

MedWet



**Volume II**

# **Mediterranean Wetland Inventory: Data Recording**

**N. Hecker, L.T. Costa, J.C. Farinha & P. Tomàs Vives**

**WETLANDS**  
**INTERNATIONAL**

**ICN**   
Instituto da Conservação da Natureza



# MedWet



Volume II

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N. Hecker, L.T. Costa, J.C. Farinha and P. Tomàs Vives



Wetlands International



Instituto da Conservação da Natureza

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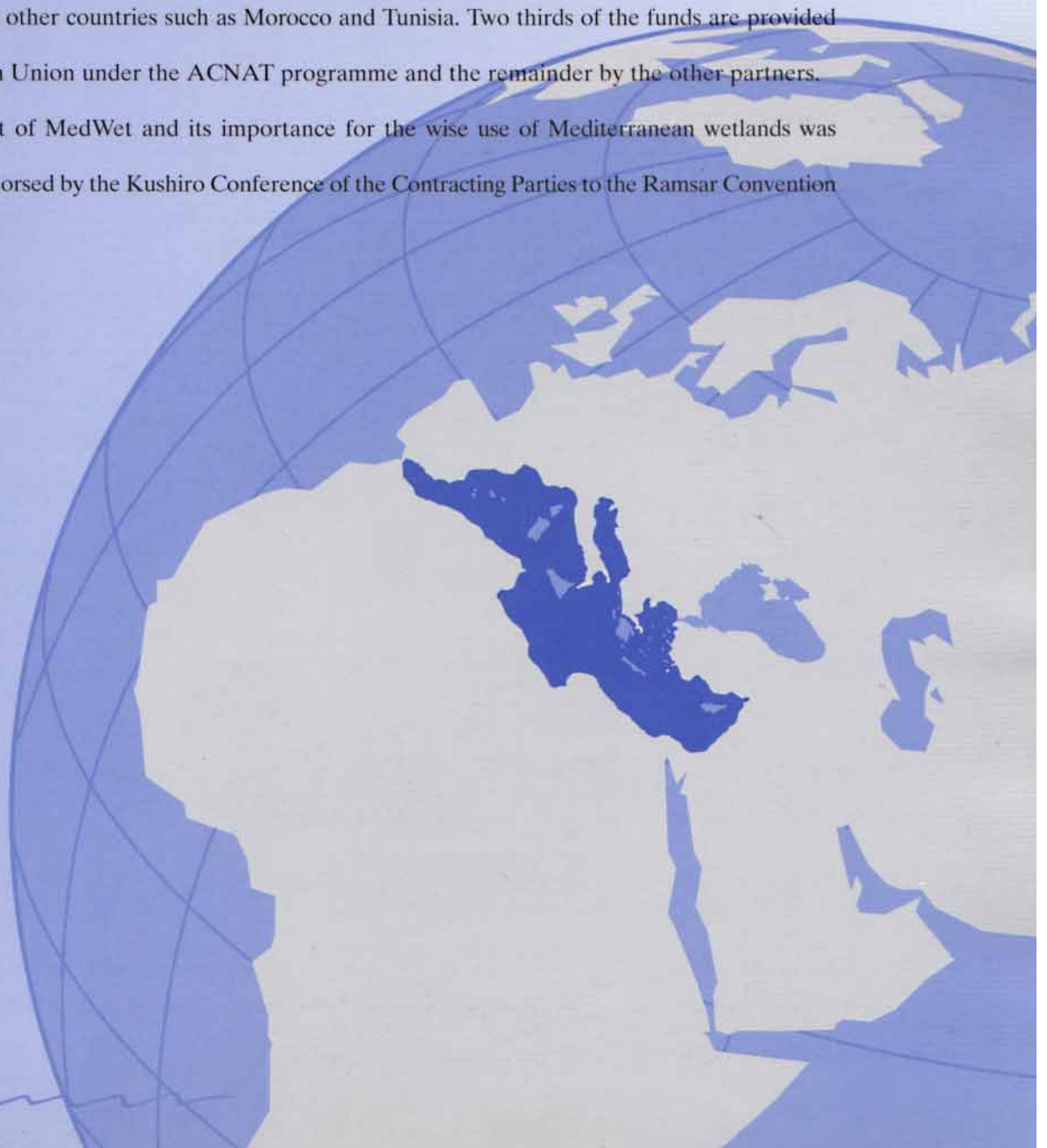
## The Medwet Action

The Mediterranean basin is rich in wetlands of great ecological, social and economic value. Yet these important natural assets have been considerably degraded or destroyed, mainly during the 20th century. To stop and reverse this loss, and to ensure the wise use of wetlands throughout the Mediterranean, a concerted long-term collaborative action has been initiated under the name of MedWet.

A three year preparatory project was launched in late 1992 by the European Commission, the Ramsar Convention on Wetlands of International Importance, the governments of France, Italy, Spain, Greece and Portugal, the World Wide Fund for Nature, Wetlands International (former IWRB) and the Station Biologique de la Tour du Valat.

This project focuses on that part of the Mediterranean included within the European Union, with pilot activities in other countries such as Morocco and Tunisia. Two thirds of the funds are provided by the European Union under the ACNAT programme and the remainder by the other partners.

The concept of MedWet and its importance for the wise use of Mediterranean wetlands was unanimously endorsed by the Kushiro Conference of the Contracting Parties to the Ramsar Convention in June 1993.





One of the methodologies developed under the MedWet project concerns Mediterranean wetland inventory. This subproject was undertaken jointly by the Instituto da Conservação da Natureza (ICN) of Portugal and Wetlands International, together with the assistance of a number of other agencies and partners.

The MedWet inventory work aimed to assess the status of existing wetland inventories in the Mediterranean region in order to identify the gaps and review the adequacy of the methods used, and to prepare a standard methodology for carrying out inventories of Mediterranean wetlands.

The MedWet Inventory Methodology includes a Manual for Mediterranean wetland inventory and a suite of publications on separate but linked tools, which allow wetland inventories to be conducted at a number of different levels. The whole methodology can be found in the set of five volumes comprising:

Volume I

**M**editerranean Wetland Inventory: *A Reference Manual*

explains the inventory process and provides a basic introduction to each of the inventory tools.

Volume II

**M**editerranean Wetland Inventory: *Data Recording*

presents the inventory Datasheets and their Guidelines.

Volume III

**M**editerranean Wetland Inventory: *Habitat Description System*

explains the MedWet Habitat Description system and gives guidelines for its application.

Volume IV

**M**editerranean Wetland Inventory: *Photointerpretation and Cartographic Conventions*

describes the MedWet mapping conventions.

Volume V

**M**editerranean Wetland Inventory: *Database Manual*

presents the MedWet inventory Database software and user Manual for data storage (available as a separate publication).



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# 1

# Introduction



# 1. Introduction

A critical step in the elaboration of a programme for the conservation of wetlands is the execution of an inventory and the identification of sites which require priority actions. A major goal of such inventories is to draw the attention of local, national and international agencies to the value of wetlands, to determine their conservation status, and to establish a basis for a national wetland conservation programme. In order to achieve this goal, it is necessary to use standard methods for the collection and presentation of data to ensure compatibility of results and to improve co-ordination of national efforts.

One of the objectives of the Inventory and Monitoring sub-project of MedWet was to complete the necessary preparatory actions to enable the completion of national wetland inventories for all the Mediterranean countries.

The existing national and international wetland inventories carried out in the Mediterranean region and elsewhere in the world have been analysed (Hecker & Tomàs Vives 1995) in order to identify all the possible requirements at the different levels of the methodology. The analysis of the types of information collected in these various inventories has enabled selection of those which are essential for a complete description of any wetland area. A set of data sheets and a database were produced with the objective of providing basic concepts and procedures for the recording and storage of data necessary for the inventory and mapping of wetlands throughout the Mediterranean region.

