluation of cultural resources; archaeological resources protection; cultural resources management; historic structures maintenance and repair; preservation philosophy; and compliance issues. Most courses last about one week and they are given in the U.S. Although such courses focus on cultural resources and legislation in the U.S., the theoretical and practical issues touched upon are also relevant to cultural resources and their management in Italy and other places around the world.

**Table 4-2. Cultural Resource Training Opportunities**

U.S. Government	NGOs in the U.S. and Italy
<p><b>Advisory Council on Historic Preservation</b> 1100 Pennsylvania Avenue NW, Rm. 803 Washington, DC 20004 Tel: (202) 606-8503 Website: <a href="http://www.achp.gov">http://www.achp.gov</a></p> <p><b>U.S. Navy Civil Engineer Corps Officers School (CECOS) Environmental Training Program</b> 3502 Goodspeed Street, Suite 1 Port Hueneme, CA 93043-4336 Tel: 805-982-6524 DSN: 551-6524 Website: <a href="https://www.netc.navy.mil/centers/csfe/cecos/index.cfm">https://www.netc.navy.mil/centers/csfe/cecos/index.cfm</a> Website: <a href="http://www.cecosweb.com/">http://www.cecosweb.com/</a></p> <p><b>U.S. National Park Service</b> Employee Development Division Website: <a href="http://www.nps.gov/training/edolist.htm">http://www.nps.gov/training/edolist.htm</a></p>	<p><b>Archaeological Institute of America</b> Boston University 656 Beacon Street Boston, MA 02215-2006 Tel: 617-353-9361 Website: <a href="http://www.archaeological.org">www.archaeological.org</a></p> <p><b>The Vergilian Society</b> Website: <a href="http://www.vergil.clarku.edu/">http://www.vergil.clarku.edu/</a></p> <p><b>Archeoclub d'Italia</b> Website: <a href="http://www.archeoclub.it">www.archeoclub.it</a></p> <p><b>Gruppi Archeologici d'Italia</b> Via degli Scipioni 30/a 00192 Rome Tel/Fax: 06-39734449 or 06-3721935 Website: <a href="http://www.gruppiarcheologici.org">www.gruppiarcheologici.org</a></p> <p><b>Asso Diving (underwater resources education)</b> P.zza Alcide De Gasperi, Baia 80070 Bacoli (NA) 80070 Baia (NA) E-mail: <a href="mailto:info@assodiving.it">info@assodiving.it</a> Tel.: 081/868 89 23 Website: <a href="http://www.assodiving.it">www.assodiving.it</a></p> <p><b>Earthwatch Institute</b> United Kingdom Office: Mayfield House, 256 Banbury Road, Oxford, OX2 7DE United Kingdom Email: <a href="mailto:info@earthwatch.org.uk">info@earthwatch.org.uk</a> Tel: +44 (0) 1865 318 838 Fax: +44 (0) 1865 311 383</p> <p>North American Office: 114 Western Ave, Boston, MA 02134 U.S.A. Email: <a href="mailto:info@earthwatch.org">info@earthwatch.org</a> Phone: +001 (978) 461-0081 Fax: +001 (978) 461-2332</p>
<b>UN</b>	
<p><b>International Council on Monuments and Sites (ICOMOS)</b> International Secretariat 49-51, rue de la federation 75015 Paris, France Tel: +33 (0) 1 45 67 67 70 Website: <a href="http://www.international.icomos.org/home.htm">http://www.international.icomos.org/home.htm</a></p>	<p><b>UNESCO Venice Office</b> Regional Bureau for Science and Culture in Europe Palazzo Zorzi, Castello 4930 30122 Venice, Italy Tel: 041-520-9988 Website: <a href="http://www.unesco.org/venice">www.unesco.org/venice</a></p>

### Universities

**Council on International Educational Exchange (CIEE)**

Through the University Naples 'L'Orientale'  
 General Contact Information:  
 CIEE  
 300 Fore Street  
 Portland, ME 04101  
 1-800-40-STUDY  
 1-207-553-4000  
 Website:  
[www.ciee.org/study/programOverview.aspx?pid=1858#1rightForYou](http://www.ciee.org/study/programOverview.aspx?pid=1858#1rightForYou)

**Mediterranean Center for Arts and Sciences**

Via Roma, 124  
 96100 Siracusa, Italy  
 Tel: 0931-449262  
 Website: [www.mediterraneancenter.it](http://www.mediterraneancenter.it)

**University of Nevada - Reno**

Center for Professional Development  
 Division of Continuing Education  
 1041 N. Virginia Street  
 Reno, NV 89557  
 Tel: (702) 784-4046  
 Website: <http://www.extendedstudies.unr.edu/>

### Universities and other Governmental Organizations in Italy

**Parco Regionale dei Campi Flegrei**

Via Panoramica, 80070 Monte di Procida (NA)  
 Tel./Fax 0818682314 (Ufficio c/o Monte di Procida)  
 Website:  
<http://www.parcodicampiflegrei.it/on-line/Home.html>  
 -Associated underwater educational activities with Asso Diving (Baia)

**II Università di Napoli, Facoltà di Lettere e Filosofia**

Dipartimento di Studio delle Componenti Culturali del Territorio  
 Piazza S. Francesco  
 81055 Santa Maria Capua Vetere  
 Tel. 0823-795605  
 Website: <http://www.unina.it/index.jsp>

**Museo Archeologico di Napoli – Servizio Educativo**

Servizio Educativo della Soprintendenza Speciale per I Beni Archeologici di Napoli e Pompei  
 Tel.: 081-4422273 / 081-4422270  
 Website: [www.pompeisites.org](http://www.pompeisites.org)

Periodic training seminars are also held by the U.S. Navy at selected locations. These sessions are devoted to issues which concern the nature and management of cultural and natural resources, and they are most likely to offer training opportunities most relevant to the daily activities of Navy personnel. It is important to maintain contact with NAVFAC Atlantic, EURAFSWA, and PWD Environmental, to learn about up-coming seminars and conferences.

#### **4.3.2**

#### **UNIVERSITIES AND NGOS**

Degree programs in historic preservation, cultural resource management, and archaeology are offered by many universities throughout the U.S., but few offer short courses which are independent of degree programs. The University of Nevada-Reno, however, offers a series of short courses on cultural resource management that are given throughout the U.S.

Non-governmental organizations in the U.S. and Italy are also a way of gaining familiarity with cultural resources in the Gaeta-Naples area. Fieldwork opportunities sponsored by various credible organizations are listed with the Archaeological Institute of America, and the Vergilian Society is an academic-educational organization which regularly runs programs for teachers and others with a serious interest in Classical Studies and ancient history (their Italian location is a Cuma). There are a series of Italian organizations that offer archaeological activity for non-professionals, the two most prominent of which are

the Archeoclub d'Italia and the Gruppi Archeologici d'Italia, and their activities are found in many parts of the country. More specifically, Asso Diving, a private company, works with the Ministry for Cultural Resources and Activities and the park of the Campi Flegrei and offers regular activities in the area of marine cultural and natural resources.

Study abroad has become an educational industry, and there are many private concerns that provide accredited educational opportunities in Italy. Two such concerns are the Council on International Educational Exchange (CIEE), which has a program of Classical Studies (including ancient history and archaeology) through the University of Naples 'L'Orientale', and in Sicily the Mediterranean Center for the Arts and Sciences, s.r.l. in Syracuse. It is also possible to directly contact one of the several universities in the Naples area, of which the II Università di Napoli, Facoltà di Lettere e Filosofia, Dipartimento di Studio delle Componenti Culturali del Territorio in Santa Maria Capua Vetere is the closest and most closely associated institution to the excavations at the Gricignano Support site.

### **4.3.3**

#### **OVERSEAS TRAINING OPPORTUNITIES**

Many short courses in historic preservation are offered abroad and most are geared to building conservation practice or the architecture of a specific country. These courses are offered by the International Council on Monuments and Sites (ICOMOS) in Paris, the International Center for the Study of the Preservation and Restoration of

Cultural Property in Rome, and UNESCO worldwide. Courses cover many topics including architectural and archaeological conservation; industrial archaeology and heritage management; and principles of building conservation.

U.S./ICOMOS also maintains a listing of short courses abroad in historic preservation. Additionally, the U.S. Navy's cooperative extension program through the University of Maryland offers courses in Italian art, architecture, and archaeology, but these courses are offered at irregular intervals.

As mentioned previously, another overseas training opportunity is the Joint Services EUCOM Workshop generally held biannually. The workshop covers natural and cultural resources, as well as the FGS and OEBGD.

#### **4.3.4**

#### **LOCAL TRAINING**

Because there is no substitute for practical experience in the field, it is recommended that persons interested in cultural resource management familiarize themselves with the archaeological sites and historic architecture that are accessible in the vicinity, while avoiding involvement with casual contacts that may not respect and follow the law to the fullest extent nor provide a serious, educational venue. Systematic visits to historic locations with an in-depth guidebook are often the best way to develop a practical sense for history, the progression of architectural and

artistic styles, and local geography. At Gaeta, the Museo Diocesano is a major resource, and in the area of Naples the Museo Archeologico di Napoli (the oldest archaeological museum in Europe), the archaeological sites of Herculaneum, Pompeii, and Torre Annunziata, the archaeological museum at Santa Maria Capua Vetere and the recently opened museums at Baia and Nola, just to name a few, provide more than enough material for one to gain a good knowledge of the nature and the story of human activity in the region. Sometimes archaeological excavations are open to volunteers. Announcements for these are found in the Archaeological Fieldwork Opportunities Bulletin published annually by the Archaeological Institute of America (Table 4-2) and in programs sponsored by Earthwatch and other educational/scientific organizations.

In Italy, most relevant courses in cultural resource management at the state universities are offered in Italian and require enrollment in regular degree programs. Ad hoc educational programs are often held during the summer, and they are announced in local newspapers and cultural magazines. Private organizations, such as the Archeoclub d'Italia and the Gruppi Archeologici d'Italia sponsor excavation field schools for volunteers, but there are no special accommodations for foreigners who wish to participate (one must know Italian well in order to function properly). Announcements for these are made in popular archaeology magazines such as Archeo and Archeologia

Viva and on the Internet. The Vergilian Society holds annual summer programs related to special themes in archaeology and ancient history at the historic Villa Vergiliana at Cuma near Naples. These programs are conducted in English and are intended primarily for teachers in secondary and higher education.



## CHAPTER 5 REGIONAL SETTING

<b>5.1</b>	<b>Physiographic Description and Climate of NSA Naples</b>	<b>101</b>
5.1.1	Physiographic Profile	
5.1.2	Regional Climatology	
5.1.3	Regional Geology	
5.1.4	Development Profile	
<b>5.2</b>	<b>Natural Resources in the NSA Naples Area</b>	<b>106</b>
5.2.1	Natural Resources of the Camaldoli Transmitter Site	
5.2.2	Natural Resources of Capodichino	
5.2.3	Natural Resources of Carney Park	
5.2.4	Natural Resources of the Gricignano Support Site	
5.2.5	Natural Resources of the Lago Patria Receiver Site	
<b>5.3</b>	<b>Cultural Resources in the NSA Naples Area</b>	<b>141</b>
5.3.1	Cultural Resources of the Camaldoli Transmitter Site	
5.3.2	Cultural Resources of Capodichino	
5.3.3	Cultural Resources of Carney Park	
5.3.4	Cultural Resources of the Gricignano Support Site	
5.3.5	Cultural Resources of the Lago Patria Receiver Site	
<b>5.4</b>	<b>Physiographic Description and Climate of NSAND GAETA</b>	<b>182</b>
5.4.1	Physiographic Profile	
5.4.2	Regional Climatology	
5.4.3	Regional Geology	
5.4.4	Development Profile	
<b>5.5</b>	<b>Natural Resources in the NSAND GAETA Area</b>	<b>186</b>
5.5.1	Natural Resources of the Olde Mill Inn	
5.5.2	Natural Resources of the Port of Gaeta Complex	
<b>5.6</b>	<b>Cultural Resources in the NSAND GAETA Area</b>	<b>195</b>
5.6.1	Cultural Resources of the Olde Mill Inn	
5.6.2	Cultural Resources of the Port of Gaeta Complex	
<b>5.7</b>	<b>Environmental Effects Abroad</b>	<b>210</b>
5.7.1	Implementing Environmental Effects Abroad Project Reviews	
5.7.2	U.S. Installation Commander's Process for Documenting Projects or Actions Located within the Territory of a Foreign Nation	
5.7.3	Evaluating the Significance of Environmental Impacts	

This page intentionally left blank.

The following chapter describes the general regions of the NSA Naples and NSAND GAETA facilities, while also focusing on each specific site. Natural and cultural resource information is presented separately to better describe each site and the resources found within and surrounding the areas, along with FGS compliance recommendations.

## **PHYSIOGRAPHIC DESCRIPTION AND CLIMATE OF NSA NAPLES** **5.1**

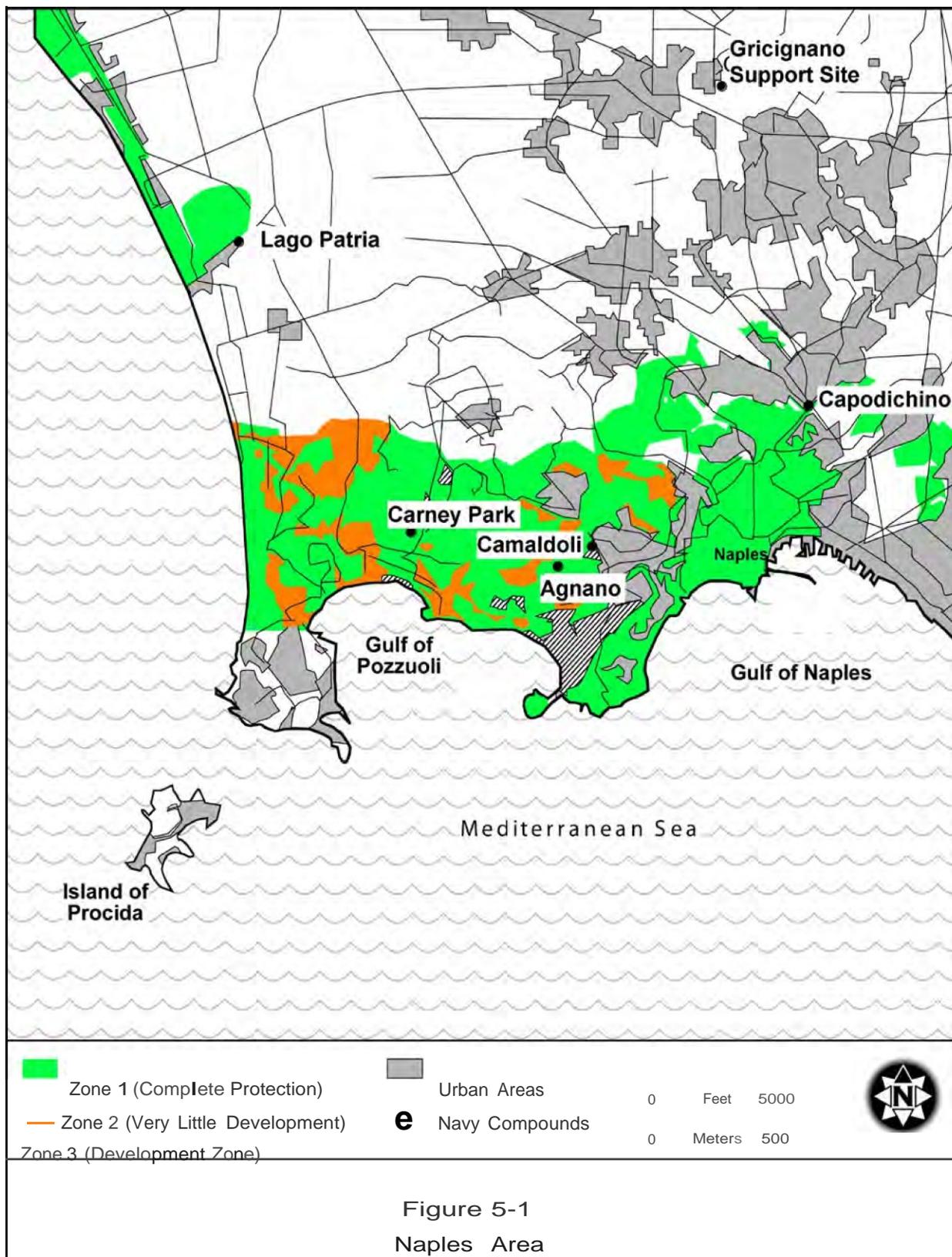
### **PHYSIOGRAPHIC PROFILE** **5.1.1**

The Campania region is divided into five provinces: Napoli (Naples), Benevento, Avellino, Caserta and Salerno, with a population of approximately 5.8 million people, making it the second-most-populous region of Italy. Naples, which is over 2,800 years old, is the capital city of the Campania Region and of the province of Naples. The population of Naples proper is approximately one million people. It is approximately 118 miles (190 km) southeast of Rome, on the north side of the Bay of Naples (Figure 5-1).

The NSA Naples support facilities include:

1. Camaldoli Transmitter Site
2. Capodichino
3. Carney Park
4. Gricignano Support Site
5. Lago Patria Receiver Site

With the exception of the Gricignano Support Site, the support facilities are located within the Naples province. The Gricignano Support Site is included within the Caserta province.



**REGIONAL CLIMATE****5.1.2**

The climate of the Naples area is typical Mediterranean with hot and dry summers and wet winters. Weather data collected from 2003 through 2010 indicate average temperatures in Naples that can range from a low of 29 degrees Fahrenheit (°F) (-1.7 degrees Celsius [°C]) in the winter months to 96°F (36°C) in the summertime ([www.wunderground.com](http://www.wunderground.com)). Throughout 1961 to 1990, the highest rainfall occurred primarily in the autumn and winter months, with the most occurring in November with an average of 6 inches (16 centimeters [cm]). The lightest rainfall historically occurs in July, with an average of 0.9 inches (2.3 cm) ([www.euroweather.net](http://www.euroweather.net)).

**REGIONAL GEOLOGY****5.1.3**

Naples is located between two volcanic areas, Mount Vesuvius and the Phlegraean Fields. Mount Vesuvius, the most striking geological feature of the area, is located on the southern end of the Bay of Naples, approximately 6 miles (9.7 km) east of Naples. It is a composite volcanic cone, where successive eruptions have built up layers of fragmental materials and flows of lava, all inclined outward away from the vent. The volcano is still active, and its current height is approximately 4,200 ft (1,300 m) above mean sea level (amsl). The volcanic activity in the Gulf of Naples dates back to the late Pleistocene epoch (2.5 million years ago). The most famous eruption of Mt. Vesuvius occurred in 79 A.D., destroying the Roman towns of Pompeii and Herculaneum. The last eruption occurred in 1944 during the Allied advancement up the Italian peninsula in World War II.

The Phlegraean Fields, another important volcanic area, lies along the northwestern part of the bay in the area around the city of Pozzuoli. Also referred to as *Campi Flegrei*, or the "burning fields", this area contains numerous hot springs and thermal waters, which have attracted visitors for centuries.

The total area of the Campania Region covers approximately 5,250 square miles (13,597 hectares [ha]). Fifty-one percent of the total area of Campania is hilly, 34% is mountainous and the remaining 15% is made up of plains, which are found to the north in the provinces of Caserta and Benevento.

**DEVELOPMENT PROFILE**

**5.1.4**

Naples is not only one of the largest cities in Italy, but it is also one of the largest in Europe. The city is rich in history, culture, art, tradition, and nature with numerous archaeological, historical, and art museums, exhibits, and natural resources available. Naples is also the second most important port in Italy, after Genoa, and is the intellectual and commercial center of Southern Italy.

The city of Naples, which includes the Camaldoli Transmitter Site and Capodichino, is primarily developed with only a few green parks and areas scattered throughout. The Camaldoli Transmitter Site, which provides communication links between various DoD facilities in the Naples area, is situated at the top of Mount Camaldoli, adjacent to an Italian transmitter site and across from the Urban Park of Camaldoli. The remaining areas surrounding the site appeared to be primarily residential. The area of Capodichino is also primarily developed, as it is attached to the International Naples Airport with both residential and business properties surrounding the area.

The Carney Park recreational facility is located at the bottom an extinct volcano crater. The facility is surrounded by the wooded sides of the crater,

while the entire crater is surrounded by undeveloped green space and some residential and business properties.

The area surrounding the Gricignano Support Site is a mixture of newly developed residential apartment buildings and agricultural farm fields.

The Lago Patria Receiver Site was previously surrounded by what appeared to be agricultural farm fields; however, construction of the new NATO Southern Command (AFSOUTH)/Allied Joint Force Command (JFC) Naples headquarters installation is currently underway.

As part of operations associated with the NSA Naples facilities, a spill response plan was developed to address potential problems associated with each facility. The spill plan includes references to the natural and cultural resources associated with each site in order to aid in their identification and protection. The spill response plan also provides the users with contact information should a problem arise.

## NATURAL RESOURCES IN THE NSA

### NAPLES AREA

### 5.2

The hills and mountains behind the city of Naples are mainly made up of volcanic ash and material, making the soil extremely rich in nutrients. Some of the flora found in the region reflect the volcanic nature of the soil and are endemic to the area. The richness of the soil and its ability to store the winter rainfall yields an azonal (i.e., not divided into zones) vegetation. As noted in the 2004 User's Guide, chestnut trees (*Castanea sativa*) dominate the slopes, while English oaks (*Quercus robur*) dominate the craters of inactive volcanoes where water collects from the slopes.

North of the volcanic hills surrounding the Gulf of Naples is the Plain of Volturno, stretching from Pozzuoli to the Aurunci Mountains near Formia. The plain hosts some coastal lagoons, like Lago di Patria, although many wetlands have been drained. Natural vegetation is present on some relic dune strips, such as in the Natural Reserve of Castel Volturno. The low coastal forest (*macchia*) is found here, while the inner plain has been cultivated since Italic (ancient Italian) times and was known to the Romans as Campania Felix (meaning "Fortunate Campania") for the richness of its soils.

#### NATURAL RESOURCES OF THE CAMALDOLI TRANSMITTER SITE

#### 5.2.1

The Camaldoli Transmitter Site is on the top of Mount Camaldoli, the highest peak of Naples, off the Via dell

Eremo (Figure 5-1 and 5-2). The U.S. Navy portion of the site has been reduced since the 2004 User's Guide, and it currently consists of one facility support building, two stand-by generators, a potable water storage tank, a diesel fuel aboveground storage tank, a condenser, and six antenna tower structures, according to the Internet Naval Facilities Assets Data Store (iNFADS) database (Figure 5-2). During the 2010 site visit, three communications towers and two smaller support towers were observed (Photograph 5-1).



**Photograph 5-1: Camaldoli Transmitter Site**

### **Flora / Fauna**

The Camaldoli Transmitter Site is completely developed. The only natural resources observed during the 2010 site visit were native and non-native landscaping, consisting primarily of manicured lawns. Fauna that could potentially

be found at the site would include those species that can thrive in an urban environment among landscape flora.

Directly across the Via dell Eremo is the Urban Park of Camaldoli (*Parco Urbano dei Camaldoli*), which was established in 1980. This park currently consists of chestnut tree (*Castanea sativa*) groves with some black locust trees (*Robinia pseudacacia*). It is essentially a tree farm without any remnant of the original natural forest area, and has very limited public access. The province of Naples improved the area as an urban park by opening paths, building parking lots, fencing the area, instituting and enforcing park regulations, and diversifying the vegetation.

In addition, the Camaldoli Hill (*Collina dei Camaldoli*) is a Natura 2000 Proposed Site of Community Importance (pSCI), or *Proposta Sito d'Importanza Comunitaria* (pSIC): *Collina dei Camaldoli* (EEA, July 2009a). According to the Natura 2000 Data Form (Appendix F), the Camaldoli Transmitter Site appears to be within the boundary of the Camaldoli Hill pSCI area. The species listed on the form could potentially be found migrating through the transmitter site, however, due to the small and very developed nature of the site, it is unlikely that any will be found.

While there have been no known sightings, birds potentially present in the area of the Camaldoli Transmitter

Site include the peregrine falcon (*Falco peregrinus*) nesting on tufa walls, Eurasian jay (*Garrulus glandarius*), Eurasian nuthatch (*Sitta europaea*), short-toed treecreeper (*Certhia brachdactyla*), great spotted woodpecker (*Dendrocopos major*), and tawny owl (*Strix aluco*).

### **Management Objectives and Recommendations for FGS-Italy Compliance**

#### *Protected Species and Habitats*

(FGS-Italy C13.1, C13.2, C13.4, and C13.5)

Due to the developed nature of the site, there have been no known sightings of any protected species or habitats; therefore, no species list or surveys are currently required. However, because of the location of the site, there is potential for species migration or habitation (i.e., nesting), and personnel should be aware.

#### *Natural Resources Management Plan*

(FGS-Italy C13.3 and C13.4)

Due to the small size of the site and the lack of natural vegetation (i.e., only mowed lawn areas are present), this User's Guide will be sufficient to meet the FGS-Italy requirements. Therefore, a site-specific Natural Resources Management Plan is not necessary. However, information and guidance identified in this guide should be consulted and periodically updated.

### *Ground Maintenance and Protection of Habitats*

*(FGS-Italy C13.1, 13.6, C13.8, and C13.9)*

A list of the vegetation used for landscaping and its associated maintenance schedule (e.g., watering, mowing) should be kept on file at NSA Naples and NAVFAC Atlantic.

### *Personnel Experience and Training*

*(FGS-Italy C13.7)*

An individual with a university degree in an environmental field (e.g., environmental science, biology, forestry, agriculture, or environmental planning) is considered optimal for managing natural resource issues. If the individual managing natural resources is not trained in this field, he/she should contact NAVFAC Atlantic for guidance. Training opportunities are described in Chapter 4.

### *Protective Cover and Erosion Control*

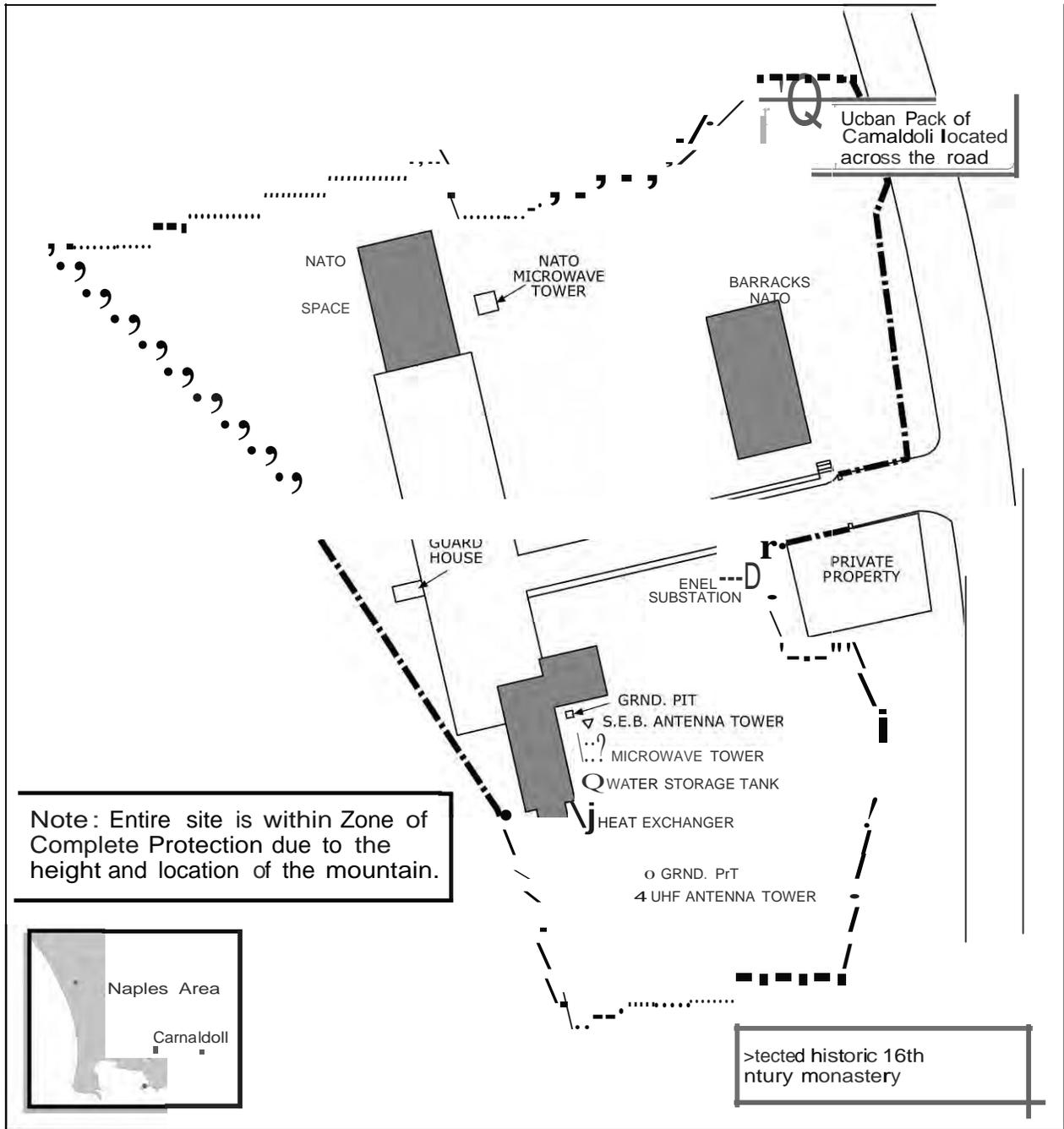
*(FGS-Italy C13.10)*

Landscaping should utilize native, drought-tolerant plants whenever possible. Vegetative cover should be maintained on exposed areas to minimize erosion and control dust.

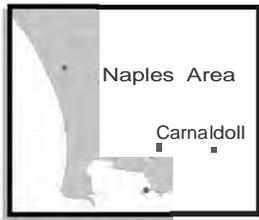
## **Project Planning**

Although the Camaldoli Transmitter Site itself has no known sensitive or significant natural resources, it should be noted that an urban park is immediately adjacent to the site, and the area is within the Camaldoli Hill Natura 2000 pSCI. Future landscaping should utilize native, drought-tolerant plants.

In addition, expansion of the transmitter site is unlikely due to the constraints from the surrounding Natura 2000 site.



Note: Entire site is within Zone of Complete Protection due to the height and location of the mountain.



Protected historic 16th century monastery

[g] Leased Buildings  
- •• Property Boundary

Historic Site  
Natural Resource Site

0 Feet 50  
0 Meters 15



Figure 5-2  
Development Constraints: NSA Naples - Camaldoli Transmitter Site

## NATURAL RESOURCES OF CAPODICHINO

### 5.2.2

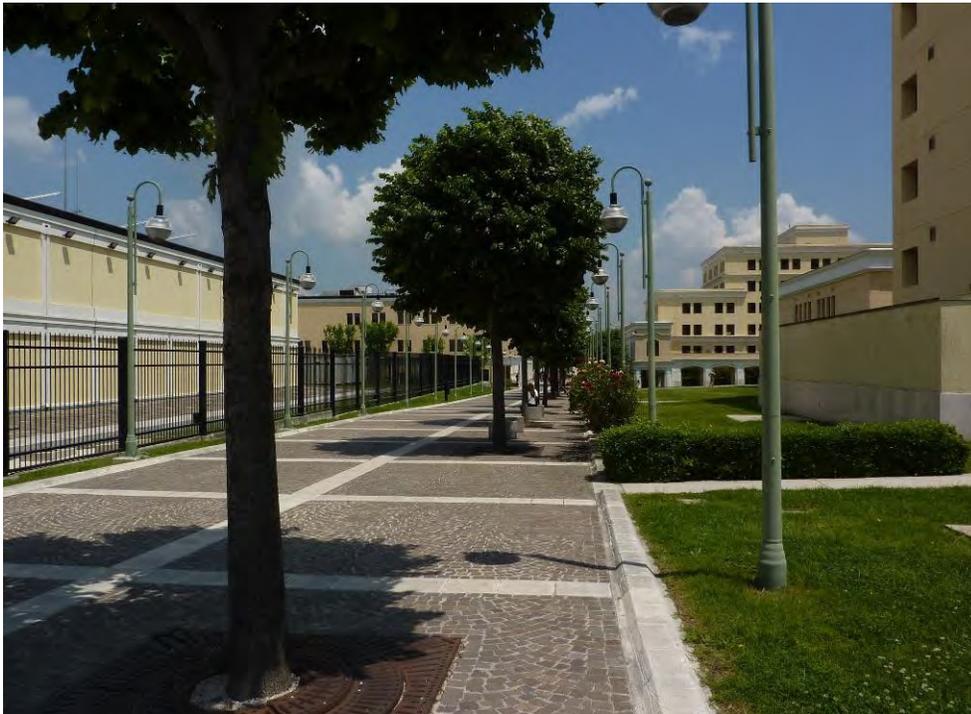
Capodichino is located in the northeast section of Naples, adjacent to the Naples International Airport (Figures 5-1 and 5-3). The installation is on land ceded for use by the Italian Ministry of Defense. Capodichino provides support facilities and bachelor housing for the U.S. Navy's air operation in the Naples area. The major activities at Capodichino include the Supply Department, Fleet Mail Center, Naval Overseas Air Cargo Terminal, Fleet Weather Detachment, and Air Navigation Office. The complex also provides personnel support associated with the Coast Guard, Air Force, and the Naval Communications Center. These activities are housed in approximately 50 separate buildings on 25 hectares (63 acres).



**Photograph 5-2: Central courtyard of Capodichino**

## **Flora / Fauna**

The Capodichino Compound is completely developed (Photograph 5-3). The only natural resources present are due to non-native landscaping, which includes lawns, trees, and hedges. The most common trees and shrubs are eucalyptus (*Eucalyptus* spp.), black or Lombardy poplar (*Populus nigra*), palms, heavenly bamboo (*Nandina domestica*), oleander (*Nerium oleander*), cherry laurel (*Prunus laurocerasus*), and rose bushes.



**Photograph 5-3: Sidewalk and landscaping through Capodichino**

Although Capodichino is located adjacent to the airport within an urban environment, a small agricultural area does occur between the southern boundary of the compound and the major regional highway (*Tangenziale*

*Napoli Raccordo Autostradale*). This area consists primarily of various fruit trees, including citrus, and small plots of vegetables (e.g., corn, cabbage, tomato).

In accordance with basic Bird Aircraft Strike Hazard (BASH) management procedures, there are no specific features present (i.e., standing water or fruit trees) throughout Capodichino that provide habitat for birds or attract migrating bird species. The BASH program is managed by the Naples International Airport.

### **Management Objectives and Recommendations for FGS-Italy Compliance**

#### *Protected Species and Habitats*

*(FGS-Italy C13.1, C13.2, C13.4, and C13.5)*

Due to the developed nature of the site, no protected species or habitats are found on site; therefore, no species list or surveys are required.

#### *Natural Resources Management Plan*

*(FGS-Italy C13.3 and C13.4)*

Due to the developed nature of the site with only small areas of landscaped vegetation, this User's Guide will be sufficient to meet the FGS-Italy requirements for Capodichino; therefore, a written Natural Resources Management Plan is not necessary. However, information and guidance identified in this guide should be consulted and periodically updated.

### *Ground Maintenance and Protection of Habitats*

*(FGS-Italy C13.1, 13.6, C13.8, and C13.9)*

A list of the vegetation used for landscaping and its associated maintenance schedule (e.g., watering, mowing, pruning) should be kept on file with the NSA Naples and NAVFAC Atlantic.

### *Personnel Experience and Training*

*(FGS-Italy C13.7)*

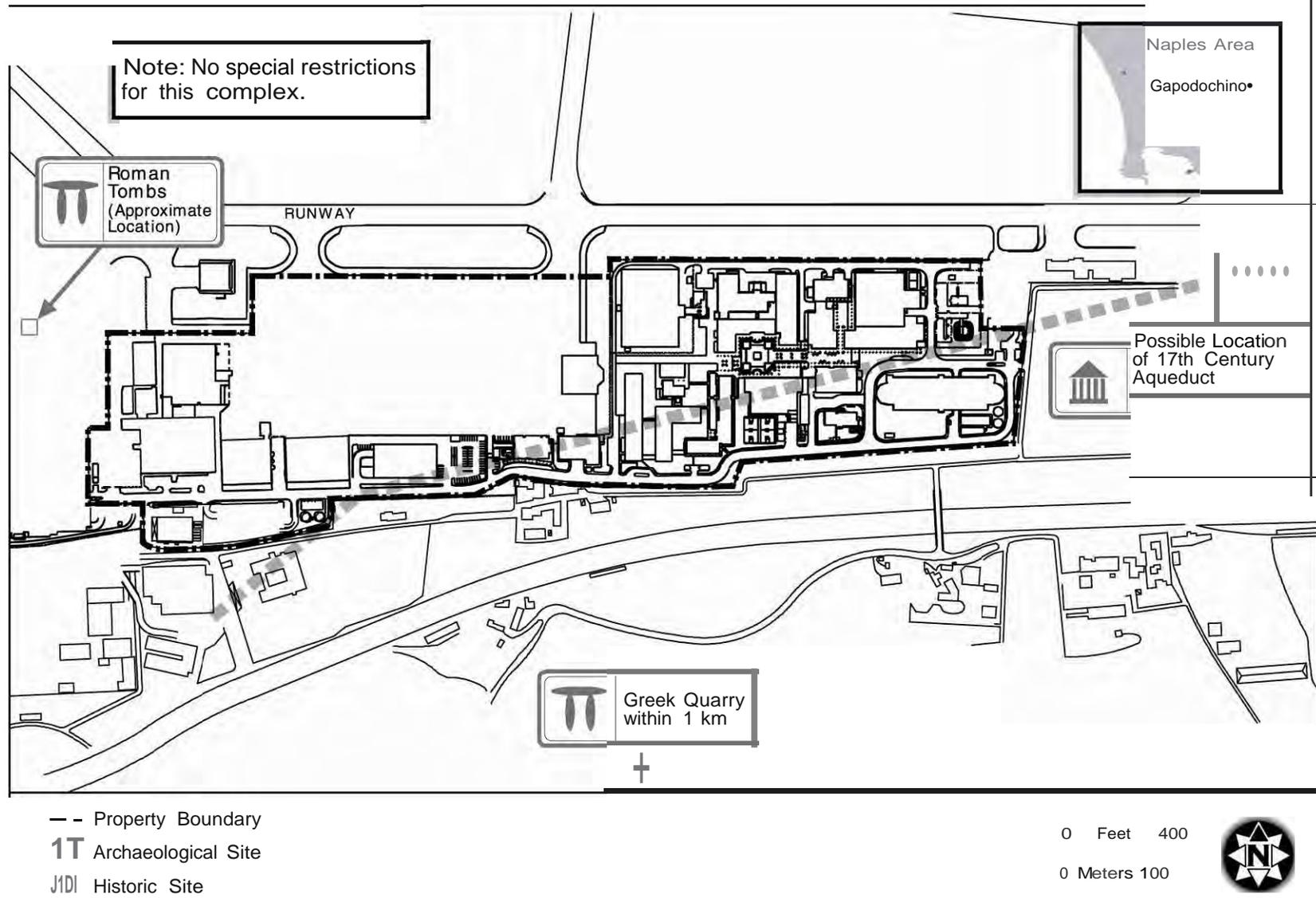
An individual with a university degree in an environmental field (e.g., environmental science, biology, forestry, agriculture, or environmental planning) is considered optimal for managing natural resource issues. If the individual managing natural resources is not trained in this field, he/she should contact NAVFAC Atlantic for guidance. Training opportunities are described in Chapter 4.

### *Protective Cover and Erosion Control*

*(FGS-Italy C13.10)*

Landscaping should utilize native, drought-tolerant plants, whenever possible. Eucalyptus trees are commonly planted in the Mediterranean area on account of their rapid growth and aesthetic appeal. However, eucalyptus species are not native and often require large quantities of water. In addition, if planted near sidewalks, their roots may break through the concrete when they become large. Therefore, eucalyptus is not recommended for landscaping purposes. Palms, with the exception of the dwarf fan palm, are also not native to Italy, but have been used for landscaping since Roman times. Use of native species will

reduce maintenance and watering requirements. The native species selected should preferably be drought-tolerant to minimize water requirements on site. Local plant nurseries (*vivaio*) should be contacted to determine the availability of various preferred plant species. Vegetative cover should be maintained on exposed areas to minimize erosion and control dust.



**Figure 5-3**  
**Development Constraints: NSA Naples- Capodichino**

**NATURAL RESOURCES OF CARNEY PARK****5.2.3**

The 85-acre (34-hectare) Carney Park recreational area is located at the floor of an extinct volcanic crater southwest of the Capodichino in the Regional Park of Campi Flegrei (*Parco Regionale dei Campi Flegrei*) (Figure 5-1). This crater floor area, which is leased from the Chianeses family, contains outdoor recreational areas including ball fields, campgrounds and cabins, tennis courts, golf course, and an outdoor swimming pool (Figure 5-4, Photographs 5-4 and 5-5).



**Photograph 5-4: Baseball field, swimming pool, and outer rim of Carney Park**



**Photograph 5-5: Golf course and outer rim of Carney Park**

The Regional Park of Campi Flegrei was established in June 1995, by Regional Decree No. 5569 (5569/95) of the President of Campania's Regional Government (*Decreto del Presidente della Giunta Regionale della Campania*). Within Campania Regional Parks it is forbidden to:

- Open quarries, mines, and garbage dumps;
- Drive any vehicle off the road (with the exception of agriculture operations and firefighting);
- Hunt (with some exceptions);
- Collect geological, paleontological and archaeological rarities;
- Collect and damage small animals and vegetation;
- Dump garbage of any kind;
- Modify water courses;
- Open new roads (with some exceptions);
- Place advertising signs outside of urban areas; and
- Install new power or communication lines, gas pipes, etc. without the authorization of the regional government.

In addition, Carney Park is protected by L. 3267/23, the hydrogeological protection law, and L. 431/85, the Galasso Law on protection of forested areas (now included in the Testo Unico [DLeg 490/99]). These regulations restrict any future development of Carney Park.

In addition to being within a Campania Regional Park, Carney Park is also completely contained within the Natura 2000 pSCI of *Monte Barbaro e Cratere di Campiglione* (EEA, July 2009b) (Appendix F). Proposed in 1995 by the *Ministero dell'Ambiente-Servizio Conservazione della Natura*, the approximately 890-acre (360-ha) area is considered important due to the presence of Mediterranean *macchia* and dry grasslands.

There are three habitats within the pSCI: 1) chestnut (*Castanea sativa*) woods, 2) Pseudo-steppe with grasses and annuals of the *Thero-Brachypodietea*, and 3) Thermo-mediterranean and pre-desert scrub (EEA, July 2009b). The pseudo-steppe grasslands habitat is the only priority habitat type listed in Annex I of Council Directive 92/43/EEC, or the "Habitats" Directive (EC, 2007), and this habitat type does not occur within Carney Park. As discussed below, Carney Park has an area of chestnut woods along the eastern/northeastern boundary. Additional flora and fauna species are listed in the Natura 2000 Data Sheet for *Monte Barbaro e Cratere di Campiglione*, which is provided in Appendix F.

## **Flora / Fauna**

The Carney Park recreational area is located inside the crater of an extinct volcano (Figure 5-4). The soil, being of volcanic ash origin, is rich in nutrients and favorable for plant growth. Most of the natural vegetation has been cleared for sport fields and recreational areas. Trees planted along the roadsides include the stone pine (*Pinus pinea*), common walnut (*Juglans regia*), black poplar (*Populus nigra*), acacia (*Acacia dealbata*), eucalyptus (*Eucalyptus* spp.), and spruce (*Picea* sp.).

Near the eastern/northeastern edge of the site boundary (Photograph 5-6), where the land is steeper, there is a wooded strip approximately 65 ft (20 m) wide. The vegetation is rich here, with most species of the European plain forest represented. As reported in the 2004 User's Guide, chestnut, oak (*Quercus* spp.) and hornbeam (*Carpinus betulus*) are dominant. Oak trees observed were possibly Dalechamps oaks (*Q. dalechampii*), but common oak (*Q. robur*), sessile oak (*Q. petraea*), and downy oak (*Q. pubescens*) may also be present, as these species frequently interbreed. Other common woody plant species include Montpellier maple (*Acer monspessulanum*), field maple (*A. campestre*), hawthorne (*Crataegus* sp.), elm (*Ulmus minor*), ash (*Fraxinus ornus*), dogwood (*Cornus sanguinea* L.), and butcher's broom (*Ruscus aculeatus*). The biodiversity of this area is high, especially compared with the nearby woods on the steeper slopes of the crater, where the forest has been cleared. This makes the

eastern/northeastern forested part of the property extremely valuable from a natural resources point of view.



**Photograph 5-6: Vegetation-rich strip near the eastern-northeastern edge of the Carney Park boundary**

Based on the Natura 2000 Data Forms for the pSCI, two species of birds listed in Annex I of Directive 2009/147/EC (formerly 79/409/EC), or the “Birds” Directive (EC, 2010), potentially breed within the area of the pSCI: peregrine falcon (*Falco peregrinus*) and red-backed shrike (*Lanius collurio*). While the International Union for Conservation of Nature (IUCN) Red List of Threatened Species classifies the peregrine falcon and the red-backed shrike as being of “Least Concern”, they are not included the list for Italy (IUCN, 2010). In addition, due to the lack of suitable breeding habitat in Carney Park (i.e., cliffs), the peregrine falcon would be expected to occur at Carney Park only as a

rare, transient visitor, primarily during migration. Although potential breeding and foraging habitat for the red-backed shrike may occur on the upper reaches of the crater and in areas outside of Carney Park and the crater, this species is not expected to occur within Carney Park.

As mentioned in the 2004 User's Guide, bird species commonly found at Carney Park include house sparrow (*Passer domesticus*), blackbird (*Turdus merula*), quail (*Coturnix coturnix*), European turtle dove (*Streptopelia turtur*), song thrush (*Turdus philomelos*), and common skylark (*Alauda arvensis*).

According to the 2004 User's Guide, the Natura 2000 Data Forms for the pSCI listed six mammals (all bats) listed in Annex II of the Habitats Directive that potentially occur within the area of the pSCI: lesser horseshoe bat (*Rhinolophus hipposideros*), greater horseshoe bat (*Rhinolophus ferrumequinum*), mouse-eared bat (*Myotis myotis*), western barbastelle (*Barbastella barbastellus*), Mediterranean horseshoe bat (*Rhinolophus euryale*), and Bechstein's bat (*Myotis bechsteini*). At that time, the IUCN Red List classified four of these species (Bechstein's bat, Mediterranean horseshoe bat, western barbastelle, and lesser horseshoe bat) as Vulnerable (VU) with the remaining two (mouse-eared bat and greater horseshoe bat) as Lower Risk (LR) (IUCN 2000). Through an IUCN Red List search, the current status of the above bat species is has been downgraded as shown below in Table 5-1 (IUCN, 2010).

**Table 5-1: IUCN Red List Status of Bats that Potentially Occur within the Area of Carney Park**

Bat Species Name	IUCN Status
Lesser horseshoe bat ( <i>Rhinolophus hipposideros</i> )	LC
Greater horseshoe bat ( <i>Rhinolophus ferrumequinum</i> )	LC
Mouse-eared bat ( <i>Myotis myotis</i> )	LC
Western barbastelle ( <i>Barbastella barbastellus</i> )	NT
Mediterranean horseshoe bat ( <i>Rhinolophus euryale</i> )	NT
Bechstein's bat ( <i>Myotis bechsteinii</i> )	NT

(IUCN, 2010)

The Natura 2000 Data Forms for the *Monte Barbaro e Cratere di Campiglione*, as downloaded in August 2010, lists only two bat species: the greater horseshoe bat and the lesser horseshoe bat (EEA, 2009b). These species are currently classified on the IUCN Red List as being of "Least Concern" (<http://www.iucnredlist.org/>, downloaded August 2010).

Since Carney Park has readily available sources of standing water and the lights associated with the sports fields and recreational buildings would attract insects during the evening, bat species could potentially utilize the area in and around Carney Park for foraging. Currently, there are no records of endangered or threatened species on the compound.

## Management Objectives and Recommendations for FGS-Italy Compliance

### *Protected Species and Habitats*

*(FGS-Italy C13.1, C13.2, C13.4, and C13.5)*

No protected species or habitats are known to exist for Carney Park, and no surveys have been completed to date. However, suitable habitat for the red-backed shrike may occur on the upper reaches of the crater. Bats species listed as "Near Threatened" by the IUCN (Bechstein's bat, Mediterranean horseshoe bat, western barbastelle, and lesser horseshoe bat) may forage in and around Carney Park because of readily available sources of standing water and the lights of the playing fields that would attract insects during the evening. The status of these species has been downgraded from "Vulnerable" since the 2004 User's Guide preparation.

The protection status of the bird and bat species should be monitored. Specific surveys for bats and birds may be warranted if their IUCN Red List status increases from "Near Threatened" to "Vulnerable" or "Threatened or endangered". Additionally, if their status on the Italian protection lists indicate an increase in protection, this may also warrant a need for a survey.

### *Natural Resources Management Plan*

*(FGS-Italy C13.3 and C13.4)*

While Carney Park is within both the Regional Park of the Campi Flegrei and the pSCI of *Monte Barbaro e Cratere di Campiglione* and contains areas of unique natural

resources (i.e., areas of undeveloped representative Mediterranean habitats), the park is relatively small and is mostly developed and landscaped. In addition, no known threatened or endangered species have been identified within the park boundaries. As a result, this User's Guide is sufficient to comply with the FGS-Italy requirement for a natural resources management plan.

However, if future bat and/or bird surveys are conducted within the park area, the maintenance and protection practices of this guide should be updated accordingly to ensure optimal protection of any potentially threatened or endangered species of Carney Park.

#### *Ground Maintenance and Protection of Habitats*

*(FGS-Italy C13.1, 13.6, C13.8, and C13.9)*

The eastern/northeastern forested strip is too small to be considered for use aside from preservation. The area has the potential for environmental educational purposes, encompassing most of the fundamental species of native Mediterranean vegetation and showing some interesting forest ecosystem dynamics.

Of the trees currently occurring along the roadsides, only the stone pine, black poplar, and common walnut are native and should be used in future plantings. A list of the vegetation used for landscaping and its associated maintenance schedule (e.g., watering, mowing, pruning) should be kept on file at NSA Naples and NAVFAC Atlantic.

*Personnel Experience and Training*

*(FGS-Italy C13.7)*

An individual with a university degree in an environmental field (e.g., environmental science, biology, forestry, agriculture, or environmental planning) is considered optimal for managing natural resource issues. If the individual managing natural resources is not trained in this field, he/she should contact NAVFAC Atlantic for guidance. Training opportunities are described in Chapter 4.

*Protective Cover and Erosion Control*

*(FGS-Italy C13.10)*

Landscaping should utilize native, drought-tolerant plants, whenever possible. Use of native species will reduce maintenance and watering requirements. Local nurseries should be contacted to determine availability of various plant species. Vegetative cover should be maintained on exposed areas to minimize erosion and control dust.

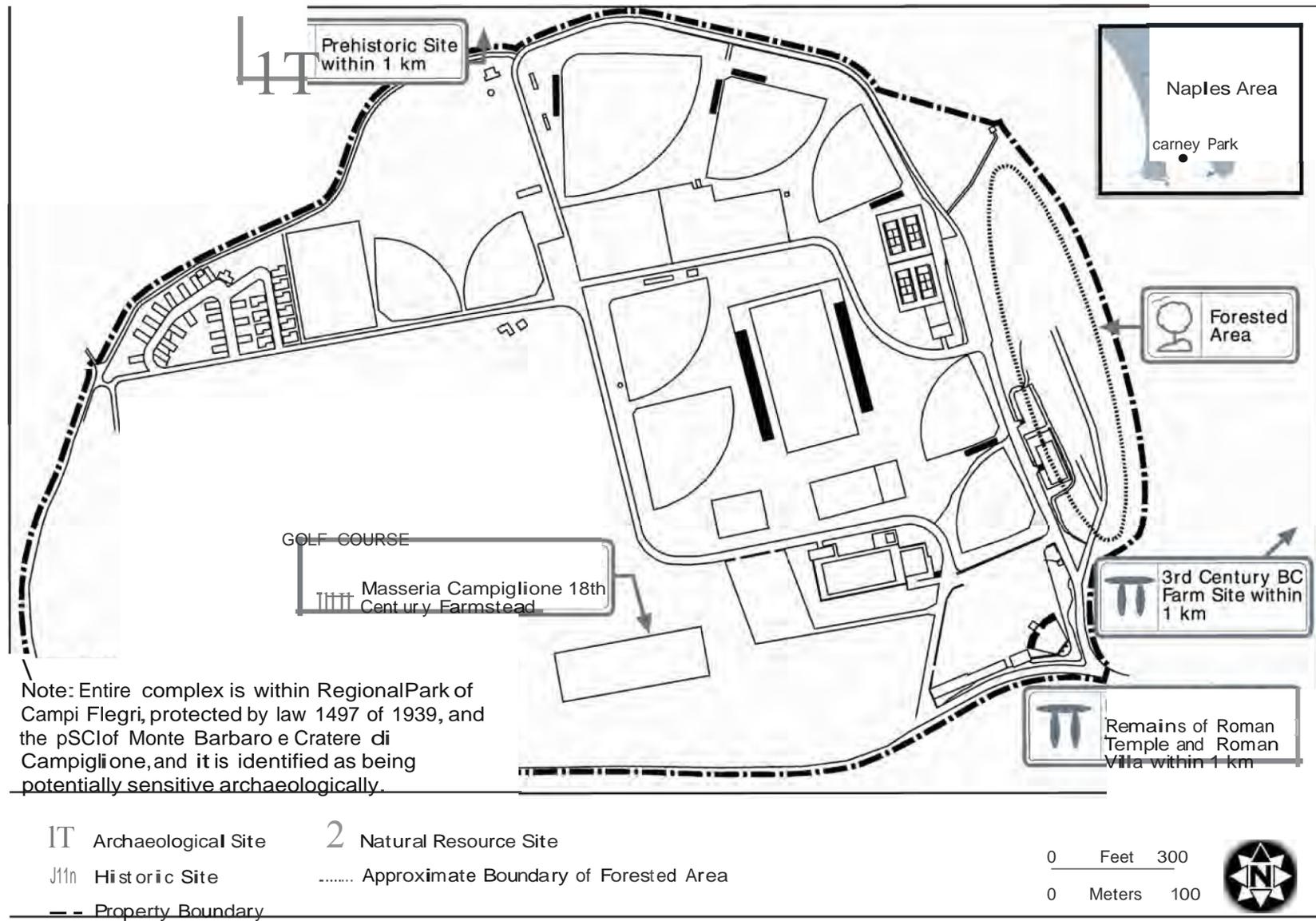


Figure S-4  
Development Constraints: NSA Naples - Carney Park

**NATURAL RESOURCES OF GRICIGNANO SUPPORT SITE****5.2.4**

The Gricignano Support Site is located on 190 acres (77 hectares), about 9 miles (15 km) northwest of Naples in the municipality of Gricignano di Aversa, in the province of Caserta and in an agricultural area known as Boscariello (Figures 5-1 and 5-5). The property is leased from and maintained by the Mirabella Company, who also constructed the base. The Gricignano Support Site provides family support facilities for NSA Naples including housing, school, recreational, exchange/commissary, and medical support services (Photographs 5-7 and 5-8).



**Photograph 5-7: Gricignano Support Site**



**Photograph 5-8: Housing facilities at the Gricignano Support Site**

### **Flora / Fauna**

The Support Site is completely developed with no sensitive or significant natural resources. The only natural resources present are due to native and non-native landscaping including lawns, trees, and hedges, and any fauna that thrives in such developed conditions.

The site is completely surrounded by agricultural fields consisting of grain crops, fruit trees, olive trees, and some livestock. No unique or sensitive natural resources occur in the vicinity of the Support Site.

## **Management Objectives and Recommendations for FGS-Italy Compliance**

### *Protected Species and Habitats*

*(FGS-Italy C13.1, C13.2, C13.4, and C13.5)*

Due to the developed nature of the site, no protected species or habitats are found on site; therefore no species list or surveys are required.

### *Natural Resources Management Plan*

*(FGS-Italy C13.3 and C13.4)*

Due to the developed nature of the site with only small areas of landscaped vegetation, this User's Guide will be sufficient to meet the FGS-Italy requirements for a Natural Resources Management Plan. However, information and guidance identified in this guide should be consulted and periodically updated.

### *Ground Maintenance and Protection of Habitats*

*(FGS-Italy C13.1, 13.6, C13.8, and C13.9)*

A list of the vegetation used for landscaping and its associated maintenance schedule (e.g., watering, mowing, pruning) should be kept on file at NSA Naples and NAVFAC Atlantic.

### *Personnel Experience and Training*

*(FGS-Italy C13.7)*

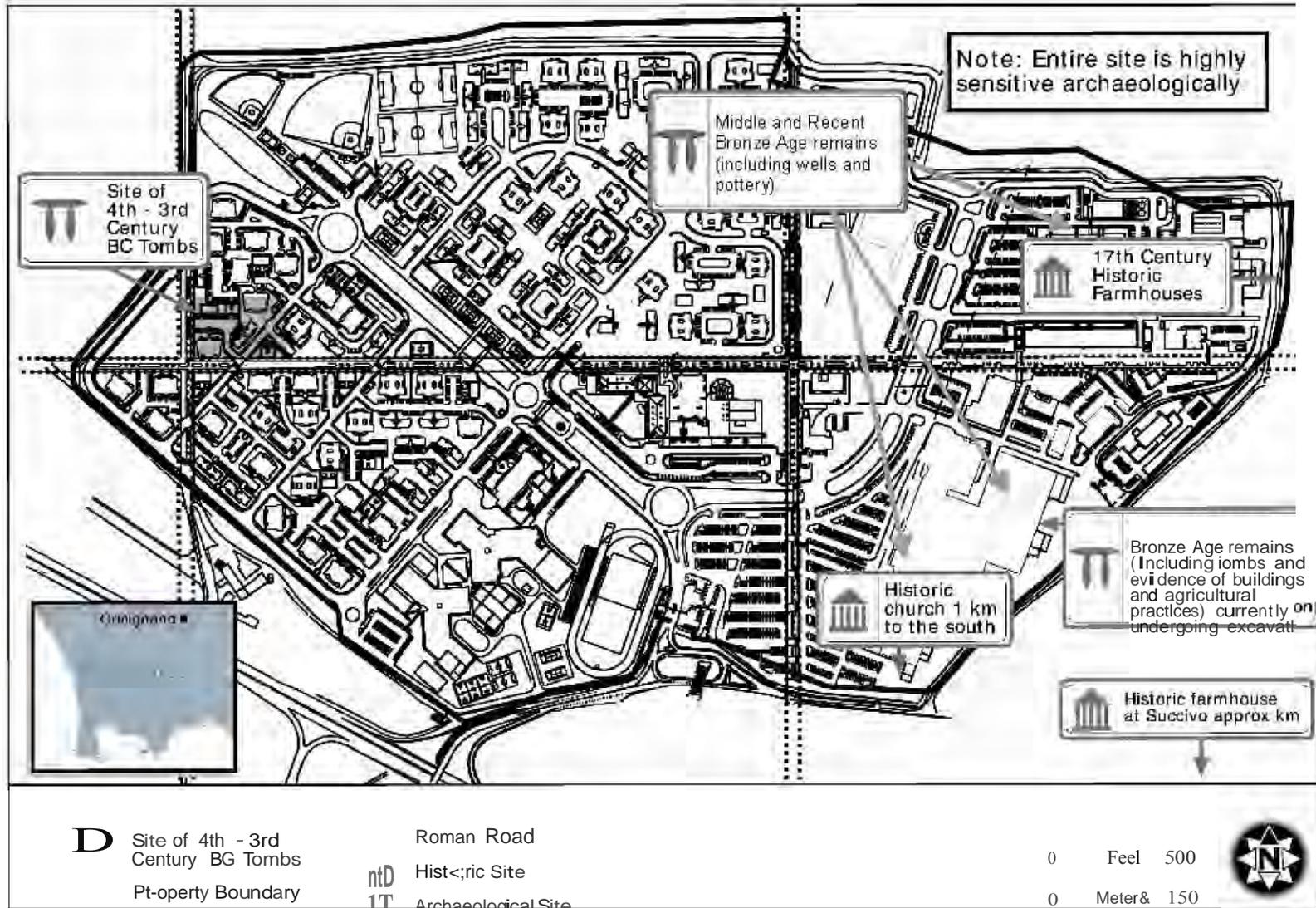
An individual with a university degree in an environmental field (e.g., environmental science, biology, forestry, agriculture, or environmental planning) is considered

optimal for managing natural resource issues. If the individual managing natural resources is not trained in this field, he/she should contact NAVFAC Atlantic for guidance. Training opportunities are described in Chapter 4.

#### *Protective Cover and Erosion Control*

*(FGS-Italy C13.10)*

Landscaping should utilize native, drought-tolerant plants, whenever possible. Use of native species will reduce maintenance and watering requirements. Local nurseries should be contacted to determine availability of various plant species. Vegetative cover should be maintained on exposed areas to minimize erosion and control dust.



**Figure 5-5**  
**Development Constraints: NSA Naples - Gricignano Support Site**

**NATURAL RESOURCES OF LAGO PATRIA RECEIVER SITE****5.2.5**

The Lago Patria Receiver Site serves as a satellite communications facility for the NSA Naples area. It is located northwest of Naples, off the S.S. Domitiana (No. 7 quater) and near the Mediterranean coast (Figure 5-1). The facility is 3.1 acres (1.3 ha) and, according to iNFADS, there are two communications antennae with various support structures and approximately 25 support buildings and facilities (Figure 5-6). During the May 2010 site visit, additional satellites/antennae were observed onsite. The property is ceded for use by the Italian Ministry of Defense. Construction of the new headquarters for the AFSOUTH/JFC Naples is currently underway on properties immediately surrounding the Lago Patria Receiver Site to enable the relocation from their current location in a historic school complex at Bagnoli.

**Flora / Fauna**

The Lago Patria Receiver Site is currently fully developed, covered entirely with support buildings and structures and cement and asphalt pavement. There are no areas of natural or introduced landscaping. As such, there are no significant or sensitive natural resources present.

The surrounding area was used primarily for agriculture, with a few small isolated wetland areas outside the compound dominated by common reed (*Phragmites australis*). As mentioned above, the area surrounding the facility is under construction, which appears to eliminate

any previously occurring natural resources in the immediate area.

Approximately 2 to 4 miles (3 to 6 km) to the east and northeast of the Lago Patria Receiver Site are two areas that were proposed as SCIs in 1995: *Lago di Patria* and *Pineta di Patria* (EEA, 2010) (Appendix F).

In addition to the lake proper, the 1,235-acre (500-ha) Lago di Patria pSCI also encompasses a canal (*Canale vecchio di Patria*) and diverse beach/dune areas. The area is considered an important representative of Mediterranean coastal dune habitats with an adjacent *macchia* forest of juniper (*Juniperus* spp.), myrtle (*Myrtus communis*), and mastic (*Pistacia lentiscus*). It is also an important area for migratory and over-wintering birds, 19 of which are on the Annex I list of the Birds Directive, including short-eared owl (*Asio flammeus*), black tern (*Chlidonias niger*), stone curlew (*Burhinus oediconemus*), whiskered tern (*Chlidonias hybridus*), collared pratincole (*Glareola pratincola*), purple heron (*Ardea purpurea*), black-winged stilt (*Himantopus himantopus*), ruff (*Philomachus pugnax*), wood sandpiper (*Tringa glareola*), marsh harrier (*Circus aeruginosus*), and moustached warbler (*Acrocephalus melanopogon*) (EEA, 2009c). In addition, three species of bats listed in Annex II of the Habitats Directive are potentially found at the Lago di Patria pSCI. These include the Greater mouse-eared bat (*Myotis myotis*), the Greater horseshoe bat

(*Rhinolophus ferrumequinum*), and the Lesser horseshoe bat (*Rhinolophus hipposideros*) (EEA, 2009c).

The 740-acre (300-ha) *Pineta di Patria* pSCI is on the Mediterranean coast just north and west of the *Lago di Patria* pSCI. The area has a unique assemblage of wooded dunes with stone pine and juniper, dune sclerophyllous scrub, and coastal dune habitats. The area supports a breeding population of red-backed shrike (*Lanius collurio*), and migrating collared flycatcher (*Ficedula albicollis*), marsh harrier (*Circus aeruginosus*), and European roller (*Coracias garrulous*), all of which are listed in Annex II of the Habitats Directive. In addition, there are also two bat species in the area protected by Annex II of the Habitats Directive: the Greater horseshoe bat (*Rhinolophus ferrumequinum*) and the Lesser horseshoe bat (*Rhinolophus hipposideros*) (EEA 2009d).

### **Management Objectives and Recommendations for EGS-Italy Compliance**

#### *Protected Species and Habitats*

(FGS-Italy C13.1, C13.2, C13.4, and C13.5)

Due to the developed nature of the site, no protected species or habitats have been found on site; therefore, no species list or surveys are required.

### *Natural Resources Management Plan*

*(FGS-Italy C13.3 and C13.4)*

Due to the developed nature of the site with only small areas of landscaped vegetation, this User's Guide will be sufficient to meet the FGS-Italy requirements. Therefore, a written Natural Resources Management Plan is not necessary. However, information and guidance identified in this guide should be consulted and periodically updated.

### *Ground Maintenance and Protection of Habitats*

*(FGS-Italy C13.1, 13.6, C13.8, and C13.9)*

A list of the vegetation used for any future landscaping and its associated maintenance schedule (e.g., watering, mowing, pruning) should be kept on file at NSA Naples and NAVFAC Atlantic.

### *Personnel Experience and Training*

*(FGS-Italy C13.7)*

An individual with a university degree in an environmental field (e.g., environmental science, biology, forestry, agriculture, or environmental planning) is considered optimal for managing natural resource issues. If the individual managing natural resources is not trained in this field, he/she should contact NAVFAC Atlantic for guidance. Training opportunities are described in Chapter 4.

*Protective Cover and Erosion Control*

*(FGS-Italy C13.10)*

Landscaping should utilize native, drought-tolerant plants, whenever possible. Vegetative cover should be maintained on exposed areas to minimize erosion and control dust.

