

# Database of Biotic Resources of the North Aegean Islands

P. Dimitrakopoulos, A.-S. Siamantziouras, A. Andreou, E. Zafiriou, N. Georgi, A. Antypa, and D. Soulantzou.

*Biodiversity Conservation Laboratory, Department of Environment, University of the Aegean.*

## Introduction

The environment of the North-East Aegean islands is a region of wide-ranging biodiversity. For example, **1,873 plant and animal species** have been recorded in the terrestrial communities of the islands.

The present database aims to draw up a list of species uses of both the terrestrial and marine environments of the region from an extensive scientific literature review, as well as to collect traditional, local knowledge about uses of plants (i.e. to carry out an ethnobotany study). **7,142 entries** have been made in total.

## Methods

### (a) Terrestrial environment

Flora of Turkey and the East Aegean Islands were the main source of data for the plant presence in the different islands of the NE Aegean Region. Data on the occurrence of animal species in each island was available from previous research conducted by the Biodiversity Conservation Laboratory. The uses of plant and animal species were recorded as well as the species' parts used and the ways of drug preparation. Finally, the group of compounds, the individual compound (if any) responsible for each particular use, and the method of extraction of these compounds from the species parts were also recorded. **Three people worked for more than 15 months, while around 500 references from professional literature were used.**

### (b) Marine environment

The spatial distributions of many marine phyla in the sea areas of the North-East Aegean Region were recorded. First, a literature review was conducted by gathering the data on the presence of marine taxa in the study area. Then, a systematic classification of marine taxa was conducted by using the European Register of Marine Species

(ERMS). The list of the NE Aegean Sea database includes **1,217 marine taxa from 26 marine phyla**. This study has revealed not only the richest phyla in the terms of species numbers (Annelida, Arthropoda, and Mollusca) but also the marine areas of the region with the highest level of marine biodiversity. Finally, the uses of marine species were recorded using more than 700 scientific journal papers. **Two people worked on this section for about 20 months.**

#### (c) Ethnobotany research

The ethnobotany research took place in five islands of the North Aegean (Limnos, Lesbos, Chios, Samos and Ikaria). The research's intention was to record the traditional uses of plants as a base for developing innovative business ideas. The field research lasted from October 2006 to June 2007. People familiar with the subject of research were selected (using the snowball method) and interviewed. In some cases, especially during spring, visits took place in the field in order to find the plants and collect samples. Overall, **240 interviews** were conducted, obtaining information on more than **250 species** of wild flora of the region.

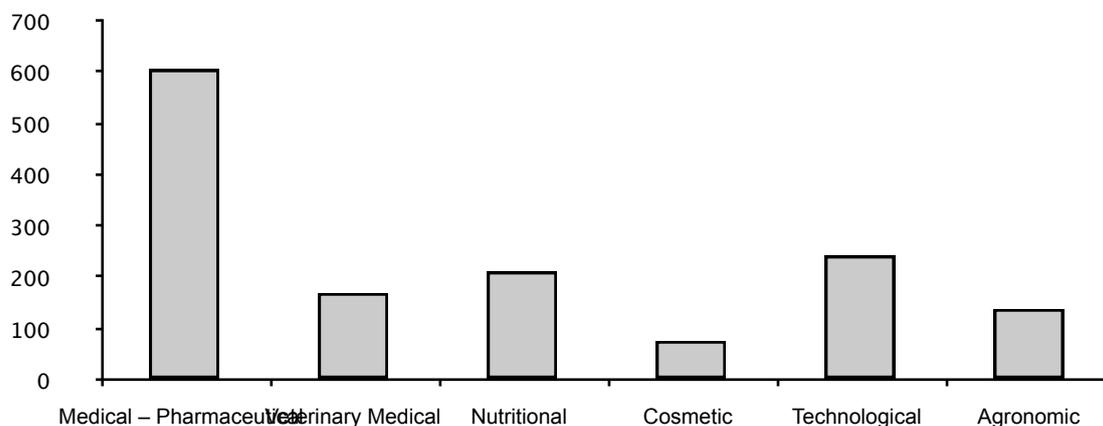
#### (d) Database structure

The database was designed in the Microsoft Windows environment, using Microsoft Visual Basic 6.0 and Microsoft Access 2003. For each species introduced in the database, information on its taxonomy and ecology (e.g. altitude or depth, habitat) is included. The spatial distribution of each species across the NE Region and its endemism are given while the uses of each species are described in detail. Species' uses have been categorized in six general classes: (a) Medical – Pharmaceutical, (b) Veterinary Medical, (c) Nutritional, (d) Cosmetic, (e) Technological, and (f) Agronomic. The Medical - Pharmaceutical use category has been divided into specific sub-categories (Infections and infectious diseases, skin diseases, urinary system ailments, respiratory ailments, gynecology, digestive system ailments, cardiovascular system ailments and blood diseases, fever, analgesics - sedatives – antispasmodics, as tonic and stimulant, hepatic complaints, endocrine - nutritional and metabolic diseases, diseases of the musculoskeletal system and connective tissue, neoplasms, neuropsychiatric diseases, ophthalmologic diseases, mental diseases, venereal diseases, various other medicinal uses). Database structure, design and implementation was conducted by one person for about 20 months.

End-users could search the database using the species' name, the species' use category or subcategory, and its geographic distribution.