The MedWet data sheets have been designed to incorporate three main principles:

- **Compatibility**

The data sheets are based on existing experiences. They contain the information fields required by existing international programmes which include wetland inventory: Ramsar Convention, CORINE Biotopes and Natura 2000. Their format is compatible with these programmes.

- **Uniformity**

The data categories presented in the data sheets cover a broad array of information. Although Mediterranean wetlands are very diverse, they can be described in a standard way. The data categories required for their description are common to all of them. Their presentation in a standard way in the data sheets and their storage in the MedWet Database will allow further comparisons and analysis of inventories from different countries or different regions within a country. The key for these future uses is the uniformity in data collection and data storage.

- **Flexibility**

Although it is necessary that inventories are carried out in a uniform and compatible way, it is essential that the methodology fulfils the requirements of each user according to his or her objectives, to the technical ability and financial and human resources available. Therefore, the data sheets include a large number of data categories, among which the user should choose those that are needed for that particular wetland inventory. This flexibility allows the user to

see

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Mediterranean  
Wetland Inventory:  
A Reference Manual

see

Volume V

Mediterranean  
Wetland Inventory:  
Database Manual

*see*

**Volume I**

Mediterranean  
Wetland Inventory:  
A Reference Manual

start with a simple inventory, as a first step in the procedure, and to make it more complete as soon as information and/or resources are available. It has to be kept in mind that some data categories should always be retained as the minimal basic information. The data sheets can be used by scientists, conservationists, water and river authorities, developers, etc.. This tool must be usable and useful for any organisation or country who needs it, whatever their technical and financial resources.

The data sheets have been tested in six countries of the Mediterranean basin in order to ensure their applicability to a wide range of situations.



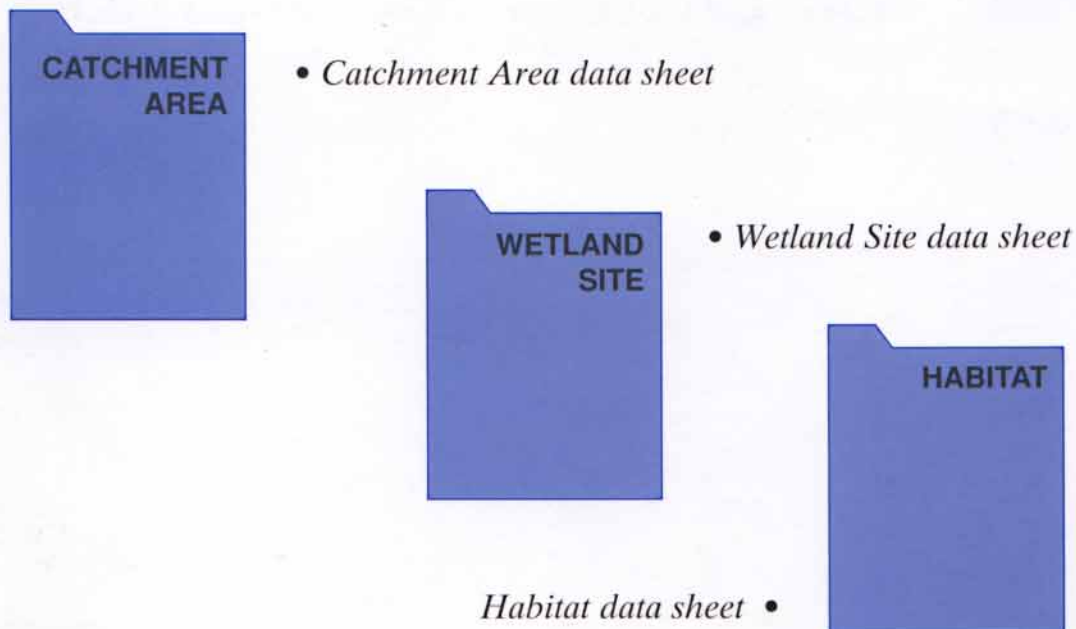
# 2

## Guidelines for Data Recording



## 2. Guidelines for Data Recording

The MedWet methodology for data recording proposes three data sheets, each with a different scope:



see

### Volume I

Mediterranean  
Wetland Inventory:  
A Reference Manual

They correspond to the three possible levels of information required to describe wetlands . These data sheets allow the recording of information at the level of detail required in each case and avoid duplication. To complement them, additional information can be collected in specific forms: Flora, Fauna, Activities and impacts, Meteorological data and References.

see

### Volume V

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Wetland Inventory:  
Database Manual

All the information collected with these data sheets can be entered into the MedWet Database developed under this sub-project, which allows the storage, analysis and presentation of the inventory information and a possible compilation at a Mediterranean regional level. This relational database could be linked to a detailed mapping system using Geographic Information System technology.

### Which data sheets to complete for a simple or a detailed inventory ?

see

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A Reference Manual

According to the resources and the time and information available, the inventory can be carried out at different levels: research of existing information, the simple inventory or the detailed inventory. This set of data sheets should be used as a flexible tool which can be adapted to any special needs.