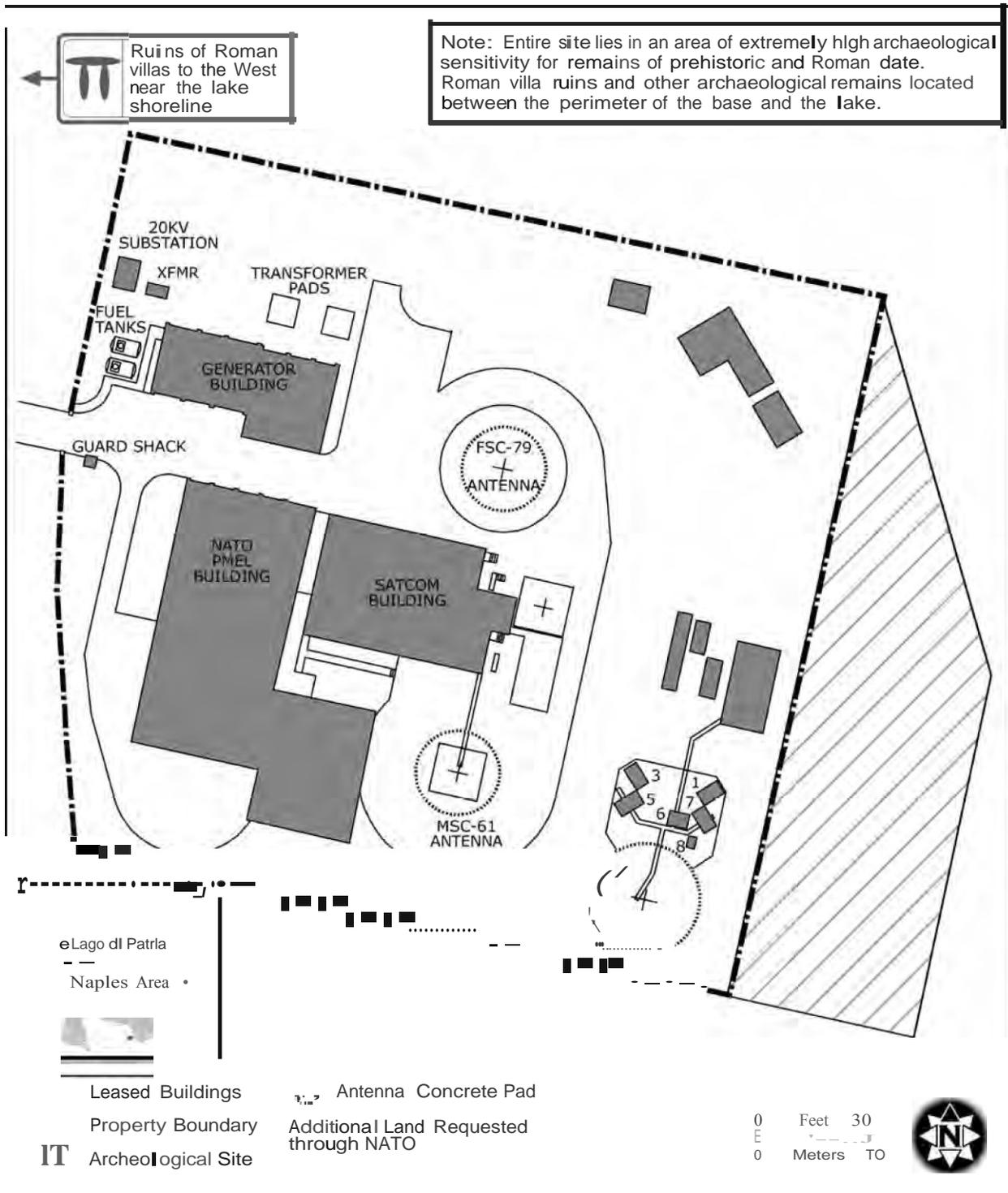


Figure 5-6  
Development Constraints: NSA Naples - Lago Patria

## 5.3 CULTURAL RESOURCES IN THE NSA NAPLES AREA

### **Historical Profile of NSA Naples**

While southern Italy was occupied as early as the Paleolithic period (before 9000 B.C.), the earliest known remains from the area around Naples date from the subsequent Neolithic period when agriculture and stable village settlements were established. Archaeological exploration, including that sponsored by the U.S. Navy at Gricignano di Aversa, as well as a major project related to the construction of an underground railway line within the city of Naples, is filling in the complex picture of human adaptation to an environment marked by repeated and extensive volcanic eruptions in the later Copper and Bronze Ages from the Fourth through the Second millennia B.C. (De Caro and Miele 2001). Contact with the cultures of Aegean Greece began in the Middle and Late Bronze Ages (1500-1300 B.C.), and an important Bronze Age *emporion* (trading-site) containing ceramics of the palatial Mycenaean culture (1400-1300 B.C.) has been found on the island of Vivara, an island by Procida off the Neapolitan coastline.

The Mycenaean culture spawned the legends of Greek mythology and the stories of Homer's *Iliad* and *Odyssey*. The latter poem recounts the travels of Odysseus to places surprisingly similar to those that early Greek adventurers and merchants found in the West, such as Pithecussai on

the island of Ischia (off Naples and beyond Vivara), the first actual Greek colony of the historical period. Pithecussai was also the northernmost of the Greek colonies (the rest are concentrated in eastern Sicily and along the instep of the Italian boot), probably because there was a strong indigenous society which resisted the onslaught of Greek settlers who came to the central Mediterranean beginning in the 8th century B.C. (this presence would eventually be substantiated by the movement of Etruscan peoples at Capua). Despite such resistance one of the first occurrences of the Greek alphabet was found at Pithecussai on the so-called Cup of Nestor (on display in the museum at Villa Arbuto in the town of Lacco Ameno on the island of Ischia), and contact through colonial markets (*emporía*) led to the transmission of this new 'technology' (writing) to the indigenous peoples of central Italy.

Campania, the Neapolitan region, was a mosaic of peoples from the 8th century B.C. to the time of the Roman domination, as ancient authors such as the geographer Strabo (1st century A.D.) and the archaeological remains attest. Greeks rapidly settled at Cuma on the mainland just opposite Ischia, while Etruscans from the north settled at Capua to the northeast. Although the Greeks did not penetrate into the hinterlands of Italy, the coastal settlements in this area of Italy became embedded in early Greek culture. Cuma became the home of the ancient prophetess, the Sibyl, while the Campi Flegrei (the burning

fields) came to be known as the place where the Olympian Gods defeated the Giants. Further growth came when indigenous Oscan peoples, including the Samnites who were powerful enough to challenge the growing Rome, descended from the interior's mountainous regions to settle at cities such as Pompeii in the 5th century B.C.

The original settlement of Naples in 7<sup>th</sup> century B.C, was called Parthenope, a nickname of the city still used today. It was located on the promontory that extends out to the Castel dell'Ovo. With the creation at the end of the 5<sup>th</sup> century B.C. of a new urban center at what is now the core of modern-day Naples, Parthenope came to be referred to as the "old city", or Paleopolis in Greek, and the new as Neapolis, or "new city." By 326 B.C. Rome was strong enough to force Greek Naples into an alliance, yet when a group of Roman citizens was settled at the neighboring city of Pompeii by the dictator Lucius Cornelius Sulla early in the 1<sup>st</sup> century B.C., they were noticeably outnumbered by those whose families had dwelt there for generations.

Naples became a rich resort region for the aristocratic and *nouveau riches* of the city of Rome under the late Roman Republic (before 27 B.C.) and especially under the Roman Empire. The areas around Naples also became very prosperous under the Roman Empire. Huge drainage and water distribution projects transformed many formerly swampy, malaria-infested areas. By the 1<sup>st</sup> century A.D. having a villa along this coast was essential for high-

mindful and powerful figures, such as those mentioned in the letters of the orator Cicero, and contact with Hellenic culture cultivated the contemplative, yet social, lifestyle that the Romans referred to as *otium* (D'Arms 1970). The Roman fleet stationed at Misenum on the extreme western end of the bay of Naples served primarily to transport Roman senators from that city to their recreation homes in this area. However, the Bay of Naples also saw great commercial activity, and Puteoli, modern Pozzuoli, was one of the great ports for the Roman grain trade with places as far away as Egypt and North Africa. A vast system of roads and public buildings including baths was built to support and amuse the population. As a result, the Campi Flegrei became an area of great splendor in the 1<sup>st</sup> century A.D. The Via Domitiana, completed in the 90s, connected the inland Via Appia directly with the port of Puteoli. Several bath complexes, including the Agnano Terme complex, the Baths of Neptune at Pozzuoli, and the baths at Baia were also built during this era or shortly thereafter.

The eruption of Mount Vesuvius in 79 A.D. did not bring life in this area to an end. In fact, most of the famous villas that are known along the Tyrrhenian coast date from after the Roman-era eruption, and the city of Naples itself, an important Greek metropolis, continued to exist relatively unharmed. Excavation within the bustling modern city suggests that Neapolis had a thriving economy and vibrant cultural life throughout ancient times (see

discussion below regarding new major advances in the urban archaeology of Naples).

The later history of the area is less documented. Like the rest of the Roman Empire, Naples was subjected to the onslaughts of barbarian invaders during the 4<sup>th</sup> and 5<sup>th</sup> centuries A.D. It was taken back by the eastern Roman, or Byzantine, empire in A.D. 554. With the subsequent waning of Byzantine influence in the Italian mainland, Naples became autonomous, and from the mid-8<sup>th</sup> to the end of the 10<sup>th</sup> century A.D., the medieval maritime republic of Naples ruled the sea and constantly battled Arab incursions. Throughout the 10<sup>th</sup> century, the history of the Neapolitan area was characterized by constantly shifting alliances as the city played off the Byzantines to the east, against the Pope in Rome, and the Lombard city-states (i.e., Pisa and Genoa) to the north. Norman knights, originally in the area as mercenaries, began their own conquest of southern Italy in 1030; Naples fell in 1139. The Norman reign in Italy was supplanted by that of the German Holy Roman Emperor, Henry VI, in 1194. Under the subsequent German rule of Frederick II, the University of Naples was founded in the early 13<sup>th</sup> century.

The scheming of Pope Innocent IV with the French brought the downfall of German control in southern Italy and Sicily, supplanting it with that of Charles of Anjou. Under this Angevin rule, Naples experienced another cultural revitalization. New churches and castles sprang up

throughout the region, and writers such as Petrarch and Boccaccio were supported by Angevin patronage. Naples became a major trading center in the Mediterranean. The Angevins also pursued further territorial ambitions to the north and east, necessitating oppressive taxation that led to the loss of Sicily in the famous revolt of the “Sicilian Vespers.” Further internecine war and intrigue led to the Angevin loss of southern Italy to the Spanish house of Aragon in 1442.

The Aragonese arrival at Naples coincided with the arrival of the Renaissance. Naples, like the rest of Italy, experienced a great flowering of the arts, as seen in the triumphal entrance to the Maschio Angioino, the castle in the center of Naples. Under Aragonese rule, Sicily was again briefly rejoined to Naples politically, but Naples remained a pawn in the struggles between the three most prominent families in Italy: the Sforza of Milan, the Medici of Florence, and the Della Rovere of Savona, and later Urbino. As a result, the French King Charles VIII conquered Naples in 1495. The House of Aragon, however, retook Naples and the Kingdom of Naples was transferred to Spanish rule in 1503. The government was headed by a viceroy, the title used often in Italian circles to identify this period (*periodo vicereale*).

During the 15<sup>th</sup> and 16<sup>th</sup> centuries A.D., Naples groaned under heavy taxation and conservative authoritarian rule that created a stifling artistic and intellectual atmosphere.

In 1647, the Neapolitans revolted, but the rebellion was suppressed by Don John of Austria (the Hapsburg family then ruled both Austria and Spain). Liberation from Spain came during the terms of the Treaty of Utrecht (1713), settling the War of the Spanish Succession. But Naples was not to be free, for it was awarded to Austria, along with Sicily, and became known as the Kingdom of the Two Sicilies.

In the next European upheaval, the War of the Polish Succession, the Austrians were defeated at Bitonto in 1734, and the kingdom then came under the rule of Charles III of Bourbon. The Bourbon reputation for misrule in late 18<sup>th</sup> and 19<sup>th</sup> centuries has obscured many of their earlier virtues. Charles III (1734-1759) abolished most of the privileges of the nobility and the clergy, built the famous theater of San Carlo and the palace of Capodimonte, initiated excavations at Pompeii and Herculaneum, and began the construction of the palace at Caserta.

The French Revolution prompted an inevitable reaction in Naples as elsewhere in Europe. In 1798, the kingdom sent an army against French-held Rome, but it was defeated. Subsequently, the French Army occupied Naples and the short-lived Parthenopean Republic was proclaimed, only to be suppressed by the English and anti-French irregulars under Cardinal Ruffo. However, many innovations were introduced in Italy under the French regime, including

regular, obligatory schooling, and the systematic exploration of cultural resources such as the newly discovered remains at Herculaneum and Pompeii. In 1801, the French placed garrisons throughout the kingdom after a successful Italian campaign, which forced Naples to renounce its alliance with England and Austria. In 1805, the French deposed King Ferdinand, and Napoleon placed his brother, Joseph, on the throne. He was succeeded in 1808 by Joachim Murat, under whom all feudal laws were abolished, and a major public works program was instituted. With the final defeat of Napoleon in 1815, Murat was defeated by the Austrians, and the Bourbons were restored to the throne in Naples.

Despite the apparent upheavals, Naples became a center of science and technology in the late 18<sup>th</sup> and early 19<sup>th</sup> centuries. A botanical garden and astronomical and volcanological observatories were established, and Naples became a center for shipbuilding and steel production. The first steam ship in the Mediterranean was built here in 1818. In the 1830s, Naples had one of the earliest railroad lines in Europe, running from the center of the city first to Portici and then to Pompeii.

When the Bourbons were restored to power in 1815, however, they quickly instituted a campaign to suppress personal freedoms and to impose censorship. Three resultant rebellions in 1820, 1837, and 1844 were put down ruthlessly. By the mid-19<sup>th</sup> century, the kingdom

was notorious for its squalor, corruption, and persecution of perceived enemies. Given this repressive atmosphere, it is no surprise that Garibaldi and his volunteers received little resistance from the populace when they landed in Italy near Reggio Calabria in 1860, having taken the island of Sicily already, and conquered the kingdom in just two months. Garibaldi then ceded the kingdom to Victor Emmanuel II, thus creating the new Italian state.

As part of unified Italy, Naples continued to prosper throughout the 19<sup>th</sup> century as a major industrial center and port with renowned shipyards and steel factories. However, much of Neapolitan life was characterized by corruption, poverty, and poor rail connections to the north that limited growth. Major developments at Naples include a comprehensive plan in 1883 by then mayor Nicola Amore to redevelop the historic center of Naples following a colera outbreak. Known now in historical terms as the Risanamento, the project focused on the development of wide streets, such as Corso Umberto, and other public areas, such as the Piazza Nicola Amore (or Piazza Quattro Palazzi) and Piazza Giovanni Bovio (or Piazza Borsa), as well as the construction of the immense Galleria Umberto I. The enterprise founded in 1888 to perform this work still exists today. Likewise during the Fascist period, Mussolini's program to further industrialize and modernize the south in the 1920s included vast public works projects in Naples such as the expansion and reconstruction of the

port, the creation of large industrial areas at Bagnoli, and the improvement of rail, road, and air connections.

Before and during World War II, Naples became a major embarkation point of men and material for the Axis' North Africa and eastern Mediterranean campaigns. As the Allies began to win the war and came closer to Naples, the city was bombed frequently. By the time of the Italian capitulation in 1943, the major industrial areas and port were in ruins. These were rebuilt in the late 1940s and 1950s, and Naples continues to serve as a major Italian port today. The U.S. Navy has maintained a continuous presence in Naples since World War II and now has facilities at several locations around the city.

### **Archaeological Research in the Area of Naples**

The region around the Bay of Naples is one of the richest archaeological areas in Italy, and no brief survey can summarize or model adequately the archaeological potential of the region. It is important to realize that the average density of identified archaeological sites in the region to date, including everything from simple deposits of archaeological materials to monumental architectural complexes, is roughly 7 to 8 sites/square km ( $\text{km}^2$ ). Furthermore, in the area of the Campi Flegrei, the number may rise to between 30 and 35 sites/ $\text{km}^2$ . Archaeological deposits in the Campi Flegrei area are generally found at very deep levels; therefore, the absence of apparent cultural remains should not be construed to mean that no

remains could be found in the future. The same situation has been encountered in the extensive excavations sponsored by the U.S. Navy at Gricignano, where pioneering research methodologies have opened a new chapter in understanding the archaeological landscape.

Due to the long and important history of this region, sites range from small prehistoric encampments to Greek trading sites and necropoli to Roman baths, markets, and amphitheaters. Architectural resources range from medieval cloisters and castles to 19<sup>th</sup> century palaces and government buildings. Although hundreds of sites and buildings in the region are subject to architectural and archaeological *vincoli*; none currently cover any of the U.S. Navy sites proper. Major sites within 0.6 miles (1 km) of each U.S. Navy complex are indicated in the facility profiles below.

Of particular importance is the fact that the historic center of Naples is now a World Heritage site. Since the advent of this guide, a major research project developed in conjunction with the construction of a new underground railway line (*metropolitana*) for the city of Naples has widened, in a revolutionary way, the picture of the area in antiquity. Considered to be the largest single project for urban archaeology in Italy, the goal of the project has been to explore and document (with preservation where possible) archaeological remains and stratigraphic sequences along the path of the projected railway tracks.

Wide-area excavations have been performed in areas where stations and access tunnels are to be constructed. Methodologies developed first in connection with the research sponsored by the U.S. Navy at Gricignano di Aversa, such as the identification of agricultural practices in the prehistoric landscape, have been employed successfully in this unique and challenging urban environment. Discoveries include settlements and cultivated fields of the Neolithic period, port areas of Greek and Roman date with three sunken ships, a temple-portico complex of Roman imperial date, and a sequence of other structures and stratigraphic layers that document the changes that came over the area along the shoreline in a way that stands as a metaphor for the passage of the ancient world to that of the middle ages. Detailed discussion of what has been found to date appears below in the facility profile for the port of Naples.

The historic center (*centro storico*) of the city of Naples is a World Heritage Site, and as such, development there is strictly regulated. Other World Heritage sites in the region are the Archaeological Areas of Pompeii, Herculaneum, and Torre Annunziata; the 17<sup>th</sup> Century Royal Palace of Caserta; the Vanvitellian Aqueduct; the Complex of S. Leucio; and the Amalfi Coast, all of which were registered in 1997.

The *Piano Territoriale Paesaggistico* (PTPs) for the Campi Flegrei region and for most of Naples were completed and

approved in early 1996. Capodichino is regulated by a separate regulation specifically for airports. Although much of the area around the NSA Naples facilities of Camaldoli, Carney Park, the Lago Patria Receiver Site, and Capodichino is highly restricted for development purposes, there are also selected areas in which development is limited (Zone 2) and areas that are already highly developed or disturbed (Zone 3). Development in these areas is virtually unrestricted (Figure 5-1).

### 5.3.1

#### **CULTURAL RESOURCES OF THE CAMALDOLI TRANSMITTER SITE**

##### **Onsite Cultural Resources**

*Architecture.* There are no above ground sensitive architectural resources on this extremely small site (Figure 5-2).

*Archaeology.* This transmitter site is located on Camaldoli Hill, the highest feature of the Neapolitan landscape, with the exception of Mount Vesuvius. The mountain is a portion of the cone of an early volcanic crater. Virtually all of the land has been altered by subterranean construction for the military or the local electric company.

##### **Offsite Cultural Resources**

*Architecture.* The major cultural resource in the area is the protected Hermitage (L'Eremo) of Camaldoli, which is located on the actual summit of the mountain to the southwest of the receiver site (Figure 5-2). Monastic presence has been noted on this site since the 5<sup>th</sup> century

A.D.; however, the current building dates to 1585. Many notable works of art lie within the monastic compound. Other structures mentioned in the text of the 1497/39 *vincolo* of May 5, 1952 (extended by ministerial decree on January 25, 1958), which governs this area, include the Masseria Pignatiello, the Casa di Minopoli, the Torre di San Domenico, the 'Casalotto' area, and the Cappella dei Cangiani. They are located down slope to the south and west. Although these structures are clearly used as legal reference points, it is not apparent from the text whether or not they also bear *vincoli* as monuments in and of themselves.

*Archaeology.* Although it seems likely that features (cisterns and other structures) of Roman date may be located in this area, especially on the more gentle, southern slopes of the mountain where there seems to be a very thick deposit of fertile soil, no known reports of any archaeological finds have been made to date.

### **Management Objectives and Recommendations for EGS-Italy Compliance**

#### *Inventory/Survey*

*(FGS-Italy C12.2, C12.4)*

No further survey work is necessary within the confines of the Camaldoli facility, and there is no Italian list of historic sites for the Camaldoli facility.

*Plans/Mitigation/Protective Action**(FGS-Italy C12.1, C12.4, C12.5, C12.6, C12.7)*

The U.S. Navy should issue a policy statement to ensure that there is no unauthorized digging for cultural materials, minerals, or fossils.

Because of the small size of the site, and the lack of known cultural resources, this User's Guide will suffice for the FGS-Italy requirements for a protection and preservation plan at the Camaldoli Transmitter Site.

**Project Planning**

The area is in a zone of complete protection, highly limiting any development. Given the limited nature of the structures and the activities at this site, there is little to recommend in the way of cultural resource management. Ensure that any future work on the site will not further affect the view to and from the mountain. In the event of proposed construction activities, the U.S. Navy Installation Commander, via the Italian Base Commander, should contact the Comune di Napoli, as soon as possible, regarding developments in the urban park and the urban recovery areas. This action shall be coordinated through NAVFAC EURAFSWA and the NAVFAC Atlantic archaeologist.

### 5.3.2

## CULTURAL RESOURCES OF CAPODICHINO

### Onsite Cultural Resources

*Architecture.* Built on an area composed of fill to form a portion of the airport, there are no above-ground historic structures on the facility (Figure 5-3). The Mall complex, constructed in the 1990s, was designed in the spirit of the Rationalist/International Style, which one finds in Italian military airport facilities of the 1930s. Features include a long portico with rectangular pillars, architectural emphasis on single-point perspective through the creation of stepped sidewalks which recall the stylobate/stereobate of Classical temples and porticoes, and the strict coordination of architecture and trees aligned with the street.

*Archaeology.* The site was the subject of a 1990 archaeological survey. The survey identified the lines of two aqueducts built between 1627 and 1631 by Cesare Carmignano (Figure 5-3). Eighteen finds, including shards and glass, recovered from construction spoils on site confirmed the report's conclusion that the area had, until recent times, been used for agricultural purposes and that there was little archaeological potential to encumber planned construction by the U.S. Navy. However, there does remain the possibility that some cultural materials may be located at depths below 6.6 ft (2 m).

### Offsite Cultural Resources

*Architecture.* There are no structures surrounding the site that are currently subject to a cultural resources *vincolo*.

Capodichino is bordered on the north, east, and west by mostly new airport facilities. Historic airport structures are found on the northwest side of the airport. They include a large central 'ex'-1930s era dormitory building common at other Italian military airports. The building has been heavily modified – the central portion has been given large windows and red stairways on either end; there is no tower. These facilities are used by the Italian Air Force and were not inspected directly, but they are subject to automatic *vincolo* as public buildings. Some older agricultural structures remain along the southern border of the site between the highway and the fence line, but these are in poor repair and have not been identified as important types of *casale* (farmhouse).

*Archaeology.* Roman tombs, dated roughly to 1<sup>st</sup> century A.D., have been found to the west in the area of the civilian passenger terminal (Figure 5-3). A Greek quarry has been identified approximately 0.6 miles (1 km) south of the base. During the June 2002 visual survey/site inspection, fragments of Roman red-ware and historic white-glazed ware were observed lying in the soil of a cornfield adjacent to the southern perimeter of the Navy compound, suggesting the presence of ancient or historic structures nearby.

## **Management Objectives and Recommendations for FGS-Italy Compliance**

### *Inventory/Survey*

*(FGS-Italy C12.2, C12.4)*

No further survey work is necessary within the confines of the Capodichino facility, and there is no Italian list of historic sites for the Capodichino facility.

### *Plans/Mitigation/Protective Action*

*(FGS-Italy C12.1, C12.4, C12.5, C12.6, C12.7)*

Because of the developed nature of the site, this User's Guide is sufficient for the FGS-Italy requirements for a protection and preservation plan for the Capodichino facility.

If future excavation in the vicinity of the aqueduct lines is necessary, and the excavation will go to a depth greater than 6.6 ft (2 m), then all construction activities shall be monitored by an archaeologist approved by the Archaeological Superintendency through the U.S. and Italian Base Commanders. This action shall be coordinated through NAVFAC EURAFSWA and the NAVFAC Atlantic archaeologist. The U.S. Navy should also issue a policy statement to ensure that there is no unauthorized digging for cultural materials, minerals, or fossils.

### **Project Planning**

Since most of the site is built on modern fill to a depth of approximately 6.6 ft (2 m), the only planning measures should be to ensure that any future development avoids the line of the aqueducts (approximately 6.6 ft [2 m] wide) and limits, where possible, excavation at depths of more than 6.6 ft (2 m).

### **5.3.3**

### **CULTURAL RESOURCES OF CARNEY PARK**

#### **Onsite Cultural Resources**

*Architecture.* Of particular note is the Masseria Campiglione, the large 18<sup>th</sup> century farm structure south of the golf course (Figure 5-4). Although not yet declared an historic structure, recent interest in vernacular architecture may designate it as such in the future. On the western side of the park/golf course there are two flat terraces constructed in ashlar (rectangular) blocks of gray tufo: 1) 82 ft (25 m) North-South x 108 ft (33 m) East-West circa; the western side is held up by a retaining wall with a projecting setting-line band; traces of a curving wall on the northern side emerge from the ground surface; 2) a 69-ft (21-m) stretch of poorly constructed terrace wall on the western side that continues up the slope into the hillside. The small area of the first terrace suggests the presence of structures, and an area of heavily disturbed soil with odd pieces of brick and stone and no grass cover seems to indicate where the foundation of a former farm building has been filled in.

*Archaeology.* The slopes of the interior of the crater are terraced for cultivation. Given the existence of historical farm structures set on the northern and western sides, settlement and construction in this area was likely in antiquity. The floor of the crater has been landscaped for recreational use and there are no cultural remains apparent on the surface. cursory examination of the slopes above the floor shows little ground disturbance except for several water pipes which are set along the crater interior's eastern side. The entire area has been identified as potentially being archaeologically sensitive. Since archaeological deposits in the Campi Flegrei are generally found at very deep levels, the absence of cultural remains on the surface should not be construed to mean that no remains could be found in the future below the surface.

### **Offsite Cultural Resources**

*Architecture.* The area outside Carney Park is a suburban area with limited development. No architecturally significant structures have been identified within 0.6 miles (1 km) of the site.

There are 18<sup>th</sup> and 19<sup>th</sup> century farm structures located on the western and southern slopes of the crater (Figure 5-4).

*Archaeology.* Less than 0.6 miles (1 km) to the southeast, on the exterior of the Campiglione crater, is a Roman road that led from ancient Puteoli (Pozzuoli) to Capua, largely following the alignment of the present road (Figure 5-4).

On both sides along this road are remains of major structures preserved to significant elevations, including monumental tombs, such as the *columbarium* opposite the former Gecom plant, and residential villas, such as that of the Bovia family opposite the local medical center. Along the road that leads to the entrance of the park, there are remains of two other structures, perhaps also villas and roadways that may have led to other villas along the summit of the crater (Quilici 1969). On the summit, there are heavy blocks in local volcanic stone (tufo) that may pertain to a sanctuary of the Roman goddess Ceres. The Greek name for Ceres is Demeter, and an unusual tufo block with a dedicatory inscription to this goddess, now in the amphitheater at Pozzuoli, is said to have been found in the vicinity. The Campiglione crater is connected with the neighboring Monte Gauro where there are also the remains of cisterns and walls presumably of other Roman villas. At the summit of Monte Gauro, a heavy subterranean walkway (*cryptoporticus*) may belong to the sanctuary of Juno Gaura. A prehistoric site datable to the Middle Bronze Age (Second millennium B.C.) has been identified at Monte Spaccata, just over 0.6 miles (1 km) to the north. The Archaeological Superintendency mentioned the recovery of Middle Bronze Age ceramics (16<sup>th</sup> – 15<sup>th</sup> centuries B.C.) and Apennine culture (14<sup>th</sup> – 13<sup>th</sup> centuries B.C.) at Monte San Angelo, less than 0.6 miles (1 km) to the northeast of Carney Park. A farm site dating from the mid-Third century B.C. has also been found on the southern slope of the Cigliano crater near Via Vecchia delle

Vigne, just over 1.2 miles (2 km) to the southeast. It is likely that many other prehistoric and historic sites remain to be found in this area.

### **Management Objectives and Recommendations for FGS-Italy Compliance**

#### *Inventory/Survey*

*(FGS-Italy C12.2, C12.4)*

No further survey work is necessary within the confines of the Carney Park complex and there is no Italian list of historic sites for the Carney Park complex.

#### *Plans/Mitigation/Protective Action*

*(FGS-Italy C12.1, C12.4, C12.5, C12.6, C12.7)*

Avoid further development of the site. Any excavation below 6.6 ft (2 m) shall be monitored by an archaeologist approved by the Archaeological Superintendency, via the U.S. and Italian Installation Commanders. This action shall be coordinated through NAVFAC EURAFSWA and NAVFAC Atlantic. The U.S. Navy should also issue a policy statement to ensure that there is no unauthorized digging for cultural materials, minerals, or fossils.

Because it has been recommended and requested that no additional site work be completed at Carney Park, this User's Guide is sufficient for the FGS-Italy requirement for the protection and preservation of resources at the recreational facility.

## **Project Planning**

The site is in an area of high potential archaeological importance in addition to being within a zone of complete protection due to its location within the Regional Park of Campi Flegri, an area of natural importance. As a result, any development within Carney Park is highly limited, and plans should be made to limit further building or development of the site and slope around the crater. This includes excavation (below 6.6 ft [2 m]) for water and sewer lines.

The area of the Campi Flegrei was constituted as a unified park for the purposes of planned development. The entity, known as the *Ente Parco Regionale dei Campi Flegrei* under the aegis of the region (*Regione Campania*) has developed in collaboration with the region-based administration for cultural resources of the Italian state (*Direzione Regionale per i Beni Culturali e Paesaggistici della Campania*) a plan, called the *Progetto Integrato Territoriale (PIT) Campi Flegrei*, that focuses both on land-based and underwater resources in the territories of the following municipalities: Bacoli, Baia, Cuma, Monte di Procida, Pozzuoli, Quarto, and Villa Literno (see Campi Flegrei 2008). Particular emphasis has been given to several areas that had an identity that was distinct from that of neighboring Naples, including Rione Terra (the historic center of ancient Puteoli/Pozzuoli), Cuma, and the Castle of Baia (recently, this has become the second largest archaeological museum in Italy, after Naples).

While no particular plans have been developed for the specific areas where the U.S. Navy is located in and around the Campi Flegrei (Carney Park), one should be aware of specific regulations for behavior within the park.

#### 5.3.4

#### CULTURAL RESOURCES OF THE GRICIGNANO SUPPORT SITE

##### Onsite Cultural Resources

*Architecture.* There are no known historic buildings above ground at the Support Site (Figure 5-5).

*Archaeology.* The Support Site is located in the area known both in antiquity and currently as the *Ager Campanus*, a rural region in the hinterland of Neapolis and the other urban areas immediately along the coast of the Bay of Naples. The land around Gricignano di Aversa seems to have been cultivated since prehistoric times, and the historic division into agricultural parcels (called *centuriation* by the Romans and established as early as the 3<sup>rd</sup> century B.C.) still defines the landscape today. The excavation of areas associated with the Support Site construction for activities that were being transferred from the former U.S. Navy facility at Agnano was conducted under the direction of the Archaeological Superintendency of Naples and Caserta (*Soprintendenza per i beni archeologici delle Province di Napoli e Caserta* – this entity has since been reorganized [Chapter 3]) with the collaboration of the Pigorini Museum for Prehistory and Ethnology at Rome (*Soprintendenza Speciale al Museo Nazionale Preistorico ed Etnografico 'Luigi Pigorini'*).

The areas excavated during the Support Site construction offers one of the widest windows into the landscape of the area around Naples in antiquity, and it is significant not only in terms of the actual remains that have been recovered, but also for the information that it supplies about the Campanian region's cultural and socio-economic history over the millennia. Unlike the conditions that characterized the area historically as a sparsely inhabited, swampy plain, the superimposed archaeological strata reveal an environment in which agriculture and settled life flourished and adapted to the presence of volcanic activity (bibliography specifically on the excavations at Gricignano di Aversa includes Marzochella 1998, Fugazzola Delpino et al. 2000, De Caro and Miele 2001, Fugazzola Delpino, Salerno Tiné 2005, Albertini, Pino Uria, Salerno, Tagliacozza 2005, Tiné 2005, and Tiné, Bizzarro, Cardone, Citro 2005; while excavations were concluded in 2005, study of the materials and information recovered is continuing and there are likely to be many more publications in the future).

In order to understand the archaeological sequence at Gricignano di Aversa, it is first necessary to look at the geography of the region. Three fundamental features mark the environment: the Clanis River to the north (the *Regi Lagni*, channeled during the era of the Spanish Viceroy), the volcanic area of the *Campi Flegrei* to the west, and the Monte Somma-Vesuvius volcano to the

south. The accumulation of alluvial soil from the river and deposits from the two distinct volcanic areas together with climate changes have produced a series of strata over 19.7 ft (6 m) deep which chart the changes in the environment over the last 15,000 years (Amato & Salerno 2005).

The earliest known presence of humankind in the area dates to the Neolithic period (see Off-Site discussion below), while the earliest evidence found on the facility so far dates to the subsequent Copper Age and Early Bronze Age and is sandwiched between two major deposits that mark tremendous volcanic events. The first event was the Agnano-Monte Spina eruption from the *Campi Flegrei*, which is dated roughly to the 27<sup>th</sup> century B.C. The second event was the eruption of Monte Somma-Vesuvius around 1800 B.C. that produced the so-called 'Avellino Pumice' (at least 10 major eruptions from this volcano, including the famous one that destroyed Pompeii and Herculaneum in A.D. 79, have been identified). Between these two harder strata of volcanic pyroclasts, an alternating sequence of paleosols (ancient soil deposits built up by river wash, wind deposition, vegetation, and other sources) and further deposits of lighter volcanic ash coming from the *Campi Flegrei* (mostly from the now dormant Astroni crater) mark an intense period of settlement and cultivation – rather than being a hinderance to human activity, the volcanic deposition seems to have promoted it by filling up wetlands and enriching the soil with minerals.

While the buildings and agricultural features have long vanished, important traces, including post-holes, channels, and other so-called 'negative evidence,' permit archeologists to reconstruct their location and form. Small and large buildings have been found in several development lots on the Gricignano Support Site, the most extensive concentration of which is located in the so-called 'Village Forum'. Within this area, 12 buildings with an oval or sub-elliptical plan have been identified from lines of postholes from each building's superstructure. The largest two buildings in this group measure 54 x 29 ft (16.5 x 9 m) and 59 x 29 ft (18 x 9 m), and they covered areas between 1,292 and 1,616 ft<sup>2</sup> (120 and 150 m<sup>2</sup>). A series of posts around the exterior of these two buildings suggest the presence of ring-like corridors that may have been closed off to shelter goods and animals, or left open as a kind of colonnade. Interspersed among these buildings are tombs with grave goods (pottery and metal objects), which may be attributed to the so-called Laterza culture of the Early Bronze Age (mid- to late-3<sup>rd</sup> millennium B.C.) present in Campania and other regions of southern Italy.

Intimately linked to the organization of the settlement are a series of agricultural land divisions marked by larger and smaller irrigation channels that were buried beneath the ash of minor volcanic eruptions. The larger channels were set roughly 164-197 ft (50-60 m) apart, while the smaller ones in between were set roughly 20-26 ft (6-8 m) apart. Careful excavation has revealed not only this sophisticated

system of land allotment (which anticipates Roman centuriation by millennia), but even the plow- or hoe-marks set at right angles which reveal the way in which they tilled the irrigated soil. This discovery counts as a major breakthrough in archaeological methodology, and the techniques used to discover such cultivation marks have been applied successfully in excavations elsewhere in Italy, including the historical center of Naples.

Although the repeated cultivation of successive soil strata has confounded the archaeological sequence (later plowing scraped away earlier ground surfaces and reduced the remains of earlier buildings to the base of post-holes), it is possible to see the development of both agricultural and domestic areas across the four major intermediate, 'flegrean' deposits of volcanic ash from the time of the Laterza culture to that of the Early Bronze Age culture called 'Palma Campania' at the beginning of the second millennium B.C. Despite evident reconstruction and repetition of earlier structures, a development in building form may be seen in a long building with a rounded end in the lot destined to house the facility's library, between the second and third intermediate eruptions, and architecturally anticipating the well preserved structures recently found directly beneath the Avellino Pumice at Nola (Albore Livadie and Vecchio 2002; a structural reconstruction of one of these buildings complete with interior furnishings found at Croce del Papa, Nola is now on display at the archaeological museum of Nola together

with many other exhibits about the geology and the archaeological development of the region). Study of the bones of animals found in a round shaft (*Pozzo 1099*) at Gricignano indicate that sheep, goat, ox, and pig were being slaughtered (see Fugazzola Delpino, Salerno, Tagliacozzo, Tiné, Vanzetti 2003, especially pages 209 – 211 and Figure 10). Rare evidence for the burial of ox-hides, some of which may still have had crania and outer limbs attached, was found in a pit (US 10) near the tombs of an infant (Tomb 1) and an adult (Tomb 2) in the trench excavated for the footprint of U.S. Navy building Deposit B (Tagliacozzo, Fiore, Salerno 2005).

The violence of this last eruption, as demonstrated by the extensive damage at this latter site and by the extensive deposits on the Gricignano facility itself, seems to have altered the environment significantly in the immediate area to the extent that settlement and cultivation of the sort practiced at the outset of the Bronze Age was abandoned to some degree. Nevertheless, several large and deep shafts which seem to have served as wells (one would walk down to the level of the water) have been found on the facility, and they are datable to the Middle Bronze Age and the Recent Bronze Age (second half of the second millennium B.C.) from pottery which has been found at the bottom (Figure 5-5).

The hiatus in the historical record actually is due to a break in the archaeological sequence. Few remains have been

discovered on the facility to date until the time of an important cemetery of the late eighth and early seventh centuries B.C. which has been found in the lot of U.S. Navy Building 22. Called 'orientalizing' for the kind of imported pottery (produced in the 'orient', that is east of Italy) included among the grave goods of 93 burials, these tombs provide important evidence for contact between the indigenous people of the region and those who arrived at Pithecussai and Cuma in the first wave of Greek colonization and for the introduction of such customs as the *symposion*, the Greek drinking banquet. Meager traces of a short-lived rural settlement with agricultural land-divisions datable to the second half of the sixth century B.C. and the beginning of the fifth century B.C. may mark the arrival of actual colonists in the area. Further evidence for habitation in the region includes a series of *capuccina* tombs (stone-lined pits with terracotta tiles set in a gable-like arrangement on top) attributable to the Samnite culture and datable between the first half of the fourth and the beginning of the third century B.C. Although the 4<sup>th</sup>-3<sup>rd</sup> century B.C. tombs excavated to date have been removed in their entirety, not all of the necropolis has been excavated. This area has been set aside as an archaeological park (Figure 5-5).

The Roman *centuriation* of the *Ager Campanus* dates as early as the third century B.C., and traces on site include a major east-west road that divides the Support Site in northern and southern halves, and north-south roads that

mark the western perimeter and separate the eastern third of the site, respectively. While current access roads within the U.S. Navy facility do not follow these ancient alignments, visual continuity along them is respected through lack of construction. An L-shaped pit found to the southeast of the intersection of two roads was filled during the first quarter of the first century B.C. with materials that may have come from a nearby sanctuary, while the remains of farmsteads and rural cemeteries of the earlier and later Roman Empire have been found to the northwest of this intersection. A Roman well has also been incorporated into the structure of the hospital. The general distribution of pre-Roman and Roman settlements within the general scheme of *centuriation* remains to be determined.

### **Offsite Cultural Resources**

*Architecture.* Although there are no architectural resources within the U.S. Navy installation, several such structures lie within 0.6 miles (1 km) (Figure 5-5). To the south is the 10<sup>th</sup> century A.D. church of S. Maria di Piro (Gricignano di Aversa), the *casale* (farm complex) di Teverolaccio (Succino) formed as a barony during the Renaissance with structures dating mostly from the 17<sup>th</sup> and 18<sup>th</sup> centuries, and a monumental residential and agricultural complex datable to the 17<sup>th</sup> century A.D. The *casale* includes a tower, the Church of S. Sossio, and several residential structures. Along the eastern radius, are three 17<sup>th</sup>-18<sup>th</sup> century historic farmsteads (*masserie*):

the Masseria San Vincenzo, the Masseria Sapienza, and the Masseria di Mezzo. Recently the *vincolo* protecting the Teverolaccio complex was expanded by Ministerial Decree 67 of 4 May 2007 to include several surrounding parcels of land, which demonstrate the relation and continuity of Roman agricultural *centuriation* to the placement and design of the structures of the *casale*.

*Archaeology.* Outside the Gricignano Support Site, one may expect to find remains similar to those found within it (Marzochella 1998, De Caro and Miele 2001). Extensive excavations like those at the Gricignano Support Site have been conducted along the routes of the Treno ad Alta Velocità (TAV, or high-speed rail line) and the new main rail access line into Naples (Nava, Giampaola, Laforgia, Boenzi 2005). A major ancient town, Atella, lies among the modern towns of S. Arpino, Succino, Orta, and Frattaminore, and a host of prehistoric and historic archaeological sites are known for most of the towns in the area. A *vincolo* (D.M. 30-7-1998) protects the Roman land-divisions (*centuriation*) of the ancient *Ager Campanus* within the area 1.8 miles (3 km) north of ancient Atella, 6 miles (10 km) south of ancient Capua, east of the Roman road Puteolis-Capuam (which passes by Carney Park), and west of the Roman road Capua-Neapolim. The Roman *centuriation* seems related to the presence of a Roman sanctuary, the Sanctuary of Diana Tifatina, which was built originally in the late 4<sup>th</sup> or early 3<sup>rd</sup> century B.C. and restructured at least twice in the 2<sup>nd</sup> and 1<sup>st</sup> centuries B.C.

The temple, which stood at the center of a large platform enclosed on three sides by a portico, today is the Abbey Church of Sant'Angelo in Formis, which is known for its historically significant 11<sup>th</sup> century frescoes (Quilici Gigli 2009).

Close to the Gricignano Support Site, traces of Neolithic and Copper Age structures have been found at Teverola, and plow- or hoe-marks similar to those found in the Early Bronze Age levels on the facility but of an earlier date have been found beneath the Agnano-Monte Spina volcanic stratum along the TAV alignment at Fusarello within the municipal limits of Gricignano (Marzochella 1998). A prehistoric burial tumulus heavily damaged by a modern well-shaft has been identified in the lot occupied by the municipal sports facility across the highway from the U.S. Navy property. Three chamber tombs built in tufo block dating to the fourth and third centuries B.C. have been found along the road leading to the Gricignano di Aversa railway station, while 76 tombs of the 3<sup>rd</sup> and 4<sup>th</sup> centuries A.D. indicate the presence of a small community associated perhaps with a large agricultural property (*latifundium*) at Tredici di Castagno, also within the town limits. Structures similar to those of the Early Bronze Age at Gricignano have been found on the property of the Polo Calzaturiero in the town of Carinaro.

## **Management Objectives and Recommendations for FGS-Italy Compliance**

### *Inventory/Survey*

*(FGS-Italy C12.2, C12.4)*

The archaeological research at the Gricignano Support Site is an exemplary case of cooperation between the U.S. Navy, the construction contractor, and the authorities in charge of Italy's archaeological resources. While the remains which have been found to date do not seem to be of such significance that their existence would prohibit construction, the archaeological information which can be derived from the deposits where construction has been or is being performed is extremely important. There is currently no unified list of protected sites for the Gricignano area, but the U.S. Navy should maintain on file all excavation reports and GPS coordinates and maintain regular contact particularly with the Archaeological Superintendency in Naples for future planning.

### *Plans/Mitigation/Protective Action*

*(FGS-Italy C12.1, C12.4, C12.5, C12.6, C12.7)*

In order to preserve to the greatest extent possible those areas where archaeological deposits are to remain intact, a plan should be developed which would permit further archaeological exploration in those areas where little or no deep-foundation construction is currently proposed. This plan should be developed in cooperation with the Archaeological Superintendency, through the U.S. Installation Commander and the Italian Base Commander.

Any excavation below 3.3 ft (1 m) shall be monitored by an archaeologist approved by the Archaeological Superintendency. The above-mentioned actions shall be coordinated through NAVFAC EURAFSWA and the NAVFAC Atlantic archaeologist.

The U.S. Navy should also issue a policy statement to ensure that there is no unauthorized digging for cultural materials, minerals, or fossils.

While the Gricignano Support Site is private property under lease by the U.S. Navy, issues of public access to the archaeological park located near the western boundary of the installation should be addressed. In addition, cultural activities and educational programs should be developed to raise the awareness of the U.S. Navy community and the Italian host community of the significance of the area and the research that has been performed there.

### **Project Planning**

The entire Gricignano Support Site is considered to be archaeologically sensitive. As such, future development that may occur should consider potential impact on cultural resources. Any additional construction/excavation at the Support Site should be monitored by an approved archeologist.

It is also important to remember that the significance of an archaeological deposit is not always initially apparent, and that the archaeological potential of a deposit must be subject to continuous re-evaluation. Negative information (e.g., post-holes, ancient hoe-marks and the impressions of ancient plants) are as important to archaeological interpretation as tangible features and artifacts. Furthermore, the archaeological significance of a site is not limited to the finds or the features which appear within the immediate area of a trench. In order to maintain the context of these important rural features, it is imperative to follow the Superintendency's directive to avoid encumbering with site infrastructure the centuriation lines that are protected landscape both inside and outside the present U.S. Navy facility.

### 5.3.5

#### **CULTURAL RESOURCES OF THE LAGO PATRIA RECEIVER SITE**

##### **Onsite Cultural Resources**

*Architecture.* The Receiver Site was built after World War II; consequently, there are no above-ground cultural resources of any historical significance at the site (Figure 5-6).

*Archaeology.* The site, located within the territory of Giugliano in Campania, is situated in the coastal portion of the *Ager Campanus*, north of the major areas of settlement in Antiquity around the Bay of Naples and to the east of the more solid ground that constituted the heart of the *Terra di Lavoro*. The area was first drained for

agricultural purposes between 1539 and 1610 on a plan conceived by Don Pedro di Toledo, and most recently in 1922 under the administration of the *Opera Nazionale dei Combattenti*. Previously, it was a swampy, malarial environment described disparagingly in ancient as well as more recent literature (*ignobilis et deserta palus*: 'unworthy and barren swamp'; Valerius Maximus, 1<sup>st</sup> century A.D.).

During the 2010 site visit, the land within the perimeter of the site was completely covered with cement and asphalt paving, buildings, and transmitter dishes. Visual survey/site inspection on June 19, 2002, within the perimeter of trenches open for cable construction revealed a sub-surface deposit of red sand 1.2 – 2.4 inches (3-6 cm) from the surface and a heavy, loamy gray sand at approximately 19.9 inches (50 cm) from the surface; no cultural resources were evident. Officials at the site stated that no building goes down further than the 18-inch (46-cm) slab it rests on, and that the radar unit is fixed with stakes that extend 3.3 ft (1 m) below the slab.

### **Offsite Cultural Resources**

*Architecture.* There is a heavy concrete bunker building on the NATO property just to the north of the U.S. Navy facility. It is reported that a fasces (an emblem of bundled axes used by the Fascist regime as a symbol on many state buildings) is still fixed to an interior wall suggesting that this building dates at least to the 1940s.

To the northwest of the facility is land associated with the Villa Micillo, a *feudo* that has been divided among new land-owners. The villa seems to date to the late 19<sup>th</sup> century A.D. with a main residential structure and ancillary buildings to the north (carriage house and stalls). Other cultural resources have been found to the west near the present lakeshore, including the Masseria Pagliarone, a historic farm that can be dated back to the 18<sup>th</sup> century, and the Torre di Patria, a watchtower with a 16<sup>th</sup> century quadrangular plan, that lies across the lake in the territory of Castelvoturno.

*Archaeology.* The Receiver Site is at the southeastern edge of an area identified with the ancient city of Liternum. The remains of the archaeological zone along the edge of the lake are subject to *vincolo* (D.M.20-5-1994 and D.M.7-6-1995). Just to the northwest of the site is an archaeologically sensitive area flanking the southern side of the road that runs from the Via Domiziana at Lago di Patria to the intersection of the superhighway. Archaeological remains, including ceramics of the early Roman empire (1<sup>st</sup> to 2<sup>nd</sup> centuries A.D.), bricks, and other materials have been found on the surface. This area may be the site of a Roman villa or other settlement. There is an automatic *vincolo* for all cultural resources within 492 ft (150 m) of the edge of lakes and rivers under the '*Legge Urbani*' (D.L. 42/2004).

Significant archaeological survey and excavation has been performed in the property surrounding the U.S. Navy facility in advance of construction for the new NATO AFSOUTH/JFC complex. Several Late Roman (3<sup>rd</sup>-4<sup>th</sup> centuries A.D.) tombs have been discovered, in addition to a well that was filled with Roman amphorae. Fragments of black-glaze pottery have been found on the surface, as well as fragments of terracotta figurines, and most recently a large pool complex with lateral channels dated prior to the 2<sup>nd</sup> century B.C. has been excavated (*Soprintendenza Archaeologica NA*).

In the 1930s, ancient structures were noted to be in the vicinity of the Villa Micillo and partially buried by the Villa Micillo. Other cultural resources have been found in the area towards the present shoreline to the west of the base. They include archaeological materials of Roman date, including mosaic fragments and a Roman necropolis of *capuccina* tombs (terracotta tiles set on a base of stone). The ancient Via Domitiana runs up the coast roughly parallel to the modern highway.

## **Management Objectives and Recommendations for FGS-Italy Compliance**

### *Inventory/Survey*

*(FGS-Italy C12.2, C12.4)*

No further survey work is necessary within the confines of the Lago Patria facility, and there is no Italian list of historic sites for the facility.

### *Plans/Mitigation/Protective Action*

*(FGS-Italy C12.1, C12.4, C12.5, C12.6, C12.7)*

Because of the developed nature and small size of the facility, this User's Guide will suffice for the FGS-Italy requirements for a protection and preservation plan for the Lago Patria Receiver Site.

Any excavation shall be monitored by an archaeologist approved by the Archaeological Superintendency. This action shall be coordinated through NAVFAC EURAFSWA and the NAVFAC Atlantic archaeologist. The U.S. Navy should also issue a policy statement to ensure that there is no unauthorized digging for cultural materials, minerals, or fossils.

### **Project Planning**

Located in an area of high archaeological potential, plans should be made to limit further building or development of the site. If further construction is planned that includes any excavation, a detailed archaeological evaluation of the area should be conducted. This action should be coordinated through NAVFAC EURAFSWA, the NAVFAC Atlantic archaeologist, the U.S. Installation Commander, and the Italian Base Commander.

## PHYSIOGRAPHIC DESCRIPTION AND CLIMATE OF

### NSAND GAETA

**5.4**

#### PHYSIOGRAPHIC PROFILE

**5.4.1**

The city of Gaeta is on a promontory that encloses the northern end of the bay of Gaeta, approximately midway between Rome and Naples, in the province of Latina and the region of Lazio (Figure 5-7). The province fronts the Tyrrhenian Sea on a wide stretch of the Pontine Coast that is characterized by both rocky and sandy beaches. Green hills and mountain slopes jut above, behind, and around the Bay of Gaeta. The coastal resort town of Sperlonga, with sandy beaches and clear waters, lies to the north. Northeast of Gaeta is the city of Formia, which lies along major north-south highways and rail lines and may be considered Gaeta's sister-city 'on the mainland.' Gaeta's beaches of Serape, St. Agostino, San Vito, Arenauta, and Ariana make it a popular tourist resort during summer months.

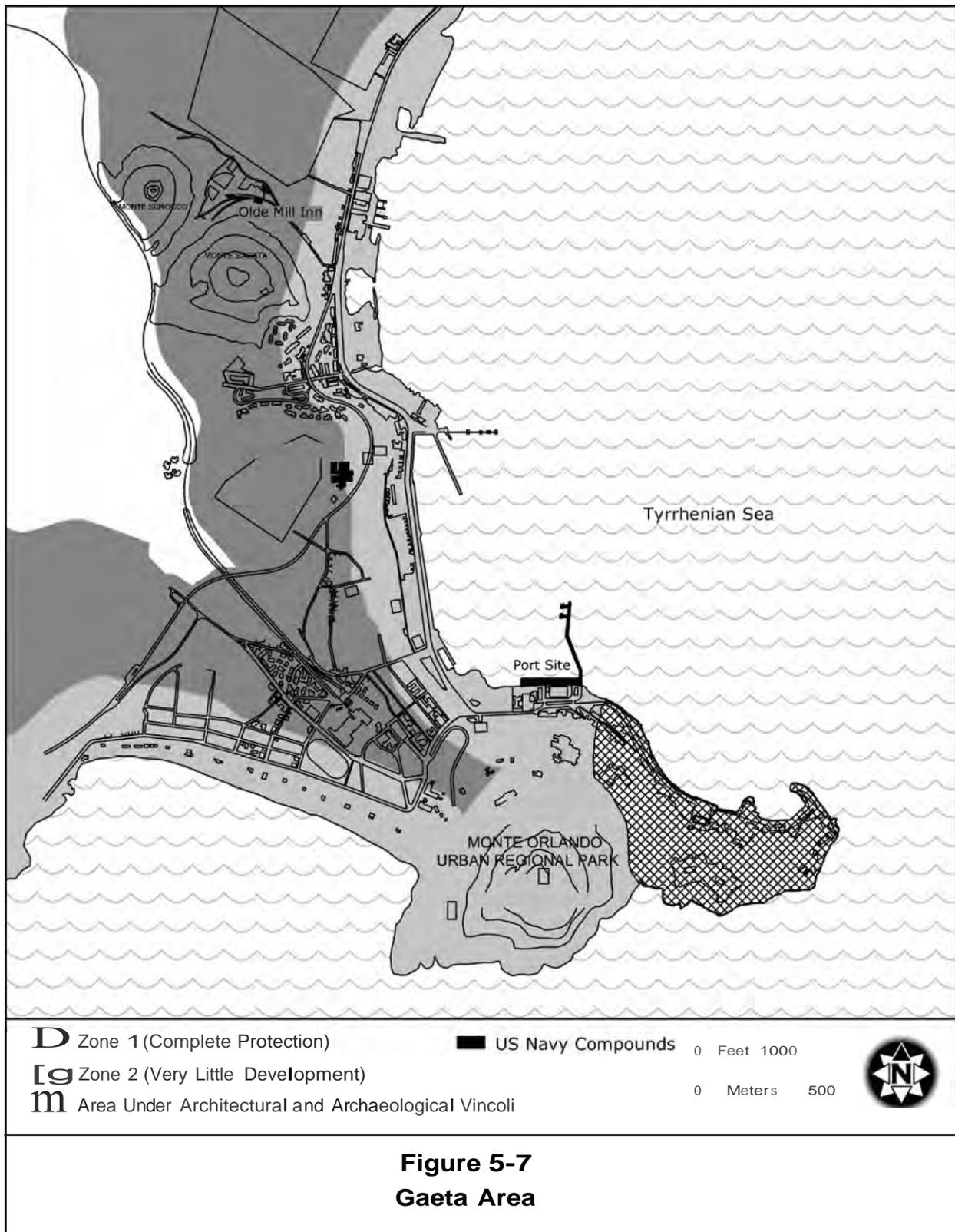
The facilities of NSAND GAETA include:

1. The Port of Gaeta Complex
2. The Olde Mill Inn

#### REGIONAL CLIMATE

**5.4.2**

The climate of Gaeta is typical of the Mediterranean with hot, dry summers and wet winters. The average annual temperature is 18°C (65°F). The average winter temperature is 11°C (52°F), while the average summer temperature is 25°C (77°F). Gaeta receives an average of 44 inches (112 cm) of rain a year, predominantly in the winter months.



**REGIONAL GEOLOGY****5.4.3**

The landscape of the Gaeta area is characterized by many outcrops of calcareous white bedrock. Differential erosion of the carbonitic bedrock produces many caves, pits, and tunnels. The carbonitic bedrock favors more xeric (i.e., adapted to a dry habitat) species. Dry conditions are prevalent near the coastline, where solar radiation is high, and steep slopes and highly permeable calcareous rocks retain little rainfall, even though the average yearly rainfall is high for Mediterranean standards.

The cape of Monte Orlando, where Gaeta is situated, is the sea-most extension of the Aurunci Mountains. These mountains are formed primarily of clear carbonatic rocks that originated in a shallow sea during the Cretaceous period (160 million years ago). The Aurunci Mountains run northwest to southeast, parallel to the main range of the Apennines.

**DEVELOPMENTAL PROFILE****5.4.4**

Gaeta is a highly developed seaport town with many historic, religious, monumental, and natural features. These features, including several beaches (Serape, St. Augustino, San Vito, Arenauta, and Ariana) make Gaeta a popular tourist area. Medieval features found in the Sant'Erasmus area of Gaeta include lanes, footpaths, a large castle, Norman bell towers, and ancient walls.

The Port of Gaeta Complex is a completely developed area along the coast of the bay. The area consists of permanent buildings and facilities with a few temporary structures. The site is mostly paved with a few landscaped green areas. Currently, the installation is the home of the Sixth Fleet Flagship USS Mount Whitney.

The Olde Mill Inn is approximately 1.5 miles (2.4 km) northwest of the Port of Gaeta Complex, providing recreational support for the local U.S. Navy personnel.

The development zones and protected areas are illustrated on Figure 5-7.

As part of operations associated with the NSAND GAETA, a spill response plan was developed to address potential problems associated with potential releases. The spill plan includes references to the natural and cultural resources in the area in order to aid in their identification and protection. The spill response plan also provides the users with contact information should a problem arise.

## NATURAL RESOURCES IN THE NSAND GAETA AREA

### 5.5

Vegetation of the general Gaeta area is characterized by a Mediterranean *macchia*, or coastal forest, on the coast that changes to holm oak (*Quercus ilex*) woods further inland. As the elevation increases, beech trees (*Fagus sylvatica*) become more abundant.

#### NATURAL RESOURCES OF THE OLDE MILL INN

#### 5.5.1

The Olde Mill Inn is the recreational area for NSAND GAETA, located off of Via S. Augustino (Figure 5-8). Facilities at the Olde Mill Inn, which is leased from the Leccese family, include sports fields, a picnic area, and an old olive mill, hence the name of the complex (Photographs 5-9 and 5-10).



**Photograph 5-9: Sports fields and picnic areas of the Olde Mill Inn facility.**



**Photograph 5-10: Recreational Building of the Olde Mill Inn.**

### **Flora / Fauna**

The area is mostly developed with baseball, soccer, and volleyball fields and landscaped with native and non-native trees and shrubs. The area was previously used for agricultural fields and orchards, as indicated by the presence of carob, olive, and lemon trees. The onsite facility building contains an old olive press.

The site is completely surrounded by the town of Gaeta. No unique or sensitive natural resources occur in the vicinity of the Olde Mill Inn.

## **Management Objectives and Recommendations for FGS-Italy Compliance**

### *Protected Species and Habitats*

*(FGS-Italy C13.1, C13.2, C13.4, and C13.5)*

Due to the developed nature of the site, no protected species or habitats are found on site; therefore, no species list or surveys are required.

### *Natural Resources Management Plan*

*(FGS-Italy C13.3 and C13.4)*

Due to the developed nature of the site with only areas of landscaped vegetation, this User's Guide will be sufficient to meet the FGS-Italy requirements for a Natural Resources Management Plan. However, information and guidance identified in this guide should be consulted and periodically updated.

### *Ground Maintenance and Protection of Habitats*

*(FGS-Italy C13.1, 13.6, C13.8, and C13.9)*

A list of the vegetation used for landscaping and its associated maintenance schedule (e.g., watering, mowing, pruning) should be kept on file at NSA Naples and NAVFAC Atlantic.

### *Personnel Experience and Training*

*(FGS-Italy C13.7)*

An individual with a university degree in an environmental field (e.g., environmental science, biology, forestry, agriculture, or environmental planning) is considered

optimal for managing natural resource issues. If the individual managing natural resources is not trained in this field, he/she should contact NAVFAC Atlantic for guidance. Training opportunities are described in Chapter 4.

#### *Protective Cover and Erosion Control*

*(FGS-Italy C13.10)*

Landscaping should utilize native, drought-tolerant plants, whenever possible. Use of native species will reduce maintenance and watering requirements. Vegetative cover should be maintained on exposed areas to minimize erosion and control dust.

All trees at the Olde Mill Inn should be maintained for their shade and aesthetic value. Arizona cypress (*Cupressus arizonica* Greene) has been used as a windbreak at the parking lot entrance. The Arizona cypress is not native to Italy and should not be used in the future. Suggested species for windbreaks include the native Italian cypress (*Cupressus sempervirens*) and the native Phoenician juniper (*Juniperus phoenicia*). Local nurseries should be contacted to determine availability of native plant species.

#### **Project Planning**

No natural resource planning issues.

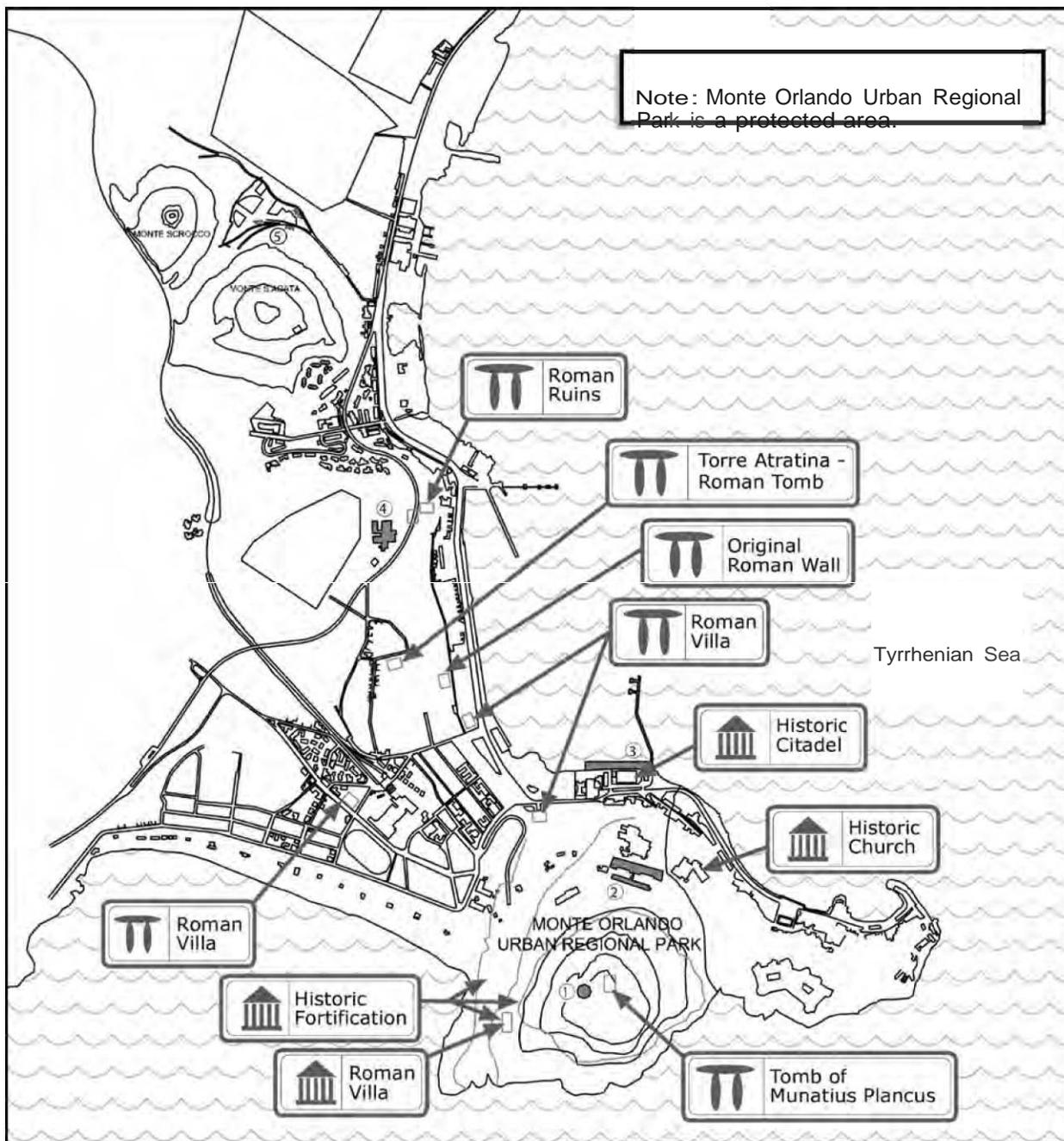


Figure 5-8

Development Constraints: NSA Gaeta

**NATURAL RESOURCES OF THE PORT OF GAETA COMPLEX**

**5.5.2**

The Port of Gaeta Complex is located on the Bay of Gaeta (Figure 5-8) and is ceded for use by the Italian Ministry of Defense (Photographs 5-11 and 5-12). The port is the homeport for the flagship of the Sixth Fleet, the USS Mount Whitney.



**Photograph 5-11: View of the pier at the port of NSAND GAETA.**



**Photograph 5-12: Administration facility of the NSAND GAETA.**

### **Flora / Fauna**

The Port of Gaeta Complex is fully developed and few natural resources are present (native and non-native landscaping). However, the area is within 984 ft (300 m) of the shoreline and is therefore protected under the Galasso Law (now within the *Testo Unico*) (Chapter 2, Appendix D).

Although the Port of Gaeta Complex is located in an urban environment within a heavily utilized public and commercial harbor, the marine environment is a sensitive natural resource.

## **Management Objectives and Recommendations for FGS-Italy Compliance**

### *Protected Species and Habitats*

*(FGS-Italy C13.1, C13.2, C13.4, and C13.5)*

Due to the developed nature of the site, no protected species or habitats are found on site; therefore no species list or surveys are required.

### *Natural Resources Management Plan*

*(FGS-Italy C13.3 and C13.4)*

Due to the developed nature of the site, this User's Guide will be sufficient to meet the FGS-Italy requirements for a Natural Resources Management Plan. However, information and guidance identified in this guide should be consulted and periodically updated.

### *Ground Maintenance and Protection of Habitats*

*(FGS-Italy C13.1, 13.6, C13.8, and C13.9)*

Since there are very few landscaped areas within the US Navy facilities at the Port of Gaeta, ground maintenance is minimal. The coastal marine habitats present within the Gulf of Gaeta should be protected according to standard operating procedures for U.S. Navy facilities and vessels operating within or anchored in a harbor.

### *Personnel Experience and Training*

*(FGS-Italy C13.7)*

An individual with a university degree in an environmental field (e.g., environmental science, biology, forestry,

agriculture, or environmental planning) is considered optimal for managing natural resource issues.

If the individual managing natural resources is not trained in this field, he/she should contact NAVFAC Atlantic for guidance. Training opportunities are described in Chapter 4.

#### *Protective Cover and Erosion Control*

*(FGS-Italy C13.10)*

Protective cover and erosion control are not necessary in the Port of Gaeta Complex due to the absence of natural resources. Activities on the pier should be planned to minimize any impacts on the adjacent waters.

Due to its developed nature and location within an urbanized area and heavily utilized public and commercial harbor, there are no sensitive natural resources within or in the vicinity of U.S. Navy facilities at the Port of Gaeta. Activities on the pier should be planned to minimize any impacts to the adjacent waters.

## 5.6 CULTURAL RESOURCES IN THE NSAND GAETA AREA

The cultural history of Gaeta and Naples are very similar, because prior to modern times Gaeta formed part of the northern boundary of the Kingdom of Naples. The earlier history of each area, before the Roman domination that began in 4<sup>th</sup> century B.C., distinguishes the character of the two areas.

While Gaeta is not known as a major stage for cultural developments in prehistoric and proto-historic times, the picture that scholars have been able to form to date does set the evidence that is known in the context of wider developments in Italy, including the earliest appearance of mankind in the Italian peninsula, the development of settled life in the Neolithic period, the development of chiefdom socio-political structure and eventually the formation of larger urban centers and perhaps even rudimentary forms of the state. Some of the earliest human remains found in Italy were discovered on Monte Circeo, just north of Gaeta. They are from two caves, the Grotta Guattari (discovered in 1939 by the famous Italian prehistorian Alberto Carlo Blanc) and the Grotta Beuil (discovery 1986), which date respectively between 80,000 – 55,000 and 35,000 – 33,000 year before present, and they represent *Homo sapiens neanderthalensis*, or Neanderthal man, a species of hominid that is close to, but not identical to our own species, *Homo sapiens sapiens*. Both species made tools and could survive in a variety of

climatic conditions, but our species seems to have had greater cognitive abilities and was able to engage in symbolic thinking and expression (we have art, the Neanderthals did not). Without providing definitive evidence, these discoveries do raise the question of whether or not both hominid species co-existed in this part of Europe, at least for a while.

An intriguing series of caves marks the coastline from Monte Circeo to the promontory of Gaeta, and many are likely to have been frequented during the Würm glaciation (the maximum extent occurred about 18,000 years ago) when the sea-level was significantly lower, possibly up to 492 ft (150 m) in some places, and the present sea-side cliffs were inland land-forms. Closer to the Gaeta area, research by A.D. Blanc and more recent scholars (Guidi 1991) has discovered Middle and Upper Paleolithic age frequenting of the Grotta di S. Agostino (80,000 – 30,000 B.C.), a Middle Bronze Age presence on the beach area nearby, and early Iron Age (mid-tenth through early-seventh century B.C.) frequenting of the Grotta dell'Arenauta. Not all such evidence for a human presence implies that people actually lived permanently in these locations; rather, it seems more likely that at least the latter site served as a station along routes of pastoral transhumance (long-distance shepherding) that characterized the rural economy of much of central Italy even unto recent times. Recent archaeological work along the shoreline suggests that relevant archaeological sites may lie today beneath the shallow waters along the coast,

which covered them as the sea rose to its present levels.