## Results

Figure 1 presents the species' number of each use category. More species with medical – pharmaceutical use occurs in the database, following from species with technological uses.



**Figure 1.** Number of species with at least one use in each category.

168 species with more than 10 uses have been recorded in the database of the North Aegean Region. Table 1 depicts 18 species with more than 40 uses.

**Table 1.** List of species for which more than 40 uses have been recorded.

Species' name	Number of uses
<i>Foeniculum vulgare</i>	43
<i>Hedera helix</i>	48
<i>Hypericum perforatum</i>	49
<i>Juglans regia</i>	91
<i>Laurus nobilis</i>	63
<i>Malva sylvestris</i>	60
<i>Matricaria chamomilla var chamomilla</i>	67
<i>Melissa officinalis altissima</i>	51
<i>Olea europaea var sylvestris</i>	65
<i>Origanum vulgare hirtum</i>	41
<i>Rosa canina</i>	69
<i>Rosmarinus officinalis</i>	77
<i>Sambucus nigra</i>	69
<i>Teucrium polium</i>	42
<i>Ulva lactuca</i>	50
<i>Urtica dioica</i>	89
<i>Urtica urens</i>	41
<i>Vitex agnus-castus</i>	44

131 species used to treat the common cold are shown in Table 2.

**Table 2.** Species used to treat the common cold.

Ajuga chamaepitys chia var chia	Ophrys holoserica candida	Rosa horrida
Anthemis wiedemanniana	Ophrys holoserica holocerica	Rosa micrantha
Artemisia sp.	Ophrys iricolor	Rosa pulverulenta
Borago officinalis	Ophrys lutea minor	Rosa sempervirens
Brassica sp.	Ophrys mammosa	Rosa sicula
Capsella bursa-pastoris	Ophrys oestrifera heldreichii	Rosmarinus officinalis
Castanea sativa	Ophrys oestrifera oestrifera	Rubus canescens
Centaurea solstitialis solstitialis	Ophrys omegaifera	Rubus sanctus
Centaureum sp.	Ophrys reinholdii reinholdii	Ruta sp.
Cerantonia siliqua	Ophrys sphegodes	Salvia fruticosa
Ceterach officinarum	Ophrys spruneri	Salvia sp.
Coridothymus capitatus	Ophrys tenthredinifera	Sambucus nigra
Cornus mas	Ophrys umbilicata umbilicata	Sarcopoterium spinosum
Cupressus sempervirens	Ophrys vernixia regis-ferdinandii	Satureja thymbra
Cydonia oblonga	Orchis anatolica	Sideritis lanata
Erica manipuliflora	Orchis collina	Sideritis montana remota
Foeniculum vulgare	Orchis coriophora	Sideritis sipylea
Helichrysum conglobatum	Orchis italica	Sinapis alba
Helichrysum italicum	Orchis lactea	Sinapis sp.
Hypericum perforatum	Orchis laxiflora	Teucrium polium
Inula viscosa	Orchis mascula pinetorum	Thymus cilicicus
Juglans regia	Orchis morio picta	Thymus longicaulis chaubardii var alternatus
Juniperus foetidissima	Orchis palustris	Thymus longicaulis chaubardii var chaubardii
Juniperus oxycedrus macrocarpa	Orchis papilionacea papilionacea	Thymus samius
Juniperus oxycedrus oxycedrus	Orchis provincialis	Thymus sipyleus rosulans
Lavandula stoechas stoechas	Orchis puadripunctata	Thymus sipyleus sipyleus var sipyleus
Linum sp.	Orchis sancta	Thymus zygioides var lycaonicus
Malva sp.	Orchis simia	Thymus zygioides var zygioides
Malva sylvestris	Orchis tridentata	Tussilago farfara
Marrubium vulgare	Origanum onites	Urtica sp.
Matricaria chamomilla var chamomilla	Origanum vulgare hirtum	Valeriana dioscoridis
Melissa officinalis altissima	Paliurus spina-christi	Verbascum antinori
Mentha pulegium typhoides var typhoides	Papaver rhoeas	Verbascum aschersonii
Micromeria juliana	Parietaria sp.	Verbascum glomeratum
Micromeria sp.	Peganum harmala	Verbascum ikaricum
Morus alba	Pimpinella anisum	Verbascum lasianthum
Nigella sativa	Pinus brutia	Verbascum mucronatum
Olea europaea var sylvestris	Pinus nigra pallasiana	Verbascum pycnostachyum
Ophrys apifera	Pistacia lentiscus var chia	Verbascum sinuatum var sinuatum
Ophrys argolica argolica	Plantago sp.	Verbascum splendidum
Ophrys attica	Potamogeton nodosus	Verbascum vacillans
Ophrys doerfleri	Punica granatum	Viola odorata
Ophrys ferrum-equinum	Rhus coriaria	Vitex agnus-castus
Ophrys fusca	Rosa canina	

## **Publications**

Soulantzou D., Siamantziouras A.-S., Troumbis A. (2007) Implementation of Marine Biodiversity on the Islands of the Northeast Aegean: A Review. 29th Conference of the Hellenic Society of Biological Sciences. May, 17–19, Kavala (in Greek)

Siamantziouras A.-S., Soulantzou D., Troumbis A. (2007) Marine biodiversity of the NE Aegean Sea. 8th Pan-Hellenic Geographical Conference, 4-7 October, Athens (in Greek).