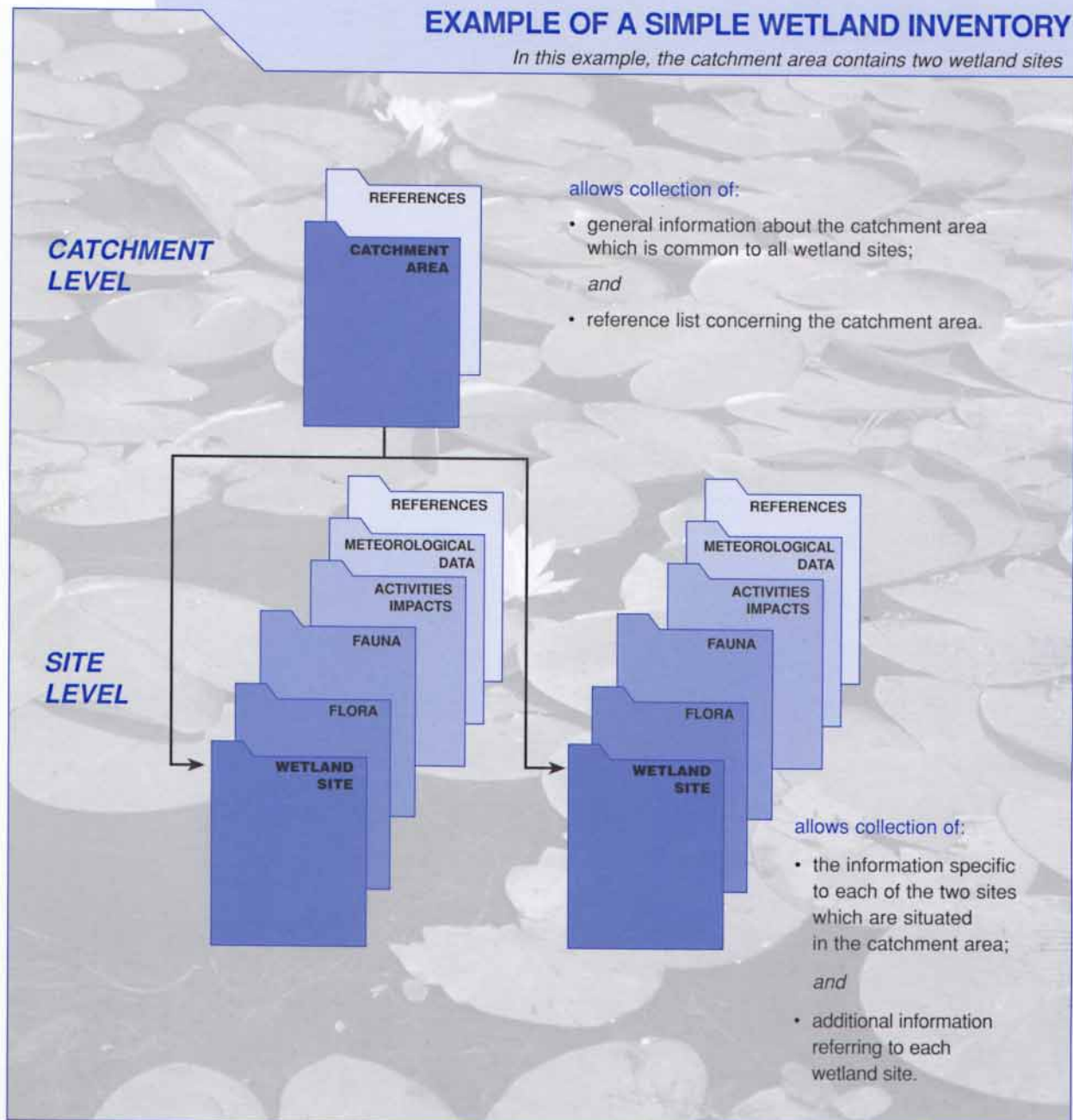


For a **simple wetland inventory**, the catchment area and the wetland sites should be described. Even for a very simple inventory a References form should be appended to the *Catchment Area data sheet* and to the *Wetland Site data sheet*. Specific forms to collect site data on *Flora*, *Fauna*, *Activities and impacts* and *Meteorology* should be attached (see box below).

Simple and detailed inventories have been separated in order to simplify the explanations. However, the inventory is an evolutionary process and there are no strict limits between these two phases. If the inventory is carried out at simple level (up to wetland site), it is nevertheless possible to describe some target sites in detail using the *Habitat data sheet*.

## EXAMPLE OF A SIMPLE WETLAND INVENTORY

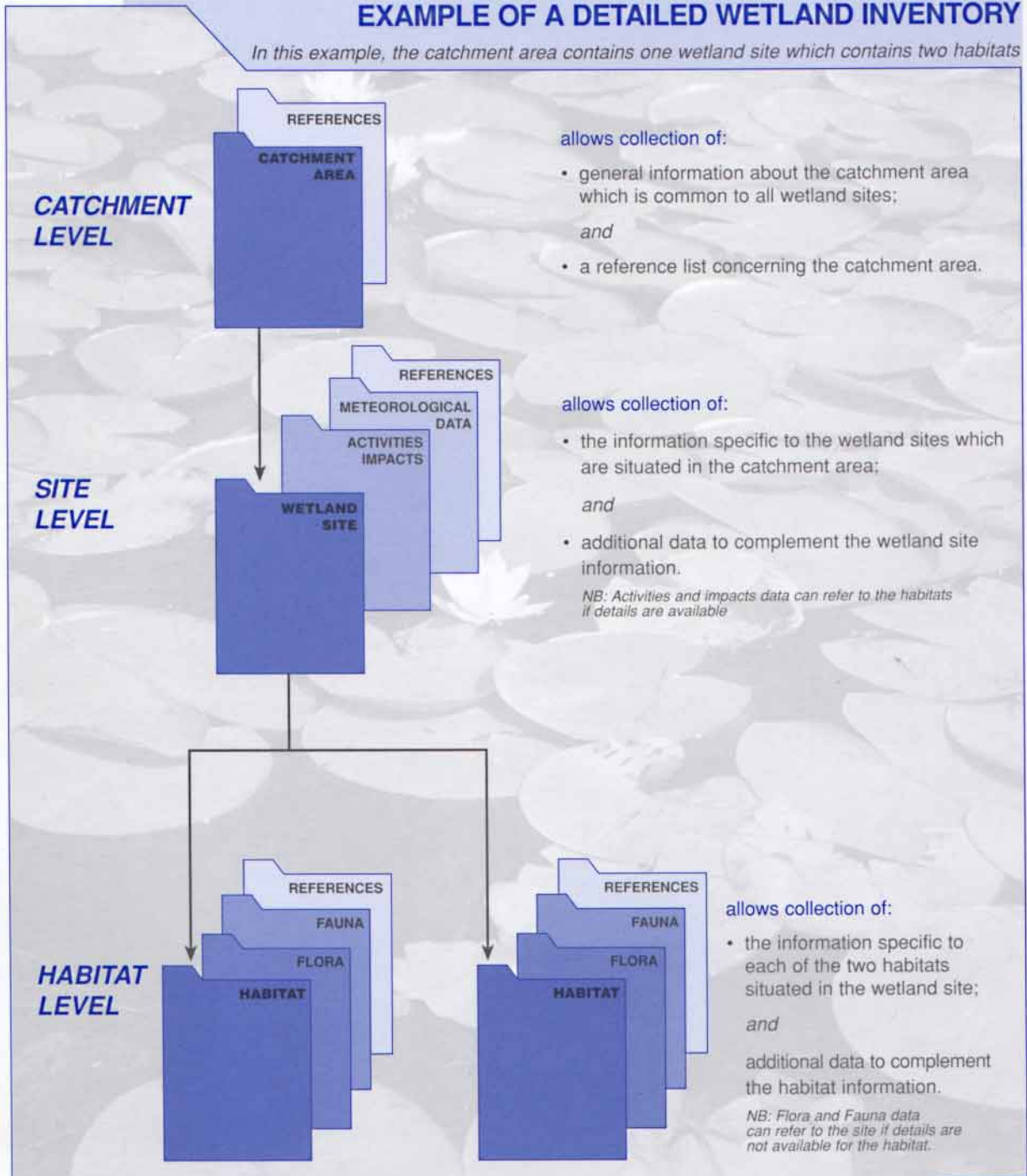
*In this example, the catchment area contains two wetland sites*



For a **detailed wetland inventory**, the wetland site will be divided into discrete units of wetland habitats. Therefore, three levels will be described: *Catchment area*, *Wetland site* and *Habitat* (see box below). The *Meteorological data* will always refer to the site. Data on *Flora*, *Fauna* and *Activities and Impacts* can be collected on specific forms. They refer independently either to the site or to the habitats according to the available information and resources. In the example presented below (see box) *Activities and Impacts* refer to the site, and *Flora* and *Fauna* refer to the habitats. A *References* form will be appended to the *Catchment area data sheet* and another one to the *Site data sheet*. This last will include all the references concerning the site and its habitats.

### EXAMPLE OF A DETAILED WETLAND INVENTORY

In this example, the catchment area contains one wetland site which contains two habitats



## Which data can be collected with these data sheets ?

### CATCHMENT AREA

Wetlands cannot be considered as independent entities. They are strongly linked to their catchment areas. Therefore, the MedWet inventory methodology allows the collection of general information about the catchment area, which normally includes several wetland sites. This helps to avoid duplication of information in the *Site data sheet*.

One *Catchment Area data sheet* will contain information concerning one or more wetland sites.

The Catchment Area data sheet includes:

- Identification of the Catchment area;
- Location;
- Physiographical information;
- Population, landcover;
- Impacts and threats.

### WETLAND SITE

The *Site data sheet* allows the collection of information about the wetland site as a whole. If more details are required the site can be divided into habitats. These habitats will be described in the *Habitat data sheet*.

The Site Data Sheet includes:

- Identification of the site;
- Location;
- Description (physiographical and ecological information);
- Values;
- Status (designation, site tenure, management).

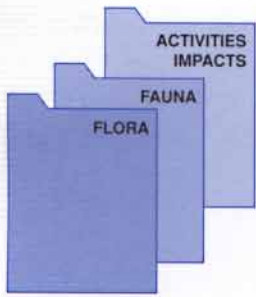
### HABITAT

The *Habitat data sheet* allows the collection of information about each habitat occurring at the site. The habitats can be identified and coded according to either the CORINE biotopes (level 2) or the Ramsar typologies, or using the MedWet Habitat Description system. The choice between the different systems depends on the level of detail required by the user, as explained in *Volume I - Mediterranean Wetland Inventory: A Reference Manual*.