Archaeological remains found along the coast of the Bay of Gaeta beyond Formia to the town of Minturno, particularly at the archaeological site of Monte Argento point to the development of large centers of population that gave the region a nascent identity starting in the first half of the first millennium B.C. (see Guidi, Pascucci, Zarattini 2002). This kind of regionalism is a hallmark of southern Italy, which was a mosaic of peoples from the 8<sup>th</sup> century B.C. to the time of Roman domination. Both the Bay of Naples and the Bay of Gaeta were home to important ports in Roman times, and both are rich in the ruins of Roman luxury villas, some of which were connected with the most prominent families and figures of Roman history. Having a villa along this coast was important for the high-minded and powerful figures mentioned in the letters of the orator Cicero and other Latin authors, and contact with Hellenic culture in this region gave a direct outlet for philosophers and others who cultivated the contemplative yet social lifestyle which the Romans referred to as *otium*. Gaeta became the home of and final resting place of important Romans including the Consul L. Sempronius Atratinus (73 BC to 7 A.D.) and L. Munatius Plancus (died 1<sup>st</sup> century A.D.), the Roman General who founded the cities of Lyon in France and Basel in Switzerland and who proposed to the Roman Senate in 27 B.C. that the title 'Augustus' be given to the young Octavian, in effect making him Rome's first emperor. Their monumental tombs, called *mausolea*, are still visible in the landscape (decorative elements from

the Mausoleum of Atratinus were built into the bell-tower of the city's cathedral).

Shipping was an important part of the Roman economy, and ports along Tyrrhenian coast received agricultural goods from far-away places, such as Egypt and Spain. Gaeta was an ideal site for port development because of its protected bay, and like other ports, such as Terracina, it was known to have been restructured during the reign of the Roman emperor Antoninus Pius (mid-2<sup>nd</sup> century A.D.). This emperor and his wife Faustina also had their villa at Gaeta. A portion of the so-called 'Rose of the Winds' monument, at base of a column that indicated wind direction, dates back to this period and is known to have come from Gaeta (Gasperini 1996).

Gaeta became part of the Eastern, or Byzantine, Empire following the invasion of Italy by the Emperor Justinian's general Belisarius in 535 A.D. After the fall of the Byzantine control in the western Mediterranean, Gaeta remained an independent duchy (the palace of Hypate Docibile I, the Duke of Gaeta from 867 to 906, remained intact until the city was bombed in 1943; remains may be seen in Via Rosmini). In the 10<sup>th</sup> and 11<sup>th</sup> centuries A.D., Gaeta's flourishing cultural life benefited greatly from trade with the east, and likewise the city became more and more fortified. At the same time, a thriving and dense city grew up around the base of Monte Orlando and along the entire peninsula.

During the later Middle Ages, Gaeta's strategic location worked to its disadvantage as it became the center of conflict between the Pope to the north and the Holy Roman Empire to the south, with Gaeta subject to a bitter siege by Pope Gregory IX in 1229. The scheming of Pope Innocent IV with the French set Gaeta under the control of Charles of Anjou, the ruthless brother of St. Louis of France. Due to its strategic location, Gaeta was frequently under siege and the city's fortifications were constantly being improved. In the late 14<sup>th</sup> and early 15<sup>th</sup> centuries, Gaeta was the favorite seat of King Ladislao, who briefly moved the royal court from Naples to Gaeta.

Further internecine war and intrigue led to the French loss of Gaeta in 1435 and the rest of southern Italy in 1442 to the Spanish house of Aragon. The Aragonese arrival coincided with the rise of Renaissance culture, which is best seen in Gaeta in the convent of Monte Spaccato and a few other small churches. During the Renaissance, Gaeta was a city of moderate intellectual and artistic importance in the wider context of Neapolitan culture. Works by Italian and Flemish artists, such as G. Filippo Criscuolo (a Gaeta native), Scipione Pulzone, and Quentin Metsys, may be seen in several churches around the city or the principal museum of religious art, the Museo Diocesano (see Fronzuto 2001, Granata 2004, and Tallini 2001). Gaeta proudly boasts that it is the native city of the explorer Giovanni Cabotto (John Cabot), who is recognized as the first European explorer since the Vikings to reach the northern regions of North America, when he arrived, most

likely in Newfoundland, in 1497 (see *Tempo di Caboto* 1997).

Gaeta, like Naples, remained a pawn in the struggles between the three most prominent families in Italy: the Sforza, the Medici, and the Della Rovere, and as a result the French king Charles VII was able to conquer Gaeta briefly in 1495. The House of Aragon retook Gaeta in 1496, and in 1504 the city, along with the rest of the Kingdom of Naples, was transferred to Spanish rule. During the 16<sup>th</sup> and 17<sup>th</sup> centuries, southern Italy groaned under heavy taxation and conservative authoritarian rule that created a stifling artistic and intellectual atmosphere. Liberation from Spain came with the Treaty of Utrecht in 1713 but Gaeta, as part of the Kingdom of Naples, was awarded to Austria. When the Austrians were defeated at Bitonto in 1734, the kingdom then came under the rule of Charles III of Bourbon (or 'Borbone' in Italian) and it was known as the Kingdom of the Two Sicilies. The Bourbon reputation for misrule in late 18<sup>th</sup> and 19<sup>th</sup> centuries, which is due in part to the ambitions of northern European powers, has obscured many of their earlier virtues.

The French Revolution prompted inevitable reaction in Gaeta, as elsewhere in Europe, and Gaeta was occupied briefly by the French under General Rey. In 1806, after the French deposed the Bourbon crown at Naples, Gaeta was conquered again. With the final defeat of Napoleon in 1815, Gaeta fell once again, this time to the Austrians, and the Bourbon monarchy was restored to the throne in

Naples. Predictably, further fortifications were added to the defenses of Gaeta. When the Bourbons were restored to power they quickly instituted a campaign to suppress personal freedoms, and by the mid-19<sup>th</sup> century the kingdom was notorious for its squalor, corruption, and persecution of perceived enemies.

Given this repressive atmosphere, it is no surprise that Giuseppe Garibaldi and his Thousand Volunteers received little resistance from the populace when, following their military successes in Sicily, they landed on the mainland near Reggio Calabria in 1860 and conquered the Bourbon kingdom, with the exception of Gaeta, in two months. Garibaldi then ceded the Kingdom of the Two Sicilies to the Piedmontese king, Victor Emmanuel, at Teano, not far inland from Gaeta, thus creating the present Italian state. After the fall of Naples, the Bourbon King Francis II fled to the fortresses at Gaeta. From November 1860 to February 1861 the area was besieged by up to 60,000 Piedmontese soldiers. After extremely severe bombardments, the city and its 11,916 soldiers capitulated on 4 February 1861. Within the new, unified Italy, Gaeta continued to function throughout the 19<sup>th</sup> century as a major military center.

Few major developments occurred in Gaeta through the end of World War I. It remained a military and naval base with a small fishing industry. Although Mussolini instituted a major program to further industrialize and modernize the south of Italy, which included vast public works projects in Naples, similar efforts are not evident in Gaeta. Before

and during World War II, Gaeta remained a military center. A military prison was constructed on Monte Orlando, and the tomb of L. Munatius Plancus was even used for a navigational beacon. As the Allies began to win the war and came closer to Gaeta, the city was bombed frequently. Minturno to the south was the scene of a major battle. After the war Gaeta remained as a fishing village, tourist center, and military and naval base. Since 1967, Gaeta has served as the homeport for the flagship of the U.S. Navy's Sixth Fleet.

### **Archaeology at Gaeta**

The archaeology of Gaeta consists primarily of remains from Roman antiquity. Gaeta was a resort center for the aristocracy of Rome both in Late Republican and Imperial times (late Second century B.C. through the 2<sup>nd</sup> and 3<sup>rd</sup> centuries A.D.), and many famous personalities retreated to villas here. Monte Orlando itself is an important archaeological site both in terms of antiquity and historical archaeology. This was the location of *Plancianum*, the villa of L. Munatius Plancus whose monumental tomb dominates the profile of the mountain. Cisterns, walls, and other features of this villa may be seen on the western slopes above the steep drop to the sea, and it has remained through the centuries as a defining element of the mountain's topography. A similar tomb, that of Lucius Sempronius Atratinus, is found in the low-lying area to the northwest, about half-way between Monte Orlando and Monte S. Agata, and other remains are found throughout this area, sometimes in the context of functioning

complexes, such as the hotel Villa Irlanda.

Although no evidence has appeared to date, Monte Orlando and other nearby hills could have rock shelters and caves similar to those on Monte Circeo, just north of Gaeta, where evidence for Early Man has been found, and locations described above, where evidence for pre- and proto-historic occupation in later periods has been found. Prehistoric pottery has been found on the summit of Monte Orlando around the tomb of L. Munatius Plancus, and prehistoric pottery also suggests that there may be a site somewhere on the spur called the Montagna Spaccata, but systematic exploration remains to be done.

It is clear that the harbor of Gaeta, the coastline along the so-called 'Riviera di Ulisse' along the coast of the Gulf of Gaeta, the bottom of the gulf itself, and the shores on the seaside of Monte Orlando are all likely to hold a wealth of archaeological materials. In fact, an ancient anchor has already been recovered from the harbor of Gaeta (Gargiullo and Okeley 1993) and several recent initiatives coordinated by the Soprintendenza per i Beni Archeologici del Lazio are focused on the development of a map of known underwater remains both in the shallow waters around the Bay of Gaeta and in deeper locations, such as those around the Pontine islands (for a discussion of Roman shipwrecks found just off the island Ventotene, see [http://www.imagoromae.com/n02209\\_IT.ashx](http://www.imagoromae.com/n02209_IT.ashx)).

The present shoreline where the U.S. Navy flagship docks has been extended significantly into the Gulf of Gaeta, and therefore, earlier submerged remains may, in fact, be lying beneath a notable layer of fill material.

### **Later Monuments**

Gaeta, as an urban center, dates from Late Antiquity and the Middle Ages. There are actually two historical centers, one at the end of the peninsula known as S. Erasmo and the other in the area of Porto Salvo (for a brief 30 years at the end of the 19<sup>th</sup> and the beginning of the 20<sup>th</sup> centuries this latter area was a separate city called Elena). In addition to its archaeological resources, the architectural monuments of Gaeta are vast and varied despite damage from Allied bombing in 1943. The section of the city on the promontory east of Monte Orlando is a well-preserved medieval city that also contains excellent examples of Renaissance, Baroque, and Rococo buildings, including the Cathedral, dedicated to S. Erasmus and S. Marcellinus. The Sanctuary of the Holy Trinity on the Montagna Spaccata, and to the northwest of Monte Orlando, one finds the thirteenth-century Gothic Abbey of the Holy Spirit. Since the Middle Ages, Gaeta has always been a citadel, and the city's extensive fortifications are well-preserved examples of their type in each historical period, including the Angevin-Aragonese castle, and a host of Bourbon-era batteries and powder magazines.

Many architectural *vincoli* for Gaeta exist, and they include all fortifications built through 1860, and numerous houses,

palaces, and churches in the medieval city and along the waterfront. U.S. Navy-operated facilities in publicly built structures older than 50 years, such as Caserma S. Angelo, are also subject to *vincolo*.

### 5.6.1

#### CULTURAL RESOURCES OF THE OLDE MILL INN

##### On-Site Cultural Resources

*Architecture.* The Olde Mill Inn facility consists of a sports fields and a converted olive mill (Figure 5-7). The mill itself is approximately 800 years old, and while it is currently used as part of the recreational facility, the stone olive press has been left intact.

*Archaeology.* The Olde Mill Inn is located in a swale between Colle S. Agata and Monte Scrocco, with alluvial soil that has been graded and landscaped extensively. The only accessible deposit is in the western area of the site. There is a layer of very reddish-brown topsoil (approximately 20 inches [50 cm] thick), beneath which there is a layer of grayish sandy brown soil. On the northern side of this excavation, a portion of soil, roughly 8 ft (2.5 m) wide, appears in the middle of this lower stratum. It appears to be stained dark brown, perhaps by oil. This does not seem to be a significant cultural deposit. Fragments of reddish coarseware and one green-glazed ceramic (medieval) were recovered from the uppermost stratum of soil. The soil and cultural material within the area of this site seems to be entirely the result of alluvial deposition from the surrounding hills outside the complex.

Therefore, it is unlikely that the area has significant archaeological potential.

### **Off-Site Cultural Resources**

*Architecture.* Located at some distance from the historic center of Porto Salvo, there are no architectural resources of note within 0.6 miles (1 km) (Figure 5-7).

*Archaeology.* Portions of walls of Roman imperial date and portions of rooms with roof vaulting are found within 0.6 miles (1 km) to the southeast. Not far to the north along the coastal 'Riviera di Ulisse' remains of Roman date seem to be present within the present hotel complex 'Villa Irlanda'. Given the materials found in the alluvial deposits on the complex, the surrounding hills possess some archaeological potential.

### **Management Objectives and Recommendations for FGS-Italy Compliance**

#### *Inventory/Survey*

*(FGS-Italy C12.2, C12.4)*

No further survey work is necessary within the confines of the Olde Mill Inn complex, and there is no Italian list of historic sites for the site.

#### *Plans/Mitigation/Protective Action*

*(FGS-Italy C12.1, C12.4, C12.5, C12.6, C12.7)*

Because of the nature of the site and the lack of resources found to date on the recreational facility, this User's Guide

will suffice for the FGS-Italy requirement for a protection and preservation plan for the Olde Mill Inn complex.

The U.S. Navy should issue a policy statement to ensure that there is no unauthorized digging for cultural materials, minerals, or fossils.

If the site is expanded to include any part of Monte Scrocco to the northwest, then an archaeological survey by an approved archaeologist, coordinated through the U.S. Installation Commander and the Italian Base Commander, should be conducted prior to excavation and construction.

## 5.6.2

### CULTURAL RESOURCES OF THE PORT OF GAETA COMPLEX

#### On-Site Cultural Resources

*Architecture.* Located at the foot of Monte Orlando in the so-called port of San Antonio Abate, the pier is of new construction (Figure 5-8). Construction of the pier was first begun on March 7, 1915, for the use by submarines of the Italian Royal Navy, but by 1927 it served as the *Stazione Regia Caccia Torpediniere* for antisubmarine surface vessels.

*Archaeology.* The pier itself contains no known archaeological resources. The shoreline has been extended out into the Gulf of Gaeta through backfill, burying any potential formerly submerged archaeological resources under the recent stratum.

### **Off-Site Cultural Resources**

*Architecture.* Within 0.6 miles (1 km) of the pier are most of the major architectural monuments of Gaeta including castles, churches, historical fortifications, and the Mausoleum of Munatius Plancus. Directly outside of the pier is the Batteria S. Antonio and a 16<sup>th</sup> century gate (begun in 1516 by Charles V of the Habsburg dynasty) which joined the section of Gaeta's fortifications known as the *Fronte di Mare* with that known as the *Fronte di Terra*. The L-shaped entrance was a special feature of the gate's strategic design, and it now serves as a chapel that is subject to a *vincolo*. To the west is a second entrance gate, the Porta dell'Avanzata constructed in the second half of the 18<sup>th</sup> century by Charles III and rebuilt in 1811.

*Archaeology.* Within 0.6 miles (1 km) of the pier are most of the major archaeological monuments of Gaeta, including the Mausolea of L. Munatius Plancus and L. Sempronius Atratinus. Along the road between the two gates described above there are a series of apsidal niches in *opus reticulatum* facing, which together with several cisterns belong to a complex of Roman imperial date. The remains of a large villa ascribed to the Roman Emperor Antoninus Pius (2<sup>nd</sup> century A.D.) are said to lie between Via Firenze and Gaeta's current municipal building. In addition, the harbor of Gaeta and the shores on the seaside of Monte Orlando probably have a wealth of archaeological materials. The *Soprintendenza per i Beni Archeologici del Lazio* is currently working on a mapping of

known underwater resources in the Gulf of Gaeta and along its shore.

### **Management Objectives and Recommendations for FGS-Italy Compliance**

#### *Inventory/Survey*

*(FGS-Italy C12.2, C12.4)*

No further survey work is necessary within the confines of the U.S. Navy pier facilities, and there is no Italian list of historic sites for the pier.

#### *Plans/Mitigation/Protective Action*

*(FGS-Italy C12.1, C12.4, C12.5, C12.6, C12.7)*

Because of the developed nature of the site and the lack of resource found to date, this User's Guide will suffice for the FGS-Italy requirement for a protection and preservation plan for the Port of Gaeta complex.

The U.S. Navy should issue a policy statement to ensure that there is no unauthorized digging or diving for cultural materials, minerals, or fossils.

If the facility is expanded to include any part of citadel to the south, then measures should be taken, in consultation with the Architectural Superintendency via the U.S. Installation Commander and the Italian Base Commander, to ensure the protection and preservation of the citadel.

## ENVIRONMENTAL EFFECTS ABROAD

## 5.7

This section provides Navy guidance for evaluating data and documenting the environmental effects of a proposed project at overseas Navy installations. It is divided into three subsections:

**Section 5.7.1** Provides background information on the general framework for implementing Environmental Effects Abroad project reviews. The definitions used in this section are explained.

**Section 5.7.2** Describes the process to be followed by U.S. Installation Commanders for adequately documenting projects or actions located within the territory of a foreign nation.

**Section 5.7.3** Provides information to assist the U.S. Installation Commander in evaluating the significance of environmental effects of a project or action.

### IMPLEMENTING ENVIRONMENTAL EFFECTS ABROAD PROJECT REVIEWS 5.7.1

The 2007 OEBGD and the 2008 FGS-Italy include no information regarding the requirements for implementing Environmental Effects Abroad project reviews (formerly included as Chapter 17 of the FGS). However, procedures for evaluating the environmental effects of actions undertaken outside the U.S. are still applicable to Navy installations located outside of the U.S. as outlined in the following guidance:

- EO 12114 (Environmental Effects Abroad of Major Federal Actions), January 4, 1979;
- DoD Directive 6050.7 (Environmental Effects Abroad of Major DoD Actions), March 1979;
- Environmental and Natural Resources Program Manual (OPNAVINST 5090.1C), 30 October 2007; and

---

*The U.S. Installation Commander should institute the Environmental Effects Abroad process into the planning of all future projects on the installation to ensure sound planning and environmental practices.*

---

What is meant by environmental effects? The environment is defined as the natural and physical environment. Impacts on social, economic, and/or other environments are excluded from consideration. In other words, the focus of environmental analysis is on nonhuman environmental effects--geology and soils, water, vegetation, wildlife, air, noise, and cultural resources rather than population growth, land use, property values, or other social or economic issues. Table 5-3 provides more definitions of relevant terms.

**Table 5-3: Environmental Effects Abroad Definitions**

**Environment:** The natural and physical environment. It excludes social, economic and/or other environments.

**Environmental Review (ER):** An analysis of the likely environmental consequences of a major federal action in a foreign nation that is to be considered by DoD components in the decision-making process. An ER will be prepared either unilaterally by DoD or in conjunction with another U.S. agency, but does not include foreign government participation.

**Environmental Study (ES):** An analysis of the likely environmental consequences of a major federal action in a foreign nation that is to be considered by DoD components in the decision-making process. An ES will be prepared by the U.S. with one or more foreign nations, or by an international body or organization in which the U.S. is a member or participant.

**Exclusive Economic Zone (EEZ):** The area extending seaward from the low water mark on a foreign nation's coast to 200 nautical miles (370.4 kilometers) offshore. Within this area, a foreign nation controls fishing rights, marine protection, and scientific research.

**Exempt Action:** A category of actions identified in EO 12114 as exempt from review because of security or emergency considerations.

**Foreign Nation:** Any geographic area (land, water, and airspace) that is under the jurisdiction of one or more foreign governments; any area under military occupation by the U.S. alone or jointly with any other foreign government; and any area that is the responsibility of an international organization of governments. A foreign nation includes contiguous zones, fisheries zones, and/or EEZs regardless of recognition the U.S.

**Impacts:** Synonymous with effects, impacts can be categorized as direct, indirect, and cumulative.

**Direct Impacts:** Caused by an action and occurring at the same time and place as the action.

**Indirect Impacts:** Caused by an action although occurring later in time or farther removed in distance from the action; they are still reasonably foreseeable.

**Cumulative Impacts:** Incremental impacts of an action when added to other past, present, and reasonably foreseeable future actions regardless of whether the U.S. or the host nation undertakes such action.

**Global Commons:** Geographical areas that are outside the jurisdiction of any nation, and include the oceans outside territorial limits and Antarctica. Global commons do not include contiguous zones and fisheries zones of foreign nations.

**Major Federal Action:** Any project in excess of \$25,000 construction value or \$75,000 repair value or any action that could have a significant impact on the quality of the environment funded directly by the U.S. government. It does not

include actions in which the U.S. participates in an advisory, information gathering, representational, or diplomatic capacity, nor does it include actions taken by a foreign government in a foreign country in which the U.S. is a beneficiary of the action or actions in which foreign governments use funds derived indirectly from the U.S. These thresholds differ slightly from those adopted by the Mixed Commission.

**Mitigating Measures:** Actions that reduce the severity or intensity of impacts of other actions, including:

- a. Avoiding the impact altogether by not taking a certain action or parts of an action or by moving the project location.
- b. Minimizing impacts by limiting the degree or magnitude of the action and its implementation, for example by adjusting site layout.
- c. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- d. Reducing or eliminating the impact over time by monitoring, maintaining, and/or replacing equipment or structures so that future environmental degradation due to equipment or structural failure does not occur during the life of the action.
- e. Compensating for the impact by replacing or providing substitute resources or environments.

Action proponents are encouraged to consider avoidance as the preferred mitigation measure.

**Negative Decision:** A record of decision not to prepare an ER, ES, OEA, or OEIS and the facts supporting the decision.

**Overseas Environmental Assessment (OEA):** A concise analysis to assist DoD components in determining whether there is potential for significant environmental impacts associated with the proposed action and whether an overseas environmental impact statement (OEIS) is required.

**Overseas Environmental Impact Statement (OEIS):** An analysis of the likely environmental consequences of a proposed major federal action. An OEIS is to be considered by DoD components in deciding whether to approve the proposal.

**Prohibited or Strictly Regulated Toxic Product, Effluent or Emission:** These materials are prohibited or strictly regulated because their toxic effects on the environment create a serious public health risk:

- Any chemical substance or mixture subject to an order under 15 USC Sec. 2606.
- Any toxic water pollutant as defined in section 33 USC Sec. 502(13) and regulated under Sec. 1317.
- Any hazardous air pollutant under 42 USC Sec. 112.

- Any extremely hazardous substance described in 42 USC Sec. 11002(a)(2).
- Any of the following if not previously prescribed: Acrylonitrile, Arsenic, Beryllium, Asbestos, Benzene, Cadmium, Isocyanates, Mercury, Polychlorinated Biphenyls, and Vinyl Chloride.

**Resources of Global Importance:** Natural or ecological resources of global importance designated by the President, or in the case of such a resource protected by international agreement binding on the U.S., designated by the Department of State. For the purposes of this Guide, resources of global importance shall include, but not be limited to, threatened species on the IUCN Red List and cultural resources on the World Heritage List.

**Significance:** Significance of an impact is determined by its context and intensity. Context is identified by the area or processes affected (affected region, affected interests, the locality, and duration of effects--short- or long-term). Intensity refers to the severity of impact as derived from evaluating the magnitude of effects on public health or safety, unique characteristics of the geographic area, controversy of environmental effects, risk analysis, precedents, relationship to other actions, cumulative impacts, and the potential for violating laws imposed to protect the environment.

EO 12114 is the driving force behind the U.S. Navy requirement to perform environmental analysis at overseas locations. It requires responsible officials of Federal agencies to be informed of pertinent environmental considerations and to take such considerations into account in authorizing and approving major Federal actions having significant effects on the environment outside the geographic borders of the U.S.

---

*It is the spirit of the EO that is most important. It requires a process that allows environmental analysis to be incorporated early in the planning stages of a project. This helps to ensure sound planning practices, adequate scope definition, and appropriate project funding, and that decision makers are well informed of potential impacts.*

---

The level of environmental documentation is dependent upon whether the proposed action occurs within a foreign territory or in the global commons, whether the proposed action would have significant impacts, and whether a

foreign government participates in the proposed action. The range of environmental documentation includes:

- Negative Decision,
- ER,
- ES,
- Overseas Environmental Assessment (OEA), or
- Overseas Environmental Impact Statement (OEIS).

Most relevant to the U.S. Installation Commander at NSA Naples and NSAND GAETA is the Negative Decision, ER, and ES. The OEA or OEIS, if required, likely would be initiated by the Sixth Fleet, not the U.S. Installation Commander, for actions occurring in the Global Commons. Each level of environmental review documentation is discussed below.

### **Negative Decision**

A Negative Decision is a record of decision not to prepare an ER, ES, OEA, or OEIS, and includes the facts supporting that decision. Negative Decisions are internal Navy documents for use by the decision maker and do not usually (but may) involve formal contact/consultation with the host nation. The negative decision is retained in the project files after signature by the PWO or the U.S. Installation Commander. A Negative Decision includes a concise summary of the proposed action, affected environment, and potential environmental impacts and should be prepared using the ROND form (ROND and EIA Checklist, Revised Draft February 2008 as discussed in Section 4.2, included in Appendix J).

### **Environmental Review**

An ER contains a concise survey of the likely environmental issues associated with a proposed project/action where its environmental impacts

occur in the territory, territorial sea, contiguous zone, or fishery zone of another country. As an internal document, it is prepared unilaterally by the U.S. or in conjunction within another federal agency for use only by the decision maker. The preparation and review of an ER does not involve formal contact/consultation with the host nation.

The contents of an ER should be based on reasonably available information, discussing issues analytically and in enough depth to allow a reasoned decision on the important issues. Note that an ER should normally not exceed 25 pages in length. After the U.S. Installation Commander or PWO signs the ER, it is forwarded with the project documentation NAVFAC EURAFSWA to the Chief of Naval Operations Environmental Readiness Division (CNO N45) for approval.

### **Environmental Study**

An ES is a bilateral or multilateral environmental study of the likely environmental consequences of a proposed project where impacts occur in the territory, territorial sea, contiguous zone, or fishery zone of another country. It may be prepared by the U.S. and one or more foreign nations or by an international body or organization in which the U.S. is a member or participant. Such a study is used by Navy decision makers in determining whether or not to approve or participate in the proposed project/action.

Generally more detailed than an ER, an ES may be up to 50 pages in length. It should provide a decision maker with sufficient information to make an informed decision on the environmental impacts involved in a project/action before proceeding. Coordination occurs between the U.S. Department of State (DoS), the Assistant Secretary of the Navy (Installations and Environments) (ASN I&E), the Assistant Secretary of Defense for

International Security Affairs (ASD/ISA), and the applicable foreign government, and is ultimately forwarded with the project documentation to the ASN I&E for approval.

### **Overseas Environmental Assessment**

The OEA is a concise analysis used to assist DoD components in evaluating the potential for significant environmental impacts associated with implementing a proposed project/action in the global commons, rather than within the territory, territorial sea, contiguous zone, or fishery zone of another country. It is also used to decide if an OEIS is required. Similar to an ER, an OEA is prepared unilaterally by the U.S. and is considered an internal document that does not require public participation.

In concise language, and not exceeding 35 pages in length, the OEA must include sufficient information to allow the project/action proponent to reasonably determine if the proposed project is a major federal action that would significantly harm the environment. After the U.S. Installation Commander signs the OEA, it is forwarded by EURAFSWA to the CNIC and CNO N45 for concurrence and further action.

### **Overseas Environmental Impact Statement**

Preparation of an OEIS involves a multistage process designed to ensure that a decision maker thoroughly reviews the environmental consequences of a proposed project/action in conjunction with such factors as mission performance, diplomatic considerations, cost, and similar factors. Once the process has been completed, the decision maker remains free to approve a proposal even if it is not the environmentally preferable alternative. An OEIS is prepared unilaterally, and after completion, the Draft OEIS is forwarded by EURAFSWA to the CNIC and CNO N45 for approval. During the

comment period, the Department of State, Council on Environmental Quality, and other interested federal agencies are provided an opportunity to comment. Although an OEIS is prepared unilaterally, it may be made available to foreign governments after coordination through the chain of command, the OSD/ISA, and the DoS.

---

*The international context of the Environmental Effects Abroad process underscores the need for coordination with the Department of State when dealing with foreign nations. This coordination should take place before the environmental reviewer contacts a host nation for environmental or other information and should be conducted following the chain of command through the OSD/ISA.*

---

#### **U.S. INSTALLATION COMMANDER'S PROCESS FOR DOCUMENTING PROJECTS OR ACTIONS LOCATED WITHIN THE TERRITORY OF A FOREIGN NATION 5.7.2**

As discussed above, the U.S. Installation Commander likely will not be responsible for preparing OEAs or OEISs. More likely, he or she will be required to prepare a Negative Decision (most common) or an ER or ES for projects or actions that occur in the territory, territorial sea, contiguous zone, or fishery zone of Italy.

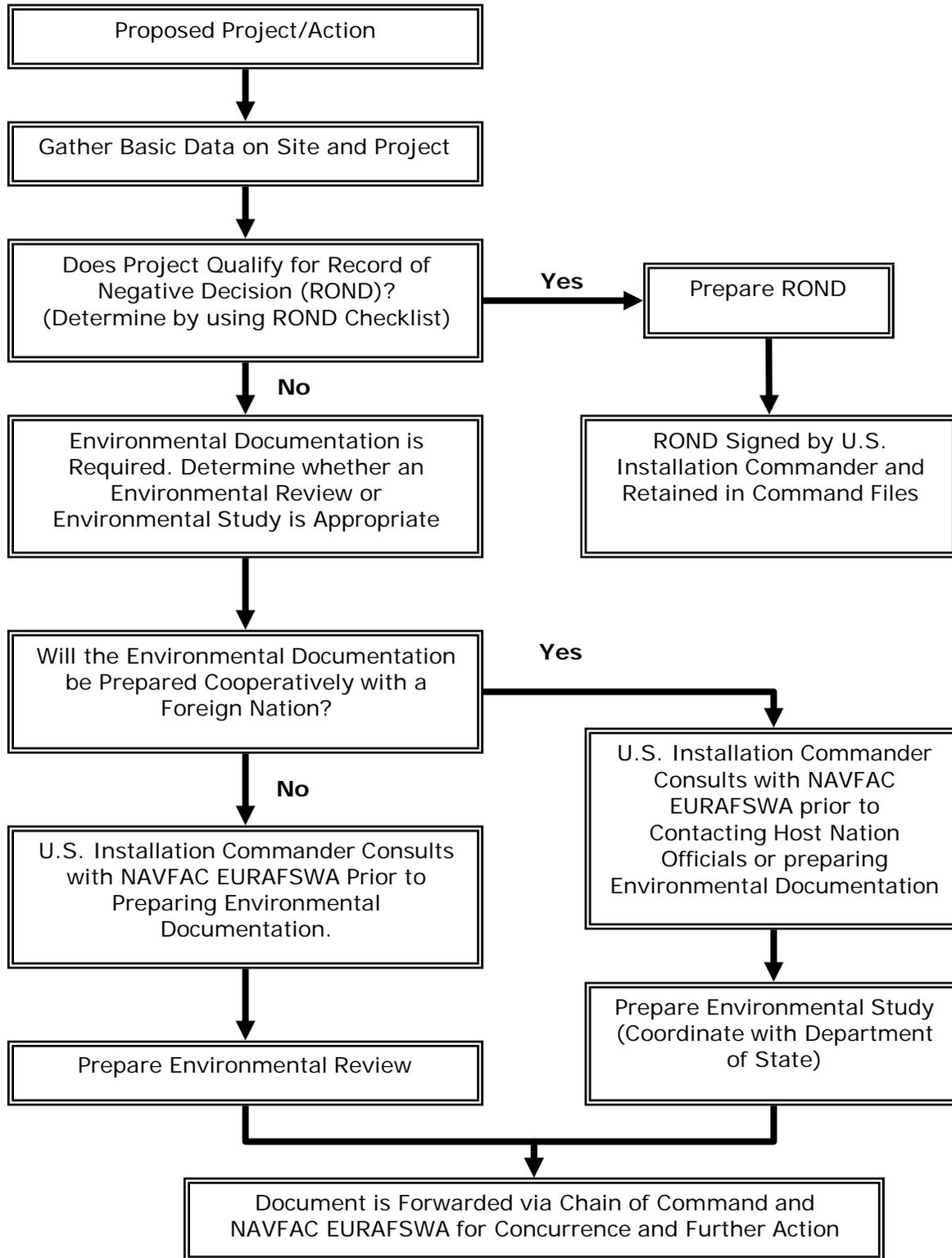
Negative Decisions are the most common form of environmental documentation because most Navy projects in Italy occur on the installation or in the waters along the installation shoreline, not the global commons, and the Italian government participates with the U.S. Navy in project planning in the form of site approval, project design review, overall project approval or permitting, or joint funding or sponsorship. An ER or an ES is rarely performed, but is required under certain circumstances that will be discussed below.

Figure 5-10 presents a flow diagram that summarizes the basic decision points in determining the appropriate level of environmental documentation for projects or actions occurring with the territory of Italy. OEAs and OEISs are not contemplated in this diagram because potential actions requiring such documentation would likely not be prepared by the U.S. Installation Commander, but rather by the Sixth Fleet. The flow diagram is discussed below.

### **Gather Basic Information**

Once a project has been identified, the U.S. Installation Commander (or designated representative) should gather basic information about the project in order to complete the ROND and EIA Checklist (Revised Draft February 2008). This checklist includes two pages, one of which is the ROND Checklist, the second of which is the EIA Checklist (Appendix B).

**Figure 5-10: Overseas Environmental Effects Review Process for Projects within the Territory of a Foreign Nation**



## **Determine Whether the Project Qualifies for a Negative Decision**

Determine whether the project qualifies for a Negative Decision by completing the ROND and EIA Checklist (Revised Draft February 2008). This checklist has incorporated the requirements of EO 12114; DoD Directive 6050.7; and OPNAVINST 5090.1C into an easy-to-use tool for the U.S. Installation Commander.

The first page of the checklist includes a series of 10 statements that, if any are true regarding the contemplated project, the project qualifies for a Negative Decision (Appendix B).

In many cases, Items 4 through 10 on the checklist do not apply to most projects contemplated at the installation level, and Item 3, Overseas Categorical Exclusions, do not currently exist as none have yet been approved. Therefore, the two key items on the checklist are Items 1 and 2.

---

*Items 1 and 2 of the ROND Checklist are the most commonly relevant to the U.S. Installation Commander. They are:*

- 1. Based on a review of the checklist on the back of this form, the action will not do significant harm to the environment outside the U.S.; and*
  - 2. Significant environmental impacts may occur, but the host nation is "participating" with the U.S. in the action.*
- 

In both cases identified above, the U.S. Installation Commander is responsible for evaluating the potential environmental impacts of the action in order to make a determination of whether or not there would be any significant impacts on the environment.

The second page of the checklist is provided to help identify any potential environmental issues and to guide the evaluator through the impact analysis

process (Appendix B). In addition, information provided in Section 5.7.3, Evaluating the Significance of Environmental Impacts, will help the U.S. Installation Commander complete the second page of the ROND and EIA Checklist (Revised Draft February 2008) for each contemplated project. To fill out the second page of the checklist, perform the following steps:

- Answer questions 1-13 with “yes” or “no” to identify if the issue is relevant to the proposed project.
- For each question, determine if there would be an impact. If so, determine whether it would be major or minor and explain your reasoning in the comments box. If you don't know if there is an impact, check the “unknown impact” box and explain your reasoning in the comments box. (See Section 5.7.3 for guidance on evaluating the significance of environmental impacts).
- If a major or minor impact is identified, determine whether the project can be changed to mitigate (reduce or eliminate) the impacts and identify the mitigation in Box 14.
- Fill in the summary box. This space can be used to summarize why there would be no major impacts of a project or why additional environmental analysis may be required for a project.

If no major impacts are identified, then the project qualifies for a ROND, and Item 1 on the first page of the checklist can be checked.

If potential major impacts of the project are identified, the project may still qualify for a ROND, as long as the Italian government is “participating” with the U.S. in the action. If the Italian government is participating with the U.S. in the action, then Item 2 on the first page of the checklist can be checked, and the project qualifies for a Negative Decision.

---

*Participation is defined by the Navy to include site approval and design review by a host nation, involvement in overall project approval, or permitting and joint funding and/or sponsorship of a project. If you are unsure if the threshold for host nation participation has been met, you should contact the EURAFSWA.*

---

### **Prepare a ROND**

After completing both sides of the ROND and EIA Checklist (Revised Draft February 2008), if any one of the boxes on the first page can be checked, then the project qualifies for a ROND, and no additional environmental documentation is required. The checklist should be signed by the U.S. Installation Commander or his/her designee and a copy kept in the project file.

### **If Necessary. Prepare ER or ES**

After completing the first page of the ROND and EIA Checklist (Revised Draft February 2008), if no boxes can be checked, then the action proponent should contact NAVFAC EURAFSWA to determine the necessary environmental documentation requirements.

In general, actions or projects that (1) affect ecological resources of global importance, (2) affect the environment of a non-participating host nation, or (3) provide a toxic or radioactive emission or effluent to a foreign nation will require an ES or ER. Table 5-4 provides a list of projects that typically require preparation of an ER or ES.

An ES would be cooperatively prepared by the Navy in conjunction with one or more foreign nations and is typically used when a Navy action would affect a protected global resource or when a Navy action would release strictly regulated or prohibited products within a foreign nation.

When preparing an ES, consultation with the concerned foreign nation is typically completed in order to make the determination of whether an action would have significant impacts on a protected environment. Any decision that the action would have no significant impacts should be documented in a record that identifies the participating decision makers. If the Navy decides to conduct an ES, no action concerning the proposal may be taken that would do significant harm to the environment until the study has been completed and the results considered.

An ER would be completed unilaterally by the Navy or in conjunction with another U.S. federal agency. Because it is a survey of environmental issues involved in a proposed action that is prepared unilaterally by the U.S., it is normally prepared for actions that would affect the environment of a foreign nation not involved in the action. Any decision that the action would have no significant impacts should be documented in a record that includes the basis for that decision. If the Navy decides to conduct an ER, no action concerning the proposal may be taken that would do significant harm to the environment until the review has been completed.

**TABLE 5-4: Examples of Projects/Actions Likely to Require an ER or ES**

Significant expansion or construction of new wastewater treatment plants.
Construction of hazardous waste disposal facilities.
Proposed activities that may jeopardize threatened or endangered species, or designated or proposed critical habitat of an endangered species.
Major acquisitions or disposals that will result in a change in land use of the subject area.
Major training exercises on non-military property or military property for which the impacts are known to be significant.
Large dredging projects that increase water depth over previously dredged or natural depths.
New small arms target ranges or range mission changes that would increase environmental impact.
Proposed activities that could affect historical buildings or prehistoric sites either listed or eligible for inclusion on the World Heritage List or Italian Heritage List.
Award or termination of contracts involving substantial quantities of natural resources, wherein the Navy is the contracting agency (i.e., tree clearing).
New sanitary landfills.
Disposal of biological or chemical munitions, pesticides, or herbicides, or other hazardous materials other than in the manner in which they are authorized for use or disposal.
Major actions that impact SOFA, international agreements, or host nation relations.
Actions that introduce or impact radioactive substances.

The last page of the ES or ER should summarize the document's findings including any constraints and/or mitigative measures designed to minimize environmental impacts. The U.S. Installation Commander or designee shall sign the document recommending approval of its findings and indicating it has been considered in the decision-making process. An example outline for an ER or ES is provided in Table 5-5.

### **Forward Document via Chain of Command**

If a ROND is prepared, it only needs to be signed by the U.S. Installation Commander or designee and maintained in the Command files. ESs and ERs shall be signed by the U.S. Installation Commander or designee and forwarded via the Chain of Command and NAVFAC EURAFSWA to COMNAVEUR for concurrence and further action. Any distribution of the documents shall be coordinated with NAVFAC EURAFSWA.

**TABLE 5-5: Environmental Review / Environmental Study Outline****Part I – Describe Proposed Project / Action**

- What is the proposed project/action?
- Describe the physical features of the project/action.
- What is its function, and how will it work (i.e., general operating plan)?
- When does the project/action need to be completed (timetable)?

**Part II – Describe Project / Action Site**

- Discuss the general location of the installation.
- What is the exact location of the project/action on the installation?
- Describe the affected environment:
  - Natural Environment (e.g., vegetation, wildlife, soils, etc.)
  - Physical Environment (e.g., cultural resources, utilities, ingress, egress, etc.)

**Part III – Identify Important Environmental Issues Associated with Project/Action**

- What environment issues caused the need for the environmental documentation?
  - Document results of Environmental Screening Process
- Why are these issues important?
  - Host Nation requirements
  - Base rights and/or SOFAs
  - International Agreements
  - Applicable U.S. legislations (e.g., Marine Mammal Protection Act)
  - Introducing a substance that is banned in the U.S.
  - Impacts resource(s) of global importance
- Integrate issues into a discussion of environmental issues (if applicable).

**Part IV – Discuss Mitigative Actions**

- When mitigative actions will be incorporated?
- Who will ensure mitigative actions are incorporated into the project?
- Document decision not to incorporate mitigative actions.

**Part V – Summary of Document's Findings**

- Restate any constraints and/or mitigative actions designed to avoid impacts.
- U.S. Installation Commander or PWO signs the document:
  - Recommending approval
  - Indicating it has been considered in the decision-making process

**An ER should not exceed 25 pages**

**An ES should not exceed 50 pages**

**EVALUATING THE SIGNIFICANCE OF ENVIRONMENTAL IMPACTS****5.7.3**

This section provides additional guidance to be used for assessing the environmental impacts of a project. The procedures discussed in this section will make it easier for the U.S. Installation Commander or designee to determine the significance of environmental impacts—or in other words—whether a project would have major, minor, or no effect on the environment. This information will be useful in completing the ROND and EIA Checklist (Revised Draft February 2008), or in preparing an ES or ER.

This User's Guide provides much of the natural and cultural resources baseline data required to comply with the Environmental Effects Abroad requirements. It contains detailed information about Italian laws and regulations and specific natural and cultural resources information for NSA Naples and NSAND GAETA, including development constraint maps for the installation.

The starting point in gathering data to complete the Environmental Effects Abroad project review, therefore, is examining and becoming familiar with the information contained in this entire Guide.

In addition to the contents of this User's Guide, there are other types of data essential to successfully completing the environmental review of a project/action. These data concern the nature of the proposed project and the project site (Table 5-6). A thorough understanding of the proposed project will enable ready identification of potential environmental impacts and can be obtained from the project proponent, including:

- Design specifications;
- Operating plans; and

- Architectural and/or engineering drawings.

A field trip to the proposed site is also important. Familiarity with a site can enable a more effective review of the data gathered. The checklist in Table 5-6 also lists the type of useful information that can and should be obtained during site visits.

### **Environmental Significance Screening**

Conducting Environmental Significance Screening for a project will reveal whether its implementation may impact resources of global importance or have potentially significant and/or and harmful environmental effects.

- The screening process described below is intended to discover if and how the proposed project/action would significantly harm the environment of a foreign nation. Consequently, the focus of the Environmental Screening mechanism is on identifying potential impacts that would occur with implementation of a proposed project/action; and
- Assessing the “significance” and the level of “harm” that these impacts would impose on the environment.

**TABLE 5-6: Basic Data Needs for Evaluating a Proposed Project****Data gathering should address the following items:**

- What is the project and how does it work (review Project Operating Plan);
- Location of the proposed project site and why it was chosen (review Site Plan);
- Project construction period;
- What are the potential environmental outputs of the project during operations, for example:
  - Land needs
  - Air pollution emissions
  - Water use and wastewater demand
  - Noise emissions
  - Solid/hazardous waste disposal requirements
- Any alternatives considered in the planning process

**While conducting a site visit, observe the following:**

- Natural Features
  - Natural slopes
  - Streams, rivers, lakes, or ponds
  - Surface drainage/flooding
  - Springs or seepage (groundwater)
  - Vegetation, including wetlands
- Adjacent Land Use Noises
  - Surrounding land use
- Visual Quality
- Transportation
  - Parking areas
  - Roads
  - Utilities
- Sensitive Land Use
  - Are there any in the surrounding area?
- Disposal Areas/Contamination
  - Are there stains, debris, or other evidence of illegal disposal or contamination?

After completion of the Environmental Significance Screening process, an informed and justifiable decision can be made on the appropriate environmental documentation to be prepared for the proposed project/action - negative decision, ER, or ES.

### **What is an Environmental Impact?**

A useful synonym for the term "impact" is "effect." In other words, an analysis of the environmental impacts of an action identifies the "effects" that the action has upon various components of the environment - soils, surface water and groundwater, air, noise, etc. For example, if a proposed project is construction of a medical clinic, disturbance of the soils at the project site for construction of the building's foundation would be an "impact" or "effect" on the soils of the project site. Impacts can be broadly categorized as direct effects of an action, indirect effects of an action, and the cumulative effects of an action:

---

*Direct impacts (primary effects) are caused by an action and occur at the same time and place as the action.*

*Indirect impacts (secondary effects) are caused by an action and occur later in time or farther removed in distance, but are still reasonably foreseeable.*

*Cumulative impacts are the incremental impacts of an action when added to other past, present, and reasonably foreseeable future actions regardless of project sponsor.*

---

Using the same illustration of a medical clinic, an example of a direct impact is vehicular traffic associated with patients coming and going from the facility; an example of an indirect impact is downstream flooding resulting from increased storm water runoff as a result of the paving of the facility's parking lot; a cumulative impact analysis would consider the

collective transportation impacts of several neighboring units of administration built either before the proposed unit or planned for a future time. Any direct, indirect, or cumulative impact may also be identified as beneficial or detrimental, short- or long-term.

### **When is an Impact Significant?**

An impact is considered significant if its context and intensity demonstrate that it is significant. The context of an impact has several components and relates primarily to area and processes affected. The intensity of an impact is measured by its magnitude, frequency, and potential for controversy or establishing a precedent, or for violating laws imposed to protect the environment. The context and intensity characteristics of a significant impact are described in Table 5-7.

### **How to Assess the Significance of a Proposed Project's Impacts**

As can be seen from the above discussion of significance, deciding if a proposed project would significantly harm the environment may not always be easy. Very often, there are aspects of a project that are subjective or immeasurable. Further complicating the determination is the fact that the environmental knowledge base of all project reviewers may not be equal. The second page of the ROND and EIA Checklist (Revised Draft February 2008) is a good place to begin the screening process (Appendix B).

**TABLE 5-7: Guidelines for Assessing the Significance of an Impact****The significance of an impact's context is determined on the basis of the:**

- Resources affected – the more resources affected, either individually or cumulatively, the more significant the impact is likely to be considered; and
- Area affected – the more widespread the effect of an impact, proceeding from local to global, the more likely the impact is significant.

**The intensity of an impact can be measured by the:**

- Magnitude of the identified impact:
  - How large or noticeable the change or disparity; the more distinctly noticeable the impact, the more significant the impact.
  - The greater the uncertainty of the magnitude of an impact or if it involves unique or unknown risks, the more likely the impact is significant.
  - If the impact represents a decision in principle about a future consideration, it is likely to be significant.
- Frequency (probably of the impact occurring and duration and rate of occurrence):
  - As the number of times of exposure or the length of time of exposure to an adverse condition increases, so will the likelihood that the impact is significant.
  - A one-time occurrence of an impact may be tolerated whereas a frequent recurrence may not and would thus be a significant impact; similarly a gradual change is less significant than one that is sudden.
  - A change is more likely to be judged significant as the possibility of its being alleviated or reversed is reduced.
- Controversy generated by the project – impacts for a controversial project are likely to be considered significant.
- Potential for violating laws imposed to protect the environment – the more likely that the identified impact will result in a violation of law, the more significant it is judged.

This checklist provides for the identification and assessment of potential environmental impacts as a result of project implementation on land, water, air, plants and animals, visual resources, transportation, noise and odors, and public health and safety. Table 5-8 provides examples of actions that may cause potentially major impacts for each resource area identified on the ROND and EIA Checklist (Revised Draft February 2008). These examples were developed using the guidelines shown in Table 5-7 for determining the significance of an impact. If the project's impacts can be mitigated by a project change, this can also be noted on the checklist (mitigation actions are discussed below in the next section).

---

*Table 5-8 was developed to provide specific examples of major impacts for each resource area identified on the ROND and EIA Checklist.*

---

After completing the checklist, those impacts identified as "major" need further examination. For each impact of concern, the project reviewer must decide if it is reasonable to conclude that impacts identified are important. To answer the question of "importance," review Table 5-7 and consider the following:

- The probability of the impact occurring;
- The duration of the impact;
- Its irreversibility, including permanently lost resources of value;
- Whether the impact can or will be controlled;
- The regional consequence of the impact; and
- Whether there are known objections to the project.

**TABLE 5-8: Guidance for Determining Major Impacts on the Record of Negative Decision/Environmental Impact Assessment Checklist**

**Issue #1: Physical Change to the Project Site**

*Examples that could cause major impacts:*

- Any construction on slopes of 15 percent or greater (14.8 ft [4.5 m] rise per 98.4 ft [30 m] length), or where the general slopes in the project area exceed 10 percent
- Construction on land where the depth to the water table is less than 3.3 ft [1 m].
- Construction of paved parking area for 50 or more vehicles.
- Construction on land where bedrock is exposed or generally within 1 m of existing ground surface.
- Construction that will continue for more than 1 year or involve more than 1 phase or stage.
- Excavation for mining purposes that would remove more than 1,000 metric tons of natural material (e.g., soil or rock) per year.
- Construction or expansion of a sanitary landfill.
- Construction in a floodplain.
- Major acquisitions or disposals that will result in a change in land use of the subject area.

**Issue #2: Water Resources, Wetlands, or Aquatic Habitats**

*Examples that could cause major impacts:*

- Area within 0.2 miles (300 m) of a lake.
- Area within 0.1 miles (150 m) of a river or stream.
- Construction in a wetland.
- Dredging of more than 2,649 ft<sup>3</sup> (75 m<sup>3</sup>) of material from the channel of a stream.
- Construction of a body of water that exceeds 9.9 acres (4 ha) of surface area.
- Proposed project requires use of a source of water that does not have approval to serve proposed project.
- Proposed project requires water supply from wells with greater than 45 gallons per minute (170 liters per minute) pumping capacity.
- Construction or operation causing any contamination of water supply systems.
- Proposed project will adversely affect groundwater.
- Liquid effluent will be conveyed off-site to facilities that presently do not exist or have inadequate capacity.
- Proposed project would use water in excess of 20,077 gallons per day (76,000 liters per day).
- Proposed project will likely cause siltation or other discharge into an existing water body to the extent that there will be obvious visual contrast with natural conditions.
- Proposed project would require the storage of petroleum or chemical products greater than 1,083 gallons (4,100 liters).
- Proposed project will require new or expansion of existing wastewater treatment and/or storage facilities.
- Proposed project would change flood water flows.
- Proposed project may cause substantial erosion.
- Proposed project is incompatible with existing drainage patterns.
- Proposed project will allow development in a floodplain or floodway.

**Issue #3: Air Quality***Examples that could cause major impacts*

- Proposed project will induce 60 or more vehicle trips (one per minute) in any given hour.
- Proposed project will emit a hazardous air pollutant as defined by 42 USC Sec. 112.

**Issue #4: Threatened or Endangered Species***Examples that could cause major impacts:*

- Reduction of one or more species listed on the IUCN Red List of Globally Threatened Animals and Plants using the site, over or near the site, or found on the site.
- Removal of any portion of a critical or significant wildlife habitat.
- Removal of olive trees or cork oaks.
- Application of pesticide or herbicide more than twice a year, other than for agricultural purposes.

**Issue #5: Non-Threatened or Non-Endangered Species***Examples that could cause major impacts:*

- Proposed project would substantially interfere with any resident or migratory fish, shellfish, or wildlife species.
- Proposed project requires the removal of mature forest (over 100 years of age) or other locally important vegetation.

**Issue #6: Visual Resources***Examples that could cause major impacts:*

- Will the proposed project affect areas protected under the landscape prohibitions of the Galasso Law?
- Project components or land uses obviously different from or in sharp contrast with surrounding environment.
- Project components will result in screening of scenic views known to be important to the area.

**Issue #7: Historic, Prehistoric, Archaeological, or Paleontological Importance***Examples that could cause major impacts:*

- Proposed project occurring wholly or partially within or substantially contiguous to any facility or site under restrictions.
- Any impact to an archaeological site or fossil bed located within the project site.

**Issue #8: Transportation System***Examples that could cause major impacts:*

- Alteration of present patterns of movement of people and goods.
- Proposed project will result in major traffic problems.

In addition to these considerations, EO 12114 specifically directs that an action that provides the following to a foreign nation is deemed to significantly harm that nation's environment:

- A prohibited or strictly regulated toxic product, effluent or emission, or
- A physical project that is prohibited or strictly regulated in the U.S. by federal law to protect the environment against radioactivity.

EO 12114 further directs that an ER or ES is required if a proposed project would affect a natural or ecological resource of global importance. Resources of global importance are defined as:

---

*Natural or ecological resources of global importance including, but not limited to, threatened species on the World Conservation Union's Red List, natural and cultural resources on the World Heritage List, and marine mammals.*

---

Based on the analysis, the following decisions can be made and the appropriate environmental documentation prepared:

- The project will not result in any large or important impact(s) and therefore will not significantly harm the environment. A negative decision is prepared.
- Although the project could significantly harm the environment, there will not be a significant impact because implementation of certain mitigative measures would reduce or eliminate these harmful effects. A negative decision is prepared.
- The project may result in one or more major and important impacts that may significantly harm the environment. Therefore, further environmental documentation (ER or ES) is prepared.

### **Mitigation Actions**

Based on the Environmental Significance Screening, potential environmental impacts associated with a proposed project/action will be known. These impacts can generally be placed into the following categories:

- Insignificant impacts;
- Significant adverse impacts that can be mitigated;
- Significant adverse impacts that cannot be mitigated;
- Impacts where a level of uncertainty exists concerning their actual environmental effects;
- Impacts with unknown environmental effects; or
- Significant adverse impacts where public concern exists.

Obviously, no further action would be required for impacts identified as insignificant, and impacts that cannot be mitigated must be fully disclosed in environmental documentation. The remaining significant adverse impacts could be remedied (at least partially) through the application of mitigation actions or measures.

---

*A mitigating measure is an action that reduces the severity or intensity of the impacts of other actions. Mitigating measures can take many forms, including avoidance, minimization, compensation, or any combination of these. See Table 5-9 for examples.*

---

The concept underlying mitigation is that by eliminating or reducing an adverse impact, preparing a negative decision may be possible, thereby avoiding the lengthy documentation process associated with an ER or ES. Avoidance should always be the first mitigating measure to attempt to apply to an adverse impact. Other mitigating measures can be explored

thereafter. Suggested mitigating measures for various types of adverse environmental impacts are shown in Table 5-9.

**TABLE 5-9: Potential Mitigative Measures****Air**

- Fugitive Dust Control Measure
  - Use water or chemicals to suppress dust during land clearing and grading, demolition, and construction activities
  - Use water to suppress dust on dirt paths, gravel roads, materials, stockpiles and other surfaces
  - Perform periodic street sweeping and/or wetting down of roads
  - Cover stockpiled materials
  - Phase construction activities
- Implement traffic-related mitigation measures

**Noise**

- Restrict construction activities to regular daylight working hours
- Phase construction activities
- Make use of natural noise barriers such as hills and trees
- Construct manmade noise barriers
- Modify transportation routes to avoid residential areas
- Require noise attenuation measures be used in building design and construction

**Surface Water**

- Implement water conservation and wastewater treatment and reuse
- Minimize materials storage exposed time during construction and operation by use of:
  - Sediment/retention basins
  - Vegetative erosion and sediment control structures: revegetate disturbed soils, grassed waterways, vegetated swales
  - Slope stabilization
  - Sediment traps, including infiltration structures and silt fences
  - Use porous pavement
- Time applications of pesticides and herbicides to minimize chemical transport
- Develop and implement a storm water control plan including best management practices
- Implement alternative wastewater treatment schemes

**Cultural Resources**

- Limit the magnitude of the undertaking
- Modify the project through redesign or other changes
- Repair, rehabilitate, or restore an affected historic property
- Document buildings and structures to be destroyed or substantially altered (drawings, photographs, histories)
- Relocate historic properties

---

### **Groundwater**

- Decrease groundwater usage
- Use liners in lagoons and other land-based waste disposal units

---

### **Visual Resources**

- Salvaged archaeological or architectural information and materials
- Blend facility exterior with viewscape by:
  - Selecting compatible color(s) of paint and painting patterns for facility exterior
  - Selecting compatible construction materials (including tinting of concrete)
  - Incorporating architectural features of existing nearby or surrounding buildings in new construction or renovations of existing buildings
  - Reusing materials from former facilities in new facilities
- Install underground utilities
- Install visual screens or barriers including greenbelts and other landscape barriers

---

### **Plants and Animals**

- Restore disturbed areas with native landscaping

---

### **Transportation**

- Use of car or van pooling or buses
  - Schedule construction equipment movement for non-peak periods
  - Provide roadway improvements to raise the level of service
-

This page intentionally left blank.



## CHAPTER 6

# ACRONYMS AND REFERENCES

6.1	Acronyms	245
6.2	General References	248
6.3	Natural Resources References	248
6.4	Cultural Resources References	249

This page intentionally left blank.

**ACRONYMS****6.1**

AFSOUTH	Allied Forces Southern Europe
amsl	Above mean sea level
ASD/ISA	Assistant Secretary of Defense for International Security Affairs
ASN I&E	Assistant Secretary of the Navy (Installations and Environment)
BASH	Bird Aircraft Strike Hazard
BIA	Bilateral Infrastructure Agreement
°C	Degree Celcius
CECOS	U.S. Navy Civil Engineering Corps Officers School
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
cm	Centimeter
CNIC	Commander, Navy Installations Command
CNO N45	Chief of Naval Operations Environmental Readiness Division
COMNAVEUR	Commander U.S. Naval Forces Europe
DENIX	Defense Environmental Network Information Exchange
DoD	Department of Defense
DoDI	Department of Defense Instruction
DoS	U.S. Department of State
EC	European Commission
EEA	Environmental Executive Agent
EIA	Environmental Impact Assessment
EO	Executive Order
ER	Environmental Review
ES	Environmental Study
EU	European Union

EUCOM	Joint Services European Command
EURAFSWA	NAVFAC Europe Africa Southwest Asia
°F	Degree Fahrenheit
FGS-Italy	Final Governing Standards for Italy
ft	Foot
GIS	Geographic Information Systems
ICOMOS	International Council on Monuments and Sites
iNFADS	Internet Naval Facilities Assets Data Store
IUCN	International Union for Conservation of Nature
JFC	Allied Joint Force Command
km	Kilometer
km <sup>2</sup>	Square kilometer
m	Meter
MIBAC	<i>Ministero per I Beni e le Attività Culturali</i> (Ministry for Cultural Resources Conservation Program)
MOU	Memorandum of Understanding
MWR	Morale, Welfare, and Recreation Command
NATO	North Atlantic Treaty Organization
NAVFAC Atlantic	Naval Facilities Engineering Command, Atlantic
NGO	Non-Government Organizations
NRCP	DoD Natural Resources Conservation Program
NSA	Naval Support Activity
OEA	Overseas Environmental Assessment
OEBGD	Overseas Environmental Baseline Guidance Document
OEIS	Overseas Environmental Impact Statement
OPNAVINST	Office of the Chief of Naval Operations Instruction
pSCI	Proposed Site of Community Importance
PWD	Public Works Department
PWO	Public Works Officer

---

ROND	Record of Negative Decision
SAC	Special Areas of Conservation
SCI	Site of Community Importance
SPA	Special Protection Area
SOFA	Status of Forces Agreement
UNESCO	United Nations Educational, Scientific and Cultural Organization
U.S.	United States
USACE	United States Army Corps of Engineers
ZSC	Zone of Special Conservation
ZSP	Zone of Special Protection

## GENERAL REFERENCES

## 6.2

Navy Region Europe, Commander. July 2008. *Environmental Final Governing Standards – Italy*.

Pioneer Technologies Corporation. 27 March 2009. Naples, Italy - Public Health Evaluation, Volume II: Phase I Screening Risk Evaluation.

Southeast Archaeological Research, Inc. June 2004 (Format Revised April 2007). *Environmental Planning User's Guide for Naval Support Activity Naples*.

The Environmental Company, Inc. June 2004. *Environmental Planning User's Guide for US Navy Facilities in Italy*.

## NATURAL RESOURCES REFERENCES

## 6.3

Arnold, Nicholas, and Denys Ovenden. 2004. *Field Guide to the Reptiles and Amphibians of Britain and Europe*. Collins, London, United Kingdom.

European Commission (EC). 1 January 2007. Council Directive 92/43/EEC of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora.

[http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index\\_en.htm#sdf](http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm#sdf).

EC. 26 January 2010. Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the Conservation of Wild Birds (codified version).

[http://ec.europa.eu/environment/nature/legislation/birdsdirective/index\\_en.htm](http://ec.europa.eu/environment/nature/legislation/birdsdirective/index_en.htm).

European Environment Agency (EEA). 1 July 2009a (update). *Natura 2000 - Clean Standard Data Form: Collina dei Camaldoli / IT8030003*.

<http://natura2000.eea.europa.eu/Natura2000/SDFPublic.aspx?site=IT8030003>, August 2010.

EEA. 1 July 2009b (update). *Natura 2000 - Clean Standard Data Form: Monte Barbaro e Cratere di Campiglione / IT8030019*.

<http://natura2000.eea.europa.eu/Natura2000/SDFPublic.aspx?site=IT8030019>, August 2010.

- EEA. 1 July 2009c (update). *Natura 2000 - Clean Standard Data Form: Lago di Patria / IT8030018*.  
<http://natura2000.eea.europa.eu/Natura2000/SDFPublic.aspx?site=IT8030018>, August 2010.
- EEA. 1 July 2009d (update). *Natura 2000 - Clean Standard Data Form: Pineta di Patria / IT8010021*.  
<http://natura2000.eea.europa.eu/Natura2000/SDFPublic.aspx?site=IT8010021>, August 2010.
- EEA. 9 February 2010 (update). *Natura 2000 Viewer*.  
[http://www.eea.europa.eu/themes/biodiversity/interactive/natura2000/gis/index\\_html](http://www.eea.europa.eu/themes/biodiversity/interactive/natura2000/gis/index_html)
- Gibbons, Bob. 1995. *Field Guide to Insects of Britain and Northern Europe*. The Crowood Press, Wiltshire, United Kingdom.
- Gibbons, Bob, and Peter Brough. 2008. *Guide to Wild Flowers of Britain and Northern Europe*. Philips, London, United Kingdom.
- International Union for Conservation of Nature and Natural Resources (IUCN). 2010. *IUCN Red List of Threatened Species. Version 2010.2*.  
[www.iucnredlist.org](http://www.iucnredlist.org), downloaded August 2010.
- MacDonald, David W., and Priscilla Barrett. 1993. *Mammals of Europe*. Princeton University Press, Princeton and Oxford.
- Svensson, Lars, Killian Mullarney, and Dan Zetterström. 2009. *Birds of Europe, Second Edition*. Princeton University Press, Princeton and Oxford.
- White, John, Jill White, and S. Max Walters. 2005. *Trees – A Field Guide to the Trees of Britain and Northern Europe*. Oxford University Press, Oxford, United Kingdom.

## CULTURAL RESOURCES REFERENCES

## 6.4

### **Naples**

- Abbazia Zannone 2001. *L'abbazia di Santo Spirito di Zannone in Gaeta*. Gaeta: Fondazione Gaeta & Associazione 'Mizar'.
- Adinolfi Raffaele Adinolfi. 1983-84. *Puteoli. VII-VIII*. Albertini, Pino Uria, Salerno, Tagliacozzo 2005. D. Albertini, B. Pino Uria, A. Salerno, A.

- Tagliacozzo. 'Gricignano d'Aversa, US Navy (Caserta): aspetti archeozoologici da alcune strutture di facies Laterza dell'area "Centro Commerciale" (poster),' pages 549 – 552 in *Atti della XL Riunione Scientifica - Roma, Napoli, Pompei, 30 novembre - 3 dicembre 2005 Strategie di insediamento fra Lazio e Campania in età preistorica e protostorica*. Firenze: Istituto Italiano di Preistoria e Protostoria.
- Albore Livadie, C., and G. Vecchio. 2002. 'Quattromila anni fa sotto il vulcano.' *Archeo*, XVIII.
- Alibrandi & Ferri 2001. Tommaso Alibrandi & Piergiorgio Ferri. *I Beni Culturali e Ambientali*. Quarta Edizione aggiornada da Tommaso Alibrandi e Anna Cenerini. Series Commentario di Legislazione Amministrativa. Milano: Dott. A. Giuffrè Editore.
- Amalfitano, P., G. Camodeca, and M. Medri, eds. 1990. *I Campi Flegrei, un itinerario archeologico*. Marsilio, Venezia.
- Amato & Salerno 2005. Vincenzo Amato, Antonio Salerno. "Strategie di insediamento e paleoambienti nella Campania centro-settentrionale tra Neolitico ed Eneolitico," pages 127-145 in *Atti della XL Riunione Scientifica - Roma, Napoli, Pompei, 30 novembre - 3 dicembre 2005 Strategie di insediamento fra Lazio e Campania in età preistorica e protostorica*. Firenze: Istituto Italiano di Preistoria e Protostoria.
- Arthur, P. 1990. 'Archaeological Study of the U.S. Navy Zone Capodichino Airport,' report submitted to NSA-Naples. Naples.
- Artioli, D., M.A. Fugazzola Delpino, M.R. Giuliani, G. Guida, and A. Salerno. 2000. 'Caratterizzazione di reperti metallici e tessili della facies di Laterza da Gricignano d'Aversa – US Navy (CE).' Poster presented to the XXXV Riunione dell'Istituto Italiano di Preistoria e Protostoria, Lipari, Luglio 2000.
- Atlante. 1992. *Atlante di Napoli*. Marsilio, Venezia.
- Atlante 2000. *Atlante Storico di Napoli. 2500 anni di storia della città, dalle origini greche al secondo millennio*. Testo di Attilio Wanderlingh. Disegni di Renato Quaranta. Napoli: Edizioni Inter Moenia.
- Baia guide A. 2000. *The archaeological museum of the phlegrean fields in the castle of baia. Guide to the Collections*. Edited by Paola Miniero. Napoli: Electa Napoli & Soprintendenza Archeologica di Napoli e Caserta.

- Baia guide B. 2003. Baia. *The castle, museum and archaeological sites. Quick Guide.* Text by Paola Miniero. Napoli: Electa Napoli & Soprintendenza Archeologica di Napoli e Caserta.
- Bailo Modesti, G., and A. Salerno. 1998. *Pontecagnano II.5 La necropoli eneolitica. L'età del Rame in Campania nei villaggi dei morti*, Napoli.
- Baraldini. 2004. Enrico Baraldini. "Il Parco Regional Urbano di Monte Orlando," pages 112 – 113 in *Arte, Media e Comunicazione: Atti del Convegno di Gaeta, 20 – 21 giugno 2003*. Roma: Aracne.
- Bartolucci, D., A. Bonanni, G. Senerchia, and E. Violini. 1990. *Conoscere Napoli, storia e itinerari*, Napoli.
- Bisi Ingrassia, A.M. 1981. *Napoli e dintorni*. Newton Compton, Roma.
- Caliman 2001. Marcello Caliman. *Il Borbone, viaggio nella storia e nei luoghi: I tempi e I fatti dell'assedio di Gaeta 17 settembre 1860 – 13 febbraio 1861*. Edizioni Cassino.
- Campi Flegrei 2008. *Il progetto integrato Campi Flegrei*, a cura di Francesco Escalona con Roberta Ruggiero. Napoli: Electa Napoli per la Regione Campania.
- Cantilena, R., and P. Rubino. 1987. *Archeologia in Campania*. Napoli.
- Cardone, V. 1989. *Bagnoli nei Campi Flegrei. La periferia anomala di Napoli*. Napoli.
- Cardone, V. 1992. *Nisida. Storia di un mito nei Campi Flegrei*. Napoli.
- Carugno, Mazzitti & Zucchelli 1994. G.N. Carugno, W. Mazzitti & C. Zucchelli. *Codice dei Beni Culturali. Annotato con la Giurisprudenza*. Milano: Dott. A. Giuffrè Editore.
- Caserta 1996. *Reggia e Parco Caserta. Itinerari*. Roma: Istituto Poligrafico e Zecca dello Stato.