The Habitat data sheet includes:

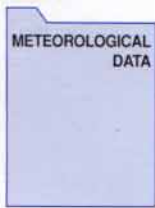
- Coding of the Habitat;
- Water permanency and Salinity if Ramsar or CORINE biotopes classifications are used;
- Area;
- Maximum depth;
- Condition of the habitat concerning human-induced changes;
- Artificiality of the water regime;
- pH range of the water;
- Description of the habitat.

### Additional data



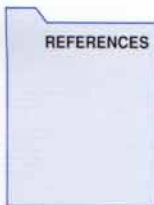
*Activities and impacts* are listed with their trend and importance at various levels. *Flora* species are listed with the cover and height of each one. *Fauna* species are recorded with their abundance and their status (breeding, wintering, etc.).

These forms may refer independently to the wetland site or to the wetland habitat according to the level of detail required in each case.



If available, *Meteorological Data* from the most relevant meteorological station should be appended to the *Site data sheet*.

The Meteorological Data form includes information on evaporation, ice/snow cover duration, temperature and rainfall.



A *References* form should always be completed even for a simple inventory. Before starting the inventory, it is recommended to compile a list of all the relevant references dealing with the wetlands. If possible, the references will be entered in the *MedWet Database* in order to produce a list which will be available to the compilers. If you do not have the *MedWet Database* yet, it is still recommended to establish a list of all references (e.g. using a Word Processor).

The References form allows information to be collected about references (publications, maps, aerial photographs) and key contacts.

### Which data to select for a simple or a detailed inventory ?

The information fields presented in these data sheets are quite complete. Among these fields, we have selected key fields which are essential to describe wetlands. They are easy to recognise: in the guidelines and in the data sheets, they are marked with \* (e.g. **Date\***), and with a blue arrow in the left hand margin of the guidelines

- **We advise users to complete these key fields** as they represent basic information needed for wetland description, we consider them as essential fields which should be recorded in all wetland inventories even for a simple inventory.

Other fields are complementary and will be selected according to the aim of the inventory. A detailed inventory could include all of them.

However, the choice of the information fields to be completed depends on the aim of the inventory and on the inventory co-ordinator. For example, if the aim of the inventory is very specific or if very few resources are available, it is possible to make a restricted selection of fields. In this case, the completion of the other key fields can be planned for the future.

Many entries on these data sheets include "remarks" fields which allow the addition of extra information if necessary. These "remarks" correspond to memo fields in the MedWet Database, where free text can be entered.

Once the information fields are selected, the inventory co-ordinator can (if needed) elaborate *Simplified data sheets* which only include these selected data categories. It is strongly recommended not to add new fields in these data sheets, because it would not be possible to enter these data in the database which has a strict format. If extra information needs to be recorded, it can be included in the "remarks" fields.

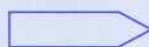
The information fields include two types of data: data which can be found in existing publications or with key contacts, and data which will be collected in the field. The choice of data to be collected in the field will depend on the availability of existing information. For example, if there are very few existing data, or only out of date information, then the field work will be a very significant part of the inventory. *Field data sheets* can be elaborated with only the required data categories to be collected in the field.

The following guidelines should be used as a key tool for the completion of the data sheets.

**NEED  
TO  
KNOW**



KEY INFORMATION FIELDS



OTHER INFORMATION FIELDS



IMPORTANT  
INFORMATION



IMPORTANT  
RECOMMENDATION



# 2

# Guidelines for Data Recording

## 2.1. Catchment Area

**MedWet** **CATCHMENT AREA**

Country: \_\_\_\_\_  
 Catcher's name: \_\_\_\_\_  
 Address: \_\_\_\_\_ Date: (DDMMYY)

Catchment area code:  Name of the catchment/catchment area: \_\_\_\_\_

**1. LOCATION**  
 Latitude:  <sup>N</sup> and  <sup>S</sup>  
 Longitude:  <sup>W</sup> and  <sup>E</sup>  
(Latitude 00)

**2. PHYSIOGRAPHICAL INFORMATION**  
 Area: \_\_\_\_\_ River Length: \_\_\_\_\_  
(Area: km<sup>2</sup>)

**CLIMATE**  

	Minimum	Maximum	Climate remarks
Rainfall (mm)			
Temperature (°C)			
Period of recording (years)			
Dominant wind direction			
1.			
2.			
3.			
4.			
5.			

(Add extra sheets if necessary)

**HYDROLOGY**  
(Use extra sheets)  
(Add extra sheets if necessary)

## 2.1. Catchment Area

This data sheet is designed to collect information on catchment areas and therefore to compile data which are common to all wetlands situated within a catchment area.

The catchment area is generally defined as an area drained by a river and all its tributaries (Finlayson & Moser 1991). It includes all the upstream land and water surface area which drains to a location (Gordon *et al.* 1992). In the case of wetland(s) situated in endoreic basin without an outlet to the sea, the area considered will be the one from which water (surface runoff and water courses) drains into the wetland(s).

If the country or region where the inventory is carried out has already official delimitations of the catchment areas, these definitions should be used (see national water authorities). Otherwise, the catchment area limits should be established. The area is delimited by the topographic divide, a theoretical line which passes through the highest points between a catchment area and those neighbouring it (Gordon *et al.* 1992). Catchment boundaries should be located by using the contour lines on a topographical map.

It is important to collect data on the area which is directly related to the wetland site because, at this scale, any action may have an impact on the site. Therefore, in the case of very large catchment areas (e.g. Rhône in France, Tejo in Portugal and Spain, Ebro in Spain), it might be more convenient and useful to consider sub-divisions of the catchment areas (i.e. sub-catchment area). This choice will depend on the aim and scale of the inventory and will have to be defined by the team responsible for the inventory.

see

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- Information on catchment areas is sometimes difficult to find because available data often refer to administrative divisions. However, it has to be kept in mind that approximate data might be very useful when precise figures are not available.



- Please append **a map showing the limits of the catchment or sub-catchment area.**
- All the references used to compile this data sheet should be listed in the References form.
- If there is not enough space in the boxes, **use extra pages** specifying a sheet number.



**Compiler's name\***: the name of the person(s) filling in the data sheet

**Address\***: the full address of the person(s) filling in the data sheet, including name of the organisation, telephone, fax and e-mail numbers if available.

Compiler's name\*:

Address\*:



**Date\***: the date on which the data sheet was completed, in the format day/month/year (e.g. 15/03/96).

Date \* (DDMMYY):

--	--	--	--



**Catchment area code\***: the national code (up to four digits) assigned for this catchment area. A list of catchment areas and corresponding codes must be established at national level in the



country where the inventory is carried out. For example, in Portugal, two letters are used to identify each catchment area (see example in **Appendix A**), and two extra digits may be used to subdivide the catchment area (e.g. secondary rivers or streams).



**Name of the catchment/sub-catchment area\***: the catchment area is identified by the name of its main river. If there is no big river in the defined catchment area, it will be identified as an area located between the catchment areas of two main rivers and named as "between river a and river b" (e.g. between Tejo and Sado, Portugal). The names are entered in the national language of the country.

**Catchment area code\***  
(or sub-catchment)

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
C	C	S	S

**Name\*** of the catchment/sub-catchment area:

### 2.1.1. LOCATION



**Latitude\* / longitude\***: the northernmost and southernmost latitude limits of the catchment area and also its easternmost and westernmost longitude limits. The coordinates are given in degrees, minutes and seconds. The latitudes are always in the Northern hemisphere and indication for longitudes must be specified whether location is West or East to the meridian of Greenwich.

Note: We recommend the adoption of the Unified European Geodetic Grid, Datum European 50, International Ellipsoid as the geodetic reference system (in the geodetic coordinates as well as on the plane coordinates with the Universal Transverse Mercator (UTM) Projection). If the inventory co-ordinator decide to use a different system, this system must be clearly define at the beginning of the inventory process.