- Caserta 2005. *Patrimoni di Caserta. La Città. Casertavecchia. San Leucio. Guida alla Conoscenza del Territorio e delle Tradizioni*. Napoli: Paparo Edizioni.
- Circeo 1999. *Il Circeo, parco della realtà e dell'immaginazione*. Edited by Alessandro Bardi, Cecilia Franceschetti, Pietro Oieni. Pomezia: Parco Nazionale del Circeo.
- Circeo 1 1991. *Il cranio neandertaliano Circeo 1: studi e documenti*, a cura di Marcello Piperno & Giovanni Scichilone. Roma: Istituto Poligrafico e Zecca dello Stato. Libreria dello Stato.
- Converso, Claudia n.d. *UNESCO World Heritage Sites. Italy*. Trans. A.B.A. Milano. Milano: Kina Italia / Eurografica.
- Costa Campana 2005. *Guida Geoarcheologica della Costa Campana ad Uso dei Naviganti*, a cura di Umberto Pappalardo e Rosaria Ciardiello. Napoli: Valtrend Editore.
- Crimaco, L. 1991. *Volturnum*, Roma.
- D'Antonio 2003. Massimo D'Antonio. *Campi Flegrei. Guide of Discovery to the Lands of Fire*. Naples: Massa Editore.
- D'Arms, J. 1970. *Romans on the Bay of Naples*. Cambridge, MA.
- D'Arms, J. 1976. *Atti dei Convegni Lincei*.
- De Caro S., and A. Greco. 1983. *Campania*. Laterza, Roma and Bari.
- De Caro 2002. Stefano De Caro. *I campi flegrei, ischia, vivara, storia e archeologia*. Napoli: Electa Napoli & Soprintendenza per I Beni Archeologici di Napoli e Caserta.
- De Caro, Miele 2001. Stefano De Caro & Floriana Miele. 'L'occupazione romana della Campania settentrionale nella dinamica insediativa di lungo periodo,' pages in *Modalità Insediative e Strutture Agrarie nell'Italia Meridionale in Età Romana*, a cura di Elio Lo Cascio e Alfredina Storchi Marino. Bari: EdiPuglia.
- De Seta, C. 1989. *I Casali di Napoli*. Laterza, Roma.
- De Sanctis, R. 1986. *La Nuova Scienza a Napoli tra '700 e '800*. Laterza, Roma.

- Di Nora 1998. Taira Di Nora. "L'Area Marina Protetta di Ventotene: un'opportunità per la valorizzazione dei siti archeologici." *Formianum* VI: 115 – 120.
- Di Vito, M., R. Isaia, G. Orsi, J. Southon, S. de Vita, M. D'Antonio, L. Pappalardo, and M. Piochi. 1999. 'Volcanism and eformation since 12,000 years at the Campi Flegrei caldera (Italy).' *Journal of Volcanology and Geothermal Research*: 91.
- Fiorentino, F. 1995. *Le Terme Puteolane e Salerno nei codici miniati di Pietro da Eboli*. Napoli.
- Fronzuto 2001. Graziano Fronzuto. *Monumenti d'Arte Sacra a Gaeta. Storia ed arte dei maggiori edifici religiosi di Gaeta*. Gaeta: Edizioni del Comune di Gaeta.
- Fugazzola Delpino, Salerno, Tagliacozzo, Tinè e Vanzetti 2003. Maria Antonietta Fugazzola Delpino, Antonio Salerno, Antonio Tagliacozzo, Vincenzo Tinè, Alessandro Vanzetti. "Una comunità della facies di Laterza nella Pianura Campana: l'Area "Forum" di Gricignano – US Navy (CE)," pages 199-214 in *Atti della XXXV Riunione Scientifica dell'Istituto Italiano di Preistoria e Protostoria, Castello di Lipari, Chiesa di S. Caterina, 2-7 Giugno 2000*. Firenze: Istituto Italiano di Preistoria e Protostoria.
- Fugazzola Delpino, Salerno, Tiné 2005. Maria Antonietta Fugazzola Delpino, Antonio Salerno & Vincenzo Tiné. 'Villaggi e necropoli dell'area "Centro Commerciale" di Gricignano d'Aversa – US Navy (Caserta),' pages 521 – 538 in *Atti della XL Riunione Scientifica - Roma, Napoli, Pompei, 30 novembre - 3 dicembre 2005 Strategie di insediamento fra Lazio e Campania in età preistorica e protostorica*. Firenze: Istituto Italiano di Preistoria e Protostoria.
- Gasperini 1996. Lidio Gasperini. "La <<Rosa dei Venti>> del <<Portus Caietae>>," *Formianum* IV: 33 – 38.
- Gianpaola n.d. Daniela Gianpaola. "Archeologia urbana a Napoli. Gli scavi della Linea Metropolitana." Pamphlet of the Ministero per i Beni e le Attività Culturali. Naples: Mirabilia.
- Granata 2004. Piergiorgio Granata. *Gaeta: viaggio nell'arte. Pittura, scultura e arti minori dal medioevo ad oggi*. Napoli: Alfredo Guida Editore.

- Guidi 1991. Alessandro Guidi. "Alcune osservazioni sul popolamento preistorico tra il Golfo di Gaeta e gli Aurunci," *Latium* 8: 5 – 31.
- Guidi n.d. Alessandro Guidi. "La presenza dell'uomo: dall'economia di sopravvivenza alla nascita dello stato." *Storia del Lazio*.
- Guidi, Pascucci e Zarattini 2002. Alessandro Guidi, Paola Pascucci, Annalisa Zarattini. "Confini geografici e confini culturali: Le *facies* della preistoria e della protostoria nel Lazio meridionale," *Latium* 19: 5 - 21.
- Gunther 1993. Robert T. Gunther. *Posillipo romana*, a cura di Domenico Viggiani. Napoli: Electa Napoli.
- Guzzo 2001. Pier Giovanni Guzzo. 'Ostacoli per una legislazione nazionale della tutela dell'archeologia dopo l'Unità.' *Mélanges de l'Ecole Française de Rome. Italie et Méditerranée*. Tome 113, pages 539 – 547.
- Lapegna Associati. 1989. *Hydrological and Geological Study of Carney Park, Exploration by Drilling Test*, report submitted to NSA-Naples. Naples.
- Legislazione B.C.P. 2008 *Legislazione dei Beni Culturali e del Paesaggio. Nozioni essenziali*. Edizioni Giuridiche Simone. Series Esami e Concorsi last minute. Collana Timone. Volume 228/1. Napoli: Esselibri.
- Marzochella. 1998. Amodio Marzochella, 'Tutela archeologica e preistoria nella pianura campana,' pages 97 – 133 in Pier Giovanni Guzzo & Renato Peroni, eds. *Archeologia e vulcanologia in Campania, Atti del Convegno di Pompeii, 21 Dicembre 1996*. Napoli: Arte Tipografica per l'Associazione Internazionale Amici di Pompei, Soprintendenza Archeologica di Pompei, Osservatorio Vesuviano.
- Monte Aurunci 2002. *Parco dei Monti Aurunci, wilderness mediterranea*. Progetto e coordinamento di Luigi Corsetti. Latina: Edizioni belvedere.
- Nava, Giampaola, Laforgia Boenzi. 2005. M.L. Nava, D. Giampaola, E. Laforgia & G. Boenzi. 'Tra il Clanis e il Sebeto: nuovi dati sull'occupazione della piana campana tra il Neolitico e l'età del Bronzo,' pages 101 – 126 in *Atti della XL Riunione Scientifica - Roma, Napoli, Pompei, 30 novembre - 3 dicembre 2005 Strategie di insediamento fra*

*Lazio e Campania in età preistorica e protostorica.* Firenze: Istituto Italiano di Preistoria e Protostoria.

Patrimonio Culturale Gaeta 1997. *Il patrimonio culturale di Gaeta. Storia, arte, tradizioni.* Series I musei del Lazio e il loro territorio/4, a cura della Regione Lazio, Assessorato politiche per la promozione della cultura, dello spettacolo e del turismo. Roma: Fratelli Palombi Editori.

Quilici Gigli 2009. Stefania Quilici Gigli. "Organizzazione e aspetti dello spazio sacro. Appunti sul santuario Capuano alle falde del Tifata," pages 125-147 in *Atlante tematico di topografia antica*, a cura di Quilici Lorenzo e Quilici Gigli Stefania. *Atlante Tematico di Topografia Antica*, 19. Roma: L'Erma di Bretschneider.

Severino. 2005. Nicola Severino. 'Recenti ricerche archeologiche sull'isola di Nisida,' *Orizzonti, Rassegna di Archeologia*, VI: 119-133.

Silenzi. 1998. Sergio Silenzi. "La risalita del livello del Mare Mediterraneo da diecimila anni ad oggi: indicatori geologici e confronto con evidenze archeologiche." *Formianum* VI: 103 – 111.

Stazione Neapolis. n.d. "Stazione Neapolis. I cantieri dell'archeologia." Pamphlet explaining the archaeological displays in the 'Corridoio di collegamento Stazione Museo – Museo Archeologico Nazionale' Naples. Napoli: Comune di Napoli et alii.

Tagliacozzo, Fiore, Salerno. 2000. Antonio Tagliacozzo, Ivana Fiore, Antonio Salerno. "Una fossa rituale del Bronzo antico con resti animali rinvenuta nel sito di Gricignano d'Aversa, US Navy (Caserta). A Bronze Age ritual pit with animal bones found at the Gricignano d'Aversa, US Navy site (Caserta)," pages 259-269 in *Atti 3o Convegno Nazionale di Archeozoologia (Siracusa 3-5 novembre 2000)*, a cura di Ivana Fiore, Giancarla Malerba, Salvatore Chilardi. *Studi di Paletnologia, II, Collana del Bullettino di Paletnologia Italiana.* Roma: Istituto Poligrafico e Zecca dello Stato.

Tallini 2001. Gennaro Tallini. *L'Arte e la Croce: tre studi sul Rinascimento.* Sondrio: Ramponi.

Tempo di Caboto 1997. *Cultura e Arte a Gaeta nel tempo di Caboto. La Marineria nell'età di Caboto.* Catalogo della mostra, Gaeta, Palazzo D Vio, August – October 1997, a cura di Erasmo Vaudo. Gaeta: Amministrazione Comunale di Gaeta, Centro Storico Culturale 'Gaeta'.

- Tiné 2005. Vincenzo Tiné. 'Gricignano – US Navy (Caserta). Le capanne sul livello AMS del Centro Commerciale: assetti planimetrici e dimensionali (poster),' pages 643 – 647 in *Atti della XL Riunione Scientifica - Roma, Napoli, Pompei, 30 novembre - 3 dicembre 2005 Strategie di insediamento fra Lazio e Campania in età preistorica e protostorica*. Firenze: Istituto Italiano di Preistoria e Protostoria.
- Tiné, Bizzarro, Cardone, Citro 2005. V. Tiné, A. Bizzarro, F. Cardone, & D. Citro. 'Gricignano – US Navy (Caserta). Elaborazione del GIS della documentazione di scavo dell'area "Forum" (poster),' pages 648 – 656 in *Atti della XL Riunione Scientifica - Roma, Napoli, Pompei, 30 novembre - 3 dicembre 2005 Strategie di insediamento fra Lazio e Campania in età preistorica e protostorica*. Firenze: Istituto Italiano di Preistoria e Protostoria.
- Vaglio 1990. Donato Vaglio. *La montagna spaccata e il suo santuario: tra storia e leggenda*. Pontificio Istituto missioni estere.

### **Gaeta**

- Andrisani, G. 1982. *Il Lazio nell'Antichità Romana*.  
Lunario Romano 1983. Roma.
- Aurigemma, S, and A. De Santis. 1964. *Gaeta, Formia, Minturno*. Roma.
- Balbo et al. 1983. *La costa del Lazio Meridionale, Gli insediamenti storici dal Circeo alla foce del Garigliano*. Officina Edizioni, Roma.
- Borgese, L. 1963a. *Gaeta Ciclopica*. Casamari, Gaeta.
- Borgese, L. 1963b. *La trimillennaria storia di Gaeta nella sua ponderosa documentazione archeologica*. Casamari, Gaeta.
- Coarelli, F., and Zevi, F. 1984. *Lazio*. Laterza, Roma-Bari.
- De Rossi, G. 1980. *Lazio Meridionale*. Newton Compton, Roma.
- Fantasia, P. 1949. *La rete stradale dell'antica Roma nell'agro di Gaeta e gli avanzi delle vecchie costruzioni romane nelle sue adiacenze*. Roma
- Gargiullo, S., and E. Okely. 1993. *Atlante archeologico dei mari d'Italia*. Istituto di Ricerche Ecologiche ed Economiche. Roma.
- Gizzi. S. 1990. *Archeologia Laziale*. X.
- Iacono, G. 1982. *Guida alla Provincia di Latina*. Sezze.

Lafon, X. 1979. *Melanges de L'Ecole Francais du Rome -- Antiquitee'*.

Mola, S. 1995. *Il Parco di Monte Orlando, Guida naturalistica, storica e didattica (Guide to the Nature and History of Monte Orlando Park):* A N. Edizioni Barba di Giove.

Museo Preistorico e Archeologico "Alberto Carlo Blanc." 1986. / *Neandertaliani*. Palazzo delle Museo Viareggio.

*Il Parco di Monte Orlando, II Edizione*, a cura di C.A. Di Rocco, La Nuova Poligrafia, Gaeta. 1998.

Sottoriva, P.G., ed. 1985. *Il golfo di Gaeta*, Istituto Geografico De Agostini.

Spano, G. 1927. *Notizie degli Scavi*, III.

This page intentionally left blank.

## **APPENDIX A**

### **GLOSSARY OF ITALIAN TERMS**

---

*Ambientale* – environment

*Aree protette* – protected areas

*Assessorato dei beni Culturali ed Ambientali e della Pubblica Istruzione* – Office for Culture, the Environment, and Public Education

*Assessorato per beni Culturali e Ambientali* – Office for Cultural Resources and the Environment

*Bellezze naturali* – natural areas

*Bellezze naturali e panoramiche* – protection of areas of natural beauty

*Beni culturali* – heritage

*Bonifica* – small grants of houses and land

*Campania Felix* – fortunate Campania

*Campi Flegrei* – area named after burning fields

*Casale* – farm complex

*Centro storico* – historic center

*Centuriation* – agricultural parcels

*Codice Civile* – civil code

*Codice Penale* – penal code

*Coltivazione, difesa e sfruttamento della sughera* – cultivation, protection, and exploitation of cork oak trees

*Comando di stazione* – local station

*Commitato Misto Paritetico* – civilian review commission

*Comune* – commune or municipality

*Conferenze di servizio* - procedures

*Conservazione integrale* – integrated conservation zones

*Coordinamento provinciale* – provincial coordinator

*Coordinamento regionale* – regional coordinator

*Corpo Forestale* – Forestry Corps

*Corpo Forestale dello Stato* – State Forestry Corps

*Cose* – things

*Costa rocciosa* – rocky coast

*Costa Smeralda* – Emerald Coast, a popular tourist area

*Cryptoporticus* – subterranean walkway

*Decreto* – decree

*Direzione generale del Demanio e dei Materiali del Genio* – Defense Military Engineers

*Dirieto di abbattimento di alberi di olivio* – abatement of cutting down of olive trees

*Elenco delle Aree Protette* – Register of Protected Areas

*Entre parco* – park authority

*Guardia di Finanza* – Customs Police

*Guinta* – government

*Il Codice dell' Ambiente* – Environmental Code

*Legge regionale* – regional law

*Macchia* – scrub forest

*Masserie* – farmstead

*Mausolea* – monumental tombs

*Ministero dell' Ambiente* – Ministry of the Environment

*Ministero delle Risorce Alimentari, Agricole, e Forestali* – Ministry for Food Resources, Agriculture, and Forestry

*Ministero di Difesa* – Ministry of Defense

*Ministero peri beni Culturali ed Ambientali* – Ministry for Culture and Environment

*Ministero peri beni e le Attivita Culturali* – Ministry for Cultural Resources and Activities

*Molo* – pier

*Nulla aosta* – no objections

*Officina Grafica Militare* – military printing office

*Parco Regionale dei Campi Flegrei* – Regional Park of Camp Flegrei

*Parco urbano* – urban park

*Periodo vicereale* – period of Italian history when the government was headed by a viceroy

*Piano Territoriale Paesaggistico* – landscape territorial plan

*Piano Urbanistico Comunale* – municipal town plan

*Piano Urbanistico Territoriale* – urban territorial plan

*Polizia di Stato* – State Police

*Presidente* – President

*Proposta Sito d'Importanza Comunitaria* – Proposed Site of Community Importance

*Provincia* – Province

*Regionale* – Region

*Regioni autonome* – Autonomous Region

*Riserva Naturale Orientata Sughereta di Niscemi* – Niscemi Cork Oak Forest Natural Reserve

*Riserve* – reserve

*Soprintendenza peri beni archeologici di Napoli e Caserta* – Archeological Superintendency for the Provinces of Naples and Caserta

*Soprintendenza peri beni architettonici e per il paesaggio, per il patrimonio storico, artistico e demoetnoantropologico di Napoli e Provincia* – Architectural Resource Administrator in Naples

*Soprintendenza peri beni architettonici e per il paesaggio, per il patrimonio storico, artistico e demotnontropologico delle province di Caserta e Benevento* – Archeological Resource Administrator in Caserta

*Soprintendenza peri beni e le Attivita Culturali* – Regional Superintendency for Cultural Heritage

*Sportello unico* – single window

*Statio* – way station

*Stazzi* – single family farms

*Tafoni* – rock hollows carved out by the wind that historically were used for settlement or burial

*Terre forte* – strong soils

*Tombe a capuccina* – imperial tomb

*Ufficio Legislativo e Legale* – Legislative and Legal Office

*Vincoli* – restrictions or protections

*Vincoli paesaggistica* – landscape restrictions

*Vincolo* – restriction or protection

*Vincolo indiretto* – area subject to indirect *vincolo*

*Vivaio* – nurseries

*Zona Speciale di Conservazione* – Special Area of Conservation

## **Italian Pronunciation**

### **Explanation**

#### Vowels:

Where the vowel **e** or the vowel **o** appear in a stressed syllable, they can be either open or closed.

#### Consonants:

**c** before **e** or **i** is pronounced like the **j** in "jet".

**ch** is pronounced like the **k** in "kit".

**g** before **e** or **i** is pronounced like the **j** in "jet".

**gh** is pronounced as **g** as in "get", even before **i** and **e**.

**gl** before **e** or **i** is normally pronounced like the **ly** sound in "million".

**gn** is pronounced like the **ny** in "canyon".

**sc** before **e** or **i** is pronounced **sh**.

**sch** before **e** and **i** is pronounced as **sk** as in "school".

**z** is pronounced like the **ts** in "stetson".

All double written consonants in Italian are fully sounded.

### **Example**

#### Vowels:

Rome – Roma (capital of Italy)  
póco – poco (few, little)  
fégato – fegato (liver)

#### Consonants:

ciao (bye, hi); bacio (kiss); Lancia (famous car brand)

chuiso (closed), chianti (Tuscan wine)

giallo (yellow); giovane (young), geriatría (geriatrics)

ghetto; Lamborghini (famous car brand)

battaglia (battle); glicerina (glycerine)

bologna (a city); agnello (lamb)

sciare (to ski); liscio (smooth)

rischio (risk); schema (diagram)

spazio (spacious); zucchero (sugar)

tutto (all); pizza

Adapted from *Collins Italian-English English-Italian Dictionary*. Berkley Books, New York, 1982

[This page intentionally left blank]

## Record of Negative Decision

Revised *DRAFT* (Feb 2008)

The purpose of this checklist is to determine if a proposed project/action qualifies for a Record of Negative Decision as defined by OPNAV Instruction 5090.1C, Appendix E; or requires additional formal environmental analysis in the form of an Environmental Review or Environmental Study. If one box below can be checked, no additional documentation is required and a copy of this checklist should be included in the project file. If no box can be checked, the action proponent should contact the cognizant Regional Environmental Coordinator to determine necessary environmental documentation requirements. Please note that the checklist on the back of this page should be completed regardless of whether a box is checked below to ensure environmental issues are not overlooked in the planning phase of the project/action.

### Description of Action:

The proposal qualifies for a Negative Decision based on the following:

1. Based on a review of the checklist on the back of this form, the action will not do significant harm to the environment outside the U.S. (*The checklist on the back of this form essentially serves as an impact analysis. If reviewer determines that the project/action will NOT have a major impact to any resource, this box can be checked. If impact to a specific resource is noted, reviewer should describe under "Comments" or "Summary" why impact is not expected to be major before this box can be checked.*) **D**
2. Significant environmental impacts may occur but host nation is "participating" with the U.S. in the action. (*Participation includes site approval and design review by host nation, involvement in overall project approval or permitting and joint funding and/or sponsorship. This is not meant to be a complete list. If you are unsure if threshold for host nation participation has been met; contact your Regional Environmental Coordinator.*) **D**
3. The action qualifies for an Overseas Categorical Exclusion. (*There are currently no approved Overseas Categorical Exclusions.*) **D**
4. Actions taken by or under the direction of the President or a cabinet officer in the course of armed conflict, continuing as long as the armed conflict continues; or when the national security or national interest is involved. **D**
5. The action will be conducted under the office of the Director of Naval Intelligence or other Navy activity utilized under EO 12036. **D**
6. The action will be conducted by the Navy International Programs Office and other responsible Navy offices with respect to arms transfers to foreign nations. **D**
7. The action is a vote or other action in international conferences and organizations including decisions with respect to representation of U.S. or Navy interests in international organizations and at multilateral conferences, negotiations, and meetings. **D**
8. The action is related to Navy participation in or assistance to disaster and emergency relief actions. **D**
9. The Navy action involves export licenses, export permits or export approvals, including advice to the DOS, Department of Commerce (DOC) and, where permitted by law, direct exports of DoD defense articles and services to foreign governments and international organizations. **D**
10. Actions relating to nuclear activities and nuclear material, except actions that provide a foreign nation with a nuclear production or utilization facility, as defined in the Atomic Energy Act, or a nuclear waste management facility. **D**

---

CDR Erin Sanders  
Public Works Officer

---

Date

## **OVERSEAS PROJECT/PLANNING ENVIRONMENTAL CHECKLIST**

The following checklist is designed to assist personnel in determining the environmental requirements and concerns associated with a proposed project. Please complete the top portion of this page and pages 2, and 3; provide any additional information (such as DD-1391 or Scope of Work, site maps, etc) that will further explain the project.

Upon completion please forward to the NAVFAC FEC Environmental Planning Product Line Coordinator and Environmental Planning Product Line Team Lead. They will evaluate and respond within 2 weeks.

1. Name of Project: \_\_\_\_\_  
Project Number: \_\_\_\_\_
2. Activity requesting Project:
3. Activity POC/phone:
4. Brief Description of the Project (Proposed Action): Attach 1391, SOW, or other project description:
5. When is project due for funding?
6. When is project scheduled to begin or to be awarded?

\_\_\_\_\_  
Checklist Preparer:

\_\_\_\_\_  
Date Completed:

---

### **To be completed by Environmental Planning Program Manager**

---

1. Environmental Actions Required:
  - RoND **YES** no
  - ERIES yes **no**
  - OEA/OEIS yes **no**
  - Env Permits/Notifications: yes **no**
  - Other EV. Concerns: yes **no**
2. Comments:

#### **Documents Reviewed:**

\_\_\_\_\_  
Environmental Evaluator (Print Name)

\_\_\_\_\_  
Environmental Evaluator (Signature) Date

**Environmental Effects Abroad Environmental Impact Assessment Checklist**

ISSUE	Yes or No?	Impact: Major, Minor, or Unknown	Can Impact be Mitigated by Project Change?	Comments
1. Will the project result in a physical change to the project site?				
2. Will the project affect any water resources, wetlands or aquatic habitats?				
3. Will the proposed project affect air quality?				
4. Will the proposed project affect any threatened or endangered species or their habitats? (ESA)				
5. Will the proposed project affect non-threatened or endangered species or their habitats? (MMP, etc.)				
6. Will the proposed project impact any site or structure of historic, prehistoric, archaeological, or paleontological importance?				
7. Will the project affect visual resources?				
8. Will the project have an effect on existing transportation systems?				
9. Will there be objectionable odors, noise, or vibration as a result of the proposed project?				
10. Will the proposed project affect public health and safety?				
11. Is there likely to be public controversy related to potentially adverse effects?				
12. Are there potential indirect, secondary or cumulative effects from the proposed action?				
13. Is the proposed project compatible with surrounding land uses?				
14. Describe what type of mitigation might be required for the project?				
<p><b>SUMMARY:</b> Based on the above environmental information, it is concluded that the proposed action will not significantly harm the environment outside the United States or resources of global importance that have been designated for protection.</p>				

\_\_\_\_\_  
Environmental Evaluator (Print Name)

\_\_\_\_\_  
Environmental Evaluator (Signature) Date

**Other Environmental Concerns that can Influence Planning or Design**

The following environmental issues have the potential to impact the project during the planning or design phase.		
Yes	No	Unsure
		1. Will the project disturb soil or unpaved land? If yes, list approximate size.
		2. Will the project take place in, near or over a waterway If yes, list the body of water:
		Does the project involve the disturbance of petroleum-contaminated soil or groundwater?
Resulting Actions		<ul style="list-style-type: none"> <li>• If "Yes" or "Unsure" the action may affect natural resource or require additional funding. Contact Environmental for more details.</li> <li>• If "No" – no environmental action is required</li> </ul>

Environmental Permits and Notifications		
The following environmental issues may not impact planning or design phase, but must be addressed prior to project execution.		
Yes	No	Unsure
		1. Will the project result in the installation of any equipment that will be classified as an air emission source: <i>(Examples of air emissions sources include but are not limited to: Abrasive blast glovebox/booth; Boilers; Dry Cleaning Equipment; Firing Ranges; Fuel fired equipment (ex. space heaters, pumps, compressors); Gasoline/fuel dispensing devices; Generators; Incinerators; Laboratory Equipment; Paint Booths; Solvent Cleaning/Degreasing Units; or Woodworking Equipment)</i>
		2. Will the project involve the installation or demolition of petroleum product storage tanks in quantities of 55 gallons or greater?
		3. Will the construction, demolition or operation phase of this project generate waste that will require disposal?
		4. Will the construction or demolition phase of this project generate material that can be recycled (concrete, steel, etc)?
		5. Will the project result in the installation of any new processes or activities that require a connection to the storm-water system? If yes, list the process: Tie into existing building tie-ins
		6. Will the project result in the installation of any new industrial processes that require a connection to the sanitary sewer system? If yes, list the process
Resulting Actions		<ul style="list-style-type: none"> <li>• If "Yes" or "Unsure" an environmental permit or state notification may be required.</li> <li>• If "No"-no environmental action is required</li> </ul>

Additional Comments: \_\_\_\_\_

\_\_\_\_\_  
Environmental Evaluator (Print Name)

\_\_\_\_\_  
Environmental Evaluator (Signature) Date

▼ M3

## ANNEX II

ANIMAL AND PLANT SPECIES OF COMMUNITY INTEREST WHOSE  
CONSERVATION REQUIRES THE DESIGNATION OF SPECIAL  
AREAS OF CONSERVATION

## Interpretation

- (a) Annex II follows on from Annex I for the establishment of a consistent network of special areas of conservation.
- (b) The species listed in this Annex are indicated:
- by the name of the species or subspecies, or
  - by all the species belonging to a higher taxon or to a designated part of that taxon.
- The abbreviation 'spp.' after the name of a family or genus designates all the species belonging to that family or genus.

## (c) Symbols

An asterisk (\*) before the name of a species indicates that it is a priority species.

Most species listed in this Annex are also listed in Annex IV. Where a species appears in this Annex but does not appear in either Annex IV or Annex V, the species name is followed by the symbol (o); where a species which appears in this Annex also appears in Annex V but does not appear in Annex IV, its name is followed by the symbol (V).

## (a) ANIMALS

## VERTEBRATES

## MAMMALS

## INSECTIVORA

## Talpidae

*Galemys pyrenaicus*

## CHIROPTERA

## Rhinolophidae

*Rhinolophus blasii*

*Rhinolophus euryale*

*Rhinolophus ferrumequinum*

*Rhinolophus hipposideros*

*Rhinolophus mehelyi*

## Vespertilionidae

*Barbastella barbastellus*

*Miniopterus schreibersii*

*Myotis bechsteinii*

*Myotis blythii*

*Myotis capaccinii*

*Myotis dasycneme*

*Myotis emarginatus*

*Myotis myotis*

## Pteropodidae

*Rousettus aegyptiacus*

## RODENTIA

## Gliridae

▼ M3

*Myomimus roachi*

Sciuridae

\* *Marmota marmota latirostris*

\* *Pteromys volans* (*Sciuropterus ruscicus*)

*Spermophilus citellus* (*Citellus citellus*)

\* *Spermophilus suslicus* (*Citellus suslicus*)

Castoridae

*Castor fiber* (except the Estonian, Latvian, Lithuanian, Finnish and Swedish populations)

Cricetidae

*Mesocricetus newtoni*

Microtidae

*Microtus cabrerai*

\* *Microtus oeconomus arenicola*

\* *Microtus oeconomus mehelyi*

*Microtus tatricus*

Zapodidae

*Sicista subtilis*

CARNIVORA

Canidae

\* *Alopex lagopus*

\* *Canis lupus* (except the Estonian population; Greek populations: only south of the 39th parallel; Spanish populations: only those south of the Duero; Latvian, Lithuanian and Finnish populations).

Ursidae

\* *Ursus arctos* (except the Estonian, Finnish, and Swedish populations)

Mustelidae

\* *Gulo gulo*

*Lutra lutra*

*Mustela eversmanni*

\* *Mustela lutreola*

*Vormela peregusna*

Felidae

*Lynx lynx* (except the Estonian, Latvian and Finnish populations)

\* *Lynx pardinus*

Phocidae

*Halichoerus grypus* (V)

\* *Monachus monachus*

*Phoca hispida bottnica* (V)

\* *Phoca hispida saimensis*

*Phoca vitulina* (V)

ARTIODACTYLA

Cervidae

\* *Cervus elaphus corsicanus*

*Rangifer tarandus fennicus* (o)

▼ M3

## Bovidae

- \* *Bison bonasus*
- Capra aegagrus* (natural populations)
- \* *Capra pyrenaica pyrenaica*
- Ovis gmelini musimon* (*Ovis ammon musimon*) (natural populations — Corsica and Sardinia)
- Ovis orientalis ophion* (*Ovis gmelini ophion*)
- \* *Rupicapra pyrenaica ornata* (*Rupicapra rupicapra ornata*)
- Rupicapra rupicapra balcanica*
- \* *Rupicapra rupicapra tatraica*

## CETACEA

- Phocoena phocoena*
- Tursiops truncatus*

## REPTILES

## CHELONIA (TESTUDINES)

## Testudinidae

- Testudo graeca*
- Testudo hermanni*
- Testudo marginata*

## Cheloniidae

- \* *Caretta caretta*
- \* *Chelonia mydas*

## Emydidae

- Emys orbicularis*
- Mauremys caspica*
- Mauremys leprosa*

## SAURIA

## Lacertidae

- Lacerta bonnali* (*Lacerta monticola*)
- Lacerta monticola*
- Lacerta schreiberi*
- Gallotia galloti insulanagae*
- \* *Gallotia simonyi*
- Podarcis lilfordi*
- Podarcis pityusensis*

## Scincidae

- Chalcides simonyi* (*Chalcides occidentalis*)

## Gekkonidae

- Phyllodactylus europaeus*

## OPHIDIA (SERPENTES)

## Colubridae

- \* *Coluber cypriensis*
- Elaphe quatuorlineata*
- Elaphe situla*
- \* *Natrix natrix cypriaca*

▼ M3

## Viperidae

- \* *Macrovipera schweizeri* (*Vipera lebetina schweizeri*)
- Vipera ursinii* (except *Vipera ursinii rakosiensis*)
- \* *Vipera ursinii rakosiensis*

## AMPHIBIANS

## CAUDATA

## Salamandridae

- Chioglossa lusitanica*
- Mertensiella luschani* (*Salamandra luschani*)
- \* *Salamandra aurorae* (*Salamandra atra aurorae*)
- Salamandrina terdigitata*
- Triturus carnifex* (*Triturus cristatus carnifex*)
- Triturus cristatus* (*Triturus cristatus cristatus*)
- Triturus dobrogicus* (*Triturus cristatus dobrogicus*)
- Triturus karelinii* (*Triturus cristatus karelinii*)
- Triturus montandoni*
- Triturus vulgaris ampelensis*

## Proteidae

- \* *Proteus anguinus*

## Plethodontidae

- Hydromantes* (*Speleomantes*) *ambrosii*
- Hydromantes* (*Speleomantes*) *flavus*
- Hydromantes* (*Speleomantes*) *genei*
- Hydromantes* (*Speleomantes*) *imperialis*
- Hydromantes* (*Speleomantes*) *strinatii*
- Hydromantes* (*Speleomantes*) *supramontis*

## ANURA

## Discoglossidae

- \* *Alytes muletensis*
- Bombina bombina*
- Bombina variegata*
- Discoglossus galganoi* (including *Discoglossus 'jeanneae'*)
- Discoglossus montalentii*
- Discoglossus sardus*

## Ranidae

- Rana latastei*

## Pelobatidae

- \* *Pelobates fuscus insubricus*

## FISH

## PETROMYZONIFORMES

## Petromyzonidae

- Eudontomyzon* spp. (o)
- Lampetra fluviatilis* (V) (except the Finnish and Swedish populations)
- Lampetra planeri* (o) (except the Estonian, Finnish, and Swedish populations)

▼ M3

Lethenteron zanandreai (V)

Petromyzon marinus (o) (except the Swedish populations)

## ACIPENSERIFORMES

## Acipenseridae

\* Acipenser naccarii

\* Acipenser sturio

## CLUPEIFORMES

## Clupeidae

Alosa spp. (V)

## SALMONIFORMES

## Salmonidae

Hucho hucho (natural populations) (V)

Salmo macrostigma (o)

Salmo marmoratus (o)

Salmo salar (only in fresh water) (V) (except the Finnish populations)

## Coregonidae

\* Coregonus oxyrhynchus (anadromous populations in certain sectors of the North Sea)

## Umbridae

Umbra krameri (o)

## CYPRINIFORMES

## Cyprinidae

Alburnus albidus (o) (Alburnus vulturius)

Anaocypris hispanica

Aspius aspius (V) (except the Finnish populations)

Barbus comiza (V) Barbus

meridionalis (V) Barbus

plebejus (V) Chalcalburnus

chalcoides (o) Chondrostoma

genei (o) Chondrostoma

lusitanicum (o)

Chondrostoma polylepis (o) (including C. willkommi)

Chondrostoma soetta (o)

Chondrostoma toxostoma (o)

Gobio albipinnatus (o)

Gobio kessleri (o)

Gobio uranoscopus (o)

Iberocypris palaciosi (o)

\* Ladigesocypris ghigii (o)

Leuciscus lucumonis (o)

Leuciscus souffia (o)

Pelecus cultratus (V)

Phoxinellus spp. (o)

\* Phoxinus phoxinus

Rhodeus sericeus amarus (o)

▼ M3*Rutilus pigus* (V)*Rutilus rubilio* (o)*Rutilus arcasii* (o)*Rutilus macrolepidotus* (o)*Rutilus lemmingii* (o)*Rutilus frisii meidingeri* (V)*Rutilus alburnoides* (o)*Scardinius graecus* (o)

## Cobitidae

*Cobitis elongata* (o)*Cobitis taenia* (o) (except the Finnish populations)*Cobitis trichonica* (o)*Misgurnus fossilis* (o)*Sabanejewia aurata* (o)*Sabanejewia larvata* (o) (*Cobitis larvata* and *Cobitis conspersa*)

## SILURIFORMES

## Siluridae

*Silurus aristotelis* (V)

## ATHERINIFORMES

## Cyprinodontidae

*Aphanius iberus* (o)*Aphanius fasciatus* (o)\* *Valencia hispanica*\* *Valencia letourneuxi* (*Valencia hispanica*)

## PERCIFORMES

## Percidae

*Gymnocephalus baloni**Gymnocephalus schraetzer* (V)\* *Romanichthys valsanicola**Zingel* spp. ((o) except *Zingel asper* and *Zingel zingel* (V))

## Gobiidae

*Knipowitschia* (*Padogobius*) *panizzae* (o)*Padogobius nigricans* (o)*Pomatoschistus canestrini* (o)

## SCORPAENIFORMES

## Cottidae

*Cottus gobio* (o) (except the Finnish populations)*Cottus petiti* (o)

## INVERTEBRATES

## ARTHROPODS

## CRUSTACEA

## Decapoda

*Austropotamobius pallipes* (V)\* *Austropotamobius torrentium* (V)

▼ M3

## Isopoda

- \* *Armadillidium ghardalamensis*

## INSECTA

## Coleoptera

- Agathidium pulchellum* (o)
- Bolbelasmus unicornis*
- Boros schneideri* (o)
- Buprestis splendens*
- Carabus hampei*
- Carabus hungaricus*
- \* *Carabus menetriesi pacholei*
- \* *Carabus olympiae*
- Carabus variolosus*
- Carabus zawadzskii*
- Cerambyx cerdo*
- Corticaria planula* (o)
- Cucujus cinnaberinus*
- Dorcadion fulvum cervae*
- Duvalius gebhardti*
- Duvalius hungaricus*
- Dytiscus latissimus*
- Graphoderus bilineatus*
- Leptodirus hochenwarti*
- Limoniscus violaceus* (o)
- Lucanus cervus* (o)
- Macroplea pubipennis* (o)
- Mesosa myops* (o)
- Morimus funereus* (o)
- \* *Osmoderma eremita*
- Oxyporus mannerheimii* (o)
- Pilemia tigrina*
- \* *Phryganophilus ruficollis*
- Probaticus subrugosus*
- Propomacrus cypriacus*
- \* *Pseudogaurotina excellens*
- Pseudoseriscius cameroni*
- Pytho kolwensis*
- Rhysodes sulcatus* (o)
- \* *Rosalia alpina*
- Stephanopachys linearis* (o)
- Stephanopachys substriatus* (o)
- Xyletinus tremulicola* (o)

## Hemiptera

- Aradus angularis* (o)

▼ M3

## Lepidoptera

Agriades glandon aquilo (o)  
Arytrura musculus  
\* Callimorpha (Euplagia, Panaxia) quadripunctaria (o)  
Catopta thrips  
Chondrosoma fiduciarium  
Clossiana improba (o)  
Coenonympha oedippus  
Colias myrmidone  
Cucullia mixta  
Dioszeghyana schmidtii  
Erannis ankeraria  
Erebia calcaria  
Erebia christi  
Erebia medusa polaris (o)  
Eriogaster catax  
Euphydryas (Eurodryas, Hypodryas) aurinia (o)  
Glyphipterix loricatella  
Gortyna borelii lunata  
Graellsia isabellae (V)  
Hesperia comma catena (o)  
Hypodryas maturna  
Leptidea morsei  
Lignyopectera fumidaria  
Lycaena dispar  
Lycaena helle  
Maculinea nausithous  
Maculinea teleius  
Melanargia arge  
\* Nymphalis vaualbum  
Papilio hospiton  
Phyllometra culminaria  
Plebicula golgus  
Polymixis rufocincta isolata  
Polyommatus eroides  
Pseudophilotes bavius  
Xestia borealis (o)  
Xestia brunneopicta (o)  
\* Xylomoia strix

## Mantodea

Apteromantis aptera

## Odonata

Coenagrion hylas (o)  
Coenagrion mercuriale (o)

▼ M3

Coenagrion ornatum (o)

Cordulegaster heros

Cordulegaster trinacriae

Gomphus graslinii

Leucorrhinia pectoralis

Lindenia tetraphylla

Macromia splendens

Ophiogomphus cecilia

Oxygastra curtisii

## Orthoptera

Baetica ustulata

Brachytrupes megacephalus

Isophya costata

Isophya harzi Isophya

stysi Myrmecophilus

baronii Odontopodisma

rubripes

Paracaloptenus caloptenoides

Pholidoptera transsylvanica

Stenobothrus (Stenobothrodes) eurasius

## ARACHNIDA

## Pseudoscorpiones

Anthrenochernes stellae (o)

## MOLLUSCS

## GASTROPODA

Anisus vorticulus

Caseolus calculus

Caseolus commixta

Caseolus sphaerula

Chilostoma banaticum

Discula leacockiana

Discula tabellata

Discus guerinianus

Elona quimperiana

Geomalacus maculosus

Geomitra moniziana

Gibbula nivosa

\* Helicopsis striata austriaca (o)

Hygromia kovacsi

Idiomela (Helix) subplicata

Lampedusa imitatrix

\* Lampedusa melitensis

Leiostyla abbreviata

Leiostyla cassida

▼ M3*Leiostyla corneocostata**Leiostyla gibba**Leiostyla lamellosa*\* *Paladilhia hungarica**Sadleriana pannonica**Theodoxus transversalis**Vertigo angustior* (o)*Vertigo genesii* (o)*Vertigo geyeri* (o)*Vertigo moulinsiana* (o)

## BIVALVIA

## Unionoida

*Margaritifera durrovensis* (*Margaritifera margaritifera*) (V)*Margaritifera margaritifera* (V)*Unio crassus*

## Dreissenidae

*Congeria kusceri*

## (b) PLANTS

## PTERIDOPHYTA

## ASPLENIACEAE

*Asplenium jahandiezii* (Litard.) Rouy*Asplenium adulterinum* Milde

## BLECHNACEAE

*Woodwardia radicans* (L.) Sm.

## DICKSONIACEAE

*Culcita macrocarpa* C. Presl

## DRYOPTERIDACEAE

*Diplazium sibiricum* (Turcz. ex Kunze) Kurata\* *Dryopteris corleyi* Fraser-Jenk.*Dryopteris fragans* (L.) Schott

## HYMENOPHYLLACEAE

*Trichomanes speciosum* Willd.

## ISOETACEAE

*Isoetes boryana* Durieu*Isoetes malinverniana* Ces. & De Not.

## MARSILEACEAE

*Marsilea batardae* Launert*Marsilea quadrifolia* L.*Marsilea strigosa* Willd.

## OPHIGLOSSACEAE

*Botrychium simplex* Hitchc.*Ophioglossum polyphyllum* A. Braun

## GYMNOSPERMAE

## PINACEAE

▼ M3

\* *Abies nebrodensis* (Lojac.) Mattei

## ANGIOSPERMAE

## ALISMATACEAE

\* *Alisma wahlenbergii* (Holmberg) Juz.

*Caldesia parnassifolia* (L.) Parl.

*Luronium natans* (L.) Raf.

## AMARYLLIDACEAE

*Leucojum nicaeense* Ard.

*Narcissus asturiensis* (Jordan) Pugsley

*Narcissus calcicola* Mendonça

*Narcissus cyclamineus* DC.

*Narcissus fernandesii* G. Pedro

*Narcissus humilis* (Cav.) Traub

\* *Narcissus nevadensis* Pugsley

*Narcissus pseudonarcissus* L. subsp. *nobilis* (Haw.) A. Fernandes

*Narcissus scaberulus* Henriq.

*Narcissus triandrus* L. subsp. *capax* (Salisb.) D. A. Webb.

*Narcissus viridiflorus* Schousboe

## ASCLEPIADACEAE

*Vincetoxicum pannonicum* (Borhidi) Holub

## BORAGINACEAE

\* *Anchusa crispa* Viv.

*Echium russicum* J.F.Gemlin

\* *Lithodora nitida* (H. Ern) R. Fernandes

*Myosotis lusitanica* Schuster

*Myosotis rehsteineri* Wartm.

*Myosotis retusifolia* R. Afonso

*Omphalodes kuzinskyanae* Willk.

\* *Omphalodes littoralis* Lehm.

\* *Onosma tornensis* Javorka

*Solenanthus albanicus* (Degen & al.) Degen & Baldacci

\* *Symphytum cycladense* Pawl.

## CAMPANULACEAE

*Adenophora lilifolia* (L.) Ledeb.

*Asyneuma giganteum* (Boiss.) Bornm.

\* *Campanula bohemica* Hruby

\* *Campanula gelida* Kovanda

*Campanula romanica* Sävul.

\* *Campanula sabatia* De Not.

\* *Campanula serrata* (Kit.) Hendrych

*Campanula zoyisii* Wulfen

*Jasione crispa* (Pourret) Samp. subsp. *serpentinica* Pinto da Silva

*Jasione lusitanica* A. DC.

## CARYOPHYLLACEAE

▼ M3

- Arenaria ciliata* L. subsp. *pseudofrigida* Ostenf. & O.C. Dahl  
*Arenaria humifusa* Wahlenberg  
 \* *Arenaria nevadensis* Boiss. & Reuter  
*Arenaria provincialis* Chater & Halliday  
 \* *Cerastium alsinifolium* Tausch *Cerastium dinaricum* G. Beck & Szysz.  
*Dianthus arenarius* L. subsp. *arenarius*  
 \* *Dianthus arenarius* subsp. *bohemicus* (Novak) O.Schwarz  
*Dianthus cintranus* Boiss. & Reuter subsp. *cintranus* Boiss. & Reuter  
 \* *Dianthus diutinus* Kit.  
 \* *Dianthus lumnitzeri* Wiesb.  
*Dianthus marizii* (Samp.) Samp.  
 \* *Dianthus moravicus* Kovanda  
 \* *Dianthus nitidus* Waldst. et Kit.  
*Dianthus plumarius* subsp. *regis-stephani* (Rapcs.) Baksay  
*Dianthus rupicola* Biv.  
 \* *Gypsophila papillosa* P. Porta  
*Herniaria algarvica* Chaudhri  
 \* *Herniaria latifolia* Lapeyr. subsp. *litardierei* Gamis  
*Herniaria lusitanica* (Chaudhri) subsp. *berlengiana* Chaudhri  
*Herniaria maritima* Link  
 \* *Minuartia smejkalii* Dvorakova  
*Moehringia jankae* Griseb. ex Janka  
*Moehringia lateriflora* (L.) Fenzl.  
*Moehringia tommasinii* Marches.  
*Moehringia villosa* (Wulfen) Fenzl  
*Petrocoptis grandiflora* Rothm.  
*Petrocoptis montsicciana* O. Bolos & Rivas Mart.  
*Petrocoptis pseudoviscosa* Fernández Casas  
*Silene furcata* Rafin. subsp. *angustiflora* (Rupr.) Walters  
 \* *Silene hicesiae* Brullo & Signorello  
*Silene hifacensis* Rouy ex Willk.  
 \* *Silene holzmanii* Heldr. ex Boiss.  
*Silene longicilia* (Brot.) Otth.  
*Silene mariana* Pau  
 \* *Silene orphanidis* Boiss  
 \* *Silene rothmaleri* Pinto da Silva  
 \* *Silene velutina* Pourret ex Loisel.

## CHENOPODIACEAE

- \* *Bassia (Kochia) saxicola* (Guss.) A. J. Scott  
 \* *Cremnophyton lanfrancoi* Brullo et Pavone  
 \* *Salicornia veneta* Pignatti & Lausi

## CISTACEAE

- Cistus palhinhae* Ingram  
*Halimium verticillatum* (Brot.) Sennen

▼ M3

*Helianthemum alypoides* Losa & Rivas Goday

*Helianthemum caput-felis* Boiss.

\* *Tuberaria major* (Willk.) Pinto da Silva & Rozeira

## COMPOSITAE

\* *Anthemis glaberrima* (Rech. f.) Greuter

*Artemisia campestris* L. subsp. *bottnica* A.N. Lundström ex Kindb.

\* *Artemisia granatensis* Boiss.

\* *Artemisia laciniata* Willd.

*Artemisia oelandica* (Besser) Komaror

\* *Artemisia pancicii* (Janka) Ronn.

\* *Aster pyrenaicus* Desf. ex DC

\* *Aster sorrentinii* (Tod) Lojac.

*Carlina onopordifolia* Besser

\* *Carduus myriacanthus* Salzm. ex DC.

\* *Centaurea alba* L. subsp. *heldreichii* (Halacsy) Dostal

\* *Centaurea alba* L. subsp. *princeps* (Boiss. & Heldr.) Gugler

\* *Centaurea akamantis* T. Georgiadis & G. Chatzikyriakou

\* *Centaurea attica* Nyman subsp. *megarensis* (Halacsy & Hayek) Dostal

\* *Centaurea balearica* J. D. Rodriguez

\* *Centaurea borjae* Valdes-Berm. & Rivas Goday

\* *Centaurea citricolor* Font Quer

*Centaurea corymbosa* Pourret

*Centaurea gadorensis* G. Blanca

\* *Centaurea horrida* Badaro

*Centaurea immanuelis-loewii* Degen

*Centaurea jankae* Brandza

\* *Centaurea kalambakensis* Freyn & Sint.

*Centaurea kartschiana* Scop.

\* *Centaurea lactiflora* Halacsy

*Centaurea micrantha* Hoffmanns. & Link subsp. *herminii* (Rouy) Dostál

\* *Centaurea niederi* Heldr.

\* *Centaurea peucedanifolia* Boiss. & Orph.

\* *Centaurea pinnata* Pau

*Centaurea pontica* Prodan & E. I. Nyárády

*Centaurea pulvinata* (G. Blanca) G. Blanca

*Centaurea rothmalerana* (Arènes) Dostál

*Centaurea vicentina* Mariz

*Cirsium brachycephalum* Juratzka

\* *Crepis crocifolia* Boiss. & Heldr.

*Crepis granatensis* (Willk.) B. Blanca & M. Cueto

*Crepis pusilla* (Sommier) Merxmüller

*Crepis tectorum* L. subsp. *nigrescens*

*Erigeron frigidus* Boiss. ex DC.

\* *Helichrysum melitense* (Pignatti) Brullo et al

▼ M3

*Hymenostemma pseudanthemis* (Kunze) Willd.  
*Hyoseris frutescens* Brullo et Pavone  
 \* *Jurinea cyanoides* (L.) Reichenb.  
 \* *Jurinea fontqueri* Cuatrec.  
 \* *Lamyropsis microcephala* (Moris) Dittrich & Greuter  
*Leontodon microcephalus* (Boiss. ex DC.) Boiss.  
*Leontodon boryi* Boiss.  
 \* *Leontodon siculus* (Guss.) Finch & Sell  
*Leuzea longifolia* Hoffmanns. & Link  
*Ligularia sibirica* (L.) Cass.  
 \* *Palaeocyanus crassifolius* (Bertoloni) Dostal  
*Santolina impressa* Hoffmanns. & Link  
*Santolina semidentata* Hoffmanns. & Link  
*Saussurea alpina* subsp. *esthonica* (Baer ex Rupr) Kupffer  
 \* *Senecio elodes* Boiss. ex DC.  
*Senecio jacobea* L. subsp. *gotlandicus* (Neuman) Sterner  
*Senecio nevadensis* Boiss. & Reuter  
 \* *Serratula lycopifolia* (Vill.) A.Kern  
*Tephrosieris longifolia* (Jacq.) Griseb et Schenk subsp. *moravica*

## CONVOLVULACEAE

\* *Convolvulus argyrothamnus* Greuter  
 \* *Convolvulus fernandesii* Pinto da Silva & Teles

## CRUCIFERAE

*Alyssum pyrenaicum* Lapeyr.  
 \* *Arabis kennedyae* Meikle  
*Arabis sadina* (Samp.) P. Cout.  
*Arabis scopoliana* Boiss  
 \* *Biscutella neustriaca* Bonnet  
*Biscutella vinctina* (Samp.) Rothm.  
*Boleum asperum* (Pers.) Desvaux  
*Brassica glabrescens* Poldini  
*Brassica hilarionis* Post  
*Brassica insularis* Moris  
 \* *Brassica macrocarpa* Guss.  
*Braya linearis* Rouy  
 \* *Cochlearia polonica* E. Fröhlich  
 \* *Cochlearia tatarae* Borbas  
 \* *Coincya rupestris* Rouy  
 \* *Coronopus navasii* Pau  
*Crambe tatarica* Sebeok  
*Diplotaxis ibicensis* (Pau) Gómez-Campo  
 \* *Diplotaxis siettiana* Maire  
*Diplotaxis vinctina* (P. Cout.) Rothm.  
*Draba cacuminum* Elis Ekman

▼ M3

*Draba cinerea* Adams  
*Draba doreri* Heuffel.  
*Erucastrum palustre* (Pirona) Vis.  
 \* *Erysimum pieninicum* (Zapal.) Pawl.  
 \* *Iberis arbuscula* Runemark  
*Iberis procumbens* Lange subsp. *microcarpa* Franco & Pinto da Silva  
 \* *Jonopsidium acaule* (Desf.) Reichenb.  
*Jonopsidium savianum* (Caruel) Ball ex Arcang.  
*Rhynchosinapis erucastrum* (L.) Dandy ex Clapham subsp. *cintrana* (Coutinho) Franco & P. Silva (*Coinceya cintrana* (P. Cout.) Pinto da Silva)  
*Sisymbrium cavanillesianum* Valdés & Castroviejo  
*Sisymbrium supinum* L.  
*Thlaspi jankae* A.Kern.

## CYPERACEAE

*Carex holostoma* Drejer  
 \* *Carex panormitana* Guss.  
*Eleocharis carniolica* Koch

## DIOSCOREACEAE

\* *Borderea chouardii* (Gaussen) Heslot

## DROSERACEAE

*Aldrovanda vesiculosa* L.

## ELATINACEAE

*Elatine gussonei* (Sommier) Brullo et al

## ERICACEAE

*Rhododendron luteum* Sweet

## EUPHORBIACEAE

\* *Euphorbia margalidiana* Kuhbier & Lewejohann  
*Euphorbia transtagana* Boiss.

## GENTIANACEAE

\* *Centaurium rigualii* Esteve  
 \* *Centaurium somedanum* Lainz  
*Gentiana ligustica* R. de Vilm. & Chopinet  
*Gentianella anglica* (Pugsley) E. F. Warburg  
 \* *Gentianella bohemica* Skalicky

## GERANIACEAE

\* *Erodium astragaloides* Boiss. & Reuter  
*Erodium paularense* Fernández-González & Izco  
 \* *Erodium rupicola* Boiss.

## GLOBULARIACEAE

\* *Globularia stygia* Orph. ex Boiss.

## GRAMINEAE

*Arctagrostis latifolia* (R. Br.) Griseb.  
*Arctophila fulva* (Trin.) N. J. Anderson  
*Avenula hackelii* (Henriq.) Holub  
*Bromus grossus* Desf. ex DC.

▼ M3

*Calamagrostis chalybaea* (Laest.) Fries  
*Cinna latifolia* (Trev.) Griseb.  
*Coleanthus subtilis* (Tratt.) Seidl  
*Festuca brigantina* (Markgr.-Dannenb.) Markgr.-Dannenb.  
*Festuca duriotagana* Franco & R. Afonso  
*Festuca elegans* Boiss.  
*Festuca henriquesii* Hack.  
*Festuca summilusitana* Franco & R. Afonso  
*Gaudinia hispanica* Stace & Tutin  
*Holcus setiglumis* Boiss. & Reuter subsp. *duriensis* Pinto da Silva  
*Micropyropsis tuberosa* Romero — Zarco & Cabezudo  
*Poa granitica* Br.-Bl. subsp. *disparilis* (E. I. Nyárády) E. I. Nyárády  
\* *Poa riphaea* (Ascher et Graebner) Fritsch  
*Pseudarrhenatherum pallens* (Link) J. Holub  
*Puccinellia phryganodes* (Trin.) Scribner + Merr.  
*Puccinellia pungens* (Pau) Paunero  
\* *Stipa austroitalica* Martinovsky  
\* *Stipa bavarica* Martinovsky & H. Scholz  
*Stipa danubialis* Dihoru & Roman  
\* *Stipa styriaca* Martinovsky  
\* *Stipa veneta* Moraldo  
\* *Stipa zalesskii* Wilensky  
*Trisetum subalpestre* (Hartman) Neuman

## GROSSULARIACEAE

\* *Ribes sardoum* Martelli

## HIPURIDACEAE

*Hippuris tetraphylla* L. Fil.

## HYPERICACEAE

\* *Hypericum aciferum* (Greuter) N.K.B. Robson

## IRIDACEAE

*Crocus cyprius* Boiss. et Kotschy  
*Crocus hartmannianus* Holmboe  
*Gladiolus palustris* Gaud.  
*Iris aphylla* L. subsp. *hungarica* Hegi  
*Iris humilis* Georgi subsp. *arenaria* (Waldst. et Kit.) A. et D.Löve

## JUNCACEAE

*Juncus valvatus* Link  
*Luzula arctica* Blytt

## LABIATAE

*Dracocephalum austriacum* L.  
\* *Micromeria taygetea* P. H. Davis  
*Nepeta dirphya* (Boiss.) Heldr. ex Halacsy  
\* *Nepeta sphaciotica* P. H. Davis  
*Origanum dictamnus* L.

▼ M3

*Phlomis brevibracteata* Turril  
*Phlomis cypria* Post  
*Salvia veneris* Hedge  
*Sideritis cypria* Post  
*Sideritis incana* subsp. *glauca* (Cav.) Malagarriga  
*Sideritis javalambrensis* Pau  
*Sideritis serrata* Cav. ex Lag.  
*Teucrium lepicephalum* Pau  
*Teucrium turredanum* Losa & Rivas Goday  
 \* *Thymus camphoratus* Hoffmanns. & Link  
*Thymus carnosus* Boiss.  
 \* *Thymus lotocephalus* G. López & R. Morales (*Thymus cephalotos* L.)

## LEGUMINOSAE

*Anthyllis hystrix* Cardona, Contandr. & E. Sierra  
 \* *Astragalus algarbiensis* Coss. ex Bunge  
 \* *Astragalus aquilanus* Anzalone  
*Astragalus centralpinus* Braun-Blanquet  
 \* *Astragalus macrocarpus* DC. subsp. *lefkarensis*  
 \* *Astragalus maritimus* Moris  
*Astragalus peterfii* Jáv.  
*Astragalus tremolsianus* Pau  
 \* *Astragalus verrucosus* Moris  
 \* *Cytisus aeolicus* Guss. ex Lindl.  
*Genista dorycnifolia* Font Quer  
*Genista holopetala* (Fleischm. ex Koch) Baldacci  
*Melilotus segetalis* (Brot.) Ser. subsp. *fallax* Franco  
 \* *Ononis hackelii* Lange  
*Trifolium saxatile* All.  
 \* *Vicia bifoliolata* J.D. Rodríguez

## LENTIBULARIACEAE

\* *Pinguicula crystallina* Sm.  
*Pinguicula nevadensis* (Lindb.) Casper

## LILIACEAE

*Allium grosii* Font Quer  
 \* *Androcymbium rechingeri* Greuter  
 \* *Asphodelus bento-rainhae* P. Silva  
 \* *Chionodoxa lochia* Meikle in Kew Bull.  
*Colchicum arenarium* Waldst. et Kit.  
*Hyacinthoides vicentina* (Hoffmans. & Link) Rothm.  
 \* *Muscari gussonei* (Parl.) Tod.  
*Scilla litardierei* Breist.  
 \* *Scilla morrisii* Meikle  
*Tulipa cypria* Stapf  
*Tulipa hungarica* Borbas

▼ M3

## LINACEAE

- \* *Linum dolomiticum* Borbas
- \* *Linum muelleri* Moris (*Linum maritimum muelleri*)

## LYTHRACEAE

- \* *Lythrum flexuosum* Lag.

## MALVACEAE

- Kosteletzkya pentacarpos* (L.) Ledeb.

## NAJADACEAE

- Najas flexilis* (Willd.) Rostk. & W.L. Schmidt
- Najas tenuissima* (A. Braun) Magnus

## OLEACEAE

- Syringa josikaea* Jacq. Fil. ex Reichenb.

## ORCHIDACEAE

- Anacamptis urvilleana* Sommier et Caruana Gatto
- Calypso bulbosa* L.
- \* *Cephalanthera cucullata* Boiss. & Heldr.
- Cypripedium calceolus* L. *Dactylorhiza*
- kalopissii* E.Nelson *Gymnigritella runei*
- Teppner & Klein *Himantoglossum*
- adriaticum* Baumann *Himantoglossum*
- caprinum* (Bieb.) V.Koch *Liparis loeselii*
- (L.) Rich.
- \* *Ophrys kotschyi* H.Fleischm. et Soo
- \* *Ophrys lunulata* Parl.
- Ophrys melitensis* (Salkowski) J et P Devillers-Terschuren
- Platanthera obtusata* (Pursh) subsp. *oligantha* (Turez.) Hulten

## OROBANCHACEAE

- Orobanche densiflora* Salzm. ex Reut.

## PAEONIACEAE

- Paeonia cambessedesii* (Willk.) Willk.
- Paeonia clusii* F.C. Stern subsp. *rhodia* (Stearn) Tzanoudakis
- Paeonia officinalis* L. subsp. *banatica* (Rachel) Soo
- Paeonia parnassica* Tzanoudakis

## PALMAE

- Phoenix theophrasti* Greuter

## PAPAVERACEAE

- Corydalis gotlandica* Lidén
- Papaver laestadianum* (Nordh.) Nordh.
- Papaver radicum* Rottb. subsp. *hyperboreum* Nordh.

## PLANTAGINACEAE

- Plantago algarbiensis* Sampaio (*Plantago bracteosa* (Willk.) G. Sampaio)
- Plantago almogravensis* Franco

## PLUMBAGINACEAE

- Armeria berlengensis* Daveau

▼ M3

- \* *Armeria helodes* Martini & Pold
- Armeria neglecta* Girard
- Armeria pseudarmeria* (Murray) Mansfeld
- \* *Armeria rouyana* Daveau
- Armeria soleirolii* (Duby) Godron
- Armeria velutina* Welw. ex Boiss. & Reuter
- Limonium dodartii* (Girard) O. Kuntze subsp. *lusitanicum* (Daveau) Franco
- \* *Limonium insulare* (Beg. & Landi) Arrig. & Diana
- Limonium lanceolatum* (Hoffmans. & Link) Franco
- Limonium multiflorum* Erben
- \* *Limonium pseudolaetum* Arrig. & Diana
- \* *Limonium strictissimum* (Salzmann) Arrig.

## POLYGONACEAE

- Persicaria foliosa* (H. Lindb.) Kitag.
- Polygonum praelongum* Coode & Cullen
- Rumex rupestris* Le Gall

## PRIMULACEAE

- Androsace mathildae* Levier
- Androsace pyrenaica* Lam.
- \* *Cyclamen fatrense* Halda et Sojak
- \* *Primula apennina* Widmer
- Primula carniolica* Jacq.
- Primula nutans* Georgi
- Primula palinuri* Petagna
- Primula scandinavica* Bruun
- Soldanella villosa* Darracq.

## RANUNCULACEAE

- \* *Aconitum corsicum* Gay ( *Aconitum napellus* subsp. *corsicum* )
- Aconitum firmum* (Reichenb.) Neilr subsp. *moravicum* Skalicky
- Adonis distorta* Ten.
- Aquilegia bertolonii* Schott
- Aquilegia kitaibelii* Schott
- \* *Aquilegia pyrenaica* D.C. subsp. *cazorlensis* (Heywood) Galiano
- \* *Consolida samia* P.H. Davis
- \* *Delphinium caseyi* B.L.Burt
- Pulsatilla grandis* Wenderoth *Pulsatilla patens* (L.) Miller
- \* *Pulsatilla pratensis* (L.) Miller subsp. *hungarica* Soo
- \* *Pulsatilla slavica* G.Reuss.
- \* *Pulsatilla subslavica* Futak ex Goliašova
- Pulsatilla vulgaris* Hill. subsp. *gotlandica* (Johanss.) Zaemelis & Paegle
- Ranunculus kykkoensis* Meikle
- Ranunculus lapponicus* L.
- \* *Ranunculus weyleri* Mares

## RESEDACEAE

▼ M3

\**Reseda decursiva* Forssk.

## ROSACEAE

*Agrimonia pilosa* Ledebour

*Potentilla delphinensis* Gren. & Godron

*Potentilla emilii-popii* Nyárády

\* *Pyrus magyarica* Terpo

*Sorbus teodorii* Liljefors

## RUBIACEAE

*Galium cracoviense* Ehrend.

\* *Galium litorale* Guss.

*Galium moldavicum* (Dobrescu) Franco

\* *Galium sudeticum* Tausch

\* *Galium viridiflorum* Boiss. & Reuter

## SALICACEAE

*Salix salvifolia* Brot. subsp. *australis* Franco

## SANTALACEAE

*Thesium ebracteatum* Hayne

## SAXIFRAGACEAE

*Saxifraga berica* (Beguinot) D.A. Webb

*Saxifraga florulenta* Moretti

*Saxifraga hirculus* L.

*Saxifraga osloënsis* Knaben

*Saxifraga tombeanensis* Boiss. ex Engl.

## SCROPHULARIACEAE

*Antirrhinum charidemi* Lange

*Chaenorhinum serpyllifolium* (Lange) Lange subsp. *lusitanicum* R. Fernandes

\* *Euphrasia genargentea* (Feoli) Diana

*Euphrasia marchesettii* Wettst. ex Marches.

*Linaria algarviana* Chav.

*Linaria coutinhoi* Valdés

*Linaria loeselii* Schweigger

\* *Linaria ficalhoana* Rouy

*Linaria flava* (Poiret) Desf.

\* *Linaria hellenica* Turrill

*Linaria pseudolaxiflora* Lojacono

\* *Linaria ricardoï* Cout.

*Linaria tonzigii* Lona

\* *Linaria tursica* B. Valdés & Cabezudo

*Odontites granatensis* Boiss.

\* *Pedicularis sudetica* Willd.

*Rhinanthus oesilensis* (Ronniger & Saarsoo) Vassilez

*Tozzia carpathica* Wol.

*Verbascum litigiosum* Samp.

*Veronica micrantha* Hoffmanns. & Link

▼ M3

\* *Veronica oetaea* L.-A. Gustavsson

## SOLANACEAE

\* *Atropa baetica* Willk.

## THYMELAEACEAE

\* *Daphne arbuscula* Celak

*Daphne petraea* Leybold

\* *Daphne rodriguezii* Texidor

## ULMACEAE

*Zelkova abelicea* (Lam.) Boiss.

## UMBELLIFERAE

\* *Angelica heterocarpa* Lloyd

*Angelica palustris* (Besser) Hoffm.

\* *Apium bermejoi* Llorens

*Apium repens* (Jacq.) Lag.

*Athamanta cortiana* Ferrarini

\* *Bupleurum capillare* Boiss. & Heldr.

\* *Bupleurum kakiskalae* Greuter

*Eryngium alpinum* L.

\* *Eryngium viviparum* Gay

\* *Ferula sadleriana* Lebed.

*Hladnikia pastinacifolia* Reichenb.

\* *Laserpitium longiradium* Boiss.

\* *Naufraga balearica* Constans & Cannon

\* *Oenanthe coniooides* Lange

*Petagnia saniculifolia* Guss.

*Rouya polygama* (Desf.) Coincy

\* *Seseli intricatum* Boiss.

*Seseli leucospermum* Waldst. et Kit

*Thorella verticillatinundata* (Thore) Briq.

## VALERIANACEAE

*Centranthus trinervis* (Viv.) Beguinot

## VIOLACEAE

*Viola delphinantha* Boiss.

\* *Viola hispida* Lam.