**Latitude\***

*between*

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	N
----------------------	----------------------	----------------------	----------------------	---

*and*

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	N
----------------------	----------------------	----------------------	----------------------	---

**Longitude\***

*between*

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------	----------------------

*and*

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------	----------------------



**Altitude**: the minimum and the maximum altitudes above sea level recorded for the catchment area, in metres.

Altitude (m)

*Minimum:*

*Maximum:*

### 2.1.2. PHYSIOGRAPHICAL INFORMATION



**Area\***: the surface area of the catchment area in Km<sup>2</sup>



**River length**: when the catchment area includes one major river, complete this box with the length of this river, in Kilometres.


**Area\*** (Km<sup>2</sup>):


River Length (Km):




### Climate


**i** • The **annual** values of rainfall and temperature (see below) refer to the climatologic normal, i.e. the **average** values for the longest reference period as reported by meteorological centres. This reference period will ideally be thirty years if data are available. If data started to be collected more recently, the annual values will be calculated for the longest reference period possible.


 **Rainfall:** the minimum and maximum **annual** rainfall, in millimetres, recorded within the catchment area.

 **Temperature:** the minimum and maximum **annual** temperature, in degrees Celsius, recorded within the catchment area.


 **Period of recording:** the reference period of recording used to calculate the **annual** values for rainfall and temperature e.g. *from: 1966 to: 1996*.

Rainfall (mm)	<i>Minimum:</i>	<i>Maximum:</i>		
Temperature (°C)	<i>Minimum:</i>	<i>Maximum:</i>		
Period of recording (years)	<i>from:</i>		<i>to:</i>	

 **Dominant bioclimates:** bioclimatic classes in the catchment area following the Emberger bioclimatic system (**Appendix B**).

 **% Cover:** approximate percentage of the catchment area covered by each bioclimate. Note that detailed figures are not needed.

Dominant bioclimates	<i>cover (%)</i>
1.	
2.	
3.	
4.	
5.	

 **Climate remarks:** please add any details or peculiarities on the bioclimate definitions used and include other useful remarks about the climate of the region, e.g. regular periods of time between large floods, dominant winds that are important for the region, etc.

Climate remarks

---



---

*(add extra sheets if necessary)*



**Flow:** the estimated flow for the catchment area in Hm<sup>3</sup> (equivalent to 10<sup>6</sup> m<sup>3</sup>) per year.



**Hydrology:** a description of the main hydrologic patterns of the catchment area .

## HYDROLOGY

Flow (Hm<sup>3</sup>/ year):

*(add extra sheets if necessary)*



**Geology/geomorphology:** a description of the main geological and geomorphological features which characterise the catchment area, covering the geological origins and main types of soils.

## GEOLOGY/GEOMORPHOLOGY

*(add extra sheets if necessary)*

### 2.1.3. POPULATION, LANDCOVER AND IMPACTS



- In general, population and landcover information is available for administrative regions which do not coincide with the catchment areas. In this data sheet, only the catchment area is considered. Therefore, in many cases data requested will have to be estimated and the figures given can be approximations. Exact figures are not needed, unless they are easily available.



**Number of villages/towns:** number of villages and towns with less than 1,000 inhabitants, between 1,000 and 10,000 inhabitants, between 10,000 and 100,000 inhabitants, and with more than 100,000 inhabitants. If the exact numbers are not known, please include approximations. Add the year of recording.



**Population remarks:** information about the estimated total human population of the catchment area, the density and the seasonality of the population (if appropriate).



**CORINE LandCover types:** the approximate percentages of the catchment area devoted to: artificial surfaces (urban and industrial), agricultural areas (agriculture and pastures), forest and semi-natural areas, wetlands (marshes, bogs, salines, flats) and water bodies (water courses and bodies, lagoons, estuaries, sea and ocean). These categories were defined by the CORINE LandCover project (European Communities Commission 1992).



**LandCover remarks:** information about the distribution of the most important land-uses and human activities within the catchment area. If possible, enter the relative proportion of irrigated and non-irrigated types of agriculture.



## 2.1 Catchment Area

### POPULATION

Number of villages/towns of

< 1,000 hab.	<input type="text"/>
1,000-10,000 hab.	<input type="text"/>
10,000-100,000 hab.	<input type="text"/>
>100,000 hab.	<input type="text"/>
Year of recording:	<input type="text"/>

*Population remarks  
(human population, density and seasonality):*

### CORINE LandCover types

Percentage (%) of area devoted to

artificial surface	<input type="text"/>
agricultural areas	<input type="text"/>
forest/semi-natural areas	<input type="text"/>
wetlands	<input type="text"/>
water bodies	<input type="text"/>

*LandCover remarks:*



**Global impacts and threats:** the main impacts and threats resulting from the human activities and natural processes occurring within the catchment area that may have an influence, either positive or negative, on the conservation of the wetland sites included within the catchment area.

### GLOBAL IMPACTS AND THREATS

*(add extra sheets if necessary)*

# 2

## Guidelines for Data Recording

### 2.2. Wetland Site

**WETLAND SITE**  
Sheet number

**MedWet**

Country: \_\_\_\_\_  
 Compiler's name: \_\_\_\_\_  
 Address: \_\_\_\_\_ Date: (DDMMYY) 

--	--	--

**1. IDENTIFICATION**

Site code: 

--	--	--	--	--	--	--	--	--	--

 Local name of the wetland: \_\_\_\_\_  
Other name: \_\_\_\_\_

Other codes: 

--	--	--	--	--	--	--	--

Savanna 2000  
COWINE: Biotope  
Rainforest  
Mid. SPA (Savanna Core)

IWC: 

--	--	--	--	--	--	--	--	--	--

IWA Tick a box for each of the wetlands

**2. LOCATION**

Geographical coordinates: 

--	--	--	--	--	--	--	--	--	--

Latitude Longitude UTM

Administrative divisions	
Code	Subdivisions

Location remarks: (insert data, add page no. if 2)

Catchment area code: 

--	--	--	--

Name of the catchment sub-catchment area  
(see sub-catchment)

Part of a complex? (Y/N)  If yes, name of the complex:

--	--	--	--	--	--	--	--	--	--

  
Geographical coordinates of the complex

## 2.2. Wetland Site

This data sheet is designed to collect baseline information on the wetland site and should not require extensive field work and map or aerial photo interpretation. Maximum information should be obtained from reference works (published and unpublished) and key contacts and then updated with local experts, if necessary.

see

### Volume I

Mediterranean  
Wetland Inventory:  
A Reference Manual

- The inventory can stop at site level (Simple Inventory). In that case, the compiler should complete a *Wetland Site* data sheet and a reference form.
- To complement this information, the compiler can provide data about *Flora*, *Fauna* and *Activities and Impacts* for each site. The corresponding forms will be completed.



- If the data contained in the Wetland Site data sheet are considered insufficient, the *Habitat data sheet* should also be used.
- If new data categories are needed, they can be recorded in a new form prepared by the user. However, it has to be kept in mind that it will not be possible to enter these new data categories in the MedWet Database.

see

### Volume I

Mediterranean  
Wetland Inventory:  
A Reference Manual

- For more information about site selection and delineation, please see *Volume I. Mediterranean Wetland Inventory: A Reference Manual*.

- All the references used to compile this data sheet have to be listed in a *References form*.



- It is very important to append an outline **map of the site**. The map should include the boundary of the site, scale, latitude and longitude, compass bearing, date, some basic topographical information, main roads, major landmarks (towns, roads, etc.) and other notable features. A copy of a 1:25,000 or 1:50,000 scale map displaying the site in some detail is desirable.
- If there is not enough space in the boxes, **use extra pages** specifying a sheet number.



**Compiler's name\***: the name of the person(s) filling in the data sheet



**Address\***: the full address of the person(s) filling in the data sheet, including name of the organisation, telephone, fax and e-mail numbers if available.

Compiler's name\*:

Address\*:



**Date\***: the date on which the data sheet was completed, in the format day/month/year (e.g. 15/02/95).

Date \* (DDMMYY):

--	--	--

## 2.2.1. IDENTIFICATION

**Site code\***: it is essential to give a code to each site. This code has to be unique and will help to link all the information referring to a site. The site codes must be established at national level. One site code is composed by a maximum of nine alphanumeric characters. The characters 1 and 2 of the code must be the ISO code that identify the country (**Appendix C**). There are various way to elaborate codes. Before starting the inventory, the co-ordinator should establish a standard process to create site codes for all the sites of the area. A suggestion for establishing site codes can be found in **Appendix D**

**Usual name of the wetland\***: the common local name of the wetland site. Site names are entered in the national language.

**Other names**: other names used for identification of the site, e.g. other local names.

<b>Site code*</b>	<input type="text"/>	<b>Usual name of Wetland*:</b>
		<i>Other names:</i>

**Other codes**: quote any site codes and references to other inventories covering this site, e.g. Natura 2000, CORINE biotopes, Ramsar Convention, Barcelona Convention, International Waterfowl Census or Important Bird Areas. If any other site inventory or list or database is to be referred to, please name it in the boxes marked with<sup>1</sup>.

Other codes:			
Natura 2000	<input type="text"/>	IWC	<input type="text"/>
CORINE Biotopes	<input type="text"/>	IBA	<input type="text"/>
Ramsar	<input type="text"/>	1	<input type="text"/>
Med. SPA (Barcelona Conv.)	<input type="text"/>	1	<input type="text"/>

<sup>1</sup>Give the name of the inventory

## 2.2.2. LOCATION


**Geographical coordinates\***: the latitude and longitude of the approximate centre of the wetland site, expressed in degrees, minutes and seconds.

**UTM**: The UTM code is composed by seven alphanumeric characters. The first three characters are the Grid Zone Designation (e.g. **29S**) followed by two characters identifying the 100x100 km square (e.g. **NB**) and two characters identifying the 10x10 km square in which the wetland lies (e.g. **29SNB23**).




We recommend the adoption of the Unified European Geodetic Grid, Datum European 50, International Ellipsoid as the geodetic reference system (in the geodetic coordinates as well as on the plane coordinates with the Universal Transverse Mercator (UTM) Projection). If the inventory co-ordinator decides to use a different system, this system must be clearly defined at the beginning of the inventory process.


<b>Geographical coordinates*</b>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	N	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<b>UTM</b>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	(10X10 km)
----------------------------------	----------------------	----------------------	----------------------	----------------------	---	----------------------	----------------------	----------------------	----------------------	----------------------	------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	------------


 **Altitude:** the minimum, maximum and average altitudes recorded within the wetland site, in metres. If needed, the average altitude could be calculated as the weighted average of the altitude classes within the site.

Altitude (m)	Minimum:	Maximum:	Average:
--------------	----------	----------	----------


**Administrative divisions**

 **Codes\*:** for Portugal, Spain, France, Italy and Greece, indicate the NUTS 3 codes to which the sites belongs (Nomenclature of Territorial Units for Statistical created by EUROSTAT and listed in **Appendix E**). For non-European Union countries use, if available, an existing hierarchical list and codes for administrative divisions. If such a list does not exist or is not available, a new one should be developed (see **Appendix E**). If the wetland site is included in more than one administrative division, all of them should be indicated.

 **Cover:** the approximate percentage of the site area which falls in each administrative division.

 **Subdivision(s):** the name of administrative divisions at a lower administrative level, but which have a closer jurisdiction on the site management, e.g.: "concelhos" in Portugal, "municipios" in Spain, "communes" in France, etc.. If the site falls in several subdivisions, list them on the same line.


Administrative divisions						
Codes*					cover(%)	Subdivision(s)

 **Location remarks\*:** information about the location of the site and how to get there. Most important information includes the name and distance to the nearest towns, any roads and other ways to reach the site, and the names of all major rivers in the area.

**Location remarks\*** (nearest town, major river,etc.):

---


*(add separate sheets if necessary)*

 **Catchment/sub-catchment area code\*:** the code of the catchment or sub-catchment area in which this wetland site is included, as used in the *Catchment Area data sheet*.




 **Name of the catchment/sub-catchment area name\***: the name of the catchment or sub-catchment area in which this wetland site is included, as in the *Catchment Area data sheet*.

<b>Catchment area code*</b> (or sub-catchment)	<table border="1"><tr><td></td><td></td><td></td><td></td></tr><tr><td>C</td><td>C</td><td>S</td><td>S</td></tr></table>					C	C	S	S	<b>Name</b> * of the catchment/sub-catchment area:
C	C	S	S							

 **Part of a wetland complex\***: if the wetland site is part of a larger complex of wetland sites with close affinities in hydrology, climate and human activities, write Y (for Yes) and specify the name of the complex. If not simply write N (for No).


<b>Part of a complex?*</b> (Y/N) <input type="checkbox"/>	If yes, name of the complex*:
-----------------------------------------------------------	-------------------------------


 **Geographical coordinates of the complex**: the latitude and longitude of the approximate centre of the wetland complex, expressed in degrees, minutes and seconds.

Geographical coordinates of the complex	<table border="1"><tr><td></td><td>"</td><td></td><td>'</td><td></td><td>"</td><td>N</td></tr></table>		"		'		"	N	<table border="1"><tr><td></td><td>"</td><td></td><td>'</td><td></td><td>"</td></tr></table>		"		'		"
	"		'		"	N									
	"		'		"										

### 2.2.3. DESCRIPTION

 **Wetland area\***: the surface area of the wetland site, in hectares.

 **Length**: this field is to be filled when the area measurements are not relevant (e.g. narrow streams, coast, cliffs). Entered in kilometres.

 **Site description\***: a short description of the wetland site in a few sentences, with an overview on general characteristics, physical and ecological features, etc.

	Wetland area* (ha):	Length (m):
<b>General site description*</b> :		
<i>(add separate sheets if necessary)</i>		

#### 2.2.3.1. Physiographical information

##### *CLIMATE*

 **Bioclimate**: bioclimatic class of the wetland site following the Emberger bioclimatic system, as for the catchment area data sheet (**Appendix B**).

• <i>CLIMATE</i>	Bioclimate:
------------------	-------------

➤ **Meteorological station:** the *distance*, *code* and *name* of the most representative meteorological station to the limits of the wetland site (in most cases it will be the closest one). If the meteorological station is within the wetland site fill in distance with **0**. If there is a second relevant station fill in the line *Other*. For the code, see also chapter 2.7. *Meteorological data*.

Meteorological station	<i>Distance (Km)</i>	<i>Code</i>	<i>Name</i>
<i>Other</i>			

➤ **Climate remarks:** add any useful information, especially if there is no meteorological station corresponding to this site.

Climate remarks:

---

*(add separate sheets if necessary)*

**WATER REGIME**

➤ **Inflow:** fill in the first character (a) with the code of the *inflow type* (**1** - Sea/Ocean; **2** - River; **3** - Flood water; **4** - Ground water; **5** - Spring; **6** - Rain only; **7** - Artificial) and the second character (b) with the *inflow permanency* (**1** - Permanent; **2** - Non-permanent), fill in several double boxes if there are several inflows.

➤ **Outflow:** fill in with the type of outflow of water from the wetland site (**0** - None (evaporation only); **1** - Permanent; **2** - Intermittent; **3** - Artificial).

• **WATER REGIME**    **Inflow**<sup>1</sup>                            **Outflow**<sup>2</sup>  

a b    a b    a b    a b    a b    a b

➤ **Inflow/outflow remarks:** any specific remarks on the water balance for the wetland site that can complement the above information. If the inflow or outflow is controlled, specify it here.