*Viola jaubertiana* Mares & Vigineix

*Viola rupestris* F.W. Schmidt subsp. *relicta* Jalas

## LOWER PLANTS

## BRYOPHYTA

*Bruchia vogesiaca* Schwaegr. (o)

*Bryhnia novae-angliae* (Sull & Lesq.) Grout (o)

\* *Bryoerythrophyllum campylocarpum* (C. Müll.) Crum. (*Bryoerythrophyllum machadoanum* (Sergio) M. O. Hill) (o)

*Buxbaumia viridis* (Moug.) Moug. & Nestl. (o)

*Cephalozia macounii* (Aust.) Aust. (o)

*Cynodontium suecicum* (H. Arn. & C. Jens.) I. Hag. (o)

▼ M3

*Dichelyma capillaceum* (Dicks) Myr. (o)  
*Dicranum viride* (Sull. & Lesq.) Lindb. (o)  
*Distichophyllum carinatum* Dix. & Nich. (o)  
*Drepanocladus (Hamatocaulis) vernicosus* (Mitt.) Warnst. (o)  
*Encalypta mutica* (I. Hagen) (o)  
*Hamatocaulis lapponicus* (Norrl.) Hedenäs (o)  
*Herzogiella turfacea* (Lindb.) I. Wats. (o)  
*Hygrohypnum montanum* (Lindb.) Broth. (o)  
*Jungermannia handelii* (Schiffn.) Amak. (o)  
*Mannia triandra* (Scop.) Grolle (o)  
 \* *Marsupella profunda* Lindb. (o)  
*Meesia longiseta* Hedw. (o)  
*Nothothylas orbicularis* (Schwein.) Sull. (o)  
*Ochyraea tatrensis* Vana (o)  
*Orthothecium lapponicum* (Schimp.) C. Hartm. (o)  
*Orthotrichum rogeri* Brid. (o)  
*Petalophyllum ralfsii* (Wils.) Nees & Gott. (o)  
*Plagiomnium drummondii* (Bruch & Schimp.) T. Kop. (o)  
*Riccia breidleri* Jur. (o)  
*Riella helicophylla* (Bory & Mont.) Mont. (o)  
*Scapania massolongi* (K. Müll.) K. Müll. (o)  
*Sphagnum pylaisii* Brid. (o)  
*Tayloria rudolphiana* (Garov) B. & S. (o)  
*Tortella rigens* (N. Alberts) (o)

## SPECIES FOR MACARONESIA

## PTERIDOPHYTA

## HYMENOPHYLLACEAE

*Hymenophyllum maderensis* Gibby & Lovis

## DRYOPTERIDACEAE

\* *Polystichum drepanum* (Sw.) C. Presl.

## ISOETACEAE

*Isoetes azorica* Durieu & Paiva ex Milde

## MARSILEACEAE

\* *Marsilea azorica* Launert & Paiva

## ANGIOSPERMAE

## ASCLEPIADACEAE

*Caralluma burchardii* N. E. Brown

\* *Ceropegia chrysantha* Svent.

## BORAGINACEAE

*Echium candicans* L. fil.

\* *Echium gentianoides* Webb & Coincy

*Myosotis azorica* H. C. Watson

*Myosotis maritima* Hochst. in Seub.

## CAMPANULACEAE

▼ M3

\* *Azorina vidalii* (H. C. Watson) Feer

*Musschia aurea* (L. f.) DC.

\* *Musschia wollastonii* Lowe

## CAPRIFOLIACEAE

\* *Sambucus palmensis* Link

## CARYOPHYLLACEAE

*Spergularia azorica* (Kindb.) Lebel

## CELASTRACEAE

*Maytenus umbellata* (R. Br.) Mabb.

## CHENOPODIACEAE

*Beta patula* Ait.

## CISTACEAE

*Cistus chinamadensis* Banares & Romero

\* *Helianthemum bystropogophyllum* Svent.

## COMPOSITAE

*Andryala crithmifolia* Ait.

\* *Argyranthemum lidii* Humphries

*Argyranthemum thalassophyllum* (Svent.) Hump.

*Argyranthemum winterii* (Svent.) Humphries

\* *Atractylis arbuscula* Svent. & Michaelis

*Atractylis preauxiana* Schultz.

*Calendula maderensis* DC.

*Cheirolophus duranii* (Burchard) Holub *Cheirolophus*

*ghomerytus* (Svent.) Holub *Cheirolophus junonianus*

(Svent.) Holub *Cheirolophus massonianus* (Lowe)

Hansen & Sund. *Cirsium latifolium* Lowe

*Helichrysum gossypinum* Webb *Helichrysum*

*monogynum* Burt & Sund. *Hypochoeris*

*oligocephala* (Svent. & Bramw.) Lack

\* *Lactuca watsoniana* Trel.

\* *Onopordum nogalesii* Svent.

\* *Onopordum carduelinum* Bolle

\* *Pericallis hadrosoma* (Svent.) B. Nord.

*Phagnalon benettii* Lowe

*Stemmacantha cynaroides* (Chr. Son. in Buch) Ditt

*Sventenia bupleuroides* Font Quer

\* *Tanacetum ptarmiciflorum* Webb & Berth

## CONVOLVULACEAE

\* *Convolvulus caput-medusae* Lowe

\* *Convolvulus lopez-socasii* Svent.

\* *Convolvulus massonii* A. Dietr.

## CRASSULACEAE

*Aeonium gomeraense* Praeger

▼ M3

*Aeonium saundersii* Bolle Aichryson  
*dumosum* (Lowe) Praeg. Monanthes  
*wildpretii* Banares & Scholz Sedum  
*brissemoretii* Raymond-Hamet

## CRUCIFERAE

\* *Crambe arborea* Webb ex Christ  
*Crambe laevigata* DC. ex Christ  
 \* *Crambe sventenii* R. Petters ex Bramwell & Sund.  
 \* *Parolinia schizogynoides* Svent.  
*Sinapidendron rupestre* (Ait.) Lowe

## CYPERACEAE

*Carex malato-belizii* Raymond

## DIPSACACEAE

*Scabiosa nitens* Roemer & J. A. Schultes

## ERICACEAE

*Erica scoparia* L. subsp. *azorica* (Hochst.) D. A. Webb

## EUPHORBIACEAE

\* *Euphorbia handiensis* Burchard  
*Euphorbia lambii* Svent.  
*Euphorbia stygiana* H. C. Watson

## GERANIACEAE

\* *Geranium maderense* P. F. Yeo

## GRAMINEAE

*Deschampsia maderensis* (Haeck. & Born.) Buschm.  
*Phalaris maderensis* (Menezes) Menezes

## GLOBULARIACEAE

\* *Globularia ascanii* D. Bramwell & Kunkel  
 \* *Globularia sarcophylla* Svent.

## LABIATAE

\* *Sideritis cystosiphon* Svent.  
 \* *Sideritis discolor* (Webb ex de Noe) Bolle  
*Sideritis infernalis* Bolle  
*Sideritis marmorea* Bolle  
*Teucrium abutiloides* L'Hér.  
*Teucrium betonicum* L'Hér.

## LEGUMINOSAE

\* *Anagyris latifolia* Brouss. ex. Willd.  
*Anthyllis lemanniana* Lowe  
 \* *Dorycnium spectabile* Webb & Berthel  
 \* *Lotus azoricus* P. W. Ball  
*Lotus callis-viridis* D. Bramwell & D. H. Davis  
 \* *Lotus kunkelii* (E. Chueca) D. Bramwell & al.  
 \* *Teline rosmarinifolia* Webb & Berthel.  
 \* *Teline salsoloides* Arco & Acebes.

▼ M3

*Vicia dennesiana* H. C. Watson

## LILIACEAE

\* *Androcymbium psammophilum* Svent.

*Scilla maderensis* Menezes

*Semele maderensis* Costa

## LORANTHACEAE

*Arceuthobium azoricum* Wiens & Hawksw.

## MYRICACEAE

\* *Myrica rivas-martinezii* Santos.

## OLEACEAE

*Jasminum azoricum* L.

*Picconia azorica* (Tutin) Knobl.

## ORCHIDACEAE

*Goodyera macrophylla* Lowe

## PITTOSPORACEAE

\* *Pittosporum coriaceum* Dryand. ex. Ait.

## PLANTAGINACEAE

*Plantago malato-belizii* Lawalree

## PLUMBAGINACEAE

\* *Limonium arborescens* (Brouss.) Kuntze

*Limonium dendroides* Svent.

\**Limonium spectabile* (Svent.) Kunkel & Sunding

\**Limonium sventenii* Santos & Fernández Galván

## POLYGONACEAE

*Rumex azoricus* Rech. fil.

## RHAMNACEAE

*Frangula azorica* Tutin

## ROSACEAE

\* *Bencomia brachystachya* Svent.

*Bencomia sphaerocarpa* Svent.

\* *Chamaemeles coriacea* Lindl.

*Dendriopoterium pulidoi* Svent.

*Marcetella maderensis* (Born.) Svent.

*Prunus lusitanica* L. subsp. *azorica* (Mouillef.) Franco

*Sorbus maderensis* (Lowe) Dode

## SANTALACEAE

*Kunkeliella subsucculenta* Kammer

## SCROPHULARIACEAE

\* *Euphrasia azorica* H.C. Watson

*Euphrasia grandiflora* Hochst. in Seub.

\* *Isoplexis chalcantha* Svent. & O'Shanahan

*Isoplexis isabelliana* (Webb & Berthel.) Masferrer

*Odontites holliana* (Lowe) Benth.

*Sibthorpia peregrina* L.

▼ M3

SOLANACEAE

- \* *Solanum lidii* Sunding

UMBELLIFERAE

- Ammitrifoliatum* (H. C. Watson) Trelease
- Bupleurum handiense* (Bolle) Kunkel
- Chaerophyllum azoricum* Trelease
- Ferula latipinna* Santos
- Melanoselinum decipiens* (Schrader & Wendl.) Hoffm.
- Monizia edulis* Lowe
- Oenanthe divaricata* (R. Br.) Mabb.
- Sanicula azorica* Guthnick ex Seub.

VIOLACEAE

- Viola paradoxa* Lowe

LOWER PLANTS

BRYOPHYTA

- \* *Echinodium spinosum* (Mitt.) Jur. (o)
- \* *Thamnobryum fernandesii* Sergio (o).

▼ M3

## ANNEX IV

ANIMAL AND PLANT SPECIES OF COMMUNITY INTEREST IN  
NEED OF STRICT PROTECTION

The species listed in this Annex are indicated:

- by the name of species or subspecies, or
- by the body of species belonging to a higher taxon or to a designated part of that taxon.

The abbreviation 'spp.' after the name of a family or genus designates all the species belonging to that family or genus.

## (a) ANIMALS

## VERTEBRATES

## MAMMALS

## INSECTIVORA

## Erinaceidae

*Erinaceus algirus*

## Soricidae

*Crocidura canariensis*

*Crocidura sicula*

## Talpidae

*Galemys pyrenaicus*

## MICROCHIROPTERA

All species

## MEGACHIROPTERA

## Pteropodidae

*Rousettus aegyptiacus*

## RODENTIA

## Gliridae

All species except *Glis glis* and *Eliomys quercinus*

## Sciuridae

*Marmota marmota latirostris*

*Pteromys volans* (*Sciuropterus russicus*)

*Spermophilus citellus* (*Citellus citellus*)

*Spermophilus suslicus* (*Citellus suslicus*)

*Sciurus anomalus*

## Castoridae

*Castor fiber* (except the Estonian, Latvian, Lithuanian, Polish, Finnish and Swedish, populations)

## Cricetidae

*Cricetus cricetus* (except the Hungarian populations)

*Mesocricetus newtoni*

## Microtidae

*Microtus cabraerae*

*Microtus oeconomus arenicola*

*Microtus oeconomus mehelyi*

*Microtus tatricus*

▼ M3

## Zapodidae

*Sicista betulina**Sicista subtilis*

## Hystricidae

*Hystrix cristata*

## CARNIVORA

## Canidae

*Alopex lagopus*

*Canis lupus* (except the Greek populations north of the 39th parallel; Estonian populations, Spanish populations north of the Duero; Bulgarian, Latvian, Lithuanian, Polish, Slovak populations and Finnish populations within the reindeer management area as defined in paragraph 2 of the Finnish Act No 848/90 of 14 September 1990 on reindeer management)

## Ursidae

*Ursus arctos*

## Mustelidae

*Lutra lutra**Mustela eversmannii**Mustela lutreola**Vormela peregusna*

## Felidae

*Felis silvestris**Lynx lynx* (except the Estonian population)*Lynx pardinus*

## Phocidae

*Monachus monachus**Phoca hispida saimensis*

## ARTIODACTYLA

## Cervidae

*Cervus elaphus corsicanus*

## Bovidae

*Bison bonasus**Capra aegagrus* (natural populations)*Capra pyrenaica pyrenaica*

*Ovis gmelini musimon* (*Ovis ammon musimon*) (natural populations — Corsica and Sardinia)

*Ovis orientalis ophion* (*Ovis gmelini ophion*)*Rupicapra pyrenaica ornata* (*Rupicapra rupicapra ornata*)*Rupicapra rupicapra balcanica**Rupicapra rupicapra tatraica*

## CETACEA

All species

## REPTILES

## TESTUDINATA

## Testudinidae

*Testudo graeca*

▼ M3

Testudo hermanni

Testudo marginata

## Cheloniidae

Caretta caretta

Chelonia mydas

Lepidochelys kempii

Eretmochelys imbricata

## Dermochelyidae

Dermochelys coriacea

## Emydidae

Emys orbicularis

Mauremys caspica

Mauremys leprosa

## SAURIA

## Lacertidae

Algyroides fitzingeri

Algyroides marchi

Algyroides moreoticus

Algyroides nigropunctatus

Gallotia atlantica

Gallotia galloti

Gallotia galloti insulanagae

Gallotia simonyi

Gallotia stehlini

Lacerta agilis

Lacerta bedriagae

Lacerta bonnali (Lacerta monticola)

Lacerta monticola

Lacerta danfordi

Lacerta dugesi

Lacerta graeca

Lacerta horvathi

Lacerta schreiberi

Lacerta trilineata

Lacerta viridis

Lacerta vivipara pannonica

Ophisops elegans

Podarcis erhardii

Podarcis filfolensis

Podarcis hispanica atrata

Podarcis lilfordi

Podarcis melisellensis

Podarcis milensis

Podarcis muralis

▼ M3

*Podarcis peloponnesiaca*

*Podarcis pityusensis*

*Podarcis sicula*

*Podarcis taurica*

*Podarcis tiliguerta*

*Podarcis wagleriana*

## Scincidae

*Ablepharus kitaibelii*

*Chalcides bedriagai*

*Chalcides ocellatus*

*Chalcides sexlineatus*

*Chalcides simonyi* (*Chalcides occidentalis*)

*Chalcides viridianus*

*Ophiomorus punctatissimus*

## Gekkonidae

*Cyrtopodion kotschy*

*Phyllodactylus europaeus*

*Tarentola angustimentalis*

*Tarentola boettgeri*

*Tarentola delalandii*

*Tarentola gomerensis*

## Agamidae

*Stellio stellio*

## Chamaeleontidae

*Chamaeleo chamaeleon*

## Anguidae

*Ophisaurus apodus*

## OPHIDIA

## Colubridae

*Coluber caspius*

*Coluber cypriensis*

*Coluber hippocrepis*

*Coluber jugularis*

*Coluber laurenti*

*Coluber najadum*

*Coluber nummifer*

*Coluber viridiflavus*

*Coronella austriaca*

*Eirenis modesta*

*Elaphe longissima*

*Elaphe quatuorlineata*

*Elaphe situla*

*Natrix natrix cetti*

*Natrix natrix corsa*

▼ M3*Natrix natrix cypriaca**Natrix tessellata**Telescopus falax*

## Viperidae

*Vipera ammodytes**Macrovipera schweizeri* (*Vipera lebetina schweizeri*)*Vipera seoanni* (except Spanish populations)*Vipera ursinii**Vipera xanthina*

## Boidae

*Eryx jaculus*

## AMPHIBIANS

## CAUDATA

## Salamandridae

*Chioglossa lusitanica**Euproctus asper**Euproctus montanus**Euproctus platycephalus**Mertensiella luschani* (*Salamandra luschani*)*Salamandra atra**Salamandra aurorae**Salamandra lanzai**Salamandrina terdigitata**Triturus carnifex* (*Triturus cristatus carnifex*)*Triturus cristatus* (*Triturus cristatus cristatus*)*Triturus italicus**Triturus karelinii* (*Triturus cristatus karelinii*)*Triturus marmoratus**Triturus montandoni**Triturus vulgaris ampelensis*

## Proteidae

*Proteus anguinus*

## Plethodontidae

*Hydromantes* (*Speleomantes*) *ambrosii**Hydromantes* (*Speleomantes*) *flavus**Hydromantes* (*Speleomantes*) *genei**Hydromantes* (*Speleomantes*) *imperialis**Hydromantes* (*Speleomantes*) *strinatii* (*Hydromantes* (*Speleomantes*) *italicus*)*Hydromantes* (*Speleomantes*) *supramontis*

## ANURA

## Discoglossidae

*Alytes cisternasii**Alytes muletensis**Alytes obstetricans*

▼ M3

Bombina bombina  
Bombina variegata  
Discoglossus galganoi (including Discoglossus 'jeanneae')  
Discoglossus montalentii  
Discoglossus pictus  
Discoglossus sardus

## Ranidae

Rana arvalis  
Rana dalmatina  
Rana graeca  
Rana iberica  
Rana italica  
Rana latastei  
Rana lessonae

## Pelobatidae

Pelobates cultripipes  
Pelobates fuscus  
Pelobates syriacus

## Bufonidae

Bufo calamita  
Bufo viridis

## Hylidae

Hyla arborea  
Hyla meridionalis  
Hyla sarda

## FISH

## ACIPENSERIFORMES

## Acipenseridae

Acipenser naccarii  
Acipenser sturio

## SALMONIFORMES

## Coregonidae

Coregonus oxyrhynchus (anadromous populations in certain sectors of the North Sea, except the Finnish populations)

## CYPRINIFORMES

## Cyprinidae

Anaocypris hispanica  
Phoxinus phoxinus

## ATHERINIFORMES

## Cyprinodontidae

Valencia hispanica

## PERCIFORMES

## Percidae

Gymnocephalus baloni  
Romanichthys valsanicola

▼ M3

Zingel asper

## INVERTEBRATES

## ARTHROPODS

## CRUSTACEA

## Isopoda

Armadillidium ghardalamensis

## INSECTA

## Coleoptera

Bolbelasmus unicornis

Buprestis splendens

Carabus hampei

Carabus hungaricus

Carabus olympiae

Carabus variolosus

Carabus zawadzskii

Cerambyx cerdo

Cucujus cinnaberinus

Dorcadion fulvum cervae

Duvalius gebhardti

Duvalius hungaricus

Dytiscus latissimus

Graphoderus bilineatus

Leptodirus hochenwarti

Pilemia tigrina

Osmoderma eremita

Phryganophilus ruficollis

Probaticus subrugosus

Propomacrus cypriacus

Pseudogaurotina excellens

Pseudoseriscius cameroni

Pytho kolwensis

Rosalia alpina

## Lepidoptera

Apatura metis

Arytrura musculus

Catopta thrips

Chondrosoma fiduciarium

Coenonympha hero

Coenonympha oedippus

Colias myrmidone

Cucullia mixta

Dioszeghyana schmidtii

Erannis ankeraria

Erebia calcaria

▼ M3

Erebia christi Erebia  
sudetica Eriogaster  
catax Fabriciana elisa  
Glyphipterix loricatella  
Gortyna borelii lunata  
Hypodryas maturna  
Hyles hippophaes  
Leptidea morsei  
Lignyoptera fumidaria  
Lopinga achine  
Lycaena dispar  
Lycaena helle  
Maculinea arion  
Maculinea nausithous  
Maculinea teleius  
Melanargia arge  
Nymphalis vaualbum  
Papilio alexanor  
Papilio hospiton  
Parnassius apollo  
Parnassius mnemosyne  
Phyllometra culminaria  
Plebicula golgus  
Polymixis rufocincta isolata  
Polyommatus eroides  
Proserpinus proserpina  
Pseudophilotes bavius  
Xylomoia strix  
Zerynthia polyxena

## Mantodea

Apteromantis aptera

## Odonata

Aeshna viridis  
Cordulegaster heros  
Cordulegaster trinacriae  
Gomphus graslinii  
Leucorrhinia albifrons  
Leucorrhinia caudalis  
Leucorrhinia pectoralis  
Lindenia tetraphylla  
Macromia splendens  
Ophiogomphus cecilia  
Oxygastra curtisii

▼ M3

Stylurus flavipes

Sympecma braueri

## Orthoptera

Baetica ustulata

Brachytrupes megacephalus

Isophya costata

Isophya harzi Isophya

stysi Myrmecophilus

baronii Odontopodisma

rubripes

Paracaloptenus caloptenoides

Pholidoptera transsylvanica

Saga pedo

Stenobothrus (Stenobothrodes) eurasius

## ARACHNIDA

## Araneae

Macrothele calpeiana

## MOLLUSCS

## GASTROPODA

Anisus vorticulus

Caseolus calculus

Caseolus commixta

Caseolus sphaerula

Chilostoma banaticum

Discula leacockiana

Discula tabellata

Discula testudinalis

Discula turricula

Discus defloratus

Discus guerinianus

Elona quimperiana

Geomalacus maculosus

Geomitra moniziana

Gibbula nivosa

Hygromia kovacsi

Idiomela (Helix) subplicata

Lampedusa imitatrix

Lampedusa melitensis

Leiostyla abbreviata

Leiostyla cassida

Leiostyla corneocostata

Leiostyla gibba

Leiostyla lamellosa

Paladilhia hungarica

▼ M3

Patella ferruginea  
 Sadleriana pannonica  
 Theodoxus prevostianus  
 Theodoxus transversalis

## BIVALVIA

## Anisomyaria

Lithophaga lithophaga  
 Pinna nobilis

## Unionoida

Margaritifera auricularia  
 Unio crassus

## Dreissenidae

Congeria kusceri

## ECHINODERMATA

## Echinoidea

Centrostephanus longispinus

## (b) PLANTS

Annex IV (b) contains all the plant species listed in Annex II (b) <sup>(1)</sup> plus those mentioned below:

## PTERIDOPHYTA

## ASPLENIACEAE

Asplenium hemionitis L.

## ANGIOSPERMAE

## AGAVACEAE

Dracaena draco (L.) L.

## AMARYLLIDACEAE

Narcissus longispathus Pugsley  
 Narcissus triandrus L.

## BERBERIDACEAE

Berberis maderensis Lowe

## CAMPANULACEAE

Campanula morettiana Reichenb.  
 Physoplexis comosa (L.) Schur.

## CARYOPHYLLACEAE

Moehringia fontqueri Pau

## COMPOSITAE

Argyranthemum pinnatifidum (L.f.) Lowe subsp. succulentum (Lowe)  
 C. J. Humphries  
 Helichrysum sibthorpii Rouy  
 Picris willkommii (Schultz Bip.) Nyman  
 Santolina elegans Boiss. ex DC.  
 Senecio caespitosus Brot.  
 Senecio lagascanus DC. subsp. lusitanicus (P. Cout.) Pinto da Silva  
 Wagenitzia lancifolia (Sieber ex Sprengel) Dostal

<sup>(1)</sup> Except bryophytes in Annex II (b).

▼ M3

## CRUCIFERAE

*Murbeckiella sousae* Rothm.

## EUPHORBIACEAE

*Euphorbia nevadensis* Boiss. & Reuter

## GESNERIACEAE

*Jankaea heldreichii* (Boiss.) Boiss.

*Ramonda serbica* Pancic

## IRIDACEAE

*Crocus etruscus* Parl.

*Iris boissieri* Henriq.

*Iris marisca* Ricci & Colasante

## LABIATAE

*Rosmarinus tomentosus* Huber-Morath & Maire

*Teucrium charidemi* Sandwith

*Thymus capitellatus* Hoffmanns. & Link

*Thymus villosus* L. subsp. *villosus* L.

## LILIACEAE

*Androcymbium europaeum* (Lange) K. Richter

*Bellevalia hackelli* Freyn

*Colchicum corsicum* Baker

*Colchicum cousturieri* Greuter

*Fritillaria conica* Rix

*Fritillaria drenovskii* Degen & Stoy. *Fritillaria*

*gussichiae* (Degen & Doerfler) Rix *Fritillaria*

*obliqua* Ker-Gawl.

*Fritillaria rhodocanakis* Orph. ex Baker

*Ornithogalum reverchonii* Degen & Herv.-Bass.

*Scilla beirana* Samp.

*Scilla odorata* Link

## ORCHIDACEAE

*Ophrys argolica* Fleischm.

*Orchis scopulorum* Simsmerh.

*Spiranthes aestivalis* (Poiret) L. C. M. Richard

## PRIMULACEAE

*Androsace cylindrica* DC.

*Primula glaucescens* Moretti

*Primula spectabilis* Tratt.

## RANUNCULACEAE

*Aquilegia alpina* L.

## SAPOTACEAE

*Sideroxylon marmulano* Banks ex Lowe

## SAXIFRAGACEAE

*Saxifraga cintrana* Kuzinsky ex Willk.

*Saxifraga portosanctana* Boiss.

▼ M3

*Saxifraga presolanensis* Engl.

*Saxifraga valdensis* DC.

*Saxifraga vayredana* Luizet

SCROPHULARIACEAE

*Antirrhinum lopesianum* Rothm.

*Lindernia procumbens* (Krocker) Philcox

SOLANACEAE

*Mandragora officinarum* L.

THYMELAEACEAE

*Thymelaea broterana* P. Cout.

UMBELLIFERAE

*Bunium brevifolium* Lowe

VIOLACEAE

*Viola athois* W. Becker

*Viola cazorlensis* Gandoger



phylum	classe	ordine	famiglia	specie_lat	specie_it	L. 15792 art. 2	L. 15792	79609 CEE Ap.1	79609 CEE Ap.2A	79609 CEE Ap.2B	79609 CEE Ap.3A	79609 CEE Ap.3B	BERNA Ap.2	BERNA Ap.3	CITES A.I. A	CITES A.I. B	CITES A.I. D	BONN Ap.1	BONN Ap.2	HABITAT Ap.2	HABITAT Ap.4	HABITAT Ap.5	BARCELONA art. 2	ENDEMICA	CHECKLIST	IUCN	
Chordata	AMPHIBIA	URODELA	Salamandridae	Speleomantes genii (Temminck & Schlegel, 1839)	Geotritone dell'Inlesiente																					LR/nt	
Chordata	AMPHIBIA	URODELA	Salamandridae	Speleomantes imperialis (Stefani, 1969)	Geotritone odoroso																					LR/nt	
Chordata	AMPHIBIA	URODELA	Salamandridae	Speleomantes italicus (Dunn, 1923)	Geotritone italico																						
Chordata	AMPHIBIA	URODELA	Salamandridae	Speleomantes strinati (Aellen, 1958)	Geotritone di Strinati																						
Chordata	AMPHIBIA	URODELA	Salamandridae	Speleomantes supramonte (Lanza, Nascetti & Bullini, 1986)	Geotritone del Supramonte																					LR/nt	
Chordata	AMPHIBIA	URODELA	Salamandridae	Triturus alpestris (Laurenti, 1768)	Tritone alpino																						
Chordata	AMPHIBIA	URODELA	Salamandridae	Triturus carnifex (Laurenti, 1768)	Tritone crestatto italiano																						
Chordata	AMPHIBIA	URODELA	Salamandridae	Triturus italicus (Peracca, 1898)	Tritone italiano																						
Chordata	AMPHIBIA	URODELA	Salamandridae	Triturus vulgaris (Linnaeus, 1758)	Tritone punteggiato																						
Chordata	AVES	ACCIPITRIFORMES	Accipitridae	Accipiter brevipes (Severtzov, 1850)	Sparvier levantino	x	x																				
Chordata	AVES	ACCIPITRIFORMES	Accipitridae	Accipiter gentilis arrigonii	Astore ss. di Sardegna e Corsica	x	x																				
Chordata	AVES	ACCIPITRIFORMES	Accipitridae	Accipiter gentilis (Linnaeus, 1758)	Astore	x																					
Chordata	AVES	ACCIPITRIFORMES	Accipitridae	Accipiter nisus (Linnaeus, 1758)	Sparviere	x																					
Chordata	AVES	ACCIPITRIFORMES	Accipitridae	Aegypus monachus (Linnaeus, 1766)	Avvoltoio monaco	x	x																			LR/nt	
Chordata	AVES	ACCIPITRIFORMES	Accipitridae	Aquila chrysaetos (Linnaeus, 1758)	Aquila reale	x	x																				
Chordata	AVES	ACCIPITRIFORMES	Accipitridae	Aquila clanga Pallas, 1811	Aquila anatraia maggiore	x	x																			EU C2a	
Chordata	AVES	ACCIPITRIFORMES	Accipitridae	Aquila heliaca Savigny, 1809	Aquila imperiale	x	x																				
Chordata	AVES	ACCIPITRIFORMES	Accipitridae	Aquila pomarina Brehm C.L., 1831	Aquila anatraia minore	x	x																				
Chordata	AVES	ACCIPITRIFORMES	Accipitridae	Aquila rapax (Temminck, 1828)	Aquila rapace	x																					
Chordata	AVES	ACCIPITRIFORMES	Accipitridae	Buteo buteo (Linnaeus, 1758)	Poiana	x																					
Chordata	AVES	ACCIPITRIFORMES	Accipitridae	Buteo lagopus (Pentaptychus, 1763)	Poiana calzata	x																					
Chordata	AVES	ACCIPITRIFORMES	Accipitridae	Buteo rufinus (Cretschmar, 1827)	Poiana codabianca	x	x																				
Chordata	AVES	ACCIPITRIFORMES	Accipitridae	Circus gallicus (Gmelin, 1788)	Biancone	x																					
Chordata	AVES	ACCIPITRIFORMES	Accipitridae	Circus aeruginosus (Linnaeus, 1758)	Falco di palude	x	x																				
Chordata	AVES	ACCIPITRIFORMES	Accipitridae	Circus cyaneus (Linnaeus, 1766)	Albanella reale	x	x																				
Chordata	AVES	ACCIPITRIFORMES	Accipitridae	Circus macrourus (Gmelin, 1771)	Albanella pallida	x	x																				
Chordata	AVES	ACCIPITRIFORMES	Accipitridae	Circus pygargus (Linnaeus, 1758)	Albanella minore	x	x																				
Chordata	AVES	ACCIPITRIFORMES	Accipitridae	Elanus caeruleus (Desfontaines, 1789)	Nibbio bianco	x	x																				
Chordata	AVES	ACCIPITRIFORMES	Accipitridae	Gypaetus barbatus (Linnaeus, 1758)	Gipeto	x	x																				
Chordata	AVES	ACCIPITRIFORMES	Accipitridae	Gyps fulvus (Hablizl, 1783)	Grifone	x	x																				
Chordata	AVES	ACCIPITRIFORMES	Accipitridae	Haliaeetus albicilla (Linnaeus, 1758)	Aquila di mare	x	x																				
Chordata	AVES	ACCIPITRIFORMES	Accipitridae	Hieraetus fasciatus (Vieillot, 1822)	Aquila del Bonelli	x	x																				
Chordata	AVES	ACCIPITRIFORMES	Accipitridae	Hieraetus pennatus (Gmelin, 1788)	Aquila minore	x	x																				
Chordata	AVES	ACCIPITRIFORMES	Accipitridae	Milvus migrans (Boddaert, 1783)	Nibbio bruno	x	x																				
Chordata	AVES	ACCIPITRIFORMES	Accipitridae	Milvus milvus (Linnaeus, 1758)	Nibbio reale	x	x																				
Chordata	AVES	ACCIPITRIFORMES	Accipitridae	Neophron percnopterus (Linnaeus, 1758)	Capovaccaio	x	x																				
Chordata	AVES	ACCIPITRIFORMES	Accipitridae	Pernis apivorus (Linnaeus, 1758)	Falco pecchiaiolo	x	x																				
Chordata	AVES	ACCIPITRIFORMES	Pandionidae	Pandion haliaetus (Linnaeus, 1758)	Falco pescatore	x	x																				
Chordata	AVES	ANSERIFORMES	Anatidae	Aix galericulata (Linnaeus, 1758)	Anatra mandarina	x																					
Chordata	AVES	ANSERIFORMES	Anatidae	Anas acuta Linnaeus, 1758	Codone																						
Chordata	AVES	ANSERIFORMES	Anatidae	Anas clypeata Linnaeus, 1758	Mestolone																						
Chordata	AVES	ANSERIFORMES	Anatidae	Anas crecca Linnaeus, 1758	Aizavola																						
Chordata	AVES	ANSERIFORMES	Anatidae	Anas discors Linnaeus, 1766	Marzaiola americana																						
Chordata	AVES	ANSERIFORMES	Anatidae	Anas formosa Georgi, 1775	Alzavola asiatica	x																					
Chordata	AVES	ANSERIFORMES	Anatidae	Anas penelope Linnaeus, 1758	Fischione																						
Chordata	AVES	ANSERIFORMES	Anatidae	Anas platyrhynchos Linnaeus, 1758	Germano reale																						
Chordata	AVES	ANSERIFORMES	Anatidae	Anas querquedula Linnaeus, 1758	Marzaiola																						
Chordata	AVES	ANSERIFORMES	Anatidae	Anas strepera Linnaeus, 1758	Canapiglia																						
Chordata	AVES	ANSERIFORMES	Anatidae	Anser albifrons (Scopoli, 1769)	Oca lombardella	x	x																				
Chordata	AVES	ANSERIFORMES	Anatidae	Anser anser (Linnaeus, 1758)	Oca selvatica	x	x																				
Chordata	AVES	ANSERIFORMES	Anatidae	Anser brachyrhynchus Bailon, 1833	Oca zamperosee	x	x																				
Chordata	AVES	ANSERIFORMES	Anatidae	Anser caerulescens (Linnaeus, 1758)	Oca delle nevi	x																					
Chordata	AVES	ANSERIFORMES	Anatidae	Anser erythropus (Linnaeus, 1758)	Oca lombardella minore	x	x																				
Chordata	AVES	ANSERIFORMES	Anatidae	Anser fabalis (Latham, 1787)	Oca granaiaola	x	x																				
Chordata	AVES	ANSERIFORMES	Anatidae	Aythya ferina (Linnaeus, 1758)	Mortiglione																						
Chordata	AVES	ANSERIFORMES	Anatidae	Aythya fuligula (Linnaeus, 1758)	Moretta																						
Chordata	AVES	ANSERIFORMES	Anatidae	Aythya marila (Linnaeus, 1761)	Moretta grigia	x	x																				
Chordata	AVES	ANSERIFORMES	Anatidae	Aythya nyroca (Güldenstädt, 1770)	Moretta tabaccata	x	x																				
Chordata	AVES	ANSERIFORMES	Anatidae	Branta bernicla (Linnaeus, 1758)	Oca colombaccio	x	x																				
Chordata	AVES	ANSERIFORMES	Anatidae	Branta canadensis (Linnaeus, 1758)	Oca del Canada	x	x																				
Chordata	AVES	ANSERIFORMES	Anatidae	Branta leucopsis (Bechstein, 1803)	Oca facciabianca	x	x																				
Chordata	AVES	ANSERIFORMES	Anatidae	Branta ruficollis (Pallas, 1764)	Oca colorosso	x	x																				
Chordata	AVES	ANSERIFORMES	Anatidae	Bucephala clangula (Linnaeus, 1758)	Quattrocchi	x	x																				
Chordata	AVES	ANSERIFORMES	Anatidae	Clangula hyemalis (Linnaeus, 1758)	Moretta codona	x	x																				
Chordata	AVES	ANSERIFORMES	Anatidae	Cygnus columbianus (Ord, 1815)	Cigno minore	x																					
Chordata	AVES	ANSERIFORMES	Anatidae	Cygnus cygnus (Linnaeus, 1758)	Cigno selvatico	x	x																				
Chordata	AVES	ANSERIFORMES	Anatidae	Cygnus olor (Gmelin, 1789)	Cigno reale	x																					
Chordata	AVES	ANSERIFORMES	Anatidae	Histrionicus histrionicus (Linnaeus, 1758)	Moretta anhecchino	x																					
Chordata	AVES	ANSERIFORMES	Anatidae	Marematetta angustirostris (Ménétrières, 1832)	Anatra marmorizzata	x	x																				
Chordata	AVES	ANSERIFORMES	Anatidae	Melanitta fusca (Linnaeus, 1758)	Circo marino	x	x																				
Chordata	AVES	ANSERIFORMES	Anatidae	Melanitta nigra (Linnaeus, 1758)	Orchetto marino	x	x																				
Chordata	AVES	ANSERIFORMES	Anatidae	Mergus albellus Linnaeus, 1758	Pesciaiola	x	x																				
Chordata	AVES	ANSERIFORMES	Anatidae	Mergus merganser Linnaeus, 1758	Smergo maggiore	x	x																				
Chordata	AVES	ANSERIFORMES	Anatidae	Mergus serrator Linnaeus, 1758	Smergo minore	x	x																				
Chordata	AVES	ANSERIFORMES	Anatidae	Netta rufina (Pallas, 1773)	Fistione turco	x																					
Chordata	AVES	ANSERIFORMES	Anatidae	Oxyura jamaicensis (Gmelin, 1789)	Gobbo della Giamaica	x																					
Chordata	AVES	ANSERIFORMES	Anatidae	Oxyura leucocephala (Scopoli, 1769)	Gobbo rugginoso	x	x																				
Chordata	AVES	ANSERIFORMES	Anatidae	Somateria mollissima (Linnaeus, 1758)	Edredone	x	x																				
Chordata	AVES	ANSERIFORMES	Anatidae	Somateria spectabilis (Linnaeus,																							



phylum	classe	ordine	famiglia	specie_lat	specie_it	L. 15792 art. 2	L. 15792	79609 CEE Ap.1	79609 CEE Ap.2A	79609 CEE Ap.2B	79609 CEE Ap.3A	79609 CEE Ap.3B	BERNA Ap.2	BERNA Ap.3	CITES AII A	CITES AII B	CITES AII D	BONN Ap.1	BONN Ap.2	HABITAT Ap.2	HABITAT Ap.4	HABITAT Ap.5	BARCELONA art. 2	ENDEMICA	CHECKLIST	IUCN
Chordata	AVES	CHARADRIIFORMES	Sternidae	Sterna sandvicensis Latham, 1879	Beccapesci																					
Chordata	AVES	CICONIIFORMES	Ardeidae	Ardea cinerea Linnaeus, 1758	Airone cenerino		x	x																		
Chordata	AVES	CICONIIFORMES	Ardeidae	Ardea purpurea Linnaeus, 1766	Airone rosso				x																	
Chordata	AVES	CICONIIFORMES	Ardeidae	Ardeola ralloides (Scopoli, 1769)	Sgarza ciuffetto			x	x																	
Chordata	AVES	CICONIIFORMES	Ardeidae	Botaurus stellaris (Linnaeus, 1758)	Tarabuso		x	x																		
Chordata	AVES	CICONIIFORMES	Ardeidae	Bubulcus ibis (Linnaeus, 1758)	Airone guardabuoi			x																		
Chordata	AVES	CICONIIFORMES	Ardeidae	Egretta alba (Linnaeus, 1758)	Airone bianco maggiore			x	x																	
Chordata	AVES	CICONIIFORMES	Ardeidae	Egretta garzetta (Linnaeus, 1766)	Garzetta			x	x																	
Chordata	AVES	CICONIIFORMES	Ardeidae	Egretta gularis (Bosc, 1792)	Airone schistaceo			x																		
Chordata	AVES	CICONIIFORMES	Ardeidae	Ixobrychus eurhythmus (Swinhoe, 1873)	Tarabusino orientale			x																		
Chordata	AVES	CICONIIFORMES	Ardeidae	Ixobrychus minutus (Linnaeus, 1766)	Tarabusino			x	x																	
Chordata	AVES	CICONIIFORMES	Ardeidae	Nycticorax nycticorax (Linnaeus, 1758)	Nitticora			x	x																	
Chordata	AVES	CICONIIFORMES	Ciconiidae	Ciconia ciconia (Linnaeus, 1758)	Cicogna bianca			x	x																	
Chordata	AVES	CICONIIFORMES	Ciconiidae	Ciconia nigra (Linnaeus, 1758)	Cicogna nera			x	x																	
Chordata	AVES	CICONIIFORMES	Threskiornithidae	Platalea leucorodia Linnaeus, 1758	Spatola			x	x																	
Chordata	AVES	CICONIIFORMES	Threskiornithidae	Plegadis falcinellus (Linnaeus, 1766)	Mignattaiolo			x	x																	
Chordata	AVES	COLUMBIFORMES	Columbidae	Columba livia Gmelin, 1789	Piccione selvatico			x		x																
Chordata	AVES	COLUMBIFORMES	Columbidae	Columba oenas Linnaeus, 1758	Colombella			x																		
Chordata	AVES	COLUMBIFORMES	Columbidae	Columba palumbus Linnaeus, 1758	Colombaccio					x	x															
Chordata	AVES	COLUMBIFORMES	Columbidae	Streptopelia turtur (Linnaeus, 1758)	Tortora					x																
Chordata	AVES	COLUMBIFORMES	Columbidae	Streptopelia decaocto (Friedrichs, 1838)	Tortora dal collare orientale					x																
Chordata	AVES	COLUMBIFORMES	Columbidae	Streptopelia orientalis (Latham, 1790)	Tortora orientale					x																
Chordata	AVES	COLUMBIFORMES	Columbidae	Streptopelia senegalensis Linnaeus, 1766	Tortora delle palme					x																
Chordata	AVES	CORACIIFORMES	Alcedinidae	Alcedo atthis (Linnaeus, 1758)	Martin pescatore					x																
Chordata	AVES	CORACIIFORMES	Coraciidae	Coracias garrulus Linnaeus, 1758	Ghiandaia marina			x	x																	
Chordata	AVES	CORACIIFORMES	Meropidae	Merops apiaster Linnaeus, 1758	Gruccione					x																
Chordata	AVES	CORACIIFORMES	Meropidae	Merops superciliosus Linnaeus, 1766	Gruccione egiziano					x																
Chordata	AVES	CORACIIFORMES	Upupidae	Upupa epops Linnaeus, 1758	Upupa					x																
Chordata	AVES	CUCULIFORMES	Cuculidae	Clamator glandarius (Linnaeus, 1758)	Cuculo dal ciuffo					x																
Chordata	AVES	CUCULIFORMES	Cuculidae	Coccyzus americanus (Linnaeus, 1758)	Cuculo americano					x																
Chordata	AVES	CUCULIFORMES	Cuculidae	Coccyzus erythrophthalmus (Wilson, 1811)	Cuculo americano occhiorossi					x																
Chordata	AVES	CUCULIFORMES	Cuculidae	Cuculus canorus Linnaeus, 1758	Cuculo																					
Chordata	AVES	FALCONIFORMES	Falconidae	Falco biarmicus Temminck, 1825	Lanario			x	x																	
Chordata	AVES	FALCONIFORMES	Falconidae	Falco cherrug Gray, 1834	Sacro					x																
Chordata	AVES	FALCONIFORMES	Falconidae	Falco columbarius Linnaeus, 1758	Smeriglio					x	x															
Chordata	AVES	FALCONIFORMES	Falconidae	Falco eleonorae G�n�, 1834	Falco della regina					x	x															
Chordata	AVES	FALCONIFORMES	Falconidae	Falco naumanni Fleischer, 1818	Grillaio					x	x															
Chordata	AVES	FALCONIFORMES	Falconidae	Falco peregrinoides Temminck, 1829	Falcone di Barberia					x	x															
Chordata	AVES	FALCONIFORMES	Falconidae	Falco peregrinus Tunstall, 1771	Pellegrino					x	x															
Chordata	AVES	FALCONIFORMES	Falconidae	Falco subbuteo Linnaeus, 1758	Lodolaio					x	x															
Chordata	AVES	FALCONIFORMES	Falconidae	Falco tinnunculus Linnaeus, 1758	Gheppio					x	x															
Chordata	AVES	FALCONIFORMES	Falconidae	Falco vespertinus Linnaeus, 1766	Falco cuculo					x	x															
Chordata	AVES	GALLIFORMES	Phasianidae	Alectoris barbara (Bonaterre, 1790)	Pemice sarda					x	x	x														
Chordata	AVES	GALLIFORMES	Phasianidae	Alectoris graeca (Meisner, 1804)	Coturnice					x																
Chordata	AVES	GALLIFORMES	Phasianidae	Alectoris graeca saxatilis	Coturnice ss. delle Alpi					x																
Chordata	AVES	GALLIFORMES	Phasianidae	Alectoris graeca whitakeri	Coturnice ss. di Sicilia					x																
Chordata	AVES	GALLIFORMES	Phasianidae	Alectoris rufa (Linnaeus, 1758)	Pemice rossa					x																
Chordata	AVES	GALLIFORMES	Phasianidae	Colinus virginianus (Linnaeus, 1758)	Colino della Virginia					x																
Chordata	AVES	GALLIFORMES	Phasianidae	Coturnix coturnix (Linnaeus, 1758)	Quaglia					x																
Chordata	AVES	GALLIFORMES	Phasianidae	Francolinus francolinus (Linnaeus, 1766)	Francolino					x																
Chordata	AVES	GALLIFORMES	Phasianidae	Perdix perdix (Linnaeus, 1758)	Starna					x	x															
Chordata	AVES	GALLIFORMES	Phasianidae	Perdix perdix italica	Starna ss. italiana					x																
Chordata	AVES	GALLIFORMES	Phasianidae	Phasianus colchicus Linnaeus, 1758	Fagiano comune					x	x															
Chordata	AVES	GALLIFORMES	Tetraonidae	Bonasa bonasia (Linnaeus, 1758)	Francolino di monte					x	x															
Chordata	AVES	GALLIFORMES	Tetraonidae	Lagopus mutus (Montin, 1776)	Pemice bianca					x																
Chordata	AVES	GALLIFORMES	Tetraonidae	Lagopus mutus helveticus	Pemice bianca ss. delle Alpi					x																
Chordata	AVES	GALLIFORMES	Tetraonidae	Tetrao tetrix Linnaeus, 1758	Fagiano di monte					x																
Chordata	AVES	GALLIFORMES	Tetraonidae	Tetrao tetrix tetrix	Fagiano di monte ss. continentale					x																
Chordata	AVES	GALLIFORMES	Tetraonidae	Tetrao urogallus Linnaeus, 1758	Gallo cedrone					x	x															
Chordata	AVES	GAVIIFORMES	Gaviidae	Gavia adamsi (Gray, 1859)	Strolaga becco giallo					x																
Chordata	AVES	GAVIIFORMES	Gaviidae	Gavia arctica (Linnaeus, 1758)	Strolaga mezzana					x																
Chordata	AVES	GAVIIFORMES	Gaviidae	Gavia immer (Br�nnich, 1764)	Strolaga maggiore					x	x															
Chordata	AVES	GAVIIFORMES	Gaviidae	Gavia stellata (Pontoppidan, 1763)	Strolaga minore					x																
Chordata	AVES	GRUIFORMES	Gruidae	Anthropoides virgo (Linnaeus, 1758)	Damigella di Numida					x																
Chordata	AVES	GRUIFORMES	Gruidae	Grus grus (Linnaeus, 1758)	Gru					x	x															
Chordata	AVES	GRUIFORMES	Otididae	Chlamydotis undulata (Jacquin, 1784)	Ubaro					x	x															
Chordata	AVES	GRUIFORMES	Otididae	Otis tarda Linnaeus, 1758	Otarda					x	x															
Chordata	AVES	GRUIFORMES	Otididae	Tetrao tetrix (Linnaeus, 1758)	Gallina prataiola					x	x															
Chordata	AVES	GRUIFORMES	Rallidae	Crex crex (Linnaeus, 1758)	Re di quaglie					x	x															
Chordata	AVES	GRUIFORMES	Rallidae	Fulica atra Linnaeus, 1758	Folaga					x																
Chordata	AVES	GRUIFORMES	Rallidae	Fulica cristata Gmelin, 1789	Folaga cornuta					x	x															
Chordata	AVES	GRUIFORMES	Rallidae	Gallinula chloropus (Linnaeus, 1758)	Gallinella d'acqua					x																
Chordata	AVES	GRUIFORMES	Rallidae	Porphyrio porphyrio (Linnaeus, 1758)	Pollo sultano					x	x															
Chordata	AVES	GRUIFORMES	Rallidae	Porphyrio alleni (Thomson, 1842)	Pollo sultano di Allen					x																
Chordata	AVES	GRUIFORMES	Rallidae	Porzana parva (Scopoli, 1769)	Schiribilla					x	x															
Chordata	AVES	GRUIFORMES	Rallidae	Porzana porzana (Linnaeus, 1766)	Voltoino					x																
Chordata	AVES	GRUIFORMES	Rallidae	Porzana pusilla (Pallas, 1776)	Schiribilla grigiata					x	x															
Chordata	AVES	GRUIFORMES	Rallidae	Rallus aquaticus Linnaeus, 1758	Porciglione					x																
Chordata	AVES	GRUIFORMES	Turnicidae	Turnix sylvatica (Desfontaines, 1787)	Quaglia tridattila					x	x															

phylum	classe	ordine	famiglia	specie_lat	specie_it	L. 15792 art. 2	L. 15792	79/809 CEE Ap.1	79/809 CEE Ap.2A	79/809 CEE Ap.2B	79/809 CEE Ap.3A	79/809 CEE Ap.3B	BERNA Ap.2	BERNA Ap.3	CITES All. A	CITES All. B	CITES All. D	BONN Ap.1	BONN Ap.2	HABITAT Ap.2	HABITAT Ap.5	HABITAT Ap.4	BARCELONA art. 2	ENDEMIKA	CHECKLIST	IUCN
Chordata	AVES	PASSERIFORMES	Alaudidae	Melanocorypha bimaculata Ménétriés, 1832	Calandra asiatica																					
Chordata	AVES	PASSERIFORMES	Alaudidae	Melanocorypha calandra (Linnaeus, 1766)	Calandra		x																			
Chordata	AVES	PASSERIFORMES	Alaudidae	Melanocorypha leucoptera Pallas, 1811	Calandra siberiana			x																		
Chordata	AVES	PASSERIFORMES	Alaudidae	Melanocorypha yeltoniensis Forster, 1768	Calandra nera									x												
Chordata	AVES	PASSERIFORMES	Bombycillidae	Bombycilla garrulus (Linnaeus, 1758)	Beccofrusone			x						x												
Chordata	AVES	PASSERIFORMES	Certhiidae	Certhia brachydactyla Brehm, 1820	Rampichino			x						x												
Chordata	AVES	PASSERIFORMES	Certhiidae	Certhia familiaris Linnaeus, 1758	Rampichino alpestre				x					x												
Chordata	AVES	PASSERIFORMES	Cinclidae	Cinclus cinclus (Linnaeus, 1758)	Merlo acquaiolo			x						x												
Chordata	AVES	PASSERIFORMES	Corvidae	Corvus corax Linnaeus, 1758	Corvo imperiale				x							x										
Chordata	AVES	PASSERIFORMES	Corvidae	Corvus frugilegus Linnaeus, 1758	Corvo			x																		
Chordata	AVES	PASSERIFORMES	Corvidae	Corvus monedula Linnaeus, 1758	Taccola			x																		
Chordata	AVES	PASSERIFORMES	Corvidae	Nucifraga caryocatactes (Linnaeus, 1758)	Nocciolaia			x									x									
Chordata	AVES	PASSERIFORMES	Corvidae	Pyrrhocorax graculus (Linnaeus, 1758)	Gracchio alpino				x																	
Chordata	AVES	PASSERIFORMES	Corvidae	Pyrrhocorax pyrrhocorax (Linnaeus, 1758)	Gracchio corallino					x																
Chordata	AVES	PASSERIFORMES	Emberizidae	Emberiza caesia Cretzschmar	Zigolo di Lapponia		x	x																		
Chordata	AVES	PASSERIFORMES	Emberizidae	Emberiza aureola Pallas, 1766	Zigolo dal collare			x																		
Chordata	AVES	PASSERIFORMES	Emberizidae	Emberiza bruniceps Brandt, 1843	Zigolo testa aranciata				x																	
Chordata	AVES	PASSERIFORMES	Emberizidae	Emberiza caesia Cretzschmar	Ortolano grigio			x																		
Chordata	AVES	PASSERIFORMES	Emberizidae	Emberiza cia Linnaeus, 1758	Zigolo mucciato				x																	
Chordata	AVES	PASSERIFORMES	Emberizidae	Emberiza oedus Brandt, 1843	Zigolo mucciato orientale			x									x									
Chordata	AVES	PASSERIFORMES	Emberizidae	Emberiza citrulus Linnaeus, 1758	Zigolo nero																					
Chordata	AVES	PASSERIFORMES	Emberizidae	Emberiza citrinella Linnaeus, 1758	Zigolo giallo				x																	
Chordata	AVES	PASSERIFORMES	Emberizidae	Emberiza hortulana Linnaeus, 1758	Ortolano				x																	
Chordata	AVES	PASSERIFORMES	Emberizidae	Emberiza leucocephala Gmelin, 1771	Zigolo golarossa					x																
Chordata	AVES	PASSERIFORMES	Emberizidae	Emberiza melanocephala Scopoli, 1769	Zigolo capinero					x																
Chordata	AVES	PASSERIFORMES	Emberizidae	Emberiza pusilla Pallas, 1766	Zigolo minore																					
Chordata	AVES	PASSERIFORMES	Emberizidae	Emberiza rustica Pallas, 1766	Zigolo boschereccio																					
Chordata	AVES	PASSERIFORMES	Emberizidae	Emberiza schoenicus (Linnaeus, 1758)	Migliarino di palude				x																	
Chordata	AVES	PASSERIFORMES	Emberizidae	Miliaria calandra (Linnaeus, 1758)	Stirillozzo			x																		
Chordata	AVES	PASSERIFORMES	Emberizidae	Plectrophenax nivalis (Linnaeus, 1758)	Zigolo delle nevi				x																	
Chordata	AVES	PASSERIFORMES	Emberizidae	Zonotrichia lilaca (Merrem, 1786)	Passerella lilaca																					
Chordata	AVES	PASSERIFORMES	Fringillidae	Bucanetes githagineus (Lichtenstein, 1823)	Trombettiere			x																		
Chordata	AVES	PASSERIFORMES	Fringillidae	Carduelis chloris (Linnaeus, 1758)	Verdone																					
Chordata	AVES	PASSERIFORMES	Fringillidae	Carduelis cannabina (Linnaeus, 1758)	Fanello																					
Chordata	AVES	PASSERIFORMES	Fringillidae	Carduelis carduelis (Linnaeus, 1758)	Cardellino																					
Chordata	AVES	PASSERIFORMES	Fringillidae	Carduelis flamma (Linnaeus, 1758)	Organetto																					
Chordata	AVES	PASSERIFORMES	Fringillidae	Carduelis flavostris (Linnaeus, 1758)	Fanello nordico																					
Chordata	AVES	PASSERIFORMES	Fringillidae	Carduelis spinus (Linnaeus, 1758)	Lucarino																					
Chordata	AVES	PASSERIFORMES	Fringillidae	Carpodacus erythrinus (Pallas, 1770)	Ciuffolotto scarlatto																					
Chordata	AVES	PASSERIFORMES	Fringillidae	Coccothraustes coccothraustes (Linnaeus, 1758)	Frosone																					
Chordata	AVES	PASSERIFORMES	Fringillidae	Fringilla coelebs Linnaeus, 1758	Fringuello																					
Chordata	AVES	PASSERIFORMES	Fringillidae	Fringilla montifringilla Linnaeus, 1758	Peppola																					
Chordata	AVES	PASSERIFORMES	Fringillidae	Loxia curvirostra Linnaeus, 1758	Crociere																					
Chordata	AVES	PASSERIFORMES	Fringillidae	Loxia leucoptera Gmelin, 1789	Crociere fasciato																					
Chordata	AVES	PASSERIFORMES	Fringillidae	Loxia pygopsittacus Borkhausen, 1793	Crociere delle pinete																					
Chordata	AVES	PASSERIFORMES	Fringillidae	Pinicola enucleator (Linnaeus, 1758)	Ciuffolotto delle pinete																					
Chordata	AVES	PASSERIFORMES	Fringillidae	Pyrrhula pyrrhula (Linnaeus, 1758)	Ciuffolotto																					
Chordata	AVES	PASSERIFORMES	Fringillidae	Serinus citrinella (Pallas, 1764)	Venturone																					
Chordata	AVES	PASSERIFORMES	Fringillidae	Serinus serinus (Linnaeus, 1766)	Verzellino																					
Chordata	AVES	PASSERIFORMES	Hirundinidae	Delichon urbica (Linnaeus, 1758)	Balestruccio																					
Chordata	AVES	PASSERIFORMES	Hirundinidae	Hirundo daurica Linnaeus, 1771	Rondine rossiccia																					
Chordata	AVES	PASSERIFORMES	Hirundinidae	Hirundo rustica Linnaeus, 1758	Rondine																					
Chordata	AVES	PASSERIFORMES	Hirundinidae	Pyronoprogne rupestris (Scopoli, 1769)	Rondine montana																					
Chordata	AVES	PASSERIFORMES	Hirundinidae	Riparia riparia (Linnaeus, 1758)	Topino																					
Chordata	AVES	PASSERIFORMES	Icteridae	Dolichonyx oryzivorus (Linnaeus, 1758)	Bobolink																					
Chordata	AVES	PASSERIFORMES	Laniidae	Lanius collurio Linnaeus, 1758	Averla piccola					x																
Chordata	AVES	PASSERIFORMES	Laniidae	Lanius excubitor Linnaeus, 1758	Averla maggiore																					
Chordata	AVES	PASSERIFORMES	Laniidae	Lanius minor Gmelin, 1788	Averla cenerina					x																
Chordata	AVES	PASSERIFORMES	Laniidae	Lanius senator Linnaeus, 1758	Averla capirosa																					
Chordata	AVES	PASSERIFORMES	Motacillidae	Anthus campestris Linnaeus, 1758	Calandro					x																
Chordata	AVES	PASSERIFORMES	Motacillidae	Anthus cervinus Pallas, 1811	Pispola golarossa																					
Chordata	AVES	PASSERIFORMES	Motacillidae	Anthus novaeseelandiae Bechstein, 1805	Calandro maggiore																					
Chordata	AVES	PASSERIFORMES	Motacillidae	Anthus pratensis Linnaeus, 1758	Pispola																					
Chordata	AVES	PASSERIFORMES	Motacillidae	Anthus rubescens Tunstall, 1771	Spioncello americano																					
Chordata	AVES	PASSERIFORMES	Motacillidae	Anthus spinoletta Linnaeus, 1758	Spioncello																					
Chordata	AVES	PASSERIFORMES	Motacillidae	Anthus trivialis Linnaeus, 1758	Prispolone																					
Chordata	AVES	PASSERIFORMES	Motacillidae	Motacilla alba Linnaeus, 1758	Ballerina bianca																					
Chordata	AVES	PASSERIFORMES	Motacillidae	Motacilla cinerea Tunstall, 1771	Ballerina gialla																					
Chordata	AVES	PASSERIFORMES	Motacillidae	Motacilla cinerea Pallas, 1776	Curettole testaglia orientale																					
Chordata	AVES	PASSERIFORMES	Motacillidae	Motacilla flava Linnaeus, 1758	Curettole																					
Chordata	AVES	PASSERIFORMES	Muscicapidae	Ficedula albicollis Temminck, 1815	Balia dal collare					x																
Chordata	AVES	PASSERIFORMES	Muscicapidae	Ficedula hypoleuca Pallas, 1764	Balia nera																					
Chordata	AVES	PASSERIFORMES	Muscicapidae	Ficedula parva Bechstein, 1794	Pigliamosche pettirosso																					
Chordata	AVES	PASSERIFORMES	Muscicapidae	Ficedula semitorquata (Homeyer, E., 1885)	Balia caucasica																					
Chordata	AVES	PASSERIFORMES	Muscicapidae	Muscicapa striata Pallas, 1764	Pigliamosche																					
Chordata	AVES	PASSERIFORMES	Oriolidae	Oriolus oriolus Linnaeus, 1758	Rigogolo																					
Chordata	AVES	PASSERIFORMES	Paridae	Parus ater Linnaeus, 1758	Cincia mora																					
Chordata	AVES	PASSERIFORMES	Paridae	Parus caeruleus Linnaeus, 1758	Cinciarella																					
Chordata	AVES	PASSERIFORMES	Paridae	Parus cristatus Linnaeus, 1758	Cincia dal ciuffo																					
Chordata	AVES	PASSERIFORMES	Paridae	Parus lugubris Temminck, 1820	Cincia dalm																					

phylum	classe	ordine	famiglia	specie_lat	specie_it	L. 15792 art. 2	L. 15792	79/009 CEE Ap.1	79/009 CEE Ap.2A	79/009 CEE Ap.2B	79/009 CEE Ap.3A	79/009 CEE Ap.3B	BERNA Ap.2	BERNA Ap.3	CITES AII A	CITES AII B	CITES AII D	BONN Ap.1	BONN Ap.2	HABITAT Ap.2	HABITAT Ap.4	HABITAT Ap.5	BARCELONA art. 2	ENDEMICA	CHECKLIST	IUCN	
Chordata	AVES	PASSERIFORMES	Prunellidae	Prunella modularis Linnaeus, 1758	Passera scopolola		x																				
Chordata	AVES	PASSERIFORMES	Prunellidae	Prunella montanella Pallas, 1770	Passera scopolola asiatica		x																				
Chordata	AVES	PASSERIFORMES	Remizidae	Remiz pendulinus (Linnaeus, 1758)	Pendolino		x																				
Chordata	AVES	PASSERIFORMES	Sittidae	Sitta europea Linnaeus, 1758	Picchio muratore		x																				
Chordata	AVES	PASSERIFORMES	Sturnidae	Sturnus roseus (Linnaeus, 1758)	Sturno roseo		x																				
Chordata	AVES	PASSERIFORMES	Sturnidae	Sturnus unicolor Temminck, 1820	Sturno nero		x																				
Chordata	AVES	PASSERIFORMES	Sturnidae	Sturnus vulgaris Linnaeus, 1758	Sturno		x																				
Chordata	AVES	PASSERIFORMES	Sylviidae	Acrocephalus arundinaceus Linnaeus, 1758	Cannareccione		x																				
Chordata	AVES	PASSERIFORMES	Sylviidae	Acrocephalus dumetorum Blyth, 1849	Cannaia di Blit		x																				
Chordata	AVES	PASSERIFORMES	Sylviidae	Acrocephalus melanopogon (Temminck, 1823)	Forapaglia castagnolo		x	x																			
Chordata	AVES	PASSERIFORMES	Sylviidae	Acrocephalus paludicola Vieillot, 1817	Pagliarolo		x	x																			
Chordata	AVES	PASSERIFORMES	Sylviidae	Acrocephalus palustris Bechstein, 1798	Cannaia verdognola		x																				
Chordata	AVES	PASSERIFORMES	Sylviidae	Acrocephalus schoenobaenus Linnaeus, 1758	Forapaglia		x																				
Chordata	AVES	PASSERIFORMES	Sylviidae	Acrocephalus scirpaceus Herman, 1804	Cannaia		x																				
Chordata	AVES	PASSERIFORMES	Sylviidae	Cettia cetti (Temminck, 1820)	Usignolo di fiume		x																				
Chordata	AVES	PASSERIFORMES	Sylviidae	Cisticola juncidis (Rafinesque, 1810)	Beccamoschino		x																				
Chordata	AVES	PASSERIFORMES	Sylviidae	Hippolais icterina Vieillot, 1817	Canapino maggiore		x																				
Chordata	AVES	PASSERIFORMES	Sylviidae	Hippolais olivetorum Strickland, 1837	Canapino levantino		x	x																			
Chordata	AVES	PASSERIFORMES	Sylviidae	Hippolais pallida (Hemprich & Ehrenberg, 1833)	Canapino pallido		x																				
Chordata	AVES	PASSERIFORMES	Sylviidae	Hippolais polygotta (Vieillot, 1817)	Canapino		x																				
Chordata	AVES	PASSERIFORMES	Sylviidae	Locustella luscinioides (Sw., 1824)	Salciada		x																				
Chordata	AVES	PASSERIFORMES	Sylviidae	Locustella naevia (Boddaert, 1783)	Forapaglia macchiettato		x																				
Chordata	AVES	PASSERIFORMES	Sylviidae	Phylloscopus bonelli Vieillot, 1819	Lui bianco		x																				
Chordata	AVES	PASSERIFORMES	Sylviidae	Phylloscopus borealis (Blasius, 1858)	Lui boreale		x																				
Chordata	AVES	PASSERIFORMES	Sylviidae	Phylloscopus collybita Vieillot, 1817	Lui piccolo		x																				
Chordata	AVES	PASSERIFORMES	Sylviidae	Phylloscopus fuscatus Blyth, 1842	Lui scuro		x																				
Chordata	AVES	PASSERIFORMES	Sylviidae	Phylloscopus inornatus Blyth, 1842	Lui forestiero		x																				
Chordata	AVES	PASSERIFORMES	Sylviidae	Phylloscopus sibilatrix Bechstein, 1795	Lui verde		x																				
Chordata	AVES	PASSERIFORMES	Sylviidae	Phylloscopus trochilus Linnaeus, 1758	Lui grosso		x																				
Chordata	AVES	PASSERIFORMES	Sylviidae	Regulus ignicapillus Temminck, 1820	Fiorrancino		x																				
Chordata	AVES	PASSERIFORMES	Sylviidae	Regulus regulus Linnaeus, 1758	Regolo		x																				
Chordata	AVES	PASSERIFORMES	Sylviidae	Sylvia atricapilla Linnaeus, 1758	Capinera		x																				
Chordata	AVES	PASSERIFORMES	Sylviidae	Sylvia borin Boddaert, 1783	Beccafico		x																				
Chordata	AVES	PASSERIFORMES	Sylviidae	Sylvia cantillans Pallas, 1784	Sterpazzolina		x																				
Chordata	AVES	PASSERIFORMES	Sylviidae	Sylvia communis Latham, 1787	Sterpazzola		x																				
Chordata	AVES	PASSERIFORMES	Sylviidae	Sylvia conspiciata Temminck, 1820	Sterpazzola di Sardegna		x																				
Chordata	AVES	PASSERIFORMES	Sylviidae	Sylvia curruca Linnaeus, 1758	Bigarella		x																				
Chordata	AVES	PASSERIFORMES	Sylviidae	Sylvia hortensis (Gmelin, 1789)	Bigia grossa		x																				
Chordata	AVES	PASSERIFORMES	Sylviidae	Sylvia melanocephala Gmelin, 1789	Occhiocotto		x																				
Chordata	AVES	PASSERIFORMES	Sylviidae	Sylvia nana (Hemprich & Ehrenberg, 1833)	Sterpazzola nana		x																				
Chordata	AVES	PASSERIFORMES	Sylviidae	Sylvia nisoria Bechstein, 1797	Bigia padovana		x	x																			
Chordata	AVES	PASSERIFORMES	Sylviidae	Sylvia rueppellii Temminck, 1820	Silvia del Ruppel		x	x																			
Chordata	AVES	PASSERIFORMES	Sylviidae	Sylvia sarda Temminck, 1830	Magnanina sarda		x	x																			
Chordata	AVES	PASSERIFORMES	Sylviidae	Sylvia undata (Boddaert, 1783)	Magnanina		x	x																			
Chordata	AVES	PASSERIFORMES	Tichodromidae	Tichodroma murina Linnaeus, 1766	Picchio muraiolo		x																				
Chordata	AVES	PASSERIFORMES	Timaliidae	Panurus biarmicus Linnaeus, 1758	Basettino		x																				
Chordata	AVES	PASSERIFORMES	Troglodytidae	Troglodytes troglodytes (Linnaeus, 1758)	Scricciolo		x																				
Chordata	AVES	PASSERIFORMES	Turdidae	Catharus minimus (Lafresnaye, 1848)	Tordo di Baird		x																				
Chordata	AVES	PASSERIFORMES	Turdidae	Catharus ustulatus Nuttall, 1840	Tordo di Swainson		x																				
Chordata	AVES	PASSERIFORMES	Turdidae	Cercotrichas galactotes (Temminck, 1820)	Usignolo d'Africa		x																				
Chordata	AVES	PASSERIFORMES	Turdidae	Eritacus rubecula (Linnaeus, 1758)	Pettiroso		x																				
Chordata	AVES	PASSERIFORMES	Turdidae	Luscinia caliope Pallas, 1776	Calliope		x																				
Chordata	AVES	PASSERIFORMES	Turdidae	Luscinia luscinia Linnaeus, 1758	Usignolo maggiore		x																				
Chordata	AVES	PASSERIFORMES	Turdidae	Luscinia megarhynchos Brehm, 1831	Usignolo		x																				
Chordata	AVES	PASSERIFORMES	Turdidae	Luscinia svecica Linnaeus, 1758	Pettazzurro		x	x																			
Chordata	AVES	PASSERIFORMES	Turdidae	Monticola saxatilis Linnaeus, 1766	Codiroso		x																				
Chordata	AVES	PASSERIFORMES	Turdidae	Monticola solitarius Linnaeus, 1758	Passero solitario		x																				
Chordata	AVES	PASSERIFORMES	Turdidae	Oenanthe deserti Temminck, 1825	Monachella del deserto		x																				
Chordata	AVES	PASSERIFORMES	Turdidae	Oenanthe hispanica Linnaeus, 1758	Monachella		x																				
Chordata	AVES	PASSERIFORMES	Turdidae	Oenanthe isabellina Temminck, 1829	Cubbianco isabellino		x																				
Chordata	AVES	PASSERIFORMES	Turdidae	Oenanthe leucura Gmelin, 1789	Monachella nera		x	x																			
Chordata	AVES	PASSERIFORMES	Turdidae	Oenanthe oenanthe Linnaeus, 1758	Cubbianco		x																				
Chordata	AVES	PASSERIFORMES	Turdidae	Oenanthe pleschanka Lepechin, 1770	Monachella dorsonero		x																				
Chordata	AVES	PASSERIFORMES	Turdidae	Phoenicurus moussieri Olphe-Galliard, 1852	Codiroso algerino		x																				
Chordata	AVES	PASSERIFORMES	Turdidae	Phoenicurus ochurus Gmelin, 1789	Codiroso spazzacamino		x																				
Chordata	AVES	PASSERIFORMES	Turdidae	Phoenicurus phoenicurus Linnaeus, 1758	Codiroso		x																				
Chordata	AVES	PASSERIFORMES	Turdidae	Saxicola rubetra Linnaeus, 1758	Stiaccino		x																				
Chordata	AVES	PASSERIFORMES	Turdidae	Saxicola torquata Linnaeus, 1758	Saltimpallo		x																				
Chordata	AVES	PASSERIFORMES	Turdidae	Tarsiger cyaneus Pallas, 1773	Codazzuro		x																				
Chordata	AVES	PASSERIFORMES	Turdidae	Turdus iliacus Linnaeus, 1758	Tordo sassello		x																				
Chordata	AVES	PASSERIFORMES	Turdidae	Turdus merula Linnaeus, 1758	Merlo		x																				
Chordata	AVES	PASSERIFORMES	Turdidae	Turdus naumanni Temminck, 1820	Cesena di Naumann		x																				
Chordata	AVES	PASSERIFORMES	Turdidae	Turdus obscurus Gmelin, 1789	Tordo oscuro		x																				
Chordata	AVES	PASSERIFORMES	Turdidae	Turdus philomelos Brehm, 1831	Tordo bottaccio		x																				
Chordata	AVES	PASSERIFORMES	Turdidae	Turdus pilaris Linnaeus, 1758	Cesena		x																				
Chordata	AVES	PASSERIFORMES	Turdidae	Turdus ruficollis Pallas, 1776	Tordo golanera		x																				
Chordata	AVES	PASSERIFORMES	Turdidae	Turdus torquatus Linnaeus, 1758	Merlo dal collare		x																				