Inflow/Outflow remarks:

---

*(add separate sheets if necessary)*

➤ **Presence of water**  
 For each month fill in with two characters: the first character (a) refers to the **presence** or absence of water for the relevant month (**1** - Totally dry; **2** - Partially flooded; **3** - Totally flooded); the second character (b) refers to the **regularity** of this flooding (**1** - Never flooded; **2** - Exceptionally flooded; **3** - Regularly flooded; **4** - Permanently flooded).

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<small>a b</small>	<small>a b</small>	<small>a b</small>	<small>a b</small>	<small>a b</small>	<small>a b</small>	<small>a b</small>	<small>a b</small>	<small>a b</small>	<small>a b</small>	<small>a b</small>	<small>a b</small>



**Hydrology remarks:** write any detail on hydrology, water chemistry, flooding patterns, flood depths, causes for exceptional floods, and exceptions for the pattern of floods specified before.

Hydrology remarks:

*(add separate sheets if necessary)*

### **GEOLGY/GEOMORPHOLOGY**



**Geology/geomorphology and other physical characteristics:** a description of the main geological and geomorphological features which characterise the site, covering the geological origins and main types of soils.

#### **• GEOLOGY/GEOMORPHOLOGY**

Geology/geomorphology and other physical characteristics:

*(add separate sheets if necessary)*

## **2.2.3.2. Ecological information**

see

**Volume I**

Mediterranean  
Wetland Inventory:  
A Reference Manual

This ecological information aims to give a general overview of the wetland types present at the site. Several systems are proposed here:

CORINE Biotopes (up to the 2nd digit) and Ramsar classifications are the most appropriate to establish a list of broad wetland types of the site. It would be especially useful to describe sites with the Ramsar classification if they are or will be designated under the Ramsar convention.

CORINE Biotopes classification will provide a detailed description of the habitats if it is used at further levels. This classification is comprehensive for the European Union countries only. Its use requires a good knowledge of plant communities.

The Habitats Directive Annex I list will be used to identify the important habitats of the site, but it is not a classification to describe all the wetland types. It is particularly useful to list these habitats if the site will be included in the Natura 2000 network.

Three of these systems are presented as key information (marked with \* and a blue arrow) to be completed in order to provide information to the CORINE database, to the Natura 2000 network and the Ramsar database. Nevertheless, if it is not possible to fill in all these data, a choice can be done according to the aim and the use of the inventory.



**CORINE Biotopes habitats\*:** list the appropriate CORINE Biotopes codes down to the second digit level (**Appendix F**) with an indication of the approximate percentage of the site area covered by this type (if they are not already available, precise figures are not required as they are difficult to calculate).



**Other CORINE Biotopes habitats:** (optional) complete with CORINE Biotopes codes at any level to record in detail the habitats which occur within the wetland site.



## 2.2. Wetland Site

These codes can be found in Devillers & Devillers-Terschuren 1993. The list of codes and types is also included in the MedWet Database.



**Habitats Directive Annex I types\***: if they occur at the site, complete with the habitat types included in Annex I of the Habitats Directive (**Appendix G**) with an indication of the approximate percentage of the site area covered by this type (if they are not already available, precise figures are not required as they are difficult to calculate). Give special attention to priority habitats (marked with "P" in **Appendix G**).



**RAMSAR Wetland types\***: list all the Ramsar wetland types present in the site using the classification attached in **Appendix H**. For each type, indicate the code with an indication of the approximate percentage of the site area covered by this type (if they are not already available, precise figures are not required as they are difficult to calculate).

CORINE Biotopes habitats*		Other CORINE Biotopes habitats		Habitat Directive Annex I habitat types*		Ramsar wetland types*	
code*	cover(%)*	code	code	code*	cover(%)*	code*	cover(%)*



**Special remarks\***: record truly unique or extraordinary information about the site, e.g. flag particular habitats and species in the site.

**Special remarks\*** (unique or extraordinary information about the site, e. g. flag particular habitats and species about the site):

(add separate sheets if necessary)

### 2.2.4. VALUES

The values of the site will be described with two complementary systems: the Ramsar criteria which are used world-wide to identify wetlands of international importance and with a complementary list of values which is widely recognised and will help to identify the functions and values of the site at all levels: international, national, regional or local levels (**Appendix & K**).

#### **Ramsar criteria**






**Code\***: if appropriate, fill in with the codes of the criteria defined by the Ramsar Convention to identify wetlands of international importance (**Appendix J**).



**Remarks**: give a short explanation of the criteria choice

Ramsar criteria	
code*	Remarks





### Wetland values

-  **Code\***: detail the most important wetland values (described in **Appendix K**) that may be recognised for the site.
-  **Criteria scale\***: for each level; International (**I**), National (**N**), Regional (**R**) and Local levels (**L**), fill in the box with the relative importance of the wetland value: **0** probably no value at this level for this criterion, **1** Insufficient information to make a judgement at this level, **2** Low significance, **3** Moderate significance, and **4** High significance.
-  **Remarks**: any additional information and comment or justification of the attribution of the criteria, whenever appropriate.


Wetland values									
code*		Criteria scale* <sup>1</sup>				Remarks			
		I	N	R	L				

## 2.2.5. STATUS

### Conservation information

-  **Code\***: list the designation codes if the site has been designated at national or international level. For Portugal, Spain, France, Italy and Greece use the Natura 2000 list of national codes presented in **Appendix I**. For other countries, use an existing list of national protection status categories and their codes established at national level. List also the codes of international designations (**Appendix I**).
-  **Designation\***: to fill with the actual name of the specific designation corresponding to the site e.g. *Réserve Nationale de Camargue*.
-  **Legislation**: legal document (law, decree, regulation, etc.) by which the site has been designated. State the name and date of the document.
-  **Cover\***: the approximate percentage cover of the wetland site to which this designation applies.

Conservation information			
code*	Designation *	Legislation	cover (%)*

-  **Site tenure\***: general description of the ownership of the wetland site (private, state-owned, provincial, etc.) with references to the owners, whenever possible. If there is more than one type of ownership give approximate areas or percentage of each type.

**Site tenure\***

(Private, public/communal, local authority, municipality, etc.)

---

*(add separate sheets if necessary)*



**Management\***: give the name and address of the management authorities, mention if there are any current or proposed management plans for the site and the present management activities.

**Management\***

*(Name of the management authorities, management activities, etc.)*

*(add separate sheets if necessary)*



**Additional information**: record any proposed status, not included in the "Conservation/management information" because they are not officially declared yet. Add further comments on any official designations of the site. List constraints on development: development actions that should not be implemented in the wetland site, due to physical or legal constraints, from the point of view of the developer (e.g. if the site has a special type of substrate that does not allow safe building of structures). List also research and educational facilities (e.g. scientific research centre, information centre of a protected area, etc.).

**Additional information**

*(Proposed status, constraints on development, research/educational facilities)*

*(add separate sheets if necessary)*



# 2

## Guidelines for Data Recording

### 2.3. Habitat

**MedWet**  
HABITAT  
Sheet number

Site code\*

Classification / Habitat code\*  
MedWet Habitat code\*

Area\*\*  
General description

Maximum depth:  m

Water permanency\*

Condition\*

Artificiality\*

pH\*

Classification / Habitat code\*  
MedWet Habitat code\*

Area\*\*  
General description

Maximum depth:  m

Water permanency\*

Condition\*

Artificiality\*

pH\*

Classification / Habitat code\*  
MedWet Habitat code\*

Area\*\*  
General description

Maximum depth:  m

Water permanency\*

Condition\*

Artificiality\*

pH\*

Classification / Habitat code\*  
MedWet Habitat code\*

Area\*\*  
General description

Maximum depth:  m

Water permanency\*

Condition\*

Artificiality\*

pH\*

IF necessary, check every box for water habitat!