phylum	classe	ordine	famiglia	specie_lat	specie_it	L. 15792 art. 2	L. 15792	79609 CEE Ap.1	79609 CEE Ap.2A	79609 CEE Ap.2B	79609 CEE Ap.3	79609 CEE Ap.3B	BERNA Ap.2	BERNA Ap.3	CITES AII A	CITES AII B	CITES AII D	BONN Ap.1	BONN Ap.2	HABITAT Ap.2	HABITAT Ap.4	HABITAT Ap.5	BARCELONA art. 2	ENDEMICA	CHECKLIST	IUCN
Chordata	AVES	PICIFORMES	Picidae	Jynx torquilla Linnaeus, 1758	Torsicollo	x																				
Chordata	AVES	PICIFORMES	Picidae	Picoides leucotis (Bechstein, 1803)	Picchio dorsobianco	x	x																			
Chordata	AVES	PICIFORMES	Picidae	Picoides major (Linnaeus, 1758)	Picchio rosso maggiore	x																				
Chordata	AVES	PICIFORMES	Picidae	Picoides medius (Linnaeus, 1758)	Picchio rosso mezzano	x	x																			
Chordata	AVES	PICIFORMES	Picidae	Picoides minor (Linnaeus, 1758)	Picchio rosso minore	x																				
Chordata	AVES	PICIFORMES	Picidae	Picoides tridactylus (Linnaeus, 1758)	Picchio tridattilo	x	x																			
Chordata	AVES	PICIFORMES	Picidae	Picus canus Gmelin, 1788	Picchio cinerino	x	x																			
Chordata	AVES	PICIFORMES	Picidae	Picus viridis Linnaeus, 1758	Picchio verde	x																				
Chordata	AVES	PODECIPEDIFORMES	Podicipedidae	Podiceps auritus (Linnaeus, 1758)	Svasso cornuto	x	x																			
Chordata	AVES	PODECIPEDIFORMES	Podicipedidae	Podiceps cristatus (Linnaeus, 1758)	Svasso maggiore	x																				
Chordata	AVES	PODECIPEDIFORMES	Podicipedidae	Podiceps griseus (Boddaert, 1783)	Svasso collaroso	x																				
Chordata	AVES	PODECIPEDIFORMES	Podicipedidae	Podiceps nigricollis (Brehm C.L., 1831)	Svasso piccolo	x	x																			
Chordata	AVES	PODECIPEDIFORMES	Podicipedidae	Tachybaptus ruficollis (Pallas, 1764)	Tuffetto	x																				
Chordata	AVES	PROCELLARIIFORMES	Diomedidae	Diomedea exulans Linnaeus, 1758	Albatros uriatore	x																				
Chordata	AVES	PROCELLARIIFORMES	Hydrobatidae	Hydrobates pelagicus (Linnaeus, 1758)	Uccello delle tempeste	x	x																			
Chordata	AVES	PROCELLARIIFORMES	Hydrobatidae	Oceanites oceanicus (Kuhl, 1820)	Uccello delle tempeste di Wilson	x																				
Chordata	AVES	PROCELLARIIFORMES	Hydrobatidae	Oceanodroma leucorhoa (Vieillot, 1817)	Uccello delle tempeste codaforcata	x	x																			
Chordata	AVES	PROCELLARIIFORMES	Procellariidae	Bulweria bulweri (Jardín & Selby, 1828)	Berta di Bulwer	x	x																			
Chordata	AVES	PROCELLARIIFORMES	Procellariidae	Bulweria fallax Jouanin, 1955	Berta di Jouanin	x																				
Chordata	AVES	PROCELLARIIFORMES	Procellariidae	Calonectris diomedea (Scopoli, 1769)	Berta maggiore	x	x																			
Chordata	AVES	PROCELLARIIFORMES	Procellariidae	Caprimulgus capensis (Linnaeus, 1758)	Procellaria del Capo	x																				
Chordata	AVES	PROCELLARIIFORMES	Procellariidae	Fulmarus glacialis (Linnaeus, 1761)	Fulmaro	x																				
Chordata	AVES	PROCELLARIIFORMES	Procellariidae	Puffinus assimilis Gould, 1838	Berta minore fosca	x	x																			
Chordata	AVES	PROCELLARIIFORMES	Procellariidae	Puffinus gravis (O'Reilly, 1818)	Berta dell'Atlantico	x																				
Chordata	AVES	PROCELLARIIFORMES	Procellariidae	Puffinus griseus (Gmelin, 1789)	Berta grigia	x																				
Chordata	AVES	PROCELLARIIFORMES	Procellariidae	Puffinus puffinus (Brünnich, 1764)	Berta minore	x																				
Chordata	AVES	PTEROCLIDIFORMES	Pteroclididae	Pterocles alchata (Linnaeus, 1766)	Grandule	x	x																			
Chordata	AVES	PTEROCLIDIFORMES	Pteroclididae	Pterocles senegallus (Linnaeus, 1771)	Grandule del Senegal	x																				
Chordata	AVES	PTEROCLIDIFORMES	Pteroclididae	Syrhaptes paradoxus (Pallas, 1773)	Sirratte	x																				
Chordata	AVES	STRIGIFORMES	Strigidae	Aegolius funereus (Linnaeus, 1758)	Civetta capogrosso	x	x																			
Chordata	AVES	STRIGIFORMES	Strigidae	Asio flammeus (Pontopidan, 1763)	Gufo di palude	x	x																			
Chordata	AVES	STRIGIFORMES	Strigidae	Asio otus (Linnaeus, 1758)	Gufo comune	x																				
Chordata	AVES	STRIGIFORMES	Strigidae	Athene noctua (Scopoli, 1769)	Civetta	x																				
Chordata	AVES	STRIGIFORMES	Strigidae	Bubo bubo (Linnaeus, 1758)	Gufo reale	x	x																			
Chordata	AVES	STRIGIFORMES	Strigidae	Glaucidium passerinum (Linnaeus, 1758)	Civetta nana	x	x																			
Chordata	AVES	STRIGIFORMES	Strigidae	Otus scops (Linnaeus, 1758)	Assiolo	x																				
Chordata	AVES	STRIGIFORMES	Strigidae	Strix aluco Linnaeus, 1758	Allocco	x																				
Chordata	AVES	STRIGIFORMES	Strigidae	Strix uralensis Pallas, 1771	Allocco degli Urali	x	x																			
Chordata	AVES	STRIGIFORMES	Tytonidae	Tyto alba (Scopoli, 1769)	Barbagianni	x																				
Chordata	CONDRICTHYTES	LAMNIFORMES	Carcharhinidae	Prionace glauca (Linnaeus, 1758)	Verdesca																					
Chordata	CONDRICTHYTES	LAMNIFORMES	Lamnidae	Carcharodon carcharias (Linnaeus, 1758)	Squalo bianco																					
Chordata	CONDRICTHYTES	LAMNIFORMES	Lamnidae	Cetorhinus maximus (Gunnerus, 1765)	Squalo elefante																					VUA1cd+2cd
Chordata	CONDRICTHYTES	LAMNIFORMES	Lamnidae	Isurus oxyrinchus Rafinesque, 1810	Squalo mako																					LR/nt
Chordata	CONDRICTHYTES	LAMNIFORMES	Lamnidae	Lamna nasus (Bonaparte, 1788)	Smeriglio																					LR/nt
Chordata	CONDRICTHYTES	RAJIFORMES	Mobulidae	Mobula mobular (Bonaparte, 1788)	Diavolo di mare																					VUA1cd
Chordata	CONDRICTHYTES	RAJIFORMES	Rajidae	Raja alba Lacépède, 1803	Razza bianca																					
Chordata	CONDRICTHYTES	SQUALIFORMES	Squatinae	Squatina squatina (Linnaeus, 1758)	Squadro																					VUA1abcd+A2d
Chordata	MAMMALIA	ARTIODACTYLA	Bovidae	Capra aegreus aegreus Erleben 1777	Capra di Montecristo																					
Chordata	MAMMALIA	ARTIODACTYLA	Bovidae	Capra aegreus Erleben, 1777	Capra selvatica																					
Chordata	MAMMALIA	ARTIODACTYLA	Bovidae	Capra hircus (Linnaeus, 1758)	Capra di Montecristo																					
Chordata	MAMMALIA	ARTIODACTYLA	Bovidae	Capra ibex Linnaeus, 1758	Stambecco																					
Chordata	MAMMALIA	ARTIODACTYLA	Bovidae	Ovis orientalis Gmelin, 1774	Mufone																					
Chordata	MAMMALIA	ARTIODACTYLA	Bovidae	Ovis orientalis musimon	Mufone sardo																					VU A2cde
Chordata	MAMMALIA	ARTIODACTYLA	Bovidae	Rupicapra pyrenaica Bonaparte, 1845	Camoscio																					VU A2cde, D1+2
Chordata	MAMMALIA	ARTIODACTYLA	Bovidae	Rupicapra pyrenaica ornata *	Camoscio appenninico	x	x																			LR/cd
Chordata	MAMMALIA	ARTIODACTYLA	Bovidae	Rupicapra rupicapra (Linnaeus, 1758)	Camoscio alpino																					
Chordata	MAMMALIA	ARTIODACTYLA	Cervidae	Capreolus capreolus (Linnaeus, 1758)	Capriolo																					
Chordata	MAMMALIA	ARTIODACTYLA	Cervidae	Capreolus capreolus capreolus																						
Chordata	MAMMALIA	ARTIODACTYLA	Cervidae	Capreolus capreolus italicus																						x M
Chordata	MAMMALIA	ARTIODACTYLA	Cervidae	Cervus elaphus corsicanus *	Cervo sardo	x																				x M
Chordata	MAMMALIA	ARTIODACTYLA	Cervidae	Cervus elaphus elaphus	Cervo																					
Chordata	MAMMALIA	ARTIODACTYLA	Cervidae	Cervus elaphus Linnaeus, 1758	Cervo nobile																					
Chordata	MAMMALIA	ARTIODACTYLA	Cervidae	Dama dama (Linnaeus, 1758)	Daino																					
Chordata	MAMMALIA	ARTIODACTYLA	Suidae	Sus scrofa Linnaeus, 1758	Cinghiale																					
Chordata	MAMMALIA	ARTIODACTYLA	Suidae	Sus scrofa meridionalis	Cinghiale ss. meridionale																					
Chordata	MAMMALIA	CARNIVORA	Canidae	Canis aureus Linnaeus, 1758	Sciaccallo	x																				
Chordata	MAMMALIA	CARNIVORA	Canidae	Canis lupus * Linnaeus, 1758	Lupo																					
Chordata	MAMMALIA	CARNIVORA	Felidae	Felis silvestris lybica	Gatto selvatico	x																				
Chordata	MAMMALIA	CARNIVORA	Felidae	Felis silvestris Schreber, 1777	Gatto selvatico	x																				
Chordata	MAMMALIA	CARNIVORA	Felidae	Felis silvestris silvestris	Gatto selvatico	x																				
Chordata	MAMMALIA	CARNIVORA	Felidae	Linx linx (Linnaeus, 1758)	Linco eurasiatica	x																				
Chordata	MAMMALIA	CARNIVORA	Mustelidae	Lutra lutra (Linnaeus, 1758)	Lontra comune	x																				NT
Chordata	MAMMALIA	CARNIVORA	Mustelidae	Martes foina (Erleben, 1777)	Faina	x	x																			
Chordata	MAMMALIA	CARNIVORA	Mustelidae	Martes martes (Linnaeus, 1758)	Martora																					
Chordata	MAMMALIA	CARNIVORA	Mustelidae	Meles meles (Linnaeus, 1758)	Tasso	x																				
Chordata	MAMMALIA	CARNIVORA	Mustelidae	Mustela erminea Linnaeus, 1758	Ermellino	x																				
Chordata	MAMMALIA	CARNIVORA	Mustelidae	Mustela nivalis boccamela		x																				
Chordata	MAMMALIA	CARNIVORA	Mustelidae	Mustela nivalis Linnaeus, 1766	Donnola																					
Chordata	MAMMALIA	CARNIVORA	Mustelidae	Mustela nivalis minuta		x																				
Chordata	MAMMALIA	CARNIVORA	Mustelidae	Mustela nivalis nivalis	</																					

phylum	classe	ordine	famiglia	specie_lat	specie_it	L. 15792 art. 2	L. 15792	79609 CEE Ap.1	79609 CEE Ap.2A	79609 CEE Ap.2B	79609 CEE Ap.3	79609 CEE Ap.3B	BERNA Ap.2	BERNA Ap.3	CITES AII A	CITES AII B	CITES AII D	BONN Ap.1	BONN Ap.2	HABITAT Ap.2	HABITAT Ap.4	HABITAT Ap.5	BARCELONA art. 2	ENDEMICA	CHECKLIST	IUCN	
Chordata	MAMMALIA	CETACEA	Balaenopteridae	Balaenoptera physalus (Linnaeus, 1758)	Balenottera comune	x								x	x										M	EN A1abd	
Chordata	MAMMALIA	CETACEA	Delphinidae	Delphinus delphis Linnaeus, 1758	Delfino comune	x							x	x								x					
Chordata	MAMMALIA	CETACEA	Delphinidae	Globicephala melana (Trall, 1809)	Globicefalo	x								x	x												
Chordata	MAMMALIA	CETACEA	Delphinidae	Grampus griseus (Cuvier G., 1812)	Grampo	x							x	x								x				DD	
Chordata	MAMMALIA	CETACEA	Delphinidae	Orcinus orca (Linnaeus, 1758)	Orca	x							x	x								x				LR/gd	
Chordata	MAMMALIA	CETACEA	Delphinidae	Pseudorca crassidens (Owen, 1846)	Pseudorca	x							x	x								x					
Chordata	MAMMALIA	CETACEA	Delphinidae	Stenella coeruleoalba (Meyen, 1833)	Stenella striata	x							x	x								x				LR/cd	
Chordata	MAMMALIA	CETACEA	Delphinidae	Steno bredanensis (Lesson, 1828)	Steno	x							x	x								x				DD	
Chordata	MAMMALIA	CETACEA	Delphinidae	Tursiops truncatus (Montagu, 1821)	Tursiope	x							x	x								x				DD	
Chordata	MAMMALIA	CETACEA	Physeteridae	Kogia simus (Owen, 1866)	Cogia di Owen	x							x	x								x					
Chordata	MAMMALIA	CETACEA	Physeteridae	Physeter catodon Linnaeus, 1758	Capodoglio	x							x	x								x				VUA1bd	
Chordata	MAMMALIA	CETACEA	Ziphiidae	Ziphius cavirostris Cuvier G., 1832	Zifio	x							x	x								x				DD	
Chordata	MAMMALIA	CHIROPTERA	Molossidae	Tadarida teniotis (Rafinesque, 1814)	Molosso di Cestoni		x						x								x	x				LR/nt	
Chordata	MAMMALIA	CHIROPTERA	Rhinolophidae	Rhinolophus blasii Peters, 1866	Ferro di cavallo di Blasius		x						x								x	x				LR/nt	
Chordata	MAMMALIA	CHIROPTERA	Rhinolophidae	Rhinolophus euryle Blasius, 1853	Ferro di cavallo euriale		x						x								x	x				VU A2c	
Chordata	MAMMALIA	CHIROPTERA	Rhinolophidae	Rhinolophus ferrumequinum (Schreber, 1774)	Ferro di cavallo maggiore		x						x								x	x				LR/cd	
Chordata	MAMMALIA	CHIROPTERA	Rhinolophidae	Rhinolophus hipposideros (Bechstein, 1800)	Ferro di cavallo minore		x						x								x	x				VU A2c	
Chordata	MAMMALIA	CHIROPTERA	Rhinolophidae	Rhinolophus mehelyi Matschie, 1901	Ferro di cavallo di Mehely		x						x								x	x				VU A2c	
Chordata	MAMMALIA	CHIROPTERA	Vespertilionidae	Barbastella barbastellus (Schreber, 1774)	Barbastello		x						x								x	x					
Chordata	MAMMALIA	CHIROPTERA	Vespertilionidae	Eptesicus nilsonii (Keyserling & Blasius, 1839)	Serotino di Nilsson		x						x								x	x					
Chordata	MAMMALIA	CHIROPTERA	Vespertilionidae	Eptesicus serotinus (Schreber, 1774)	Serotino comune		x						x								x	x					
Chordata	MAMMALIA	CHIROPTERA	Vespertilionidae	Hypugo savii (Bonaparte, 1837)	Pipistrello di Savi		x						x								x	x					
Chordata	MAMMALIA	CHIROPTERA	Vespertilionidae	Miniopterus schreibersi (Natterer in Kuhl, 1819)	Miniottero		x						x								x	x				LR/nt	
Chordata	MAMMALIA	CHIROPTERA	Vespertilionidae	Myotis bechsteini (Leisler in Kuhl, 1818)	Vespertilio di Bechstein		x						x								x	x				VU A2c	
Chordata	MAMMALIA	CHIROPTERA	Vespertilionidae	Myotis blythi (Tomes, 1857)	Vespertilio di Blyth		x						x								x	x					
Chordata	MAMMALIA	CHIROPTERA	Vespertilionidae	Myotis blythi oxygnathus			x						x								x	x					
Chordata	MAMMALIA	CHIROPTERA	Vespertilionidae	Myotis blythi punicus			x						x								x	x					
Chordata	MAMMALIA	CHIROPTERA	Vespertilionidae	Myotis brandti (Eversmann, 1845)	Vespertilio di Brandt		x						x								x	x					
Chordata	MAMMALIA	CHIROPTERA	Vespertilionidae	Myotis capaccinii (Bonaparte, 1837)	Vespertilio di Capaccini		x						x								x	x				VU A2c	
Chordata	MAMMALIA	CHIROPTERA	Vespertilionidae	Myotis daubentonii (Leisler in Kuhl, 1819)	Vespertilio di Daubenton		x						x								x	x					
Chordata	MAMMALIA	CHIROPTERA	Vespertilionidae	Myotis emarginatus (Geoffroy E., 1806)	Vespertilio smarginato		x						x								x	x				VU A2c	
Chordata	MAMMALIA	CHIROPTERA	Vespertilionidae	Myotis myotis (Borkhausen, 1797)	Vespertilio maggiore		x						x								x	x				LR/nt	
Chordata	MAMMALIA	CHIROPTERA	Vespertilionidae	Myotis mystacinus (Kuhl, 1817)	Vespertilio mustacchino		x						x								x	x					
Chordata	MAMMALIA	CHIROPTERA	Vespertilionidae	Myotis nattereri (Kuhl, 1818)	Vespertilio di Natterer		x						x								x	x					
Chordata	MAMMALIA	CHIROPTERA	Vespertilionidae	Nyctalus lasiopterus (Schreber, 1780)	Nottola gigante		x						x								x	x				LR/nt	
Chordata	MAMMALIA	CHIROPTERA	Vespertilionidae	Nyctalus leisleri (Kuhl, 1818)	Nottola di Leisler		x						x								x	x				LR/nt	
Chordata	MAMMALIA	CHIROPTERA	Vespertilionidae	Nyctalus noctula (Schreber, 1774)	Nottola comune		x						x								x	x					
Chordata	MAMMALIA	CHIROPTERA	Vespertilionidae	Pipistrellus kuhli (Kuhl, 1817)	Pipistrello albimbato		x						x								x	x					
Chordata	MAMMALIA	CHIROPTERA	Vespertilionidae	Pipistrellus nathusii (Keyserling & Blasius, 1839)	Pipistrello di Nathusius		x						x								x	x					
Chordata	MAMMALIA	CHIROPTERA	Vespertilionidae	Pipistrellus pipistrellus (Schreber, 1774)	Pipistrello nano		x						x								x	x					
Chordata	MAMMALIA	CHIROPTERA	Vespertilionidae	Pipistrellus pygmaeus (Leach, 1825)	Pipistrello pigmeo		x						x								x	x					
Chordata	MAMMALIA	CHIROPTERA	Vespertilionidae	Plecotus auritus (Linnaeus, 1758)	Orecchione comune		x						x								x	x					
Chordata	MAMMALIA	CHIROPTERA	Vespertilionidae	Plecotus austriacus (Fischer, 1829)	Orecchione meridionale		x						x								x	x					
Chordata	MAMMALIA	CHIROPTERA	Vespertilionidae	Vespertilio murinus Linnaeus, 1758	Serotino bicolor		x						x								x	x					
Chordata	MAMMALIA	INSECTIVORA	Erinaceidae	Erinaceus concolor Marten, 1838	Riccio		x																				
Chordata	MAMMALIA	INSECTIVORA	Erinaceidae	Erinaceus europaeus Linnaeus, 1758	Riccio		x																				
Chordata	MAMMALIA	INSECTIVORA	Soricidae	Crocidura leucodon (Hermann, 1780)	Crocidura ventre bianco		x																				
Chordata	MAMMALIA	INSECTIVORA	Soricidae	Crocidura russula (Hermann, 1780)	Crocidura rossiccia		x																				
Chordata	MAMMALIA	INSECTIVORA	Soricidae	Crocidura russula cossyrensis			x																				
Chordata	MAMMALIA	INSECTIVORA	Soricidae	Crocidura russula ichnusae			x																				
Chordata	MAMMALIA	INSECTIVORA	Soricidae	Crocidura sicula Miller, 1901	Crocidura siciliana		x																				
Chordata	MAMMALIA	INSECTIVORA	Soricidae	Crocidura suaveolens (Pallas, 1811)	Crocidura minore		x																				
Chordata	MAMMALIA	INSECTIVORA	Soricidae	Neomys anomalus Cabrera, 1907	Toporagno d'acqua di Miller		x																				
Chordata	MAMMALIA	INSECTIVORA	Soricidae	Neomys fodiens (Pennant, 1771)	Toporagno d'acqua		x																				
Chordata	MAMMALIA	INSECTIVORA	Soricidae	Sorex alpinus Schinz, 1837	Toporagno alpino		x																				
Chordata	MAMMALIA	INSECTIVORA	Soricidae	Sorex araneus Linnaeus, 1758	Toporagno comune		x																				
Chordata	MAMMALIA	INSECTIVORA	Soricidae	Sorex minutus Linnaeus, 1766	Toporagno nano		x																				
Chordata	MAMMALIA	INSECTIVORA	Soricidae	Sorex samniticus Altobello, 1926	Toporagno appenninico		x																				
Chordata	MAMMALIA	INSECTIVORA	Soricidae	Suncus etruscus (Savi, 1822)	Mustiolo		x																				
Chordata	MAMMALIA	LOGOMORPHA	Leporidae	Lepus capensis (Linnaeus, 1758)	Lepre sarda																						
Chordata	MAMMALIA	LOGOMORPHA	Leporidae	Lepus capensis mediterraneus	Lepre bianca																						
Chordata	MAMMALIA	RODENTIA	Hystricidae	Hystrix cristata (Linnaeus, 1758)	Istrice		x																				LR/nt
Chordata	MAMMALIA	RODENTIA	Myocastoridae	Myocastor coypus (Molina, 1782)	Nutria		x																				
Chordata	MAMMALIA	RODENTIA	Myoxidae	Dryomys nitedula (Pallas, 1779)	Driomio		x																				LR/nt
Chordata	MAMMALIA	RODENTIA	Myoxidae	Eliomys quercinus (Linnaeus, 1766)	Quercino		x																				VU A1c
Chordata	MAMMALIA	RODENTIA	Myoxidae	Eliomys quercinus liparensis			x																				
Chordata	MAMMALIA	RODENTIA	Myoxidae	Eliomys quercinus sardus			x																				
Chordata	MAMMALIA	RODENTIA	Myoxidae	Muscardinus avellanarius (Linnaeus, 1758)	Moscardino		x																				LR/nt
Chordata	MAMMALIA	RODENTIA	Myoxidae	Myoxus glis (Linnaeus, 1766)	Chiro		x																				LR/nt
Chordata	MAMMALIA	RODENTIA	Scuridae	Marmota marmota (Linnaeus, 1758)	Marmotta		x																				
Chordata	MAMMALIA	RODENTIA	Scuridae	Sciurus carolinensis Gmelin, 1788	Sciattolo grigio		x																				
Chordata	MAMMALIA	RODENTIA	Scuridae	Sciurus vulgaris Linnaeus, 1758	Sciattolo		x																				
Chordata	OSTEICHTHYES	ACIPENSERIFORMES	Acipenseridae	Acipenser naccarii * Bonaparte, 1836	Storione cobice																						NT
Chordata	OSTEICHTHYES	ACIPENSERIFORMES	Acipenseridae	Acipenser sturio * Linnaeus, 1758	Storione																						VU A1ac
Chordata	OSTEICHTHYES	ACIPENSERIFORMES	Acipenseridae	Acipenser transmontanus Richardson, 1836	Storione																						CR A2d
Chordata	OSTEICHTHYES	ACIPENSERIFORMES	Acipenseridae	Huso huso (Linnaeus, 1758)	Storione ladano																						
Chordata	OSTEICHTHYES	CLUPE																									





Categorie (Gruppi non tassonomici)	Famiglia	Specie (nome latino)	Specie (nome Italiano). (Se presente nella Flora d'Italia di Pignatti, 1992)	Berna	Cites A	Cites B	Cites D	Habitat all. 2	Habitat all. 4	Habitat all. 5	Barcellona all. 2	Endemica	IUCN
ALGHE	FUCOPHYCEA	<i>Cystoseira amentacea</i> Bory (inclus. var. <i>stricta</i> et var. <i>spicata</i> )		x							x		
ALGHE	FUCOPHYCEA	<i>Cystoseira mediterranea</i> Sauvageau		x							x		
ALGHE	FUCOPHYCEA	<i>Cystoseira spinosa</i> C. Agardh (inclus. <i>C. adriatica</i> )		x							x		
ALGHE	FUCOPHYCEA	<i>Cystoseira sedoides</i> C. Agardh		x							x		
ALGHE	FUCOPHYCEA	<i>Cystoseira zosteroides</i> (Turner) C. Agardh		x							x		
ALGHE	FUCOPHYCEA	<i>Laminaria rodriguezii</i> Bornet		x							x		
ALGHE	FUCOPHYCEA	<i>Laminaria ochroleuca</i> De La Pylaie		x									
ALGHE	RHODOPHYTA	<i>Goniolithon byssoides</i> (Lamarck) Foslie		x							x		
ALGHE	RHODOPHYTA	<i>Lithothamnium coralloides</i> Crouan frat.									x		
ALGHE	RHODOPHYTA	<i>Phyramotholiton calcareum</i> (Poll.) Adey & McKibbin									x		
ALGHE	RHODOPHYTA	<i>Schimmelmannia schousboei</i> J. Agardh		x							x		
LICHENI	CLADONIACEAE	<i>Cladina arbuscula</i> (Wallr.) Hale & Culb									x		
LICHENI	CLADONIACEAE	<i>Cladina arbuscula</i> ssp. <i>arbuscula</i>									x		
LICHENI	CLADONIACEAE	<i>Cladina arbuscula</i> ssp. <i>squarrosa</i> (Wallr.) Burgaz in Burgaz & Ahti									x		
LICHENI	CLADONIACEAE	<i>Cladina ciliata</i> (Stirton) Trass var. <i>ciliata</i>									x		
LICHENI	CLADONIACEAE	<i>Cladina mediterranea</i> (Duvign. & des Abb.) Follm. & Hern.-Padr.									x		
LICHENI	CLADONIACEAE	<i>Cladina mitis</i> (Sandst.) Hustich									x		
LICHENI	CLADONIACEAE	<i>Cladina portentosa</i> (Dufour) Follm.									x		
LICHENI	CLADONIACEAE	<i>Cladina rangiferina</i> (L.) Nyl.									x		
LICHENI	CLADONIACEAE	<i>Cladins stellaris</i> (Opiz) Brodo									x		
LICHENI	CLADONIACEAE	<i>Cladina tenuis</i> (Florke) B. de Lesd.									x		V
BRIOFITE	ANTHOCEROTACEAE	<i>Nothothylas orbicularis</i> (Schwein.) Sull.		x				x					
BRIOFITE	AYTONIACEAE	<i>Mannia triandra</i> (Scop.) Grolle		x				x					E
BRIOFITE	CODONIACEAE	<i>Petalophyllum ralfsii</i> Nees & Goot. ex Lehm.		x				x					Ex
BRIOFITE	FRULLANIACEAE	<i>Frullania parvistipula</i> Steph.		x									R
BRIOFITE	RICCIACEAE	<i>Riccia breidlerii</i> Jur. ex Steph.		x				x				x	
BRIOFITE	AMBLYSTEGIACEAE	<i>Drepanocladus vernicosus</i> (Mitt.) Warnst.		x				x					
BRIOFITE	BUXBAUMIACEAE	<i>Buxbaumia viridis</i> (Moug. ex Lam. & DC.) Brid. ex Moug. & Nestl.		x				x					E
BRIOFITE	DICRANACEAE	<i>Dicranum viride</i> (Sull. & Lesq.) Lindb.		x				x					E
BRIOFITE	FONTINALACEAE	<i>Dichelyma capillaceum</i> (With.) Myr.		x				x					Ex
BRIOFITE	FUNARIACEAE	<i>Pyramidula tetragona</i> (Brid.) Brid.		x				x					
BRIOFITE	LEUCOBRYACEAE	<i>Leucobryum glaucum</i>									x		
BRIOFITE	MEESIACEAE	<i>Meesia longiseta</i> Hedw.		x				x					Ex
BRIOFITE	ORTHOTRICHACEAE	<i>Orthotrichum rogeri</i> Brid.		x				x					Ex
BRIOFITE	SCAPIANACEAE	<i>Scapania massolongi</i> (K. Muell.) K. Muell.		x				x					Ex
BRIOFITE	SPHAGNACEAE	<i>Sphagnum centrale</i> C. Jensen ex Arnell & C. Jensen									x		E
BRIOFITE	SPHAGNACEAE	<i>Sphagnum imbricatum</i> Hornschuch ex Russow									x		E
BRIOFITE	SPHAGNACEAE	<i>Sphagnum magellanicum</i> Bridel									x		
BRIOFITE	SPHAGNACEAE	<i>Sphagnum palustre</i> Linnaeus									x		
BRIOFITE	SPHAGNACEAE	<i>Sphagnum papillosum</i> Lindberg									x		
BRIOFITE	SPHAGNACEAE	<i>Sphagnum compactum</i> de Candolle ex Lamarck & de Candolle									x		

Categorie (Gruppi non tassonomici)	Famiglia	Specie (nome latino)	Specie (nome Italiano). (Se presente nella Flora d'Italia di Pignatti, 1992)	Berna	Cites A	Cites B	Cites D	Habitat all. 2	Habitat all. 4	Habitat all. 5	Barcellona all. 2	Endemica	IUCN
BRIOFITE	SPHAGNACEAE	<i>Sphagnum squarrosum</i> Crome								x			
BRIOFITE	SPHAGNACEAE	<i>Sphagnum teres</i> (Schimper) Ångström ex C. Hartman								x			
BRIOFITE	SPHAGNACEAE	<i>Sphagnum cuspidatum</i> Ehrhart ex Hoffmann								x			E
BRIOFITE	SPHAGNACEAE	<i>Sphagnum majus</i> (Russow) C. Jensen								x			E
BRIOFITE	SPHAGNACEAE	<i>Sphagnum obtusum</i> Warnstorf								x			E
BRIOFITE	SPHAGNACEAE	<i>Sphagnum recurvum</i> Palisot de Beauvois var. <i>recurvum</i>								x			
BRIOFITE	SPHAGNACEAE	<i>Sphagnum recurvum</i> var. <i>brevifolium</i> (Lindberg ex Braithwaite)								x			
BRIOFITE	SPHAGNACEAE	<i>Sphagnum recurvum</i> var. <i>tenue</i> Klinggräff								x			Ex
BRIOFITE	SPHAGNACEAE	<i>Sphagnum riparium</i> Ångström								x			R
BRIOFITE	SPHAGNACEAE	<i>Sphagnum tenellum</i> (Bridel) Bory								x			
BRIOFITE	SPHAGNACEAE	<i>Sphagnum subsecundum</i> Nees ex Sturm var. <i>subsecundum</i>								x			
BRIOFITE	SPHAGNACEAE	<i>Sphagnum subsecundum</i> var. <i>contortum</i> (Schultz) Hübener								x			
BRIOFITE	SPHAGNACEAE	<i>Sphagnum subsecundum</i> var. <i>platyphyllum</i> (Lindberg ex Braithwaite)								x			
BRIOFITE	SPHAGNACEAE	<i>Sphagnum subsecundum</i> var. <i>rufescens</i> (Nees & Hornschuch) Hübener								x			
BRIOFITE	SPHAGNACEAE	<i>Sphagnum subsecundum</i> var. <i>inundatum</i> (Russow) C. Jensen								x			
BRIOFITE	SPHAGNACEAE	<i>Sphagnum capillifolium</i> (Ehrhart) Hedwig var. <i>capillifolium</i>								x			
BRIOFITE	SPHAGNACEAE	<i>Sphagnum capillifolium</i> var. <i>tenellum</i> (Schimper) Crum								x			
BRIOFITE	SPHAGNACEAE	<i>Spagnum capillifolium</i> var. <i>tenerum</i> (Sullivant & Lesquereux ex Sullivant) Crum								x			
BRIOFITE	SPHAGNACEAE	<i>Sphagnum fimbriatum</i> Wilson ex Wilson & J.D. Hooker in J.D. Hooker								x			E
BRIOFITE	SPHAGNACEAE	<i>Sphagnum fuscum</i> (Schimper) Klinggräff								x			
BRIOFITE	SPHAGNACEAE	<i>Sphagnum girgensohnii</i> Russow								x			
BRIOFITE	SPHAGNACEAE	<i>Sphagnum molle</i> Sullivant								x			
BRIOFITE	SPHAGNACEAE	<i>Sphagnum quinquefarium</i> (Lindberg ex Braithwaite) Warnstorf								x			
BRIOFITE	SPHAGNACEAE	<i>Sphagnum russowii</i> Warnstorf								x			
BRIOFITE	SPHAGNACEAE	<i>Sphagnum subnitens</i> Russow & Warnstorf ex Warnstorf								x			
BRIOFITE	SPHAGNACEAE	<i>Sphagnum warnstorffii</i> Russow								x			
PTERIDOFITE	ASPLENIACEAE	<i>Asplenium hemionitis</i> L.	Scolopendra emionitide	x					x				
PTERIDOFITE	BLECHNACEAE	<i>Woodwardia radicans</i> (L.) Sm.	Felce bulbifera	x				x					VU
PTERIDOFITE	HYMENOPHYLLACEAE	<i>Trichomanes speciosum</i> Willd.	Felcetta Apuana	x				x					EN
PTERIDOFITE	ISOETACEAE	<i>Isoetes malinverniana</i> Ces. & De Not.	Calamaria malinverniana	x				x					CR
PTERIDOFITE	LYCOPODIACEAE	<i>Lycopodium annotinum</i> L.	Licopodio annotino									x	x
PTERIDOFITE	LYCOPODIACEAE	<i>Lycopodium clavatum</i> L.	Licopodio clavato									x	x
PTERIDOFITE	MARSILEACEAE	<i>Marsilea quadrifolia</i> L.	Trifoglio acquatico comune	x				x					VU
PTERIDOFITE	MARSILEACEAE	<i>Marsilea strigosa</i> Willd.	Trifoglio acquatico peloso	x				x					VU
PTERIDOFITE	MARSILEACEAE	<i>Pilularia minuta</i> Durieu ex. Braun	Pilularia minore	x									VU
PTERIDOFITE	OPHIOGLOSSACEAE	<i>Botrychium simplex</i> Hitchc.	Botrichio minore	x				x					VU
PTERIDOFITE	OPHIOGLOSSACEAE	<i>Botrychium matricariifolium</i> A. Braun ex Koch	Botrichio ramoso	x									VU
PTERIDOFITE	OPHIOGLOSSACEAE	<i>Botrychium multifidum</i> (S.G. Gmelin) Rupr.	Botrichio multifido	x									x
PTERIDOFITE	SALVINIACEAE	<i>Salvinia natans</i> (L.) All.	Erba pesce	x									VU
GIMNOSPERME	PINACEAE	<i>Abies nebrodensis</i> (Lojac.) Mattei	Abete dei Nebrodi	x				P	x			x	CR
ANGIOSPERME	ALISMATACEAE	<i>Caldesia parnassifolia</i> (L.) Parl.	Mestolaccia minore	x				x	x				CR

Categorie (Gruppi non tassonomici)	Famiglia	Specie (nome latino)	Specie (nome Italiano). (Se presente nella Flora d'Italia di Pignatti, 1992)	Berna	Cites A	Cites B	Cites D	Habitat all. 2	Habitat all. 4	Habitat all. 5	Barcellona all. 2	Endemica	IUCN
ANGIOSPERME	AMARYLLIDACEAE	<i>Galanthus nivalis</i> L.	Bucaneve			x				x			
ANGIOSPERME	AMARYLLIDACEAE	<i>Galanthus nivalis</i> subsp. <i>nivalis</i>				x							x
ANGIOSPERME	AMARYLLIDACEAE	<i>Galanthus nivalis</i> subsp. <i>Reginae-olgae</i> (Orph.) Gottl.-Tann.				x							x
ANGIOSPERME	AMARYLLIDACEAE	<i>Leucojum nicaense</i> Ard.		x				x	x				CR
ANGIOSPERME	AMARYLLIDACEAE	<i>Narcissus pseudonarcissus</i> L.											
ANGIOSPERME	AMARYLLIDACEAE	<i>Narcissus pseudonarcissus</i> L. subsp. <i>nobilis</i> (Haw.) A. Fernandes						x	x				
ANGIOSPERME	AMARYLLIDACEAE	<i>Narcissus angustifolius</i> Curt.		x									x
ANGIOSPERME	BORAGINACEAE	<i>Anchusa crispa</i> Viv.	Buglossa sarda	x				P	x			x	EN
ANGIOSPERME	BORAGINACEAE	<i>Anchusa litorea</i> Moris		x									CR
ANGIOSPERME	BORAGINACEAE	<i>Myosotis rehsteineri</i> Wartm.	Nontiscordardimè	x				x	x			x	CR
ANGIOSPERME	CAMPANULACEAE	<i>Campanula sabatia</i> De Not.	Campanula di Savona	x				P	x			x	VU
ANGIOSPERME	CAMPANULACEAE	<i>Campanula moretiana</i> Reichenb.	Campanula di Moretti	x					x			x	LR
ANGIOSPERME	CAMPANULACEAE	<i>Physoplexis comosa</i> (L.) Schur.	Raponzolo chiomosa	x					x			x	LR
ANGIOSPERME	CARYOPHYLLACEAE	<i>Dianthus rupicola</i> Biv.	Garofano rupicolo	x				x	x				
ANGIOSPERME	CARYOPHYLLACEAE	<i>Dianthus rupicola</i> Biv. subsp. <i>rupicola</i>											VU
ANGIOSPERME	CARYOPHYLLACEAE	<i>Gypsophila papillosa</i> P. Porta	Gipsofila papillosa	x				P	x			x	VU
ANGIOSPERME	CARYOPHYLLACEAE	<i>Herniaria latifolia</i> Lapeyr.											
ANGIOSPERME	CARYOPHYLLACEAE	<i>Herniaria latifolia</i> subsp. <i>litardierei</i> Gamisans						P	x				CR
ANGIOSPERME	CARYOPHYLLACEAE	<i>Moehringia tommasinii</i> Marches.	Moehringia di Tommassini	x				x	x			x	VU
ANGIOSPERME	CARYOPHYLLACEAE	<i>Silene hiesiae</i> Brullo & Signorello						P	x			x	CR
ANGIOSPERME	CARYOPHYLLACEAE	<i>Silene velutina</i> Pourret ex Loisel.	Silene vellutata	x				P	x			x	VU
ANGIOSPERME	CHENOPODIACEAE	<i>Bassia</i> ( <i>Kochia</i> ) <i>saxicola</i> (Guss.) A. J. Scott	Granata rupicola	x				P	x			x	CR
ANGIOSPERME	CHENOPODIACEAE	<i>Salicornia veneta</i> Pignatti & Lausi	Salicornia veneta	x				P	x			x	EN
ANGIOSPERME	CISTACEAE	<i>Helianthemum caput-felis</i> Boiss.	Eliantemo testa di micio	x				x	x			x	LR
ANGIOSPERME	COMPOSITAE	<i>Arnica montana</i> L.	Arnica				x			x			x
ANGIOSPERME	COMPOSITAE	<i>Artemisia genipi</i> Weber	Assenzio genepi a spiga							x		x	x
ANGIOSPERME	COMPOSITAE	<i>Aster sorrentinii</i> (Tod) Lojac.	Astro di Sorrentino					P	x			x	VU
ANGIOSPERME	COMPOSITAE	<i>Centaurea horrida</i> Badaro	Fiordaliso spinoso	x				P	x			x	VU
ANGIOSPERME	COMPOSITAE	<i>Centaurea kartschiana</i> Scop.	Fiordaliso del Carso	x				x	x			x	VU
ANGIOSPERME	COMPOSITAE	<i>Lamyropsis microcephala</i> (Moris) Dittrich & Greuter	Cardo	x				P	x			x	CR
ANGIOSPERME	COMPOSITAE	<i>Leontodon siculus</i> (Guss.) Finch & Sell	Dente di Leone di Sicilia	x				P	x			x	
ANGIOSPERME	CRUCIFERAE	<i>Brassica glabrescens</i> Poldini	Eurocastro friulano	x				x	x			x	VU
ANGIOSPERME	CRUCIFERAE	<i>Brassica insularis</i> Moris	Cavolo di Sardegna	x				x	x			x	x
ANGIOSPERME	CRUCIFERAE	<i>Brassica macrocarpa</i> Guss.	Cavolo delle Egadi	x				P	x			x	CR
ANGIOSPERME	CRUCIFERAE	<i>Erucastrum palustre</i> (Pirona) Vis.	Brassica palustre	x				x	x			x	CR
ANGIOSPERME	CRUCIFERAE	<i>Jonopsidium savianum</i> (Caruel) Ball ex Arcang.	Bivonea di Salvi	x				x	x			x	VU
ANGIOSPERME	CYPERACEAE	<i>Carex panormitana</i> Guss.	Carice palermitana					P	x			x	
ANGIOSPERME	CYPERACEAE	<i>Eleocharis carniolica</i> Koch	Giunchina della Carniola	x				x	x				VU
ANGIOSPERME	DROSERACEAE	<i>Aldrovanda vesiculosa</i> L.	Aldovranda	x				x	x				CR
ANGIOSPERME	ERICACEAE	<i>Arctostaphylos uva-ursi</i> (L.) Spreng	Uva ursina				x						x
ANGIOSPERME	EUPHORBIACEAE	<i>Euphorbia dendroides</i> L.	Euforbia arborecente			x							

Categorie (Gruppi non tassonomici)	Famiglia	Specie (nome latino)	Specie (nome Italiano). (Se presente nella Flora d'Italia di Pignatti, 1992)	Berna	Cites A	Cites B	Cites D	Habitat all. 2	Habitat all. 4	Habitat all. 5	Barcellona all. 2	Endemica	IUCN
ANGIOSPERME	GENTIANACEAE	<i>Gentiana ligustica R. de Vilm. &amp; Chopinet</i>		x				x	x			x	x
ANGIOSPERME	GENTIANACEAE	<i>Gentiana lutea L.</i>	Genziana gialla				x			x			x
ANGIOSPERME	GRAMINEAE	<i>Bromus grossus Desf. ex DC.</i>	Forasacco del farro	x				x	x				
ANGIOSPERME	GRAMINEAE	<i>Coleanthus subtilis (Tratt.) Seidl</i>		x				x	P				
ANGIOSPERME	GRAMINEAE	<i>Stipa austroitalica Martinovsky</i>	Lino delle fate	x				P	x			x	
ANGIOSPERME	GRAMINEAE	<i>Stipa austroitalica subsp. appendiculata (Celak) Moraldo</i>											EN
ANGIOSPERME	GRAMINEAE	<i>Stipa austroitalica subsp. austroitalica</i>											x
ANGIOSPERME	GRAMINEAE	<i>Stipa veneta Moraldo</i>						P	x			x	EN
ANGIOSPERME	GROSSULARIACEAE	<i>Ribes sardoum Martelli</i>	Ribes di Sardegna	x				P	x			x	CR
ANGIOSPERME	IRIDACEAE	<i>Crocus etruscus Parl.</i>	Zafferano di Toscana	x					x			x	LR
ANGIOSPERME	IRIDACEAE	<i>Iris marsica Ricci &amp; Colasante</i>	Giaggiolo della Marsica	x					x			x	LR
ANGIOSPERME	LABIATAE	<i>Dracocephalum austriacum L.</i>	Melissa austriaca	x				x	x				VU
ANGIOSPERME	LABIATAE	<i>Dracocephalum ruyschiana L.</i>	Melissa di Ruysch	x									VU
ANGIOSPERME	LEGUMINOSAE	<i>Astragalus aquilanus Anzalone</i>	Astragalo dell'Aquila	x				P	x			x	VU
ANGIOSPERME	LEGUMINOSAE	<i>Astragalus centralpinus Braun-Blanquet</i>	Astragalo maggiore	x				x	x				
ANGIOSPERME	LEGUMINOSAE	<i>Astragalus maritimus Moris</i>	Astragalo marittimo	x				P	x			x	CR
ANGIOSPERME	LEGUMINOSAE	<i>Astragalus verrucosus Moris</i>	Astragalo verrucoso	x				P	x			x	CR
ANGIOSPERME	LEGUMINOSAE	<i>Cytisus aeolicus Guss. ex Lindl.</i>	Citiso delle Eolie	x				P	x			x	VU
ANGIOSPERME	LEGUMINOSAE	<i>Genista holopetala (Fleischm. ex Koch) Baldacci</i>	Ginestra dei ghiaioni	x				x	x				EN
ANGIOSPERME	LEGUMINOSAE	<i>Trifolium saxatile All.</i>	Trifoglio dei greti	x				x	x			x	LR
ANGIOSPERME	LILIACEAE	<i>Colchicum corsicum Baker</i>		x					x				EN
ANGIOSPERME	LILIACEAE	<i>Lilium rubrum Lmk</i>	Giglio a fiocco							x		x	
ANGIOSPERME	LILIACEAE	<i>Muscari gussonei (Parl.) Tod.</i>	Muscari di Gussone	x				P	x			x	EN
ANGIOSPERME	LILIACEAE	<i>Ruscus aculeatus L.</i>	Ruscolo pungitopo							x			
ANGIOSPERME	LINACEAE	<i>Linum muelleri Moris (Linum maritimum muelleri)</i>	Lino marittimo					P	x				EN
ANGIOSPERME	MALVACEAE	<i>Kosteletzkya pentacarpos (L.) Ledeb.</i>	Ibisco litorale	x				x	x				CR
ANGIOSPERME	ORCHIDACEAE	<i>Aceras anthropophorum (L.) R. Br.</i>	Ballerina			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Anacamptis pyramidalis (L.) L. C. Rich.</i>	Orchide			x							
ANGIOSPERME	ORCHIDACEAE	<i>Barlia robertiana (Loisel.) Greuter</i>	Barlia			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Cephalanthera damasonium (Miller) Druce</i>	Cefalantera bianca			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Cephalanthera longifolia (Hudson) Fritsch</i>	Cefalantera maggiore			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Cephalanthera rubra (L.) L. C. Rich.</i>	Cefalantera rossa			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Chamaeorchis alpina L. C. Rich.</i>	Gramignola alpina			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Coeloglossum viride (L.) Hartm.</i>	Celoglosso			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Corallorhiza trifida Chatel</i>	Coralloriza			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Cypripedium calceolus L.</i>	Pianelle della Madonna	x	x	x		x	x				VU
ANGIOSPERME	ORCHIDACEAE	<i>Epipactis atropurpurea Rafin</i>	Elleborine violacea			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Epipactis greuteri M. Baumann et Kunkele</i>				x							EN
ANGIOSPERME	ORCHIDACEAE	<i>Epipactis helleborine (L.) Crantz</i>	Elleborine comune			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Epipactis leptochila (Godfery) Godfery</i>				x							
ANGIOSPERME	ORCHIDACEAE	<i>Epipactis leptochila subsp. leptochila</i>				x							x

Categorie (Gruppi non tassonomici)	Famiglia	Specie (nome latino)	Specie (nome Italiano). (Se presente nella Flora d'Italia di Pignatti, 1992)	Berna	Cites A	Cites B	Cites D	Habitat all. 2	Habitat all. 4	Habitat all. 5	Barcellona all. 2	Endemica	IUCN
ANGIOSPERME	ORCHIDACEAE	<i>Epipactis meridionalis</i> M. Baumann et Lorenz				x							x
ANGIOSPERME	ORCHIDACEAE	<i>Epipactis microphylla</i> (Ehrh.) Swartz	Elleborine minore			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Epipactis muelleri</i> Godfery				x							x
ANGIOSPERME	ORCHIDACEAE	<i>Epipactis palustris</i> (Miller) Crantz	Elleborine palustre			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Epipactis persica</i> (Soò) Hausskn. Ex Nannf.				x							x
ANGIOSPERME	ORCHIDACEAE	<i>Epipactis persica</i> subsp. <i>gracilis</i> (B. et H. Baumann) W. Rossi				x							x
ANGIOSPERME	ORCHIDACEAE	<i>Epipactis purpurata</i> Sm.				x							DD
ANGIOSPERME	ORCHIDACEAE	<i>Epipactis tremolsii</i> Pau				x							EN
ANGIOSPERME	ORCHIDACEAE	<i>Epipogium aphyllum</i> (Schmidt) Swartz	Epipogio			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Gennaria diphylla</i> (Link.) Parl.	Gennaria			x							VU
ANGIOSPERME	ORCHIDACEAE	<i>Goodyera repens</i> (L.) R. Br.	Godiera			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Gymnadenia conopsea</i> (L.) R. Br.	Manina rosea			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Gymnadenia odoratissima</i> (L.) L. C. Rich.	Manina profumata			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Hammarbya paludosa</i> (L.) Kuntze	Hammarbia			x							CR
ANGIOSPERME	ORCHIDACEAE	<i>Herminium monorchis</i> (L.) R. Br.	Orchide ad un bulbo			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Leucorchis albida</i> (L.) E. Mayer	Orchide candida			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Limodorum abortivum</i> (L.) Swartz	Fior di legna			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Limodorum trabutianum</i> Batt.				x							VU
ANGIOSPERME	ORCHIDACEAE	<i>Liparis loeselii</i> (L.) Rich.	Liparide	x	x	x		x	x				EN
ANGIOSPERME	ORCHIDACEAE	<i>Listera cordata</i> (L.) R. Br.	Listera minore			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Listera ovata</i> (L.) R. Br.	Listera maggiore			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Loroglossum hircinum</i> (L.) L. C. Rich.	Barbone			x							
ANGIOSPERME	ORCHIDACEAE	<i>Microstylis monophyllos</i> (L.) Lindl.	Microstile			x							VU
ANGIOSPERME	ORCHIDACEAE	<i>Neotinea intacta</i> (Link) Rchb.	Orchide			x							
ANGIOSPERME	ORCHIDACEAE	<i>Neotinea maculata</i> (Desf.) Stearn				x							x
ANGIOSPERME	ORCHIDACEAE	<i>Neottia nidus-avis</i> (L.) L. C. Rich.	Nido d'uccello			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Nigritella miniata</i> (Crantz) Janchen	Nigritella rossa			x						x	
ANGIOSPERME	ORCHIDACEAE	<i>Nigritella nigra</i> (L.) Rchb.	Nigritella comune			x							
ANGIOSPERME	ORCHIDACEAE	<i>Nigritella nigra</i> subsp. <i>corneliana</i> Beauverd				x							EN
ANGIOSPERME	ORCHIDACEAE	<i>Nigritella nigra</i> subsp. <i>nigra</i>				x							x
ANGIOSPERME	ORCHIDACEAE	<i>Nigritella widderi</i> Teppner et Klein				x							LR
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys apifera</i> Hudson	Ofride fior di Api; Vesparia			x							
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys apifera</i> subsp. <i>apifera</i>				x							x
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys arachniformis</i> Gren et Phil.	Ofride a forma di ragno			x							
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys bertolonii</i> Mor.	Ofride di Bertoloni			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys bombyliflora</i> Link	Ofride fior di bombo			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys ciliata</i> Biv.				x							x
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys crabronifera</i> Mauri				x							
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys crabronifera</i> subsp. <i>crabronifera</i>				x							x
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys discors</i> Bianca				x							EN
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys exaltata</i> Ten.				x							

Categorie (Gruppi non tassonomici)	Famiglia	Specie (nome latino)	Specie (nome Italiano). (Se presente nella Flora d'Italia di Pignatti, 1992)	Berna	Cites A	Cites B	Cites D	Habitat all. 2	Habitat all. 4	Habitat all. 5	Barcellona all. 2	Endemica	IUCN
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys exaltata subsp. sundermannii</i> Soò				x							x
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys exaltata subsp. tyrrhena</i> (Goltz et Reinh.) Del Prete				x							x
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys fuciflora</i> (Crantz) Moench	Ofride dei fuchi			x							
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys fuciflora subsp. fuciflora</i>				x							
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys fuciflora subsp. candica</i> Nelson				x							x
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys fuciflora subsp. oxyrrhynchos</i> (Tod) Soò				x							x
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys fuciflora subsp. exaltata</i> (Ten.) Nelson				x							x
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys fuciflora subsp. pollinensis</i> Nelson				x							x
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys fuciflora subsp. apulica</i> Danesch				x							x
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys fusca</i> Link	Ofride scura			x							
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys fusca subsp. fusca</i>				x							x
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys fusca subsp. iricolor</i> (Desf.) O. Schwarz.				x							
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys holoserica</i> (Burm.F.) Greuter				x							x
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys holoserica subsp. apulica</i> (O.et E. Danesch) Buttler				x							x
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys holoserica subsp. candica</i> Nelson				x							x
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys holoserica subsp. holoserica</i>				x							x
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys holoserica subsp. parvimaculata</i> (O.et E. Danesch) O. et E. Danesch				x							x
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys holoserica subsp. pollinensis</i> (E. Nolsen.) Landwehr				x							x
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys incubacea</i> Bianca ex Tod.				x							x
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys insectifera</i> L.	Ofride insettifera			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys lacaitae</i> Lojac				x							x
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys lunulata</i> Parl.	Ofride a mezza luna	x	x	x		x	x				LR
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys lutea</i> Cav.	Ofride gialla			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys oxyrrhynchos</i> (Tod.) Soò				x							
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys oxyrrhynchos subsp. celiensis</i> O. et E. Danesch				x							CR
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys oxyrrhynchos subsp. oxyrrhynchos</i>				x							x
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys pallida</i> Rafin	Ofride pallida			x							LR
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys panormitana</i> (Tod.) Soò				x							LR
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys scolopax</i> Cav.	Ofride cornuta			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys scolopax subsp. heldreichii</i> (Schlechter) Nelson				x							
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys scolopax subsp. cornuta</i> (Stev.) Cam				x							
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys speculum</i> Link	Ofride azzurra			x							
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys sphecodes</i> Miller	Ofride verde-bruna			x							
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys sphecodes subsp. sphecodes</i>				x							x
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys sphecodes subsp. garganica</i> Nelson				x							x
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys sphecodes subsp. atrata</i> (Lindl) E. Mayer				x							
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys sphecodes subsp. sicula</i> Nelson				x							x
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys sphecodes subsp. panormitana</i> (Tod.) Nelson				x							x
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys tarentina</i> Goltz et Reinh				x							CR
ANGIOSPERME	ORCHIDACEAE	<i>Ophrys tenthredinifera</i> Willd.	Ofride a fior di vespa			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Oplismenus hirtellus</i> P. Beauv.				x							

Categorie (Gruppi non tassonomici)	Famiglia	Specie (nome latino)	Specie (nome Italiano). (Se presente nella Flora d'Italia di Pignatti, 1992)	Berna	Cites A	Cites B	Cites D	Habitat all. 2	Habitat all. 4	Habitat all. 5	Barcellona all. 2	Endemica	IUCN
ANGIOSPERME	ORCHIDACEAE	<i>Oplismenus hirtellus subsp. undulatifolius</i> (Ardoino) Scholz				x							x
ANGIOSPERME	ORCHIDACEAE	<i>Orchis brancifortii</i> Bivona	Orchide di Branciforti			x						x	x
ANGIOSPERME	ORCHIDACEAE	<i>Orchis collina</i> Solander	Orchide a sacco			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Orchis coriophora</i> L.	Orchide cimicina			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Orchis cruenta</i> Muller	Orchide sanguigna			x							
ANGIOSPERME	ORCHIDACEAE	<i>Orchis incarnata</i> L.	Orchide palmata			x							
ANGIOSPERME	ORCHIDACEAE	<i>Orchis insularis</i> Sommier	Orchide delle isole			x							
ANGIOSPERME	ORCHIDACEAE	<i>Orchis italica</i> Poirlet	Orchide italiana			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Orchis lactea</i> Poirlet	Orchide aguzza			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Orchis latifolia</i> L.	Orchide a foglie larghe			x							
ANGIOSPERME	ORCHIDACEAE	<i>Orchis laxiflora</i> Lam.	Orchide acquatica			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Orchis longicornu</i> Poirlet	Orchide cornuta			x							
ANGIOSPERME	ORCHIDACEAE	<i>Orchis maculata</i> L.	Orchide macchiata			x							
ANGIOSPERME	ORCHIDACEAE	<i>Orchis maculata subsp. saccifera</i> (Brongn.) Soò				x							
ANGIOSPERME	ORCHIDACEAE	<i>Orchis maculata subsp. fuchsii</i> (Druce) Hylander				x							
ANGIOSPERME	ORCHIDACEAE	<i>Orchis mascula</i> L.	Orchide maschia			x							
ANGIOSPERME	ORCHIDACEAE	<i>Orchis militaris</i> L.	Orchide militare			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Orchis morio</i> L.	Orchide minore			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Orchis pallens</i> L.	Orchide pallida			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Orchis palustris</i> Jacq.	Orchide palustre			x							EN
ANGIOSPERME	ORCHIDACEAE	<i>Orchis papilionacea</i> L.	Orchide a farfalla			x							
ANGIOSPERME	ORCHIDACEAE	<i>Orchis papilionacea subsp. papilionacea</i>				x							x
ANGIOSPERME	ORCHIDACEAE	<i>Orchis papilionacea subsp. grandiflora</i> (Boiss.) Nelson				x							
ANGIOSPERME	ORCHIDACEAE	<i>Orchis patens</i> Desf.	Orchide palermitana			x							CR
ANGIOSPERME	ORCHIDACEAE	<i>Orchis pauciflora</i> Ten.	Orchide calabrese			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Orchis provincialis</i> Balb.	Orchide gialla	x		x							x
ANGIOSPERME	ORCHIDACEAE	<i>Orchis purpurea</i> Hudson	Orchide maggiore			x							
ANGIOSPERME	ORCHIDACEAE	<i>Orchis quadripuntata</i> Cyr.	Orchide a quattro punti			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Orchis romana</i> Sebast. et Mauri	Orchide romana			x							
ANGIOSPERME	ORCHIDACEAE	<i>Orchis romana subsp. fasciculata</i> Soò				x							
ANGIOSPERME	ORCHIDACEAE	<i>Orchis sambucina</i> L.	Orchide sambucina			x							
ANGIOSPERME	ORCHIDACEAE	<i>Orchis simia</i> Lam.	Orchide omiciattolo			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Orchis spitzelii</i> Sauter	Orchide di Spitzel			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Orchis traunsteineri</i> Sauter	Orchide di Traunsteiner			x							
ANGIOSPERME	ORCHIDACEAE	<i>Orchis tridentata</i> Scop.	Orchide screziata			x							
ANGIOSPERME	ORCHIDACEAE	<i>Orchis ustulata</i> L.	Orchide bruciacchiata			x							
ANGIOSPERME	ORCHIDACEAE	<i>Platanthera algeriensis</i> Batt. Et Trab.				x							LR
ANGIOSPERME	ORCHIDACEAE	<i>Platanthera bifolia</i> (L.) Rchb.	Platantera comune			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Platanthera chloantha</i> (Custer) Rchb	Platantera verdastra			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Serapias cordigera</i> L.	Serapide cuoriforme			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Serapias lingua</i> L.	Serapide lingua			x							x

Categorie (Gruppi non tassonomici)	Famiglia	Specie (nome latino)	Specie (nome Italiano). (Se presente nella Flora d'Italia di Pignatti, 1992)	Berna	Cites A	Cites B	Cites D	Habitat all. 2	Habitat all. 4	Habitat all. 5	Barcellona all. 2	Endemica	IUCN
ANGIOSPERME	ORCHIDACEAE	<i>Serapias neglecta</i> De Not.	Serapide brunastra			x						x	x
ANGIOSPERME	ORCHIDACEAE	<i>Serapias orientalis</i> Nelson				x							
ANGIOSPERME	ORCHIDACEAE	<i>Serapias orientalis</i> subsp. <i>apulica</i> Nelson				x							VU
ANGIOSPERME	ORCHIDACEAE	<i>Serapias orientalis</i> subsp. <i>siciliensis</i> Bartolo et Pulvirenti				x							CR
ANGIOSPERME	ORCHIDACEAE	<i>Serapias parviflora</i> Parl.	Serapide minore			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Serapias vomeracea</i> (Burm.) Briq.	Serapide maggiore			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Spiranthes aestivalis</i> (Poiret) L.C.M. Richard	Viticcini estivi	x	x	x			x				EN
ANGIOSPERME	ORCHIDACEAE	<i>Spiranthes spiralis</i> (L.) Koch	Viticcini autunnali			x							x
ANGIOSPERME	ORCHIDACEAE	<i>Traunsteinera globosa</i> (L.) Rchb.	Orchide dei pascoli			x							x
ANGIOSPERME	PLUMBAGINACEAE	<i>Armeria helodes</i> Martini & Pold						P	x			x	CR
ANGIOSPERME	PLUMBAGINACEAE	<i>Limonium insulare</i> (Beg. & Landi) Arrig. & Diana						P	x			x	VU
ANGIOSPERME	PLUMBAGINACEAE	<i>Limonium pseudolaetum</i> Arrig. & Diana						P	x			x	VU
ANGIOSPERME	PLUMBAGINACEAE	<i>Limonium strictissimum</i> (Salzmann) Arrig.						P	x			x	CR
ANGIOSPERME	POSIDONIACEAE	<i>Posidonia oceanica</i> (Med.)		x							x		x
ANGIOSPERME	PRIMULACEAE	<i>Androsace mathildae</i> Levier	Andros abruzzese	x				x	x			x	LR
ANGIOSPERME	PRIMULACEAE	<i>Cyclamen hederifolium</i> Aiton	Ciclamino napoletano			x							x
ANGIOSPERME	PRIMULACEAE	<i>Cyclamen purpurascens</i> Mill.	Ciclamino delle Alpi			x							x
ANGIOSPERME	PRIMULACEAE	<i>Cyclamen repandum</i> Sibth et Sm.	Ciclamino primaverile			x							x
ANGIOSPERME	PRIMULACEAE	<i>Primula apennina</i> Widmer	Primula appenninica	x				P	x			x	EN
ANGIOSPERME	PRIMULACEAE	<i>Primula glaucescens</i> Moretti	Primula glaucescente	x					x			x	LR
ANGIOSPERME	PRIMULACEAE	<i>Primula palinuri</i> Petagna	Primula di Palinuro	x				x	x			x	VU
ANGIOSPERME	PRIMULACEAE	<i>Primula spectabilis</i> Tratt.	Primula meravigliosa	x					x			x	x
ANGIOSPERME	RANUNCULACEAE	<i>Adonis distorta</i> Ten.	Adonide curvata	x				x	x			x	LR
ANGIOSPERME	RANUNCULACEAE	<i>Adonis vernalis</i> L.	Adonide gialla				x						CR
ANGIOSPERME	RANUNCULACEAE	<i>Aquilegia alpina</i> L.	Aquilegia maggiore						x			x	x
ANGIOSPERME	RANUNCULACEAE	<i>Aquilegia bertolonii</i> Schott	Aquilegia di Bertoloni	x				x	x			x	VU
ANGIOSPERME	RANUNCULACEAE	<i>Ranunculus fontanus</i> C. Presl.	Ranuncolo delle fonti	x									VU
ANGIOSPERME	RUBIACEAE	<i>Galium litorale</i> Guss.	Caglio litorale	x				P	x			x	EN
ANGIOSPERME	SAXIFRAGACEAE	<i>Saxifraga berica</i> (Beguinot) D. A. Webb	Sassifraga dei Colli Berici	x				x	x			x	EN
ANGIOSPERME	SAXIFRAGACEAE	<i>Saxifraga florulenta</i> Moretti	Sassifraga dell'Argentera	x				x	x			x	VU
ANGIOSPERME	SAXIFRAGACEAE	<i>Saxifraga hirculus</i> L.	Sassifraga delle torbiere	x				x	x				DD
ANGIOSPERME	SAXIFRAGACEAE	<i>Saxifraga presolanensis</i> Engl.	Sassifraga della Presolana	x					x			x	LR
ANGIOSPERME	SAXIFRAGACEAE	<i>Saxifraga tombeanensis</i> Boiss. ex Engl.	Sassifraga del monte Tombea	x				x	x			x	VU
ANGIOSPERME	SAXIFRAGACEAE	<i>Saxifraga valdensis</i> DC.	Sassifraga valdese	x					x			x	
ANGIOSPERME	SCROPHULARIACEAE	<i>Euphrasia genargentea</i> (Feoli) Diana	Eufrazia del Gennargentu					P	x			x	CR
ANGIOSPERME	SCROPHULARIACEAE	<i>Euphrasia marchesettii</i> Wettst. ex Marches.	Eufrazia di Marchesetti	x				x	x			x	VU
ANGIOSPERME	SCROPHULARIACEAE	<i>Linaria flava</i> (Poiret) Desf.	Linajola Sardo-Corsa	x				x	x				
ANGIOSPERME	SCROPHULARIACEAE	<i>Linaria flava</i> (Poiret) Desf. subsp. <i>sardoa</i> (Sommier) Arrigoni											LR
ANGIOSPERME	SCROPHULARIACEAE	<i>Linaria tonzigii</i> Lona	Linajola bergamasca					x	x			x	LR
ANGIOSPERME	SCROPHULARIACEAE	<i>Lindernia procumbens</i> (Krocker) Philcox	Vandellia palustre	x					x				VU
ANGIOSPERME	SOLANACEAE	<i>Mandragora officinarum</i> L.	Mandragora primaverile	x					x				CR

Categorie (Gruppi non tassonomici)	Famiglia	Specie (nome latino)	Specie (nome Italiano). (Se presente nella Flora d'Italia di Pignatti, 1992)	Berna	Cites A	Cites B	Cites D	Habitat all. 2	Habitat all. 4	Habitat all. 5	Barcellona all. 2	Endemica	IUCN
ANGIOSPERME	THYMELAEACEAE	<i>Daphne petraea</i> Leybold	Dafne minore	x				x	x			x	LR
ANGIOSPERME	TRAPACEAE	<i>Trapa natans</i> L.	Castagna d'acqua	x									EN
ANGIOSPERME	THYPACEAE	<i>Typha minima</i> Funk	Lisca minore	x									x
ANGIOSPERME	THYPACEAE	<i>Typha shuttleworthii</i> Koch & Sonder		x									
ANGIOSPERME	UMBELLIFERAE	<i>Apium repens</i> (Jacq.) Lag.	Sedano strisciante	x				x	x				CR
ANGIOSPERME	UMBELLIFERAE	<i>Athamanta cortiana</i> Ferrarini	Atamanta di Corti	x				x	x			x	VU
ANGIOSPERME	UMBELLIFERAE	<i>Eryngium alpinum</i> L.	Calcatreppola alpina	x				x	x			x	VU
ANGIOSPERME	UMBELLIFERAE	<i>Petagnia saniculifolia</i> Guss.	Petagna	x				x	x			x	VU
ANGIOSPERME	UMBELLIFERAE	<i>Rouya polygama</i> (Desf.) Coincy	Firrastrina bianca	x				x	x				VU
ANGIOSPERME	VALERIANACEAE	<i>Centranthus trinervis</i> (Viv.) Beguinot	Camarezza sardo-corsa	x								x	LR
ANGIOSPERME	ZANNICHELLIACEAE	<i>Cymodocea nodosa</i> (Med.)		x									x
ANGIOSPERME	ZOOSTERACEAE	<i>Zoostera marina</i> (Med.)		x								x	x
ANGIOSPERME	ZOOSTERACEAE	<i>Zoostera noltii</i> (Med.)									x		

## APPENDIX C

### IUCN RED LIST OF THREATENED TERRESTRIAL ANIMALS AND PLANTS IN ITALY

<i>Scientific Name</i>	<i>Common English Name</i>	<i>Status</i>
<b>Arthropods</b>		
<i>Ampedus aethiops</i>	Click beetle species	LC
<i>Ampedus auripes</i>	Click beetle species	LC
<i>Ampedus brunnicornis</i>	Click beetle species	VU
<i>Ampedus callegarii</i>	Click beetle species	DD
<i>Ampedus cardinalis</i>	Cardinal Click Beetle	NT
<i>Ampedus coenobita</i>	Click beetle species	NT
<i>Ampedus koschwitzii</i>	Click beetle species	DD
<i>Ampedus magistretti</i>	Click beetle species	DD
<i>Ampedus quadrisignatus</i>	Click beetle species	EN
<i>Ampedus triangulum</i>	Click beetle species	LC
<i>Brachygorius campadellii</i>		DD
<i>Brachypteroma ottomanum</i>		LC
<i>Buprestis splendens</i>		EN
<i>Callimus abdominalis</i>		LC
<i>Calopteryx xanthostoma</i>	Western Demoiselle	LC
<i>Ceruchus chrysomelinus</i>	Lucanid beetle	NT
<i>Chlorophorus glabromaculatus</i>		LC
<i>Clytus lama</i>		LC
<i>Clytus triangulimacula</i>		VU
<i>Cordulegaster bidentata</i>	Sombre goldenring	NT
<i>Cordulegaster heros</i>	Balkan goldenring	NT
<i>Cordulegaster trinacriae</i>	Italian goldenring	NT
<i>Cucujus cinnaberinus</i>		NT
<i>Dacne notata</i>		LC
<i>Grynocharis oblonga</i>		LC
<i>Hylis cariniceps</i>		LC
<i>Hylis simonae</i>		NT
<i>Isotomus barbarae</i>		VU
<i>Lucanus tetraodon</i>		LC
<i>Microrhagus emyi</i>		LC
<i>Microrhagus hummleri</i>		DD
<i>Microrhagus Lepidus</i>		LC
<i>Microrhagus pygmaeus</i>		LC
<i>Monochamus sartor</i>		LC
<i>Osmoderma eremite</i>	Hermit beetle	NT
<i>Osmoderma italica</i>		EN
<i>Pseudosphegesthes cinerea</i>		DD
<i>Pseudotriphyllus suturalis</i>		NT
<i>Purpuricenus globulicollis</i>		DD
<i>Reitterelater buoyoni</i>		NT
<i>Ropalopus femoratus</i>		LC
<i>Ropalopus insubricus</i>		NT
<i>Ropalopus ungaricus</i>		EN
<i>Stenagostus rufus</i>	Click beetle species	LC
<i>Tenebroides fuscus</i>		DD
<i>Triplax andreinii</i>		DD
<i>Triplax tergestana</i>		DD
<i>Tritoma bipustulata</i>		LC
<i>Xylophilus corticalis</i>		LC

<b>Mammals</b>		
<i>Monachus monachus</i>	Mediterranean Monk Seal	CR
<b>Plants</b>		
<i>Antinoria agrostidea</i>		LC
<i>Apium crassipes</i>		NT
<i>Armeria helodes</i>		CR
<i>Carex hispida</i>		LC
<i>Carex mairii</i>		LC
<i>Carex microcarpa</i>		LC
<i>Chrysosplenium dubium</i>		NT
<i>Euphorbia cuneifolia</i>		LC
<i>Exaculum pusillum</i>		NT
<i>Isolepis pseudosetacea</i>		LC
<i>Juncus heterophyllus</i>		NT
<i>Juncus sorrentinii</i>		VU
<i>Mentha cervina</i>	Hart's Pennyroyal	NT
<i>Mentha insularis</i>		LC
<i>Mentha requienii</i>	Corsican Mint	LC
<i>Oenanthe globulosa</i>		LC
<i>Phalaris truncata</i>		LC
<i>Pinguicula reichenbachiana</i>		LC
<i>Polygonum romanum</i>		LC
<i>Salix pedicellata</i>		LC
<i>Sanguisorba dodecandra</i>		NT
<i>Saxifraga tombeanensis</i>	Dwarf cushion	EN
<i>Selaginella denticulata</i>	Tooth-leaved clubmoss	LC

## Notes:

Categories:

CR – Critically Endangered. A taxon is Critically Endangered when it is facing an extremely high risk of extinction in the wild in the immediate future, as defined by any of the criteria (A to E).

EN – Endangered. A taxon is Endangered when it is not Critically Endangered but is facing a very high risk of extinction in the wild in the near future, as defined by any of the criteria (A to E).

VU – Vulnerable. A taxon is Vulnerable when it is not Critically Endangered or Endangered but is facing a high risk of extinction in the wild in the medium-term future, as defined by any of the criteria (A to E).

LR/nt - Lower Risk/near threatened. A taxon is Lower Risk when it has been evaluated and does not satisfy the criteria for Critically Endangered, Endangered or Vulnerable. Taxa included in the Lower Risk category can be separated into 3 subcategories:

- Conservation Dependent (cd). Taxa which are the focus of a continuing taxon-specific or habitat-specific conservation programme targeted towards the taxon in question, the cessation of which would result in the taxon qualifying for one of the threatened categories above within a period of 5 years.
- Near Threatened (nt). Taxa which do not qualify for Conservation Dependent, but which are close to qualifying for Vulnerable.
- Least Concern (lc). Taxa which do not qualify for Conservation Dependent or Near Threatened.

DD – Data Deficient. A taxon is Data Deficient when there is inadequate information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status. A taxon in this category may be well studied, and its biology well known, but appropriate data on abundance and/or distribution is lacking. Data Deficient is therefore not a category of threat or Lower Risk. Listing of taxa in this category indicates that more information is required and acknowledges the possibility that future research will show that threatened classification is appropriate. In many cases great care should be exercised in choosing between DD and threatened status. If the range of a taxon is suspected to be relatively circumscribed, if a considerable period of time has elapsed since the last record of the taxon, threatened status may well be justified.

## **APPENDIX D**

### **NATURAL RESOURCES REGULATIONS**

---

Chapter 2 of this User's Guide provides an updated and streamlined discussion of the laws and regulations related to natural resources throughout Italy. The following includes additional descriptions and information as provided in the 2004 User's Guide.

### **ITALIAN LAWS AND REGULATIONS**

While the FGS-Italy are the definitive regulations applicable to environmental actions at NSA Naples and NSAND GAETA, it is important to consider the Italian laws and regulations that were used to ensure the proper protection and management of natural resources at NSA Naples and NSAND GAETA. Below is a brief description of these laws and regulations. More comprehensive information can be found in Appendix E.

#### **ITALIAN GOVERNMENTAL STRUCTURE**

Italy is a parliamentary republic, with centralized administrative structures:

- **State** (equivalent to the U.S. Federal government)
- **Regions / Peripheries** (equivalent to U.S. States)
- **Prefectures / Nomi** (equivalent to U.S. counties)
- **Municipalities** (equivalent to U.S. cities)

Legal and executive power is shared among the national government and 20 regions, 94 provinces, and 8,102 municipalities. Figure 2-1 outlines the administration of natural resources in Italy. For natural resource issues, policy is generally made in Rome at the national level. Regions, provinces, and local governments also have regional and local laws and regulations.

---

Two primary Italian Ministries responsible for natural resource management and protection as illustrated on Figure 2-1 are the Ministry for Agriculture and Forestry and the Ministry of the Environment.

### **Ministry for Agricultural, Food, and Forestry Policies**

This ministry is important in supporting governmental policy relating to agriculture, forests, food and fishing, working at a national, European, and international level.

### **Ministry of the Environment**

The Ministry of the Environment is considered the most important national-level governmental body for the promotion, maintenance, and restoration of the environment and for the protection of natural resources from pollution.

Presidential decree No. 140 (3 August 2009) established the reorganization of the Ministry of the Environment, with Ministerial Decree No. 135 (2 December 2009) providing the actual structure of the General Directorates of the Ministry:

- Directorate General for Protection of Natural Resources and Water
- Directorate General for Nature Conservation and the Sea
- Directorate General for Sustainable Development, Climate, and Energy
- Directorate General for Environmental Assessment
- Directorate General for General Affairs and Personnel

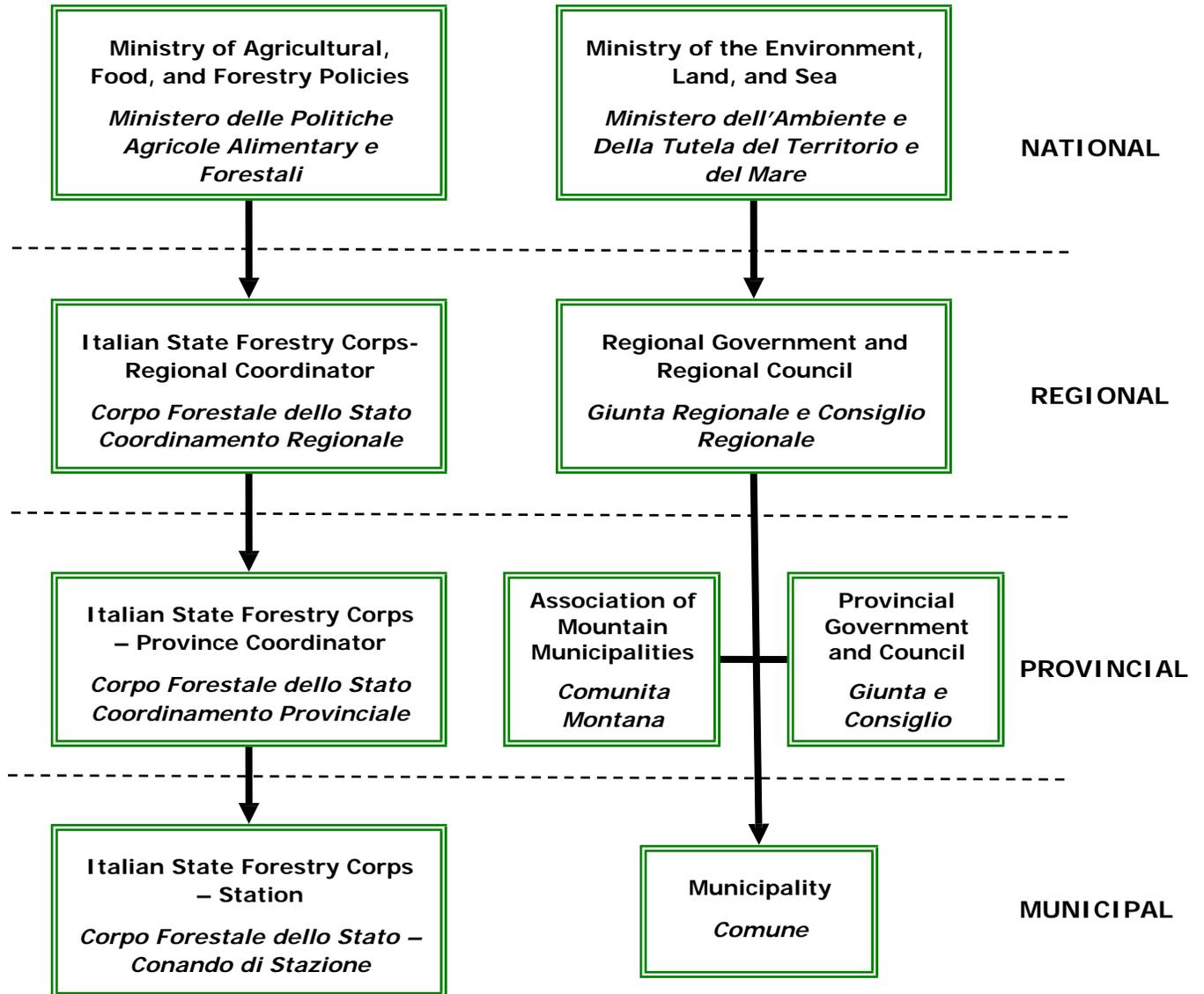
The Directorate General for Nature Conservation and the Sea acts to promote protection of biodiversity, in coordination with Natura 2000, CITES, and the Ramsar Convention of Wetlands of International Importance, among others. They are also responsible for the establishment and regulation of national parks and protected natural areas.

---

The Directorate General for Environmental Assessment plays an important role in the environmental impact assessment (EIA) process providing technical and administrative support for plans and programs with significant environmental impact.

Governments on a regional level are given many legislative and planning responsibilities for several environmental issues, including environmental permitting. The regional governments typically work in coordination with the Provincial and Municipal governments.

**Figure 2-1. Italian Governmental Structure for Natural Resource Protection**



The Italian Constitution was formally adopted January 1, 1948. As opposed to the constitutions of other European countries (e.g., Spain, Germany), the Italian Constitution does not contain any explicit references to the environment. However, there are articles which are of relevance to environmental questions, such as:

- Article 2 (inviolable rights);
- Article 9 (tutelage of the countryside); and
- Article 32 (health and collective interests).

There are also environmentally relevant articles in the Italian Civil and Penal Codes (*Codice Penale* and *Codice Civile*), such as laws stipulating the legal building distance of construction sites to natural resources.

### ITALIAN ENVIRONMENTAL LAWS

There have been numerous laws developed in Italy for the protection or management of environmental resources, as shown in the list below. These laws were taken into consideration during the development of the 2002 FGS-Italy update:

- Legislative Decree 490/99 (Testo Unico) – “Consolidation of laws relating to cultural and environmental assets” (combining L.1497/39 – Natural resource protection, 431/85 – Galasso Law, and 1089/39 – Cultural resource protection)
  - Royal Decree (RD) 1357/40 – Regulation for Natural Beauty;
  - L. 759/56 – National Law on Protection of Cork Trees;
  - L. 874/75 – National Law on International Trade of Endangered Species;
  - Decree of the President of the Republic (DPR) 448/76 – National Regulation for Wetlands;
-

- DPR 616/77 – National Regulation for Local Authorities' Responsibility Regarding Natural Resources;
- L. 812/78 – National Law on Bird Protection;
- L. 503/81 – National Law on Wildlife and Habitats;
- L. 42/83 – National Law on Wildlife Migratory Species;
- L. 127/85 – National Law on Protected Areas;
- L. 183/89 – National Law on Land Use;
- L. 394/91 – National Law on Natural Reserves;
- L. 157/92 – National Law on Wildlife;
- L. 10/94 – Institution of the National Park of Archipelago La Maddalena (which created the National Park of the Maddalena Archipelago);
- Deliberation of the Ministry of Environment (DME) of 2 December 1996 – Classification of Protected Areas;
- DPR of 17 May 1996 (which established the Maddalena National Park Office in January 1997 and identified prohibitions to guarantee the park's protection);
- DPR 357/97 – Regulation on the Implementation of the EU Directive 92/43/EEC Relating to the Conservation of Natural and Seminatural Habitats and Wild Flora and Fauna;
- Ministerial Decree of 20 January 1999 – Modification of Attachments A and B of DPR 357/97 Regulation on the Implementation of the EU Directive 92/43/EEC Relating to the Conservation of Natural and Seminatural Habitats and Wild Flora and Fauna; and
- Ministerial Decree of 3 April 2000 – Sites of Community Importance and Zones of Special Protection.

Because the above laws can change or be updated periodically, it is important to verify these laws prior to their reference. EURAFSWA should be

---

contacted to confirm their applicability or to verify the most recent version of specific laws.

### **NATIONAL LAWS PERTAINING TO NATURAL RESOURCES**

The Acts, Presidential Decrees, and Ministerial Decisions briefly summarized in this section are regulatory mandates passed by the Italian government to comply with national laws, the EU, and international conventions and treaties to protect and conserve the natural resources of Italy.

The Italian legislation on natural resources consists of two basic groups of laws: (1) the laws that protect landscapes, panoramic views, and other natural resources of unique value, and (2) the laws that regulate the management and conservation of protected areas such as natural parks and marine reserves.

**DPR 616/77** – Title V, Planning and Utilization of the Territory – gives the State the responsibility of approving projects involving areas subject to zoning restrictions due to the presence of natural resources. The Regions were delegated to provide administrative controls for the protection of natural resources, their inventory, preservation, and relative sanctions.

**L. 394/91** – established the regulations for the identification, designation, and management of natural protected areas to promote the conservation and the development of natural resources. This law defines a natural resource as any physical, geological, geomorphological, and biological formation that has relevant natural and environmental value. Areas that present these characteristics, particularly if in a vulnerable condition, are subject to special protection and management with the intent to:

---

- Conserve flora and fauna species, vegetation and forests, exceptional geological formations, paleontological formations, ecosystems, scenic and panoramic locales, hydrologic and hydrogeologic equilibrium, and ecological equilibrium
- Apply managerial methods or environmental restoration to accomplish the integration of man and the natural environment and to safeguard the anthropologic, archaeological, historic, and architectural resources and those traditional agricultural activities
- Promote activities for the education, training, and scientific research and compatible recreational activities
- Protect and reconstitute hydraulic and hydrogeologic equilibrium

The natural protected areas, those including natural resources subject to special protection and management, are classified as follows:

- National parks
- Regional nature parks
- Nature reserves
- Protected marine areas (as defined in the Geneva Convention, according to L. 127/85 and L. 979/82)

The framework law also provides definitions for each category and for the establishment of a Committee for protected areas presided by the Ministry of the Environment.

**DME of 2 December 1996** - "Classification of protected areas", integrates the above classification to establish the following classification of natural protected areas:

- National park
  - State nature reserve
  - Interregional nature park
  - Regional nature park
-

- Regional nature reserve
- Wetlands of international importance (as defined in the Ramsar Convention)
- Zone of Special Protection (ZSP), as defined in EU Directive 79/409/EEC
- Zone of Special Conservation (ZSC), as defined in EU Directive 92/43/EEC

A national Committee for Protected Natural Areas oversees policy coordination. Each park must have separate plans prepared to regulate land use and further develop compatible activities (i.e., social and economic promotion). Both plans are essentially based on agreement among the park authority and regional and local administrations. The land use plan is developed by the park authorities (national park management boards), while the social and economic promotion plan is handled by the park community (an advisory body of the park authority). Both plans are approved by the region.

L. 394/91 also allows the governments of autonomous regions (regioni autonome), such as Sardinia, more power in the definition of the boundaries and regulations of National Parks, which must be negotiated between the State (i.e., the national level) and the regional government. Figure 2-3 outlines the environmental structure in the autonomous regions of Sardinia and Sicily. The structure is essentially the same for nonautonomous regions; however, autonomous regions generally have more power in regional and local regulations.

The Register of Protected Areas (Elenco delle Aree Protette) in Italy is an official directory containing administrative information and maps of protected

---

areas set up in Italy either by the State or by the regions. The directory was established in 1991 and is published and updated by the Ministry of the Environment's Nature Conservation Survey in Rome.

### **Protection of Flora, Fauna, and Habitat**

The Italian legislation on the protection and conservation of species and their habitats is governed by the following regulations that implement international conventions: Paris 1950, Ramsar 1971, Geneva 1972, Washington 1973, Bern 1979, Bonn 1979, and EU Directives on the protection of endangered species both worldwide and in Europe.

**DPR 448/76** is directed to the Italian Regions and implements the Ramsar Convention (2 February 1971) on the protection of wetlands as habitats for aquatic birds. Since it is an international convention, the statements provided are very broad in their scope and require the signatory States to:

- Identify the wetlands in their territories on the basis of biological, ecological, botanical, zoological, and hydrologic relevance and to include them in a list
- Take adequate actions to protect, improve, and develop the wetlands in their territories

DPR 448/76 defines wetlands as swamps, bogs, natural or artificial, permanent or temporary basins, with stagnant, running, salt, brackish, or fresh water and seawater with a depth less than 6 meters during low tide. It also states that all birds that are ecologically dependent on wetlands are to be considered aquatic birds and must be protected and controlled, creating natural reserves, regardless of their exclusion from the protected list.

**L. 812/78** implements the International Convention of Paris (18 October 1950) on the protection of wild birds. It is a procedural law that provides

---

broad guidelines on the protection and management of wild birds and endangered birds. According to this law, the birds must be protected, especially during their reproductive period and, if migratory, when they are returning to their nesting sites, especially during the period from March to July. Endangered species must be protected year around. During the period of protection, any activity that can harm the birds or their nests is prohibited. Action that can bring about the total destruction or extinction of indigenous or migratory species is prohibited in all the signatory countries.

Each signatory country (to the Convention) must create a list of the species that can be hunted or captured in their territory. Particular care must be taken to avoid harming wild birds by air and water pollution or poisons. The signatory countries must create nature reserves where the wild birds can find their optimal habitat.

**L. 503/81** implements the Bern Convention (19 September 1979) on the preservation of the European wildlife and natural environment. The law promotes the preservation of endangered wildlife and their habitats, which must be assured by adopting specific laws and regulations to minimize the risk of deterioration of such areas, and to protect the habitats used by migratory species. Each country is required to reintroduce indigenous wild flora and fauna, particularly when in danger of extinction, and to carefully control the introduction of non-indigenous species.

**L. 42/83** implements the Bonn Convention (23 June 1979) on the protection of wild migratory fauna. This is mainly a procedural law that establishes general guidelines on actions to implement to protect and enhance endangered migratory species and their habitats.

---

The Italian State should promote, cooperate with, and support research on migratory species. Italy is engaged in:

- The preservation of endangered migratory species' habitats to minimize their risk of extinction
- The minimization of the causes that produce the risk of extinction for the endangered migratory species, especially regarding the control of non-indigenous species

Migratory species cannot be killed or collected other than for scientific purposes. The Agreements on particular migratory species among nations should stress the availability of proper habitats and the intent to minimize pollution.

Other wildlife-related laws are those that regulate hunting. These Italian regulations are very general and broad in their application. Actually, they are primarily procedural regulations that only provide general guidelines for the protection of endangered species and their habitats. The only substantive portions can be found in the lists of endangered species that are taken directly from international conventions or EU Directives to which the Italian L. 157/92 adds several mammals.

**L. 127/85** implements the Geneva Protocol (3 April 1982) on the protected areas of the Mediterranean. This procedural-type law establishes general guidelines for the protection of important sea areas for both their natural and cultural relevance. The protected areas apply only to the Mediterranean Sea and may include wetlands or coastal zones as agreed upon by each member of the Geneva Protocol.

---

Italy has agreed to the creation and preservation of protected areas and to conserve natural habitats and historical and cultural resources. Italy will select these protected areas and develop management programs. It is possible to create "buffer zones" surrounding the protected areas to enhance their preservation. When a protected area is included within the borders of two nations, the two nations will agree on the best solution for the protection of the area.

Italy is taking steps to:

- Organize a management system for the protected areas
- Prohibit any pollution of the areas and control the movement of ships
- Regulate hunting, fishing, and flora and fauna collection
- Prohibit the introduction of exotic species
- Regulate any off-shore drilling, use, or activity that may modify the sea bottom or the land portion of any protected marine zone
- Regulate any archaeological activity in the area
- Safeguard the biological diversity of the area

Italy promotes scientific and technical research related to the protected areas, as well as the adequate training of personnel, and informs the public of the importance of those areas for their environmental and cultural values.

**L. 394/91** is the framework law for natural reserves and establishes the regulations for identification and designations of natural protected areas. Under this law, National parks, Regional nature parks, nature reserves, and protected marine areas are subject to special protection and management. Authorization is required for construction or renovation projects within these areas.

---

**L. 157/92** - According to this law, any activity intended to capture birds and wild animals, as well as to collect eggs, nests, and newly-born animals (especially of those species belonging to the endangered list) is prohibited. Each Region is delegated the responsibility to issue specific regulations regarding the management and protection of the wild fauna species based on the requirements of this law, applicable international conventions, and EU Directives. Regions are required to create protected areas along the migratory bird routes to maintain their natural habitats. The law also states that the management of bird populations near airports is delegated to the Ministry of Transportation.

A very important issue of the present law is found in Article 21 and regards hunting, which is prohibited within military installations. The violation of this prohibition can result in the penal sanctions specified by the same law, or by the penal code in the most serious cases.

**DPR 17** May 1996 establishes the National Park Office and the standards to safeguard the Maddalena National Park (i.e., zoning of the park territory into areas with different degrees of protection). To guarantee the protection of the park, the decree prohibits the following activities:

- Capture, killing, or perturbation of animal species
- Collection or destruction of plant species
- Collection of fossils or mineral samples
- Introduction of species that are not compatible with the local fauna
- Access to areas during reproduction or nesting periods
- Creation of quarries, or motor vehicle transit

**DPR 357/97** implements EU Directive 92/43/EEC on the conservation of natural and semi-natural habitat and of wild flora and fauna. It establishes

---

the procedures for the maintenance and restoration of natural habitat and wild flora and fauna species in a satisfactory state of conservation.

The general scope of these regulations is to safeguard the biologic diversity through the protection of natural habitats. Article 3 of DPR 357/97 specifies that Regions and Autonomous Provinces must identify the areas where any of the protected habitats or protected animal or plant species are present, and define the zones of special conservation.

Monitoring the state of conservation of species and habitats of interest for the Community is delegated to the Regions.

Article 8 of DPR 357/97 establishes the regulations for safeguarding the fauna species by prohibiting:

- The capture or killing of animal species in their natural environment
- The perturbation of these species in their natural environment
- The destruction or collection of eggs or nests
- The damage or destruction of the sites used for reproduction or rest

Article 9 provides the following prohibitions for plant species (referred to all the phases of the biological cycle of the protected species):

- To pick up, collect, uproot, or destroy any specimen of the protected plant species
- To possess, transport, or trade any specimen of the protected plant species

In addition to the laws identified above, forestry laws also exist that limit the number of trees that can be cut and regulate their harvest exist for specific trees, such as olive trees and cork oaks. **L. 475/45** prohibits the cutting down of olive trees (*divieto di abbattimento di alberi di olivo*) and **L. 759/56**

---

regulates the cultivation, protection, and exploitation of cork oaks (*coltivazione, difesa e sfruttamento della sughera*). Both of these trees have been used economically for thousands of years in the Mediterranean and are highly valued.

The Ministry for Food Resources, Agriculture, and Forestry (*Ministero delle Risorse Alimentari, Agricole e Forestali*) assists in the management of natural resources through the Italian State Forestry Corps (*Corpo Forestale dello Stato*). The Forestry Corps manages and protects forests in Italy, where many natural resources are found. Generally, the provincial coordinator (*coordinamento provinciale*) or the local station (*comando di stazione*) develops a forestry management plan that must be approved by the regional coordinator (*coordinamento regionale*). In contrast to the Ministry of the Environment, much of the administration of forests in Italy is handled at the regional level and below, rather than at the national level.

## **EUROPEAN UNION (EU) LAWS**

Italy is a member of the EU and one of the six founding members of the European Communities. The EU does not pass laws per se, but it does emanate directives which are binding upon its members. A member state that does not introduce the substance of an EU directive into its own legislation is subject to a fine and/or other sanctions prescribed in its treaty of admission into the EU. While the U.S. Navy should be aware of EU directives, it should always look to the Italian State for specific laws and regulations. Awareness of conventions, resolutions, and other affirmations by the Council of Europe also can help the U.S. Navy to understand trends in concepts and policies with regard to cultural and natural resources.

---

The treaties of the European Community (1986) and of the EU (Treaty of Maastricht, 1991) contain references to the environment and environmental regulations. As a Member State of the EU, Italy is responsible for bringing into force laws, regulations, and administrative provisions necessary to comply with these directives, conventions, and treaties.

The following directives and decisions are of particular importance to the protection of flora, fauna, and their habitats:

- **Directive 2009/147/EC on the Conservation of Wild Birds (formerly 79/409/EC)** provides for the protection and management of wild birds and their habitats. Member States must maintain populations of wild birds at a level which will ensure a stable population while accounting for economic, recreational, and cultural requirements. NATURA 2000 ecological network includes Special Protection Areas (SPAs), which are important bird habitats established by this directive, also known as the Birds Directive. Italian L. 157/92 implemented the Bird Directive in Italy in 11 February 1992.
  - **Directive 92/43/EEC on the Conservation of Natural Habitats of Wild Fauna and Flora** (21 May 1992, latest amendment in 2007 to expand the annexes) was implemented in Italy under Decree No. 357 of 8/9/97. This directive establishes procedures for conservation, maintenance, and restoration of natural habitat and wild fauna and flora species. Regions must identify the areas where any of the habitats listed in Annex I or species listed in Annex II are present, and define ZSP. Annex IV also includes a list of Animal and Plant Species of Community Interest in Need of Special Protection. Both the Annex II and IV lists are specifically identified in Chapter 13 of the FGS (include in Appendix D).
-

- **Council Decision 82/461/EEC on the Conservation of Migratory Species** (24 June 1982) approves the Bonn Convention (1 November 1983) on wildlife and habitat conservation on a global scale. It enables member countries to take actions that preserve and manage endangered migratory species within their borders. L. 42/83 implements the Bonn Convention.
- **Council Decision 82/72/EEC on the Conservation of European Wildlife and Natural Habitats** (3 December 1981) approves the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention of 19 September 1979) as drawn up by the Council of Europe. The purpose of this decision is to encourage cooperation between countries for the protection of wild flora and fauna and their habitats. L. 503/81 implements the Bern Convention which requires signatory countries to reintroduce indigenous wild flora and fauna and to control the introduction of non-indigenous species.
- **Directive 97/11/EC of 3 March 1997 (amending Directive 85/337/EEC) on the assessment of the effects of certain public and private projects on the environment** prevents pollution and the disturbance of the environment by requiring environmental impact assessments (EIAs) prior to development consent is granted for public and private projects that may result in a potential negative impact to the environment.

In 1988, the Economic Commission for Europe (ECE) adopted the Declaration on Conservation of Flora, Fauna and their Habitats (ECE/ENVWA/6). By this declaration, ECE member governments endorsed the principles of the 1980 World Conservation Strategy, agreeing to conserve living natural resources in the interests of present and future generations by maintaining essential ecological processes and life-support

---

systems, preserving genetic diversity, and ensuring sustainable utilization of species and ecosystems. They also agreed, on a common European basis, inter alia, to study and describe the fauna and flora of Europe, including the geographical ranges of wild animal and plant species, and to draw up lists of threatened species.

## **INTERNATIONAL LAWS AND TREATIES**

The United Nations Environmental Programme (UNEP) was established in 1972 at the Conference on the Human Environment in Stockholm, Sweden. The UNEP is the environmental conscience of the United Nations (UN) system, and has created a basis for comprehensive consideration and coordination action on a variety of environmental issues. The UNEP encourages the use of EIA to integrate environmental issues with the need for development and as a means to comply with international conventions and treaties. In the recent past, governments of the industrial nations have used economic incentives and sanctions to enforce conventions and treaties.

International conventions and treaties are used by the world community to protect threatened and endangered species and their habitat. All nations that sign an international convention or treaty are sanctioned to bring into force the necessary laws, regulations, and administrative provisions to comply with conventions or treaties within 2 years of its signing date.

International conventions and treaties signed by Italy to protect threatened and endangered species and their habitat include:

- **Convention on Wetlands of International Importance** is known as the Ramsar Convention, which mandates global intergovernmental cooperation in the conservation and sustainable use of "Wetlands of International Importance" (Article 2.1); to formulate and implement a
-

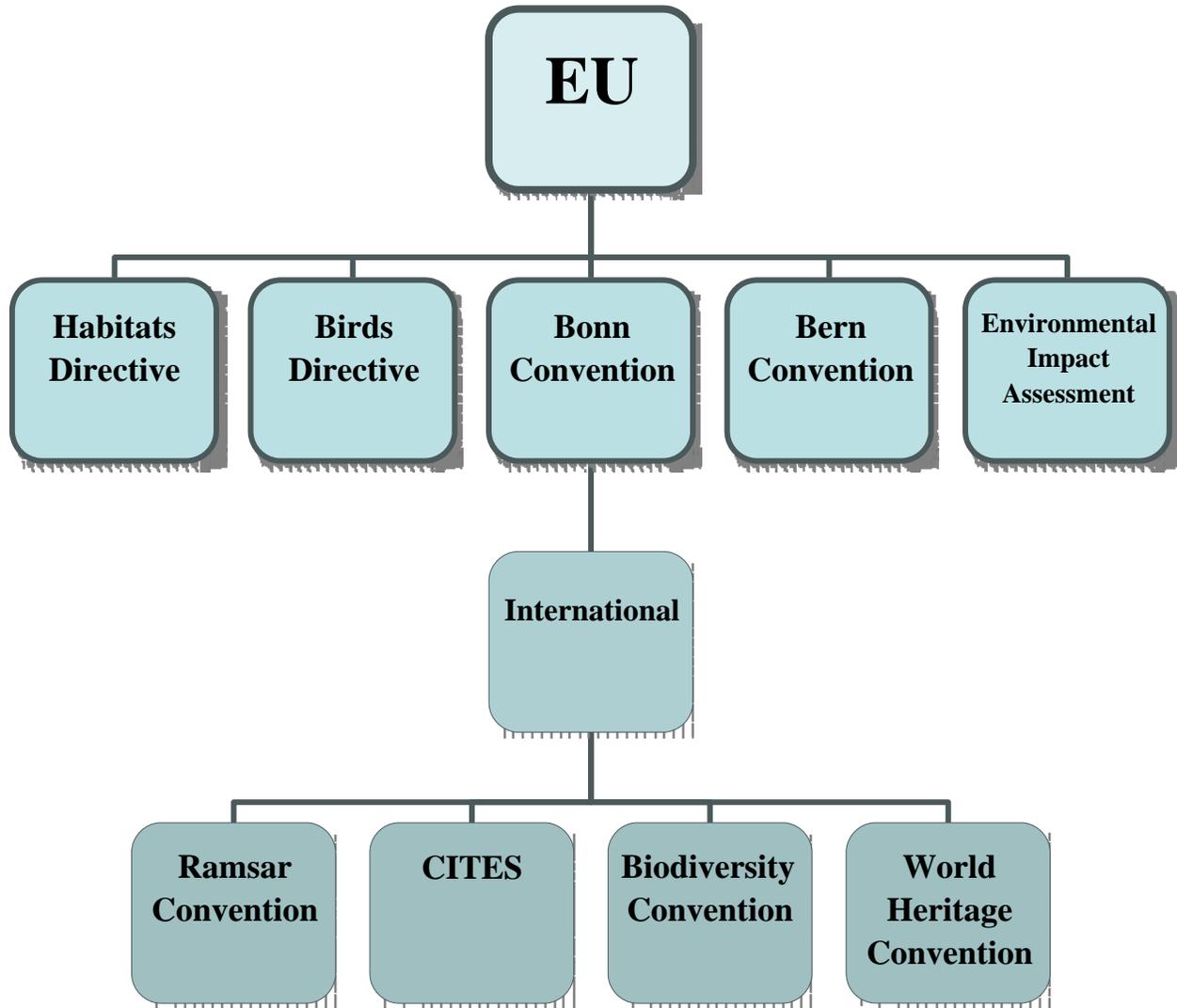
plan to promote the conservation of identified wetlands; to promote the conservation of wetlands within their territory (Article 3.1); to establish nature reserves in wetlands; and to provide for their wardening and management (Article 4.1). DPR 448/76 implements the Ramsar Convention and directs the regions to promote actions for training personnel to study, manage, and protect wetlands.

- **The Convention on International Trade in Endangered Species (CITES)**, signed on March 3, 1973, is the largest international wildlife conservation agreement in the world. Italy was one of the original signers of this convention. CITES decides when international trade in certain species can continue unimpeded, when it must slow, and when it must stop entirely to avoid extinction. L. 874/75 implements CITES and Decree of 31 December 1983 is the national regulation that provides enforcement of CITES in Italy. There are no records of any species on the CITES list at the any of the Navy facilities in Italy.
  - **Convention on Biological Diversity**, (ratified into Italy through Law No. 124 of 14 February 1994), is the international effort to conserve biological diversity, to ensure the sustainable use of its components, and to provide the fair and equitable sharing of the benefits arising from their use.
  - **Convention Concerning the Protection of the World Cultural and Natural Heritage**, known as the United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Convention, primarily functions to link the concepts of nature conservation and the preservation of cultural properties. The Convention determines which sites are considered to have "outstanding universal value" to be
-

included on the World Heritage List. This Convention was ratified into Italy on 23 June 1978.

The relationship of the international conventions and EU directives and Decisions discussed in the preceding sections are presented in Figure 2-2.

**Figure 2-2: EU Decisions and Directives and International Conventions**



## **APPENDIX E**

### **CULTURAL RESOURCES REGULATIONS**

---

Chapter 3 of this User's Guide provides an updated and streamlined discussion of the laws and regulations related to cultural resources throughout Italy. The following includes additional descriptions and information as provided in the 2004 User's Guide.

### **ITALIAN LAWS AND REGULATIONS**

It has been said that Italy holds roughly 70 percent of the world's cultural resources, including archaeological sites, monumental buildings, and works in sculpture and painting. Italy also has the world's longest history of cultural resource administration, dating from the time of the painter Raffaello, who served as a kind of archaeological inspector for the papal government in 15th century Rome, to the laws later instituted by papal government as well as the Kingdom of Naples, which mark the beginning of modern cultural resource administration in the Mediterranean. The present laws of the Italian State and its constituent regional governments are extensive and complex, as are the administrative systems that make them work. It is important to be aware that because cultural resources in Italy are so highly regarded, it is essential to know the proper authorities to contact in the event that proposed work may have an effect on such cultural resources.

#### **Italian Cultural Resources Administration**

Cultural resources of historical significance in Italy are property of the Italian state. Authority over their disposition and administration is the area of the *Ministero per i Beni e le Attività Culturali* (Ministry for Cultural Resources and

Activities [MIBAC]). This ministry has changed names several times in the last decade, and in the past it has also managed environmental resources and sports. The present name and administrative alignment date to 1999. While the ability to manage cultural resources in some regions of Italy has been delegated to local governments through the principle of autonomy (for example, Sicily, Sardinia, and the Valle d'Aosta are autonomous regions, and the provinces of Bolzano and Trento are autonomous within their regions), formal ownership of state resources always rests with the government in Rome. Administrative structures can vary in their degree of direct communication with the ministry in Rome, and it is important for Navy personnel to be aware of the specific hierarchies for the areas in which they are working (this is explained for each facility profile).

Cultural resources are administered by superintendencies, which are divided by territorial jurisdiction and which handle specific kinds of resources, such as archaeology, architecture, landscape, and historical and artistic resources. It is important to contact the appropriate superintendency for the appropriate resource. Figures 3-1, 3-2, and 3-3 outline the primary institutional relationships relevant to the areas of the U.S. Navy's facilities concentrating on Italy, NSA Naples, and NSAND GAETA, respectively. Each superintendency usually has a specific inspector assigned to each territory who serves as an official institutional representative.

At the time of the Ministry's reorganization in 1999, another series of offices was created. First called 'regional superintendencies', these offices are now called Regional Directorates, and they serve to bring the functioning of the Ministry throughout the whole of Italy into line with the administrative structure of Italy's autonomous regions. While some local superintendencies work through the regional directorates, others, such as the archaeological

superintendencies work through the regional directorates, others, such as the archaeological superintendency at Naples, have a direct relationship with the ministry and are called 'special superintendencies'. Although these changes are more a matter of internal reorganization within the Italian government than effective changes in the administration that the U.S. Navy must deal with, as contact is still made through the existing, 'local' superintendencies, it is important to be aware of the evolution of Italian institutions, especially when dealing with older documents and other archival material.

For the purposes of this Guide, it is important for U.S. Navy personnel to understand that the Italian territorial administration for the areas where Navy facilities are located does not correspond to that of the Navy administration – whereas Gaeta and Naples constitute a functional unity for the U.S. Navy, Gaeta is located within the Italian Region of Lazio, while all of the other Naples-area facilities are located within the Italian Region of Campania. Furthermore, within the Region of Campania the U.S. Navy complex at Gricignano di Aversa is located within the Province of Caserta, while all other U.S. Navy facilities are located within the Province of Naples. Each facility is located in a specific municipality (*comune*), and facilities within the Municipality of Naples are located in various districts or wards (It. singular *rione*). Knowing the location makes a difference in knowing which office to contact or even which inspector to contact within each office (for example, one superintendency at Naples is so complex that it has a 'find-the-official' protocol on its website, which one may search by street address).

## **Cultural Resources Administration for NSA Naples**

Cultural resource administration for the areas where NSA Naples facilities are located is varied because the facilities are in three municipalities and two provinces. As with all cultural resource administration on mainland Italy, archaeological resources are administered by one superintendency, and architectural, landscape, and ethnoanthropological resources by another. The central ministry in Rome is concerned primarily with policy issues.

Recent changes have shifted the jurisdiction for archaeological resources somewhat. Whereas until September 2009, all archaeological resources in the NSA Naples area were under the jurisdiction of Archaeological Superintendency for the province of Naples and Caserta (*Soprintendenza per i beni archeologici di Napoli e Caserta*), which was located in Naples, those in the province of Caserta have been switched to the reorganized Superintendency for the Provinces of Salerno, Avellino, Benevento and Caserta (*Soprintendenza per i beni archeologici di Salerno, Avellino, Benevento, e Caserta*), which has its main office in Salerno. This is important because the Gricignano Support Site is located in the province of Caserta, and the new authority is the primary referent for all archaeological matters (n.b. – the Pigorini Museum in Rome is still associated with the research, and it still has an inspector who is assigned to Gricignano, but all contact should be made first through the newly reorganized agency, which does have a local office nearby in Santa Maria Capua Vetere). All contacts regarding the other US Navy facilities that lie in the province of Naples (Camaldoli, Capodichino, Carney Park, Lago Patria, Nisida, and the Port of Naples) should be made still with the Naples office that formerly handled everything, which is now known as the Special Archaeological Superintendency for Naples and Pompeii (*Soprintendenza Speciale per i Beni Archeologici di Napoli e Pompei*; the term 'special' is used to designate the independence of this office from the Regional superintendency of Campania

– ‘special’ entities have independent sources of financing, such as museum and park entrance fees, and they answer directly to the Ministry in Rome, although a protection decrees – *vincoli* – still pass through the regional superintendencies).

Architectural resource administration is split along the lines now followed by the archaeological administration. Capodichino, Carney Park, Camaldoli, Lago Patria, Nisida, and the Port of Naples site are under the jurisdiction of the superintendency in Naples (*Soprintendenza per i beni architettonici e per il paesaggio, per il patrimonio storico, artistico e demotnoantropologico di Napoli e Provincia*), while the Gricignano Support Site falls under the administration of the superintendency for the Province of Caserta (*Soprintendenza per i beni architettonici e per il paesaggio, per il patrimonio storico, artistico e demotnoantropologico delle province di Caserta e Benevento*), which has its main office in the former Bourbon royal palace in Caserta (the *Reggia di Caserta*).

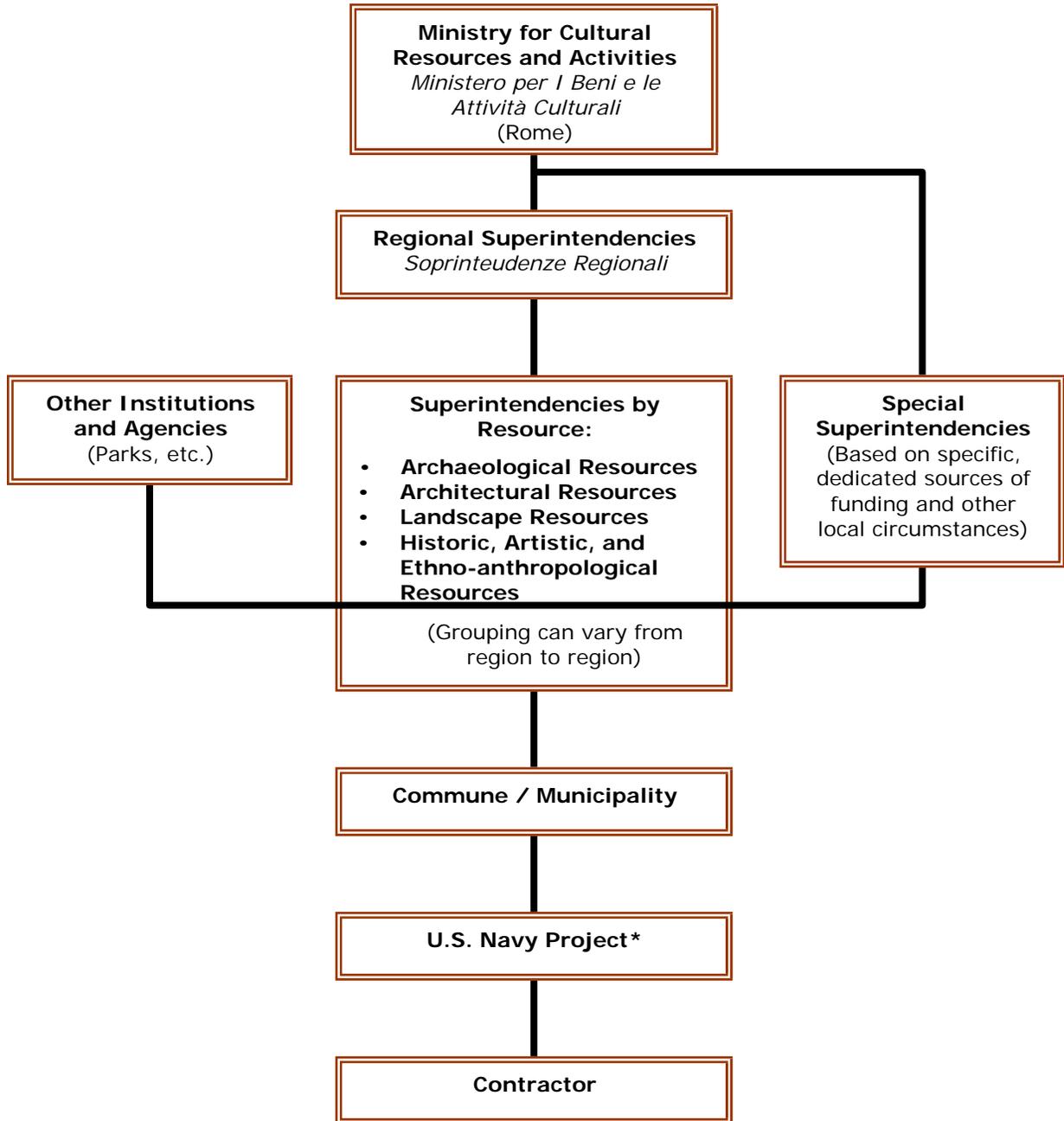
Local cultural resources are dealt with by the Office for Cultural Resources and the Environment (*Assessorato per Beni Culturali e Ambientali*) in the municipality office where each installation is located.

### **Cultural Resources Administration for NSAND GAETA**

Cultural resources in the area of Gaeta are administered by several governmental agencies, according for the most part to the nature of the resource. It is important to remember that although the U.S. Navy administration of facilities at Gaeta and Naples are unified, and the historical ties between the two cities are strong, the present structure of the Italian government separates the two locations by region (*regione*)– Gaeta is located in the Regione Lazio, while Naples is located in the Regione Campania. The principal agencies (superintendencies, or *soprintendenze* in

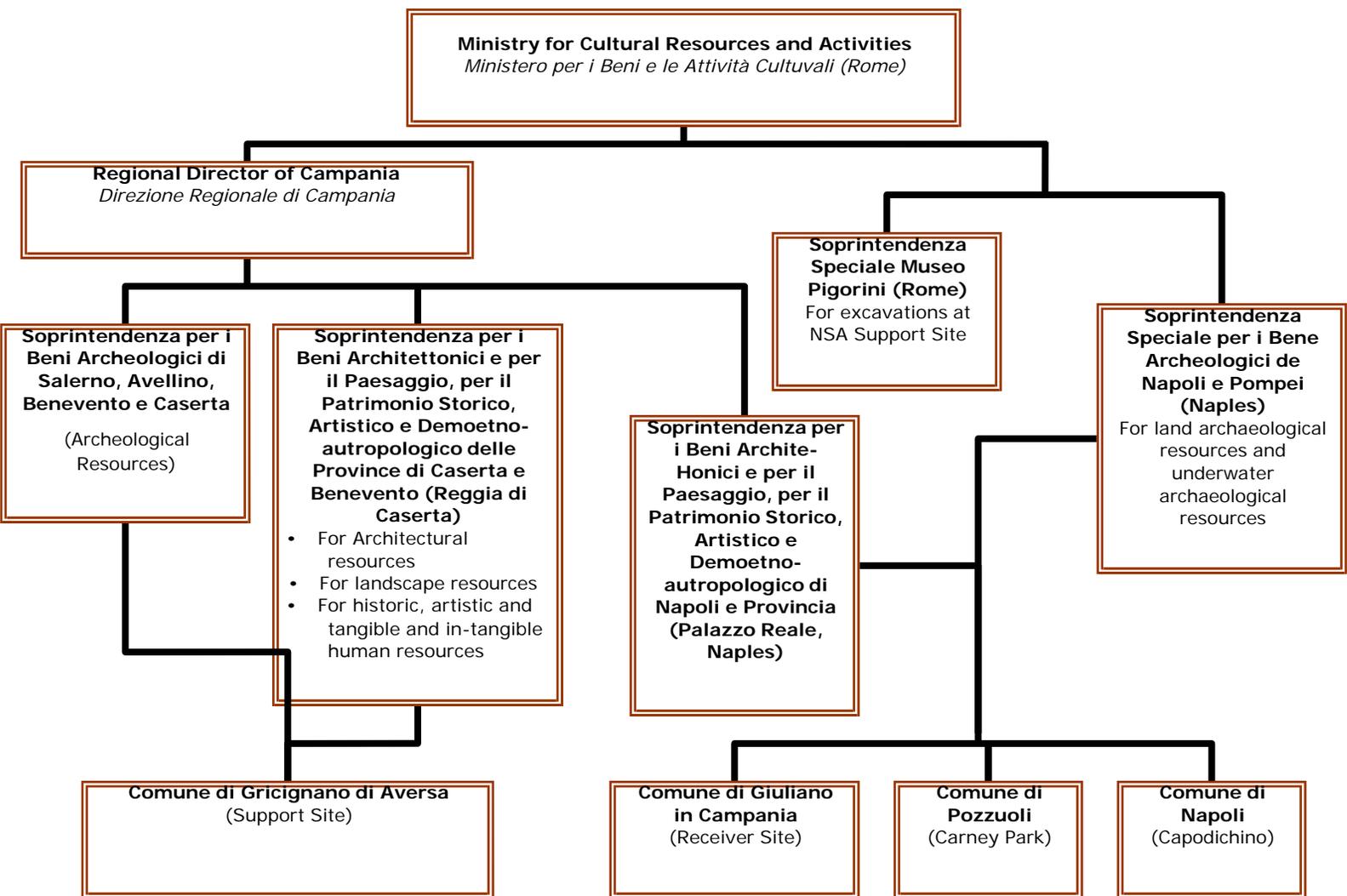
Italian) are those of the Italian state, which are part of the *Ministero per i Beni e le Attività Culturali*. All archaeological resources are administered by the *Soprintendenza per i Beni Archeologici del Lazio*, which has its seat in Rome. Architectural and landscape resources are administered by the *Soprintendenza per i Beni Architettonici e il Paesaggio del Lazio*, which has its principal seat in Rome, but also has a peripheral seat in Latina (for a brief period, resources in the Province of Latina were administered by an agency independent of that in Rome, and for this reason, various records are kept in this office). Resources of historic, art historic, or ethno-anthropological nature (and which are mostly mobile or intangible in substance) are administered, instead, by the *Soprintendenza per i Beni Storici Artistici ed Etnoantropologici del Lazio* (the core of this agency, for a time, was incorporated with that of architecture and the landscape, but since then it has been established as a separate entity). There is a state office (the *Direzione Regionale del Lazio*) that coordinates the activities of all three offices at the regional level, but primary inquiries concerning each type of resource should be directed (naturally in coordination with the Italian base commander) to the appropriate superintendency in Rome. Local matters are also addressed by the technical office of the City of Gaeta, which may also be helpful in finding the appropriate recipient for inquiries at higher levels, given the recent somewhat rapid changes in the structure of the Italian state. The identification of alienable and inalienable properties, in particular, is available through the state *Ufficio del Demanio, Agenzia di Latina*.

**Figure 3-1. General Diagram of Institutional Relationships for Cultural Resources in Italy**

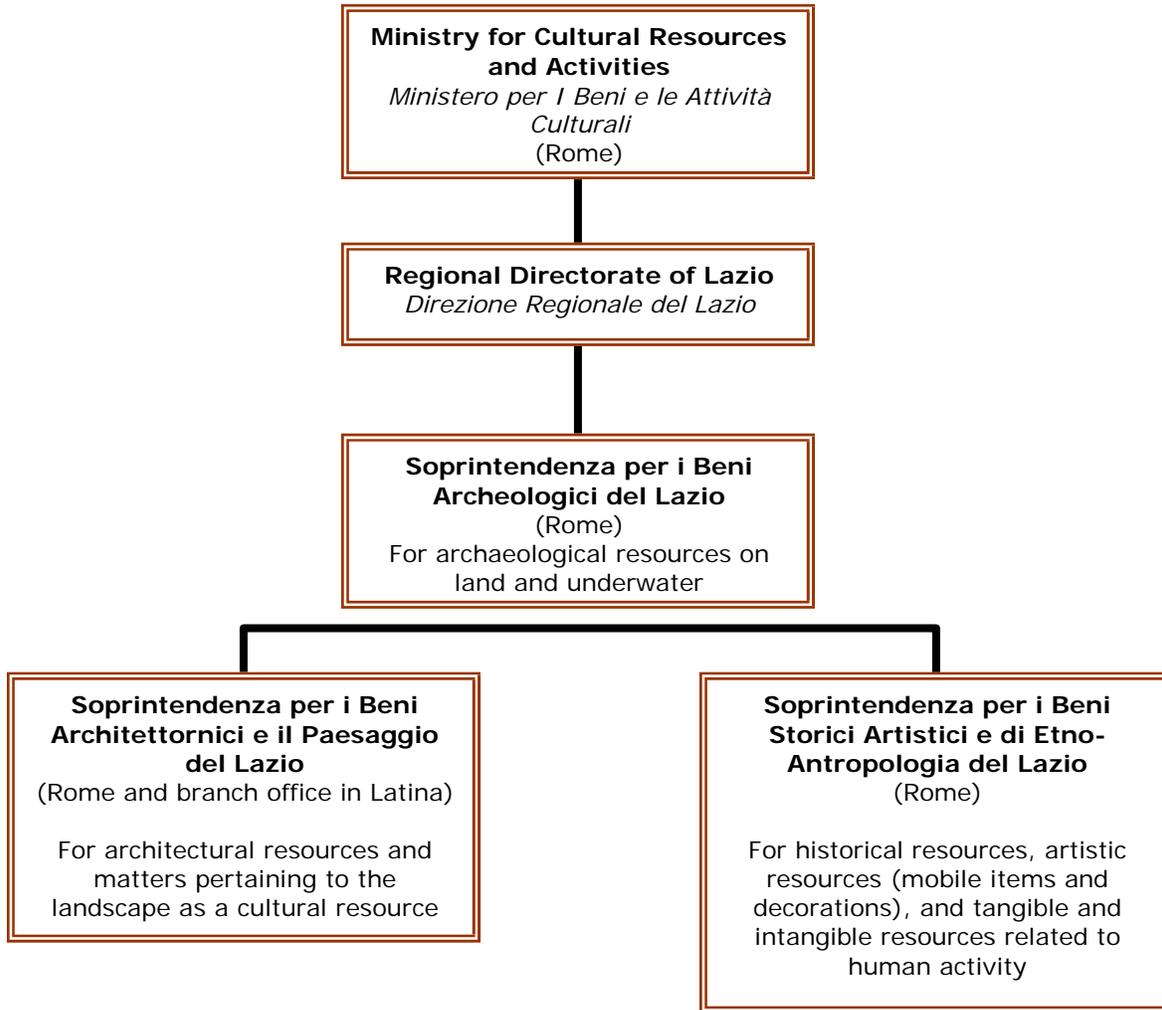


\*SOFA and Host Nation contracting protocol omitted

**Figure 3-2. General Diagram of Institutional Relationships for Cultural Resources at NSA Naples**



**Figure 3-3. General Diagram of Institutional Relationships for Cultural Resources at NSAND GAETA**



### Contact between the U.S. Navy and Italian Authorities

The FGS-Italy state clearly that contact between the U.S. Navy and the Italian government is to be handled exclusively by the Italian Ministry for Defense in accordance with SOFA and other applicable international protocols. This is intended to avoid compromising Italian sovereignty in matters of defense. However, the substantial presence of U.S. personnel in Italy both for operations and support activities puts its institutional arrangements on a par in terms of variety with those of the Italian Military, to some degree on par in terms of variety with those of the Italian military. Italian law (e.g., L42/2004, article 147) now makes specific distinction between relations concerning operational facilities (e.g., a pier for the docking of a vessel) and support facilities (e.g., housing areas). Whereas operational facilities fall under the authority of the Ministry for Defense, support facilities lies outside this realm, and therefore, the U.S. Navy's relation with the Italian government resembles that of any other private entity.

This distinction is particularly evident in the planning process for new construction. The Mixed Commission process seems to be relevant for projects that are at strictly defense-related locations (i.e., facilities that are of an operational nature as opposed to those that are related to support activities). In the case of operations sites, the U.S. Navy is hosted by the Italian Ministry of Defense and the Mixed Commission process governs the development of project planning, while in the case of support sites the planning process is governed by regulations which apply generally to all civilian development projects in Italy.

*The FGS-Italy states that contact between the U.S. Navy and the Italian government is to be handled by the Italian Ministry of Defense. Therefore, if*

*such contact is warranted, the U.S. Navy shall initiate the contact through the Italian Base Commander.*

A series of procedures (It. Plural *conferenze di servizio*), which correspond roughly to public hearings in the U.S., are now an integral part of the planning and development process. These procedures were introduced into Italian state law in 1990 (L. 241/90), subsequently modified in 2000 (L. 340/2000), and they were incorporated into Italian cultural and environmental resource law in 1999 (L. 490/99) and reiterated in the current law (L. 42/2004, Articles 25 and 147). Such hearings must include all parties involved by law in the project, and they are occasions in which representatives of the U.S. Navy come into direct contact with officials of the Italian state. Any formal interaction of common (U.S. and Italian) interest with Italian authorities, however, must be conducted under the cognizance, approval, or involvement of the Italian Base Commander.

It should be noted that, although the Ministry for Defense is the exclusive interlocutor between the U.S. Navy and representatives of the Italian State and regional governments, this protocol is not always understood clearly by local Italian officials, and requests made directly to the U.S. Navy should be rerouted through official channels. Likewise, the distinction between the U.S. Navy, which serves as the executor for all DoD projects in Italy, and the other Services, as well as NATO, is not always clear to those outside military circles. Every effort should be made to identify clearly the party involved and the appropriate protocol in contacts between U.S. and Italian institutions. Proper protocol in Italy specifies that written communications be addressed to the office (including individual roles) by title rather than to the person who occupies the office at the moment (otherwise, the communication is

treated as a personal communication, and it is not registered, which is an essential feature of any official communication).

Whether it be archaeology, architecture, or historic and artistic resources, there are often many different Italian officials that are assigned to the places where the U.S. Navy is present. Getting to see (much less identify) all of them can be a daunting task. Although it is advisable for there to be contact with each agency involved in the preparation of an application for a construction or other such project, a new procedure has been introduced to streamline bureaucracy and to avoid oversight and confusion. It is called the 'single window' (*sportello unico*) and it places the responsibility for obtaining all necessary permissions on the town where the project is to take place; the town office receives the application for construction and then passes it along to the appropriate authorities. While direct contact between the U.S. Navy and the town is often avoided through the delegation of all responsibility to the U.S. Navy contractor (or in certain instances to the Italian Ministry of Defense), it is advisable that Navy personnel be aware of this protocol and the various offices that are involved just the same.

### **Italian Cultural Laws**

The history of cultural resource legislation goes back to the time when the Papacy in Rome controlled much of central Italy. Concerted efforts to catalog and explore ancient monuments in the Eternal City are documented as early as the Renaissance (fourteenth and fifteenth centuries A.D.) in the work of the architect Leon Battista Alberti, the painter Raffaello Sanzio, and their successors. The first comprehensive code for the protection of works of artistic and historic significance is a decree of Cardinal Pacca dated April 7, 1820 under the Pontificate of Pius VII, which was followed shortly by the better known decree of Ferdinand I of Borbon, King of Naples and Sicily,

issued on May 13, 1822 that was modeled after it. While the treatment of cultural resources in the legislation that came with the creation of the modern Italian State in 1860 was relatively succinct (the earlier codes of the smaller, pre-unification states of Italy were maintained basically until 1909), the protection of cultural resources has been an element of the Italian constitution since 1947. Article 9 declares that 'the Italian Republic promotes the development of culture and scientific research. It protects the landscape and the historic and artistic heritage of the Nation' (Gazzetta Ufficiale n. 298, 27 dicembre 1947: «Art. 9. - La Repubblica promuove lo sviluppo della cultura e la ricerca scientifica e tecnica. Tutela il paesaggio e il patrimonio storico e artistico della Nazione»), thus identifying cultural and landscape resource management as one of the state's primary roles (see Alibrandi & Ferri 2001, pages 3-15 and Guzzo 2001).

Italian cultural resource legislation itself has been in a state of relative flux for the past ten years. While for decades, Italian law rested on the foundations of two laws enacted in 1939 (L.1089/39 dealt with archaeological, architectural and artistic resources and L.1497/39 dealt primarily with landscape as a cultural resource) with the timely addition in 1985 of a law (L.431/85, the so-called 'Galasso Law') that put the earlier laws in the framework of environmental resource management, including a key provision about yet-to-be-discovered archaeological resources, the last decade has seen a series of revisions. Following the 1999 revision of the earlier codes into a single, new law (the so-called '*Testo Unico*' L.490/1999), cultural resource legislation has been altered to such a degree that there is no longer a single, up-to-date printed reference book to turn to for questions. The last text, Alibrandi & Ferri's *I Beni Culturali e Ambientali*, dates to 2001, and there is yet no new edition (see Alibrandi & Ferri 2001, Carugno, Mazzitti & Zucchelli 1994, as well as the test-preparation text

*Legislazione B.C.P.* 2008). One Italian official has commented that one cannot keep up with the many legislative amendments and ministerial interpretations that have been issued even by consulting recent texts published in the Italian *Gazzetta Ufficiale* (the equivalent of the *Congressional Record*) and that the only way to know precisely what the current administrative codes and practices are is to look at the appropriate pages of the official website of the Italian Ministry for Cultural Resources and Activities:

<http://www.beniculturali.it/mibac/opencms/MiBAC/sito-MiBAC/MenuPrincipale/Normativa/index.html>.

A convenient reference source for many Italian national cultural heritage laws, as well as those of other countries, is now available through the UNESCO Heritage Laws Database: <http://www.unesco.org/culture/natlaws>. In order to consult this source one must search according to national or other criteria, following the instructions that are conveniently available at the top of the page.

The present comprehensive cultural resources law is the so-called 'Legge Urbani' (D.L. 42/2004) with amendments passed in 2006 (a 153-page, English-language translation of the 2004 text is available through the UNESCO Heritage Laws Database described above). It is a kind of 'testo unico', one of several revisions between 1999 and 2004, and it also takes into consideration a reordering of some aspects of Italy's overall governmental hierarchies (in some sectors of administrative competence cities, regions, and the Italian State are now on a par). The much-maligned but actually brilliant Italian term coined by the archaeologist and historian Biagio Pace in drafting the laws of 1939, '*cosa*' (literally 'thing'), which has the flexibility to cover a variety of known or yet-to-be-known material

remains, has been distinguished from a '*bene*' (property), which is a recognized resource (see L.42/2004, Articles 2 and 10). Eligible ages for designation as a resource remain as they were before: at least 100 years for archaeological finds and historical monuments, 200 years for maps, 75 years for means of transport, 25 years for historic photographs and films, 50 years for other items of antiquarian interest that are not specifically defined; no work of a living artist or structure having less than fifty years is eligible. As with the identification of material remains of significance between fifty and one hundred years, the application of cultural resource definitions is never truly a cut-and-dry matter, and it is important to observe how they are employed by the relevant authorities.

The comprehensive law, in many ways reflect its own jurisprudential heritage. The sources for textual components of the two basic titles cited in the headings are the two laws of 1939: Title I Cultural Resources and Title II Landscape and Environmental Resources. Many regulations govern the transport of culturally significant objects across the relatively new, frontier-less borders between component states of the EU and the identification of new forms of cultural media created by advances in technology and human creativity. While most people recognize that cultural and natural resources include archaeological monuments and sites, works of art, and historic buildings, many are not aware that the comprehensive law L.42/2004 also covers objects such as fossils and minerals. Unauthorized fossil hunting, shard or coin collecting, digging of any sort in a protected archaeological zone, or collection of archaeological finds from the sea floor is expressly prohibited and punishable by law. Authorization to conduct these activities can only come from the Italian State or, in areas where there is local autonomy from the regional or provincial government to which the State's authority has been delegated. Violation of these laws is a criminal offense.

The local prosecutor may use any enforcement arm to search for suspected illicit materials and to arrest those in possession. This means that any individual under suspicion is subject to search and arrest by the Italian Customs Police (*Guardia di Finanza*) or the internal division of the army known as the *Carabinieri*, as well as by the State Police (*Polizia di Stato*). The comprehensive law L.42/2004 also specifies the range of incarceration and/or monetary fine that a judge may sentence someone who has been convicted of a relevant offense.

Like its predecessor, the current law (L.42/2004) specifies a time-limit within which fortuitous archaeological discoveries must be communicated to relevant Italian authorities.

*Article 90, Paragraph 1 sets a limit of 24 hours from the moment of discovery to the time of notification. This notification should be initially directed to the Italian Base Commander.*

The law actually identifies the relevant authorities as the Superintendent (for Cultural Resources) or the Mayor in charge of the territory in which the discoveries were made, or 'public security' authorities. The public security authorities are interpreted to be the Italian State Police, the *Carabinieri*, or in the case of the U.S. Military, which is the guest of the Italian Ministry of Defense, the local Italian Base Commander. It is important to remember that these laws uniformly apply to all U.S. Forces personnel, whether on base or not.

### *Vincoli (Restrictions)*

Areas protected by law either for their natural beauty or for the presence of cultural resources above or below ground are subject to what in Italy is

called a *vincolo* (restriction or protection). It functions somewhat like an easement in American law in which the state claims an interest in the property. This kind of protection is issued either by a decree of the Italian State or delegate of local government for a specific property or by a blanket description which may or may not be stated for a specific property. Examples of blanket protection include land areas along shorelines (0.19 miles [300 m]), lakes (0.19 miles [300 m]), and rivers (0.09 miles [150 m]) (see L.42/2004, Article 142), as well as all mobile and fixed material remains that pertain to the First World War (this is a new category of cultural resource that was first introduced through a special law – L.78/2001 of March 7, 2001 and later included in the comprehensive L.42/2004, see Article 11, Paragraph 1, Comma 1). Blanket protection afforded buildings destined for public use and military vehicles and equipment, on the other hand, is expressed in terms of state property in the general Italian Civil Code of 1942 (Article 186), which also mentions cultural resources in a summary fashion.

Usually development of properties that are under *vincolo* is highly restricted, but not impossible. Any proposed development or change to such properties must be submitted to the appropriate Italian superintendency for approval. The existence of *vincoli* on a base or near any proposed activity can have a significant effect on the way property may be used and can severely limit any proposed action.

The concept of a *vincolo* is often concerned not only with the specific cultural or natural resource which it is intended to protect but also with the context in which the cultural or natural resource exists. An area subject to a direct *vincolo* will often have an area around it subject to an indirect one (*vincolo indiretto* or *fascia di rispetto*) that regulates what may be done within the

surrounding area in a slightly less stringent manner. Although property-owners of lands where specific monuments or archaeological sites are found are notified when *vincoli* are instituted, holders of property under *vincolo* as landscape are not. Often the latter are unaware that they must contact the cultural and environmental resource administrations in the event of any planned construction or land transformations.

Furthermore, Italian cultural resource administrations, do not necessarily equate historic importance and public visibility with cultural significance and the need for protection. The limited nature of a list of Historic Places, even one as prestigious as the World Heritage List, cannot cover all the kinds of cultural resources that have been or will be found in Italy. It is, therefore, impractical to look for a single, national list of protected cultural resources in order to be satisfied that Italian law has been respected; rather, it is best to contact the relevant Italian authorities and in conjunction with them, evaluate potential impacts on cultural resources in the area of their competence.

Generally, the comprehensive law L.42/2004 makes no distinction between military and civilian parties, and one is often left with default assumptions based on the primacy of cultural resource protection in the constitution and the lack of specific exemptions. The issue of the relation between cultural resource protection and the military was first mentioned in the declarations of the so-called Franceschini Commission, which was formed by legislative act in 1964 to address existing problems in Italy's protection and management of its rich cultural and landscape heritage and which completed its work in 1967. Declaration Forty-Nine (XLIX), which focuses on environmental issues (the term '*ambiente*', or 'environment' is used in comparison to the term '*paesaggio*', which refers more specifically to

aesthetic aspects of the landscape) stated: “The norms and measures for the protection of the environment are applicable to anyone. Public administrations are held to observe them for any use of [these] resources, even for purposes in the public interest, including works pertaining to the military authorities and state administrations with structural autonomy” (see Alibrandi & Ferri 2001: 13 and the text of the Franceschini Commission).

Further official treatment of the issue in Presidential decrees of 1977 and 1991 was limited to the realm of housing for the Italian military police (*carabinieri*), and it has led to contradictory interpretations in the courts and significant debate in legal circles (Alibrandi & Ferri 2001: 713–716). This is still the extent to which Italian law defines the relationship, and it has been encapsulated in Article 147 of the comprehensive cultural resources law (L.42/2004), which requires that such construction to be subject to the same process of review and authorization as projects that are completely unrelated to the military. While the position of military properties in regard to cultural resource laws in Italy remains an open issue in theoretical terms, in practical terms for the U.S. Navy much has been resolved insofar as a significant portion of construction has been dedicated precisely to housing needs. Already, the U.S. Navy has collaborated successfully with Italian authorities in following both the letter and the spirit of cultural and environmental resource legislation, and the results of these efforts are now visible both within the immediate areas of U.S. Navy facilities and in the wider context of cultural resource management practices and advances in scientific research in the regions where they are found. See the individual facility descriptions in Chapter 5 of this Guide, particularly in regard to Gricignano di Aversa.

In Italy, recent legislation has given greater definition, also, to the figure of the professional archaeologist. While such legislation has been aimed primarily at establishing qualifications for those wishing to bid on public contracts, the terms of base-line competence have been outlined. Ministerial Decree No. 60 of 2009, which puts into effect a code for public contracts dating to 2006, establishes that a public list of archaeologists be drawn up from qualified academic departments at universities, persons holding both a basic university degree (*laurea*) and specialization in archaeology, or persons holding a doctorate (*dottorato di ricerca*) in archaeology. The areas of institutional qualification are specific to Italy, and they are somewhat different from those that one might expect to find for similar work in the United States (this is quite normal, however, in a European academic context): a) prehistory and protohistory, b) Etruscan and Italic antiquities, c) Classical archaeology (i.e. Greek and Roman and related civilizations), d) Christian (i.e. Early Christian) and Medieval archaeology, e) ancient topography, f) the methodology of archaeological research, and g) the archaeology of Phoenician and Punic civilization. Recognition is given to foreign institutions in Italy and to those holding equivalent foreign degrees, although experience shows that the definition of equivalence (*'equipollenza'*) for individuals can be somewhat nuanced and subject to specific interpretation. Recognition of institutional equivalence is subject to review under terms established in Article 2, comma 2 of the same decree.

### **Local and Regional Laws**

Each Italian region and municipality also has its own laws concerning the treatment of natural and cultural resources. Most duplicate the national laws, creating *vincoli* on areas of architectural or archaeological interest, some are derived from other legal instruments. The laws that might apply

to each activity are discussed in the individual activity chapters in Part II of this User's Guide.

## **EUROPEAN COMMUNITY RESOLUTIONS, RECOMMENDATIONS, AND DIRECTIVES**

It is important to stress the distinction between the EU, which is an aggregate body of European states which have agreed to lift the frontiers between them and to adopt a single currency (with the exception of Great Britain), and the Council of Europe, which is a larger association of European states (including many in eastern Europe, Scandinavia and the Mediterranean) without binding economic or political ties. Italy is both part of the EU and a member of the Council of Europe.

The EU does not pass laws per se, but it does emanate directives which are binding upon its members. A member state that does not introduce the substance of an EU directive into its own legislation is subject to a fine and/or other sanctions prescribed in its treaty of admission into the EU. While the U.S. Navy should be aware of EU directives, it should always look to the Italian State for specific laws and regulations. Awareness of conventions, resolutions, and other affirmations by the Council of Europe also can help the U.S. Navy to understand trends in concepts and policies with regard to cultural and natural resources.

Since the founding of the European Community (an antecedent to the actual EU) a number of resolutions, recommendations, and declarations concerning cultural resources have been passed. Most of these resolutions were passed in the early 1970s and call for the member nations to comply with the Paris treaty of 1972 (see below), and in January 1975 the European Community

called for member nations to comply with the World Heritage Convention of 1972 and to provide funding to create pilot preservation and public information projects. In 1986, following the signing of the Grenada Convention, the European Commission Council members resolved to implement the terms of the Convention. The European Convention on the Protection of the Archaeological Heritage of 1969 (London Convention) was revised at a convention held in Valetta – La Valette, Malta in 1992 (Valetta Convention). Although the Valetta Convention is pan-European in character, the Italian State is reluctant to ratify its measures because they are less stringent than those currently prescribed by Italian law.

## **INTERNATIONAL LAWS AND TREATIES**

Since 1954, Italy has been a signatory to most international treaties governing the protection of cultural resources, including most recently the Convention for Safeguarding of the Intangible Cultural Heritage (signed in Paris on 17 October 2003 and ratified by Italy on 30 October 2007) and the Convention on the Protection of the Underwater Cultural Heritage ('Underwater cultural Heritage Convention' signed in Paris on 2 November 2001 and ratified by Italy on 8 January 2010). Some treaties, like the UNIDROIT convention on the illicit commerce of cultural properties, are mentioned by name in the Italian comprehensive cultural resources law (see L.42/2004, Article 87). Many of these conventions can be consulted in English-language translation through the UNESCO website: [www.unesco.org/new/en/unesco](http://www.unesco.org/new/en/unesco) -- follow the homepage menu for 'Conventions & Recommendations', then on that webpage, look for the menu for the appropriate region – for Italy, the entry is 'Europe & North America' - - which will lead to another webpage where one may click on ratified and non-ratified conventions by country. The Convention concerning the

Protection of the World Cultural and Natural Heritage ('World Heritage Convention' signed in Paris on 16 November 1972 and ratified by Italy on 23 June 1978) is the most important treaty for FGS-Italy compliance because it is specifically cited in Chapter 12 of the FGS-Italy. The World Heritage and Underwater Cultural Heritage conventions are described below, while the other treaties are summarized in Table 3-3.

### **World Heritage Convention**

The 1972 Paris Treaty on World Cultural and Natural Patrimony, better known as the World Heritage Convention, provides for the designation of properties of, "...outstanding universal value to mankind." These cultural and natural properties constitute a legacy whose "...deterioration or disappearance is a harmful impoverishment of the heritage of all the nations of the world." The convention puts forward the following principles:

- That each nation holds in trust for everyone those parts of the world heritage within its boundaries;
- That the international community has an obligation to support any nation in discharging this trust, if its own resources are insufficient;
- That the natural and built environment are inseparable; and
- That the importance of the world heritage transcends all political and geographical boundaries.

A World Heritage committee composed of representatives of 186 member nations implements the Convention. It is administered by the World Heritage staff at United Nations Educational, Scientific, and Cultural Organization (UNESCO) headquarters in Paris. The committee identifies World Heritage sites and provides public information and financial assistance through the World Heritage Fund.

Parties to the Convention may nominate properties meeting specific criteria within their national boundaries to the World Heritage List. The committee also maintains the List of World Heritage in Danger, places endangered by natural and human actions. The World Heritage Fund provides technical and financial assistance to sites on the List of World Heritage in Danger and to other nations in need. The International Council on Monuments and Sites serves as the adviser to the commission on technical matters concerning cultural heritage.

Italian law now gives priority to the conservation and protection of official World Heritage Sites (see L.20/2006 published on March 10, 2006 – this is one of the amendments to the comprehensive cultural resources law L.42/2006). As of April 2009, World Heritage sites in Italy numbered roughly 44 (42 cultural, 2 natural; several site-entities group locations that are not contiguous geographically but that have cultural resources that are considered to be homogenous in terms of their significance), and they include (by Region):

- (Sicily) Agrigento – Valley of the Temples, Piazza Armerina – Villa del Casale, Baroque towns of the Val di Noto, Syracuse and the Necropolis of Pantalica, the Aeolian Islands
- (Sardegna) Nuragic settlement of Barumini
- (Puglia) Trulli of Alberobello, Castel del Monte
- (Basilicata) Sassi of Matera
- (Campania) Cilento – Paestum, Velia, and the Charterhouse of Padula, Amalfi coast, Pompeii/Herculaneum/Torre Annunziata, Historic Center of Naples, Reggia di Caserta
- (Lazio) Historic Center of Rome, Vatican, Tivoli – Hadrian's Villa, Villa d'Este, Etruscan necropoleis of Cerveteri and Tarquinia
- (Umbria) Assisi -- Basilicae of St. Francis

- (Tuscany) Val d'Orcia, Historic Center of Pienza, Historic Center of Siena, San Gimignano, Pisa – Piazza del Duomo, Historic Center of Florence
- (Marche) Historic Center of Urbino
- (Emilia Romagna) Ravenna, Ferrara, Modena
- (Liguria) Porto Venere and the Cinque Terre, Genoa – Palazzi Rolli
- (Piedmont) Residences of the Royal House of Savoy, Holy Mounts of Piedmont
- (Lombardy) Holy Mounts of Lombardy, Santa Maria delle Grazie and the Last Supper (L. Da Vinci), Crespi d'Adda, Val Camonica rock carvings
- (Veneto) Historic Center of Verona, Vicenza town and Villas of A. Palladio, Padova – Botanical Gardens, Venice and its Lagoon
- (Friuli Venezia Giulia) Aquileia – Basilica and the Archaeological Area.

Source: Converso, Claudia n.d. *UNESCO World Heritage Sites. Italy*. Trans. A.B.A. Milano. Milano: Kina Italia / Eurografica. The World Heritage List, which is updated by UNESCO, is also available via the internet at: <http://whc.unesco.org/en/list>.

World Heritage sites closest to U.S. Navy facilities covered in this Guide are Pompeii/Herculaneum/Torre Annunziata, the Historic Center of Naples, and the Reggia di Caserta. Only the pier of San Vincenzo in the port of Naples is included in any of these areas (Naples Historic Center), and the other sites are not contiguous with land where there is a U.S. Navy presence. One should remember, however, Navy facilities at Gaeta do fall within the urban park of Monte Orlando administered by the Regional government of Lazio, and those in the area of Naples at Carney Park and Nisida intersect with the developing park known as the Progetto Integrato Campi Flegrei in the area around the Gulf of Pozzuoli.

## **Legislation and Underwater Cultural Resources**

The biggest recent change in cultural resource legislation in Italy, however, comes with the introduction of a true cultural resources 'law of the sea'. On October 23, 2009, Italy ratified the Underwater Cultural Heritage Convention of UNESCO, which had been signed some eight years earlier. Whereas existing cultural resource laws had given blanket protection to shoreline (0.19 miles [300 m]), lake edge (0.19 miles [300 m]), and riverbank (0.09 miles [150 m]) areas on land and submerged areas within the twelve-nautical-mile limit of Italy's territorial waters (the so-called 'zone of exclusive economic interest') and a further twelve nautical mile band beyond the territorial waters (the so-called 'zone of ecological protection'), the new law accepts the regulations of the UNESCO convention for international waters beyond the 24-mile (19.3-km) limit and regulates the activities of Italian citizens and captains of Italian-flag vessels both in international waters and within the dual bands of other signatory nations. The law concerns both submerged features and related finds that were once on dry land and the remains of sea-faring vessels and/or their contents which were deposited on the sea-floor by accidental or deliberate sinking. Since the advent of flight, this also includes aircraft and spacecraft, as well as any other kinds of material remains that made their way into the water and/or were buried beneath the sea-floor.

Underwater archaeological research was pioneered in Italy in the 1950s by the famous archaeologist Nino Lamboglia, and scores of discoveries over the years have demonstrated the presence of archaeological remains in both shallow and deep-water contexts around the world. The relation of underwater archaeology to archaeology on land is obvious, as the remains of ships buried beneath filled-in harbors and coastal areas and the submerged remains of port facilities clearly point out. Legal and administrative

regulation of underwater areas has remained, however, much less certain, particularly in the conceptually and politically complex Mediterranean, which is a more circumscribed body of water than the world's oceans. In Italy a famous court decision of 1963 regarding the recovery of a Phoenician bronze statuette by a fisherman from Sciacca, Sicily, established a lasting precedent for the treatment of fortuitous discoveries. It identified the home-port of the fishing boat as an extension of Italian territorial jurisdiction. The U.S. Navy became embroiled in the discussion after well-publicized exploration off the Skerki Bank between Sicily and Tunisia led to a declaration on the Underwater Cultural Heritage of the Mediterranean that was adopted at Syracuse, Sicily, on March 10, 2001. That statement called for the adoption of the draft UNESCO convention, which was signed in Paris on November 1<sup>st</sup> later that year.

A fundamental issue that confronts underwater archaeology world-wide is the definition of what constitutes an underwater cultural resource. Shipwrecks, ancient or modern, usually consist of some kind of recoverable property (the ship itself and/or its cargo), which may be understood in terms of existing admiralty laws. But the notion of a shipwreck as an underwater cultural resource with an archaeological and historical context takes it out of the realm of simple private ownership and into the realm of public heritage. The UNESCO convention states that material remains must have been underwater for at least 100 years and may include: a) sites, constructions, buildings, manufactured and human remains, together with their archaeological and natural context, b) ships, airplanes; other vehicles or any part therefrom, their cargo or other content (understood as the debris field), together with their archaeological and natural context, and c) objects of prehistoric nature. While the convention itself does not make specific reference to human prehistory or also to paleontology, it is generally

assumed that such remains are included as cultural resources, just as they are on land.

While Italian Presidential decrees in 1968 (DPR 1639/68, Article 28) and 1979 (DPR 886/79, Article 24) did attempt to regulate the activities of underwater exploration for cultural resources, and articles in the comprehensive cultural resources law (L.42/2004, see Chapter VI, Section II, Article 94) did tie the protection of underwater resources within the combined 24 nautical-mile limit to those on land, the ratification of the UNESCO convention in L.157/2009 of October 23, 2009 establishes relationships between cultural resource protection efforts in Italy and neighboring states, as well as with those of the signatory parties in so-called 'international waters'. Great care is expressed in the law to establishing default lines for 'median distances' between coasts where the distance between separate countries is less than the sum of their combined 48 nautical-mile respective zones of exclusive economic and ecological interest.

The specific provisions of the law resemble those of cultural resource law on land. Sea-farers must report to the nearest maritime authority any discovery of submerged cultural resources within three days (the lengthier time period is also accompanied by a statement that such communication may be done by radio or other electronic means, which reflects the maritime context), including the geographical coordinates of the site. Naturally, these terms apply both to cultural resources found on the surface of the sea-floor and to those buried beneath its relative sub-soil. No intervention on the resource is permitted without express permission from the Ministry for Cultural Resources and Activities through the maritime authority following the submission of a formal request in accordance with Rules 9 and 10 of the UNESCO convention. These rules apply to all Italian citizens and captains of

Italian-flag vessels within the waters of interest of other signatory nations, as well, including military vessels (L.157/2009, Article 5, Comma 6) with the proviso that the capacity of the military vessel to perform its duties not be compromised. When an Italian citizen or vessel makes an international report, the Italian Ministry of Foreign Affairs, in conjunction with the Ministry for Cultural Resources and Activities, and when the military is involved the Italian Ministry of Defense, is the interlocutor with the other state, and the Director General of UNESCO is also notified. Should there be any legitimate reason to associate the cultural resource with a third-party state, for example, by nature of the port of origin, the contents, or the circumstances associated with the deposition, then the Ministry of Foreign Affairs is to be notified, as well.

Application to intervene on a cultural resource must be made at least three months prior to the start of any proposed activity. Sanctions for violation of the law are similar to those on land, although the terms of the law make it obligatory for sea-farers to report what they have seen and establish penalties for those who make their reports late (i.e., beyond the three-day reporting period) or begin whatever intervention on the material remains that they have planned before a formal authorization has been issued (i.e., there is no clause that permits even a well-meaning sea-farer to employ good judgment in protecting cultural resources, as there is for resources on land – what is found underwater, stays underwater, until officially indicated otherwise). Penalties for the sale of underwater cultural resources are specified to include up to two years imprisonment and a fine between 50 and 500 Euros.

As in the case of terrestrial resources, the Italian legislation that protects underwater resources is accompanied by initiatives in the identification and

cataloguing of finds from under the sea. Long-term projects in the Gulf of Pozzuoli and more recent surveys in the Gulf of Gaeta are now accompanied by the ArcheoMar Project, which approaches the regions of Campania, Basilicata, Puglia and Calabria in southern Italy in a coordinated way. Financed by a separate Italian law and conducted by a consortium of private contractors under the direction of the Ministry for Cultural Resources and Activities, this project is aimed at developing a GIS (Geographical Information System) database that will furnish relevant data to regulatory agencies and scientific information to scholars and the general public. The project includes the creation of didactic materials in several media. Already, significant progress has been achieved not only in shallower coastal waters but also in deeper locations, such as the sea-floor off the Pontine islands. An example of a registration form used to report underwater finds to the maritime authority is included as an appendix to this Guide.

The significance of this Italian law to the U.S. Navy is considerable. Navy vessels and Navy divers regularly pass through waters that are defined by the terms of its articles, and Navy personnel and their families, like the general public, often engage in the growing business of 'underwater tourism' (see the relevant sections for Navy facilities in Part II). While the U.S. has not yet ratified the UNESCO convention, both the federal government and individual state governments have adopted laws that govern underwater cultural resources. Title XIV of U.S. House Resolution 4200 (a portion of the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005) has declared sunken military craft (both sea-going vessels and other forms of vessel that have landed in the sea) to be property of the U.S. and has established regulations for intervention on them, as well as those of foreign states that request that such be done within U.S. Waters (that is a legal definition that includes U.S. internal waters and territorial seas, as well as

the off-shore U.S. contiguous zone). While it is conceivable that there may be some conflict between these claims and those in the Italian declaration of blanket protection for cultural resources pertaining to the First World War, the greater U.S. presence in Italy during World War II is not affected and remains as an issue that may arise as time progresses. Ships, landing craft, powered aircraft, as well as a considerable number of troop-carrying gliders are included among the potential resources pertaining to this later conflict, and therefore it is advisable that U.S. Navy personnel treat them in the same manner as recognized cultural resources, unless directed otherwise.

Database release: End2010

[XML](#)

# NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA)  
For Sites Eligible for identification as sites of community importance (SCI) and  
For Special Areas of Conservation (SAC)

SITE IT8030003  
SITENAME Collina dei Camaldoli

## TABLE OF CONTENTS

- [1. SITE IDENTIFICATION](#)
- [2. SITE LOCATION](#)
- [3. ECOLOGICAL INFORMATION](#)
- [4. SITE DESCRIPTION](#)
- [5. SITE PROTECTION STATUS AND RELATION WITH CORINE BIOTOPES](#)
- [6. IMPACTS AND ACTIVITIES IN AND AROUND THE SITE](#)
- [7. MAP OF THE SITE](#)

Print Standard Data Form

## 1. SITE IDENTIFICATION

[Back to top](#)

### 1.1 TYPE

B

### 1.2 SITE CODE

IT8030003

### 1.3 COMPILATION DATE

01-May-1995

### 1.4 UPDATE

01-Jul-2009

### 1.6 RESPONDENT(S)

Ministero dell'Ambiente e della Tutela del Territorio e del Mare - Direzione Conservazione della Natura, Via Capitan Bavastro 174, 00147 Roma

### 1.7 SITE NAME

Collina dei Camaldoli

### 1.8 SITE INDICATION AND DESIGNATION/CLASSIFICATION DATES

<b>DATE SITE PROPOSED AS ELIGIBLE AS SCI</b>	<b>DATE CONFIRMED AS SCI</b>
01-May-1995	No data
<b>DATE SITE CLASSIFIED AS SPA</b>	<b>DATE SITE DESIGNATED AS SAC</b>
No data	No data

## 2. SITE LOCATION

[Back to top](#)**2.1 SITE CENTRE LOCATION****Longitude** 14.197222**Latitude** 40.856667

positive values = decimal degrees W/ negative values = decimal degrees E (Greenwich)

**2.2 AREA (HA)**

261.0000

**2.4 ALTITUDE (M)****Minimum** 90**Maximum** 457**Mean** 350**2.5 ADMINISTRATIVE REGION****Nuts Code** IT8**Region Name** No data**% Cover** 100.00**2.6 BIOGEOGRAPHIC REGION**

Mediterranean

**3. ECOLOGICAL INFORMATION**[Back to top](#)*NOTE: Protected species are shown with red background.***3.1 HABITAT TYPES PRESENT ON THE SITE AND ASSESSMENT FOR THEM****ANNEX I HABITAT TYPES**

CODE	% COVER	REPRESENTATIVITY	RELATIVE SURFACE	CONSERVATION STATUS	GLOBAL ASSESSMENT
9260 <b>F</b>	50.00	B	C	C	C
9340 <b>F</b>	10.00	C	C	C	C
6220 <b>F</b>	20.00	B	C	C	C
5330 <b>F</b>	10.00	B	C	C	C

**3.2. SPECIES**

Covered by Article 4 of Directive 79/409/EEC and listed in Annex II of Directive 92/43/EEC and site assessment for them

**3.2.A. BIRDS listed on Annex I of Council directive 79/409/EEC**

CODE	NAME	POPULATION			SITE ASSESSMENT				
		Resident	Migratory			Population	Conservation	Isolation	Global
			Breed	Winter	Stage				
A103	<a href="#">Falco peregrinus</a>	P				C	B	C	B

A339	<a href="#">Lanius collurio</a>		6-10 p	C	C	B	C	B
A072	<a href="#">Pernis apivorus</a>			R	C	B	C	B

### 3.2.B. Regularly occurring Migratory Birds not listed on Annex I of Council directive 79/409/EEC

CODE	NAME	POPULATION			SITE ASSESSMENT				
		Resident	Migratory			Population	Conservation	Isolation	Global
			Breed	Winter	Stage				
A113	<a href="#">Coturnix coturnix</a>				C	C	C	C	
A210	<a href="#">Streptopelia turtur</a>				C	C	B	C	
A283	<a href="#">Turdus philomelos</a>				C	C	C	C	

### 3.2.C. MAMMALS listed on Annex II of Council directive 92/43/EEC

CODE	NAME	POPULATION			SITE ASSESSMENT				
		Resident	Migratory			Population	Conservation	Isolation	Global
			Breed	Winter	Stage				
1304	<a href="#">Rhinolophus ferrumequinum</a>	P			C	A	C	A	
1303	<a href="#">Rhinolophus hipposideros</a>	P			C	A	C	A	

### 3.2.D. AMPHIBIANS AND REPTILES listed on Annex II of Council directive 92/43/EEC

CODE	NAME	POPULATION			SITE ASSESSMENT				
		Resident	Migratory			Population	Conservation	Isolation	Global
			Breed	Winter	Stage				
1279	<a href="#">Elaphe quatuorlineata</a>	P			C	A	C	A	

### 3.2.E. FISHES listed on Annex II of Council directive 92/43/EEC

### 3.2.F. INVERTEBRATES listed on Annex II of Council directive 92/43/EEC

CODE	NAME	POPULATION			SITE ASSESSMENT				
		Resident	Migratory			Population	Conservation	Isolation	Global
			Breed	Winter	Stage				
1088	<a href="#">Cerambyx cerdo</a>	P			C	B	B	B	

### 3.2.G. PLANTS listed on Annex II of Council directive 92/43/EEC

### 3.3 OTHER IMPORTANT SPECIES OF FLORA AND FAUNA

GROUP	SCIENTIFIC NAME	POPULATION	MOTIVATION
R	<a href="#">Podarcis sicula</a>	C	C
I	<a href="#">Scarabaeus sacer</a>	P	D
I	<a href="#">Anaciaeschna isosceles</a>	P	C
R	<a href="#">Coluber viridiflavus</a>	C	C
R	<a href="#">Lacerta bilineata</a>	C	C
I	<a href="#">Lucanus tetraodon</a>	P	D

(B=Birds, M= Mammals, A=Amphibians, R=Reptiles, F=Fish, I=Invertebrates, P=Plants)

## 4. SITE DESCRIPTION

[Back to top](#)

### 4.1 GENERAL SITE CHARACTER

Habitat Classes	% Cover
Dry grassland, Steppes	20.00
Broad-leaved deciduous woodland	50.00
Evergreen woodland	10.00
Non-forest areas cultivated with woody plants (including Orchards, groves, Vineyards, Dehesas)	10.00
Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	10.00
<b>TOTAL HABITAT COVER</b>	<b>100 %</b>

### 4.2 QUALITY AND IMPORTANCE

### 4.3 VULNERABILITY

### 4.4 SITE DESIGNATION

### 4.5 OWNERSHIP

### 4.6 DOCUMENTATION

## 5. SITE PROTECTION STATUS AND RELATION WITH CORINE BIOTOPES

[Back to top](#)

### 5.1 DESIGNATION TYPES at National and Regional Level

CODE	% COVER
IT04	100.00

### 5.2 RELATION OF THE DESCRIBED SITE WITH OTHER SITES

### 5.3 RELATION OF THE DESCRIBED SITE WITH CORINE BIOTOPE SITES

CORINE SITE CODE	OVERLAP	
	TYPE	% COVER
300100592	/	

## 6. IMPACTS AND ACTIVITIES IN AND AROUND THE SITE

[Back to top](#)

### 6.1 GENERAL IMPACTS AND ACTIVITIES AND PROPORTION OF THE SURFACE OF THE SITE AFFECTED

Impacts and activities within the site

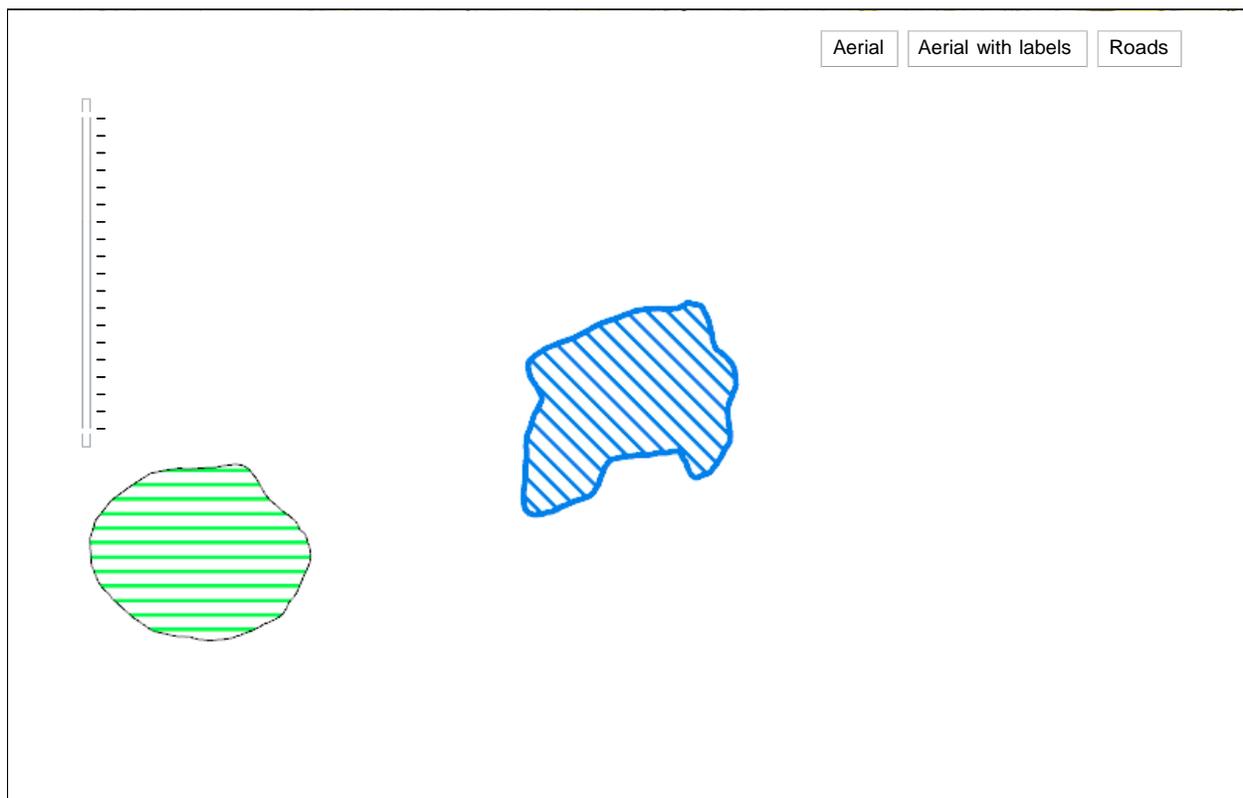
CODE	INTENSITY	% OF SITE	INFLUENCE
100	C	40.00	0
160	C	50.00	0
180	A	100.00	-

230	C	10.00	0
301	C	5.00	0
400	B	50.00	-
409	C	10.00	0
421	B	80.00	-
900	C	30.00	0
943	C	30.00	0

## 7. MAP OF THE SITE

[Back to top](#)

### SITE DISPLAY



### PHYSICAL MAP

NATIONAL MAP NUMBER	SCALE	PROJECTION
184-ISO	25000	UTM
184-IVSE	25000	UTM

### REFERENCE TO AVAILABILITY OF BOUNDARIES IN DIGITIZED FORM

Database release: End2010

[XML](#)

# NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA)  
For Sites Eligible for identification as sites of community importance (SCI) and  
For Special Areas of Conservation (SAC)

SITE IT8030018  
SITENAME Lago di Patria

## TABLE OF CONTENTS

- [1. SITE IDENTIFICATION](#)
- [2. SITE LOCATION](#)
- [3. ECOLOGICAL INFORMATION](#)
- [4. SITE DESCRIPTION](#)
- [5. SITE PROTECTION STATUS AND RELATION WITH CORINE BIOTOPES](#)
- [6. IMPACTS AND ACTIVITIES IN AND AROUND THE SITE](#)
- [7. MAP OF THE SITE](#)

[Print Standard Data Form](#)

## 1. SITE IDENTIFICATION

[Back to top](#)

### 1.1 TYPE

B

### 1.2 SITE CODE

IT8030018

### 1.3 COMPILATION DATE

01-May-1995

### 1.4 UPDATE

01-Jul-2009

### 1.6 RESPONDENT(S)

Ministero dell'Ambiente e della Tutela del Territorio e del Mare - Direzione Conservazione della Natura, Via Capitan Bavastro 174, 00147 Roma

### 1.7 SITE NAME

Lago di Patria

### 1.8 SITE INDICATION AND DESIGNATION/CLASSIFICATION DATES

<b>DATE SITE PROPOSED AS ELIGIBLE AS SCI</b>	<b>DATE CONFIRMED AS SCI</b>
01-May-1995	No data
<b>DATE SITE CLASSIFIED AS SPA</b>	<b>DATE SITE DESIGNATED AS SAC</b>
No data	No data

## 2. SITE LOCATION

[Back to top](#)**2.1 SITE CENTRE LOCATION****Longitude** 14.035556**Latitude** 40.937500

positive values = decimal degrees W/ negative values = decimal degrees E (Greenwich)

**2.2 AREA (HA)**

507.0000

**2.4 ALTITUDE (M)****Minimum** 0**Maximum** 2**Mean** 2**2.5 ADMINISTRATIVE REGION****Nuts Code** IT8**Region Name** No data**% Cover** 100.00**2.6 BIOGEOGRAPHIC REGION**

Mediterranean

**3. ECOLOGICAL INFORMATION**[Back to top](#)*NOTE: Protected species are shown with red background.***3.1 HABITAT TYPES PRESENT ON THE SITE AND ASSESSMENT FOR THEM****ANNEX I HABITAT TYPES**

CODE	% COVER	REPRESENTATIVITY	RELATIVE SURFACE	CONSERVATION STATUS	GLOBAL ASSESSMENT
1150 <b>F</b>	35.00	A	C	C	B
2260 <b>F</b>	5.00	B	C	C	B
2210 <b>F</b>	10.00	B	C	C	B
2250 <b>F</b>	5.00	A	C	C	B
1210 <b>F</b>	5.00	B	C	C	B
2110 <b>F</b>	5.00	B	C	C	B
2120 <b>F</b>	5.00	B	C	C	B
5330 <b>F</b>	5.00	B	C	C	C

**3.2. SPECIES**

**Covered by Article 4 of Directive 79/409/EEC and listed in Annex II of Directive 92/43/EEC and site assessment for them**

**3.2.A. BIRDS listed on Annex I of Council directive 79/409/EEC**

--	--	--	--	--	--

CODE	NAME	POPULATION			SITE ASSESSMENT			
		Resident	Migratory		Population	Conservation	Isolation	Global
			Breed	Winter				
A293	<a href="#">Acrocephalus melanopogon</a>			1-5 i	C	B	C	B
A229	<a href="#">Alcedo atthis</a>				C	B	C	B
A209	<a href="#">Ardea purpurea</a>				R	B	C	B
A222	<a href="#">Asio flammeus</a>				R	B	C	B
A133	<a href="#">Burhinus oediconemus</a>				V	B	C	B
A196	<a href="#">Chlidonias hybridus</a>				R	B	C	B
A197	<a href="#">Chlidonias niger</a>				C	B	C	B
A081	<a href="#">Circus aeruginosus</a>				R	B	C	B
A189	<a href="#">Gelochelidon nilotica</a>				C	B	C	B
A135	<a href="#">Glareola pratincola</a>				V	B	C	B
A127	<a href="#">Grus grus</a>				R	B	C	B
A131	<a href="#">Himantopus himantopus</a>				C	B	C	B
A022	<a href="#">Ixobrychus minutus</a>		1-5 i		C	B	C	B
A176	<a href="#">Larus melanocephalus</a>			R	C	B	C	B
A094	<a href="#">Pandion haliaetus</a>				R	B	C	B
A151	<a href="#">Philomachus pugnax</a>				C	B	C	B
A195	<a href="#">Sterna albifrons</a>				C	B	C	B
A191	<a href="#">Sterna sandvicensis</a>			1-5 i	C	B	C	B
A166	<a href="#">Tringa glareola</a>				C	C	C	C

### 3.2.B. Regularly occurring Migratory Birds not listed on Annex I of Council directive 79/409/EEC

CODE	NAME	POPULATION			SITE ASSESSMENT			
		Resident	Migratory		Population	Conservation	Isolation	Global
			Breed	Winter				
A247	<a href="#">Alauda arvensis</a>				C	C	C	C
A051	<a href="#">Anas crecca</a>			11-50 i	C	B	C	B
A050	<a href="#">Anas penelope</a>			11-50 i	C	B	C	B
A053	<a href="#">Anas platyrhynchos</a>			6-10 i	C	B	C	B
A055	<a href="#">Anas querquedula</a>				C	B	C	B
A059	<a href="#">Aythya ferina</a>			11-50 i	C	B	C	B
A061	<a href="#">Aythya fuligula</a>			6-10 i	C	B	C	B
A113	<a href="#">Coturnix coturnix</a>				C	C	C	C
A125	<a href="#">Fulica atra</a>		6-10 p	51-100 i	C	C	C	C
A153	<a href="#">Gallinago gallinago</a>				C	C	C	C
A123	<a href="#">Gallinula chloropus</a>	6-10 p			C	C	C	C
A130	<a href="#">Haematopus ostralegus</a>				C	C	C	C
A184	<a href="#">Larus argentatus</a>				C	B	C	B
A179	<a href="#">Larus ridibundus</a>				C	B	C	B
A156	<a href="#">Limosa limosa</a>				C	B	C	B
	<a href="#">Lymnocyptes minimus</a>							

A152		R	C	C	B	C	B
A069	<a href="#">Mergus serrator</a>	V		C	C	C	C
A058	<a href="#">Netta rufina</a>		R	C	B	C	B
A144	<a href="#">Numenius arquata</a>		R	C	C	C	C
A158	<a href="#">Numenius phaeopus</a>		R	C	C	C	C
A391	<a href="#">Phalacrocorax carbo sinensis</a>	51-100 i		C	B	C	B
A141	<a href="#">Pluvialis squatarola</a>		R	C	C	C	C
A006	<a href="#">Podiceps grisegena</a>		V	C	B	C	B
A161	<a href="#">Tringa erythropus</a>		R	C	C	C	C
A164	<a href="#">Tringa nebularia</a>		R	C	C	C	C
A162	<a href="#">Tringa totanus</a>		C	C	C	C	C
A283	<a href="#">Turdus philomelos</a>		C	C	C	C	C
A142	<a href="#">Vanellus vanellus</a>	C		C	C	C	C

### 3.2.C. MAMMALS listed on Annex II of Council directive 92/43/EEC

CODE	NAME	POPULATION				SITE ASSESSMENT			
		Resident	Migratory			Population	Conservation	Isolation	Global
			Breed	Winter	Stage				
1324	<a href="#">Myotis myotis</a>	P				C	A	C	A
1304	<a href="#">Rhinolophus ferrumequinum</a>	P				C	A	C	A
1303	<a href="#">Rhinolophus hipposideros</a>	P				C	A	C	A

### 3.2.D. AMPHIBIANS AND REPTILES listed on Annex II of Council directive 92/43/EEC

### 3.2.E. FISHES listed on Annex II of Council directive 92/43/EEC

CODE	NAME	POPULATION				SITE ASSESSMENT			
		Resident	Migratory			Population	Conservation	Isolation	Global
			Breed	Winter	Stage				
1152	<a href="#">Aphanius fasciatus</a>				V	D			

### 3.2.F. INVERTEBRATES listed on Annex II of Council directive 92/43/EEC

CODE	NAME	POPULATION				SITE ASSESSMENT			
		Resident	Migratory			Population	Conservation	Isolation	Global
			Breed	Winter	Stage				
1044	<a href="#">Coenagrion mercuriale</a>	P				C	B	C	B

### 3.2.G. PLANTS listed on Annex II of Council directive 92/43/EEC

### 3.3 OTHER IMPORTANT SPECIES OF FLORA AND FAUNA

GROUP	SCIENTIFIC NAME	POPULATION	MOTIVATION
R	<a href="#">Podarcis sicula</a>	C	C
I	<a href="#">Sympecma fusca</a>	P	C
I	<a href="#">Anaciaeschna isosceles</a>	P	C

A	<a href="#">Bufo viridis</a>	V	C
I	<a href="#">Ceriagrion tenellum</a>	P	C
R	<a href="#">Coluber viridiflavus</a>	C	C
A	<a href="#">Hyla italica</a>	R	A
R	<a href="#">Lacerta bilineata</a>	C	C
I	<a href="#">Lestes dryas</a>	P	C

(B=Birds, M= Mammals, A=Amphibians, R=Reptiles, F=Fish, I=Invertebrates, P=Plants)

## 4. SITE DESCRIPTION

[Back to top](#)

### 4.1 GENERAL SITE CHARACTER

Habitat Classes	% Cover
Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins)	35.00
Coastal sand dunes, Sand beaches, Machair	10.00
Shingle, Sea cliffs, Islets	20.00
Heath, Scrub, Maquis and Garrigue, Phygrana	10.00
Other arable land	15.00
Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	10.00
<b>TOTAL HABITAT COVER</b>	<b>100 %</b>

### 4.2 QUALITY AND IMPORTANCE

### 4.3 VULNERABILITY

### 4.4 SITE DESIGNATION

### 4.5 OWNERSHIP

### 4.6 DOCUMENTATION

## 5. SITE PROTECTION STATUS AND RELATION WITH CORINE BIOTOPES

[Back to top](#)

### 5.1 DESIGNATION TYPES at National and Regional Level

CODE	% COVER
IT04	100.00

### 5.2 RELATION OF THE DESCRIBED SITE WITH OTHER SITES

Designated at National or Regional level

TYPE CODE	SITE NAME	OVERLAP	
		TYPE	%COVER
IT04	P.R. Campi Flegrei		100.00

### 5.3 RELATION OF THE DESCRIBED SITE WITH CORINE BIOTOPE SITES

--	--	--	--

CORINE SITE CODE	OVERLAP	
	TYPE	% COVER
300015025	=	

## 6. IMPACTS AND ACTIVITIES IN AND AROUND THE SITE

[Back to top](#)

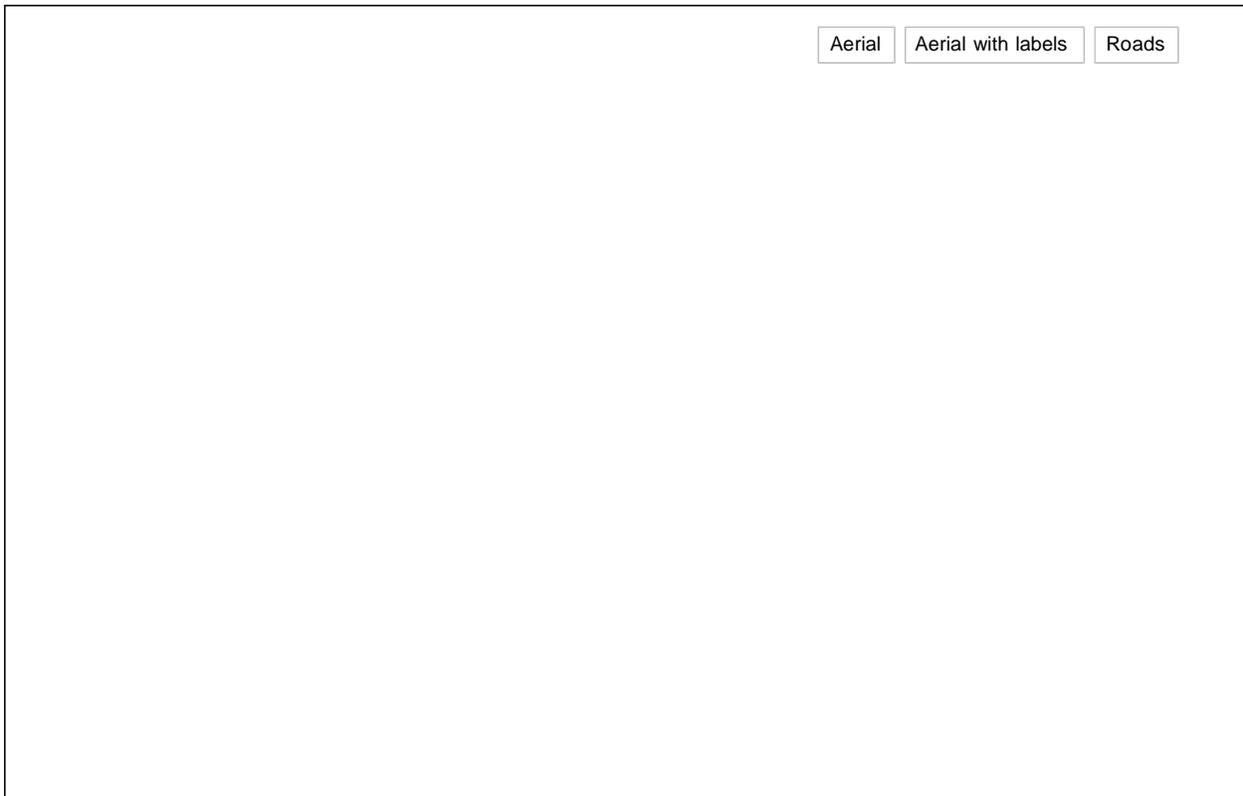
### 6.1 GENERAL IMPACTS AND ACTIVITIES AND PROPORTION OF THE SURFACE OF THE SITE AFFECTED

Impacts and activities within the site

## 7. MAP OF THE SITE

[Back to top](#)

### SITE DISPLAY



### PHYSICAL MAP

**NATIONAL MAP NUMBER SCALE PROJECTION**184-IVNO  25000 UTM184-IVSO  25000 UTM**REFERENCE TO AVAILABILITY OF BOUNDARIES IN DIGITIZED FORM**

Database release: End2010

[XML](#)

# NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA)  
For Sites Eligible for identification as sites of community importance (SCI) and  
For Special Areas of Conservation (SAC)

SITE IT8030019

SITENAME Monte Barbaro e Cratere di Campiglione

## TABLE OF CONTENTS

- [1. SITE IDENTIFICATION](#)
- [2. SITE LOCATION](#)
- [3. ECOLOGICAL INFORMATION](#)
- [4. SITE DESCRIPTION](#)
- [5. SITE PROTECTION STATUS AND RELATION WITH CORINE BIOTOPES](#)
- [6. IMPACTS AND ACTIVITIES IN AND AROUND THE SITE](#)
- [7. MAP OF THE SITE](#)

Print Standard Data Form

## 1. SITE IDENTIFICATION

[Back to top](#)

### 1.1 TYPE

B

### 1.2 SITE CODE

IT8030019

### 1.3 COMPILATION DATE

01-May-1995

### 1.4 UPDATE

01-Jul-2009

### 1.6 RESPONDENT(S)

Ministero dell'Ambiente e della Tutela del Territorio e del Mare - Direzione Conservazione della Natura, Via Capitan Bavastro 174, 00147 Roma

### 1.7 SITE NAME

Monte Barbaro e Cratere di Campiglione

### 1.8 SITE INDICATION AND DESIGNATION/CLASSIFICATION DATES

<b>DATE SITE PROPOSED AS ELIGIBLE AS SCI</b>	<b>DATE CONFIRMED AS SCI</b>
01-May-1995	No data
<b>DATE SITE CLASSIFIED AS SPA</b>	<b>DATE SITE DESIGNATED AS SAC</b>
No data	No data

## 2. SITE LOCATION

[Back to top](#)**2.1 SITE CENTRE LOCATION****Longitude** 14.105556**Latitude** 40.852500

positive values = decimal degrees W/ negative values = decimal degrees E (Greenwich)

**2.2 AREA (HA)**

358.0000

**2.4 ALTITUDE (M)****Minimum** 95**Maximum** 320**Mean** 200**2.5 ADMINISTRATIVE REGION****Nuts Code** IT8**Region Name** No data**% Cover** 100.00**2.6 BIOGEOGRAPHIC REGION**

Mediterranean

**3. ECOLOGICAL INFORMATION**[Back to top](#)*NOTE: Protected species are shown with red background.***3.1 HABITAT TYPES PRESENT ON THE SITE AND ASSESSMENT FOR THEM****ANNEX I HABITAT TYPES**

CODE	% COVER	REPRESENTATIVITY	RELATIVE SURFACE	CONSERVATION STATUS	GLOBAL ASSESSMENT
5330 <b>f</b>	20.00	B	C	C	C
6220 <b>f</b>	20.00	A	C	C	C
9260 <b>f</b>	30.00	B	C	C	C

**3.2. SPECIES**

Covered by Article 4 of Directive 79/409/EEC and listed in Annex II of Directive 92/43/EEC and site assessment for them

**3.2.A. BIRDS listed on Annex I of Council directive 79/409/EEC**

CODE	NAME	POPULATION			SITE ASSESSMENT				
		Resident	Migratory			Population	Conservation	Isolation	Global
			Breed	Winter	Stage				
A103	<a href="#">Falco peregrinus</a>	1-5 p				C	B	C	B
A339	<a href="#">Lanius collurio</a>		1-5 p		C	C	B	C	B

## 3.2.B. Regularly occurring Migratory Birds not listed on Annex I of Council directive 79/409/EEC

CODE	NAME	POPULATION			SITE ASSESSMENT				
		Resident	Migratory			Population	Conservation	Isolation	Global
			Breed	Winter	Stage				
A247	<a href="#">Alauda arvensis</a>				R	C	B	C	B
A113	<a href="#">Coturnix coturnix</a>				C	C	B	C	B
A210	<a href="#">Streptopelia turtur</a>				C	C	B	C	B
A283	<a href="#">Turdus philomelos</a>				C	C	C	C	C

## 3.2.C. MAMMALS listed on Annex II of Council directive 92/43/EEC

CODE	NAME	POPULATION			SITE ASSESSMENT				
		Resident	Migratory			Population	Conservation	Isolation	Global
			Breed	Winter	Stage				
1304	<a href="#">Rhinolophus ferrumequinum</a>	P				C	A	C	A
1303	<a href="#">Rhinolophus hipposideros</a>	P				C	A	C	A

## 3.2.D. AMPHIBIANS AND REPTILES listed on Annex II of Council directive 92/43/EEC

## 3.2.E. FISHES listed on Annex II of Council directive 92/43/EEC

## 3.2.F. INVERTEBRATES listed on Annex II of Council directive 92/43/EEC

CODE	NAME	POPULATION			SITE ASSESSMENT				
		Resident	Migratory			Population	Conservation	Isolation	Global
			Breed	Winter	Stage				
1088	<a href="#">Cerambyx cerdo</a>	P				C	B	B	B

## 3.2.G. PLANTS listed on Annex II of Council directive 92/43/EEC

## 3.3 OTHER IMPORTANT SPECIES OF FLORA AND FAUNA

GROUP	SCIENTIFIC NAME	POPULATION	MOTIVATION
R	<a href="#">Podarcis sicula</a>	C	C
R	<a href="#">Coluber viridiflavus</a>	C	C
R	<a href="#">Lacerta bilineata</a>	C	C
I	<a href="#">Lucanus tetraodon</a>	P	D

(B=Birds, M= Mammals, A=Amphibians, R=Reptiles, F=Fish, I=Invertebrates, P=Plants)

## 4. SITE DESCRIPTION

[Back to top](#)

## 4.1 GENERAL SITE CHARACTER

Habitat Classes	% Cover
Heath, Scrub, Maquis and Garrigue, Phygrana	10.00

Dry grassland, Steppes	30.00
Broad-leaved deciduous woodland	30.00
Mixed woodland	10.00
Non-forest areas cultivated with woody plants (including Orchards, groves, Vineyards, Dehesas)	5.00
Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	15.00
<b>TOTAL HABITAT COVER</b>	<b>100 %</b>

#### 4.2 QUALITY AND IMPORTANCE

#### 4.3 VULNERABILITY

#### 4.4 SITE DESIGNATION

#### 4.5 OWNERSHIP

#### 4.6 DOCUMENTATION

### 5. SITE PROTECTION STATUS AND RELATION WITH CORINE BIOTOPES

[Back to top](#)

#### 5.1 DESIGNATION TYPES at National and Regional Level

CODE	% COVER
IT04	100.00

#### 5.2 RELATION OF THE DESCRIBED SITE WITH OTHER SITES

Designated at National or Regional level

TYPE CODE	SITE NAME	OVERLAP	
		TYPE	%COVER
IT04	P.R. Campi Flegrei		100.00

### 6. IMPACTS AND ACTIVITIES IN AND AROUND THE SITE

[Back to top](#)

#### 6.1 GENERAL IMPACTS AND ACTIVITIES AND PROPORTION OF THE SURFACE OF THE SITE AFFECTED

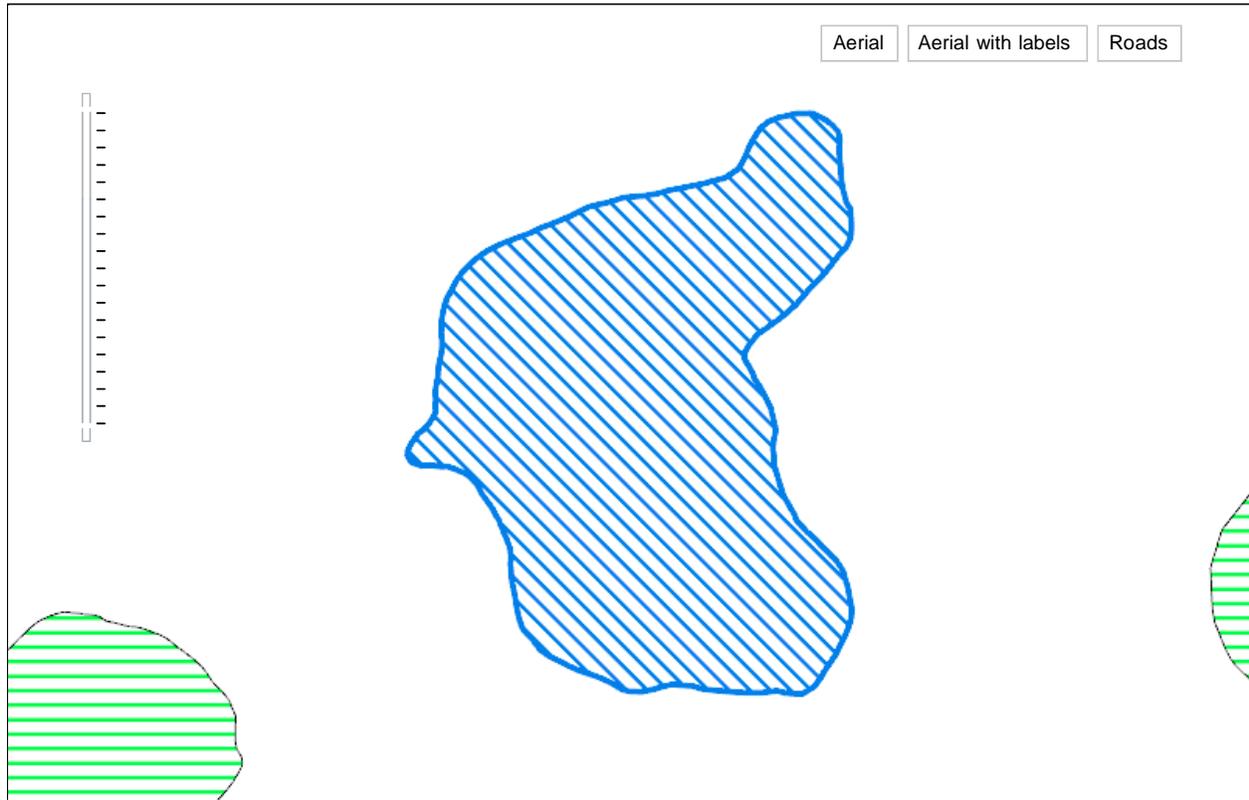
Impacts and activities within the site

CODE	INTENSITY	% OF SITE	INFLUENCE
100	B	50.00	0
180	B	100.00	-
230	C	10.00	0
400	B	50.00	-
501	C	10.00	0
502	C	20.00	0
620	C	25.00	0
740	B	100.00	-

### 7. MAP OF THE SITE

[Back to top](#)

**SITE DISPLAY**



**PHYSICAL MAP**

NATIONAL MAP NUMBER	SCALE	PROJECTION
184-IVSE	25000	UTM

**REFERENCE TO AVAILABILITY OF BOUNDARIES IN DIGITIZED FORM**

Database release: End2010

[XML](#)

# NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA)  
For Sites Eligible for identification as sites of community importance (SCI) and  
For Special Areas of Conservation (SAC)

SITE **IT8010021**  
SITENAME **Pineta di Patria**

## TABLE OF CONTENTS

- [1. SITE IDENTIFICATION](#)
- [2. SITE LOCATION](#)
- [3. ECOLOGICAL INFORMATION](#)
- [4. SITE DESCRIPTION](#)
- [5. SITE PROTECTION STATUS AND RELATION WITH CORINE BIOTOPES](#)
- [6. IMPACTS AND ACTIVITIES IN AND AROUND THE SITE](#)
- [7. MAP OF THE SITE](#)

[Print Standard Data Form](#)

## 1. SITE IDENTIFICATION

[Back to top](#)

### 1.1 TYPE

B

### 1.2 SITE CODE

IT8010021

### 1.3 COMPILATION DATE

01-May-1995

### 1.4 UPDATE

01-Jul-2009

### 1.6 RESPONDENT(S)

Ministero dell'Ambiente e della Tutela del Territorio e del Mare - Direzione Conservazione della Natura, Via Capitan Bavastro 174, 00147 Roma

### 1.7 SITE NAME

Pineta di Patria

### 1.8 SITE INDICATION AND DESIGNATION/CLASSIFICATION DATES

<b>DATE SITE PROPOSED AS ELIGIBLE AS SCI</b>	<b>DATE CONFIRMED AS SCI</b>
01-May-1995	No data
<b>DATE SITE CLASSIFIED AS SPA</b>	<b>DATE SITE DESIGNATED AS SAC</b>
No data	No data

## 2. SITE LOCATION

[Back to top](#)**2.1 SITE CENTRE LOCATION****Longitude** 14.013056**Latitude** 40.940556

positive values = decimal degrees W/ negative values = decimal degrees E (Greenwich)

**2.2 AREA (HA)**

313.0000

**2.4 ALTITUDE (M)****Minimum** 1**Maximum** 2**Mean** 2**2.5 ADMINISTRATIVE REGION****Nuts Code** IT8**Region Name** No data**% Cover** 100.00**2.6 BIOGEOGRAPHIC REGION**

Mediterranean

**3. ECOLOGICAL INFORMATION**[Back to top](#)*NOTE: Protected species are shown with red background.***3.1 HABITAT TYPES PRESENT ON THE SITE AND ASSESSMENT FOR THEM****ANNEX I HABITAT TYPES**

CODE	% COVER	REPRESENTATIVITY	RELATIVE SURFACE	CONSERVATION STATUS	GLOBAL ASSESSMENT
2270 	30.00	D			
2260 	20.00	B	C	C	B
2250 	5.00	B	C	B	B
1210 	10.00	A	C	C	B
2110 	5.00	B	C	C	C
2210 	1.00	A	C	B	B
2240 	5.00	B	C	C	B
2120 	5.00	B	C	B	C
2230 	1.00	C	C	B	B
9340 	15.00	B	C	B	A

**3.2. SPECIES**

Covered by Article 4 of Directive 79/409/EEC and listed in Annex II of Directive 92/43/EEC and site assessment for them

## 3.2.A. BIRDS listed on Annex I of Council directive 79/409/EEC

CODE	NAME	POPULATION				SITE ASSESSMENT			
		Resident	Migratory			Population	Conservation	Isolation	Global
			Breed	Winter	Stage				
A081	<a href="#">Circus aeruginosus</a>				R	C	C	C	C
A231	<a href="#">Coracias garrulus</a>				V	C	C	C	C
A321	<a href="#">Ficedula albicollis</a>				R	C	C	C	C
A339	<a href="#">Lanius collurio</a>		11-50 p			C	C	C	C

## 3.2.B. Regularly occurring Migratory Birds not listed on Annex I of Council directive 79/409/EEC

CODE	NAME	POPULATION				SITE ASSESSMENT			
		Resident	Migratory			Population	Conservation	Isolation	Global
			Breed	Winter	Stage				
A113	<a href="#">Coturnix coturnix</a>				C	C	C	C	C
A184	<a href="#">Larus argentatus</a>				P	C	B	C	C
A210	<a href="#">Streptopelia turtur</a>				C	C	C	C	C
A283	<a href="#">Turdus merula</a>	11 - 50 p				C	C	C	C
A283	<a href="#">Turdus philomelos</a>				C	C	C	C	C

## 3.2.C. MAMMALS listed on Annex II of Council directive 92/43/EEC

CODE	NAME	POPULATION				SITE ASSESSMENT			
		Resident	Migratory			Population	Conservation	Isolation	Global
			Breed	Winter	Stage				
1304	<a href="#">Rhinolophus ferrumequinum</a>	V				C	A	C	A
1303	<a href="#">Rhinolophus hipposideros</a>	V				C	A	C	A

## 3.2.D. AMPHIBIANS AND REPTILES listed on Annex II of Council directive 92/43/EEC

## 3.2.E. FISHES listed on Annex II of Council directive 92/43/EEC

## 3.2.F. INVERTEBRATES listed on Annex II of Council directive 92/43/EEC

CODE	NAME	POPULATION				SITE ASSESSMENT			
		Resident	Migratory			Population	Conservation	Isolation	Global
			Breed	Winter	Stage				
1078	<a href="#">Callimorpha quadripunctaria</a>	C				C	B	C	B

## 3.2.G. PLANTS listed on Annex II of Council directive 92/43/EEC

## 3.3 OTHER IMPORTANT SPECIES OF FLORA AND FAUNA

GROUP	SCIENTIFIC NAME	POPULATION	MOTIVATION
R	<a href="#">Podarcis sicula</a>	C	C
R	<a href="#">Coluber viridiflavus</a>	C	C
R	<a href="#">Lacerta bilineata</a>	C	C

I	<a href="#">Lucanus tetraodon</a>	P	D
---	-----------------------------------	---	---

(B=Birds, M= Mammals, A=Amphibians, R=Reptiles, F=Fish, I=Invertebrates, P=Plants)

## 4. SITE DESCRIPTION

[Back to top](#)

### 4.1 GENERAL SITE CHARACTER

Habitat Classes	% Cover
Coastal sand dunes, Sand beaches, Machair	15.00
Heath, Scrub, Maquis and Garrigue, Phygrana	25.00
Coniferous woodland	40.00
Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	20.00
<b>TOTAL HABITAT COVER</b>	<b>100 %</b>

### 4.2 QUALITY AND IMPORTANCE

### 4.3 VULNERABILITY

### 4.4 SITE DESIGNATION

### 4.5 OWNERSHIP

### 4.6 DOCUMENTATION

## 5. SITE PROTECTION STATUS AND RELATION WITH CORINE BIOTOPES

[Back to top](#)

### 5.1 DESIGNATION TYPES at National and Regional Level

CODE	% COVER
IT02	100.00
IT05	100.00

### 5.2 RELATION OF THE DESCRIBED SITE WITH OTHER SITES

Designated at National or Regional level

TYPE CODE	SITE NAME	OVERLAP	
		TYPE	%COVER
IT02	Castelvoturno		
IT05	Foce Volturno - Costa di Licola		

### 5.3 RELATION OF THE DESCRIBED SITE WITH CORINE BIOTOPE SITES

CORINE SITE CODE	OVERLAP	
	TYPE	% COVER
300015015	-	

## 6. IMPACTS AND ACTIVITIES IN AND AROUND THE SITE

[Back to top](#)

## 6.1 GENERAL IMPACTS AND ACTIVITIES AND PROPORTION OF THE SURFACE OF THE SITE AFFECTED

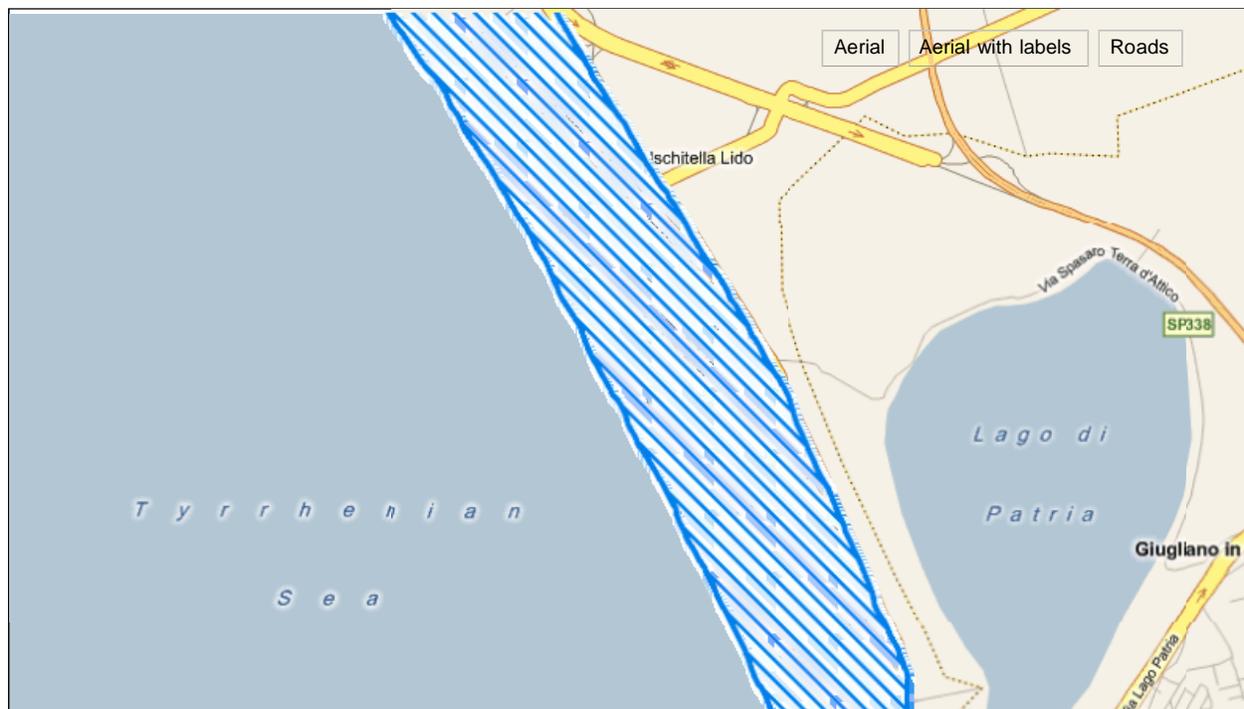
Impacts and activities within the site

CODE	INTENSITY	% OF SITE	INFLUENCE
100	C	10.00	0
160	B	70.00	+
243	B	70.00	-
302	B	20.00	-
402	B	20.00	-
409	B	20.00	-
419	C	10.00	-
420	C	10.00	-
490	C	10.00	-
501	C	5.00	+
502	C	2.00	0
503	C	1.00	0
620	C	2.00	0
700	B	20.00	-
740	B	40.00	-
790	C	10.00	-
800	C	10.00	-

## 7. MAP OF THE SITE

[Back to top](#)

### SITE DISPLAY



---

**PHYSICAL MAP**

**NATIONAL MAP NUMBER SCALE PROJECTION**

184-IVNO \_\_\_\_\_ 25000 UTM

**REFERENCE TO AVAILABILITY OF BOUNDARIES IN DIGITIZED FORM**