1. Classification  
2. Water permanency  
3. Water salinity  
4. Condition  
5. Artificiality  
6. pH

1. CODES: 1. Natural, 2. Seasonal, 3. Permanent  
2. From 1 (1 day) to 12 (365 days)  
3. From 1 (0 g/L) to 3 (30 g/L)  
4. 1. Channel, 2. Pool, 3. Shallow, 4. Deep, 5. Shallow, 6. Deep, 7. Shallow, 8. Deep, 9. Shallow, 10. Deep, 11. Shallow, 12. Deep  
5. 1. Natural, 2. Artificially created, 3. Artificially modified, 4. Artificially modified, 5. Artificially modified, 6. Artificially modified, 7. Artificially modified, 8. Artificially modified, 9. Artificially modified, 10. Artificially modified, 11. Artificially modified, 12. Artificially modified  
6. From 1 (6.5) to 14 (14)

## 2.3. Habitat

This data sheet is designed to collect detailed information on the wetland habitats present in the site and it will normally require fieldwork to be undertaken.

There are three proposed ways to describe the habitats using one of the following systems:

- Ramsar Convention classification system (see **Appendix H**)
- CORINE biotopes classification system up to the 2nd digit (see **Appendix F**)

*Ramsar and CORINE biotopes (up to the 2nd digit) classification systems allow the description of the wetland habitat at a broad scale. They are easy to use and to understand.*

- MedWet Habitat Description system. This method was recently developed for the Mediterranean region, based on Cowardin *et al.* 1979. It was field tested in Portugal and Greece (see **Appendix L**)

*The MedWet Habitat description system is more detailed and requires adequate fieldwork and map and/or aerial photo interpretation; it is especially aimed to be linked to detailed maps of the site. Habitat units should be identified according to the habitat description system and recorded as the Habitat Code. This habitat system (and therefore the code) has many parameters built in, i.e. system, sub-system, cover, salinity, permanence of water. The system for habitat description is presented in detail in a separate document.*

see

Volume III

Mediterranean  
Wetland Inventory:  
Habitat Description  
System

see

Volume I

Mediterranean  
Wetland Inventory:  
A Reference Manual

The advantages of these three alternative systems for habitat description are presented in detail in Volume I. Mediterranean Wetland Inventory: *A Reference Manual* in order to help to choose the most adequate system. If needed, two systems can be combined:

**Ramsar and MedWet, or CORINE biotopes and MedWet.**

- If one habitat occurs in different places at one site (i.e. there is more than one plot of the same wetland type within one site), it should be considered as two separate units, since they may have different species, human activities and impacts. Therefore each unit will be described separately.
- To complement this information, the compiler can provide data about Flora, Fauna and Activities and Impacts for each habitat. However, if this represents too much work, these additional data can be partially or completely referred to the site. This choice depends on the aim of the inventory, the resources and information available.
- All the references used to compile this data sheet have to be listed in the site References form.
- The limits of each habitat should be drawn on the **outline map** of the site.
- If there is not enough space in the boxes, **use extra pages** specifying a sheet number



**Site code\***: the code of the corresponding *Site data sheet*

**Site code\***

--	--	--	--	--	--	--	--	--	--



- If you choose to use either Ramsar or CORINE biotopes classification system, fill in the following:



**Classification/Habitat code\***: if you choose the CORINE system, complete the first cell with 1 and the 2nd and 3rd cells with the relevant code chosen in **Appendix F**

e.g.: a salt marsh would be:  /

If you choose the Ramsar system, complete the first cell with 2 and the 2nd and 3rd cells with the relevant code chosen in **Appendix H**

e.g.: a salt marsh would be:  /

The 4th cell is a counter. If there are several different plots of a specific habitat which differ from each other in a site, they might be described separately. In that case, the counter will be used to identify each plot.

**Classification<sup>1</sup> / Habitat code\***  /



**Water permanency\***: to characterise the water permanency in this habitat put: **1** for *Permanent*: if the habitat is always flooded; **2** for *Seasonal*: if the habitat is flooded at seasonal or regular periods, **3** for *Temporary/intermittent*: if the flood period does not follow a regular or seasonal pattern.



**Water salinity\***: complete with the dominant class of salinity during the year: **0** for *Unknown*; **1** for *Fresh* (<0.5 g/l), **2** for *Fresh/brackish* (0.5 to 5 g/l); **3** for *Brackish* (5.0 to 18.0 g/l); **4** for *Brackish/salty* (18.0 to 30.0 g/l); and **5** for *Salty* (>30.0 g/l). If the water salinity varies a lot along the year, you can mention it in "general description" (below).

**Water permanency<sup>2</sup> \***  **Water salinity<sup>3</sup> \***

- If you choose to use the MedWet habitat description system, fill in the following:



**MedWet habitat code\***: fill in with the MedWet code as described in the **Appendix L**

**MedWet Habitat code\***

Level 1 2 3 4 5 6 7 D C C

The next fields of information have to be completed independently from the classification used:



**Area\***: the surface area of the habitat, in hectares.



**Maximum depth**: the maximum depth recorded for this habitat, in metres.



**Condition**: please specify the actual condition of the habitat in terms of human-induced changes. "Untouched" and "original vegetation/landform" refer to a habitat which is natural or managed in a way which does not alter the natural habitat functions or values. Fill in with **1** for *Untouched* (No signs of man-made changes); **2** for *Original vegetation/landform still predominant* (>50%); **3** for *Original vegetation/landform partially modified* (10-50% untouched); **4** for *Original vegetation/landform highly modified* (< 10% untouched); **5** for *Original vegetation/landform totally change*.



### 2.3. Habitat



**Artificiality:** refers to the level of importance of the water management by humans. Use **0** for a naturally flooded habitat if there is no management of the water; **1** for *Partially controlled* and **2** for *Heavily controlled* if the water is controlled by man; and **3** for *Unknown* if you do not know whether or not water is controlled.



**pH:** the pH category of the water in this habitat during the major part of the flooded period. Use **1** for *Acid* (pH<5.5), **2** for *Circumneutral* (pH 5.5-7.4), **3** for *Alkaline* (pH>7.4) or **4** for *Unknown*. If the pH varies a lot, you can mention it in "general description" (below).

Area<sup>\*</sup>(ha):

Maximum depth(m):

Condition<sup>4</sup>

Artificiality<sup>5</sup>

pH<sup>6</sup>



**General description:** give a short description of the habitat mentioning the principal physical and ecological features and any useful information. If appropriate, give more details about the variation of water permanency, salinity, condition, artificiality, etc.

*General description:*





## 2.4. Flora



- All the references used to compile this form have to be listed in the site *References form*.



**Site code\***: the code of the corresponding *Site data sheet*.

Site code\*

--	--	--	--	--	--	--	--	--	--



- According to the details required and the time and resources available, the information on flora can be referred to the site **or** to the habitat. Therefore in the following paragraph **wetland** means either **site** or **habitat**.
- In the European Union countries, special attention should be paid to species listed in Annex II and IV of the Habitats Directive (92/43/EEC).



**Habitat code**: if the information refers to a particular habitat, fill in with the relevant code such as in the *Habitat data sheet*



**Scientific name\***: the Latin name of the species. Use the first two lines to record the dominant species in the vegetation community and list subsequently all other plant species recorded in the **wetland**



**Cover**: the approximate percentage of the **wetland** covered by each species, using the following scale: **(+)** - present; **1** - 1-10%; **2** - 11-25%; **3** - 26-50%; **4** - 51-75%; **5** - 76-100%.



**Height**: the range of height of each plant species, in metres (**1** for <1m; **2** for 1 to 3m, **3** for 3 to 6m, and **4** for > 6m).



**Remarks no.:** complete with the number given to the sheet where you will write any additional information about the species (e.g. rare species, protected species, introduced species, the bibliography number of the reference used, etc.).

Habitat code	Scientific name*	Cover <sup>1</sup>	Height <sup>2</sup>	Remarks no:
	(Dominant)			
	(Co-dominant)			

*(If necessary attach extra forms for more Flora, and separate sheets for remarks)*



## 2.5. Fauna



• All the references used to compile this form have to be listed in the site *References form*.



**Site code\***: the code of the corresponding *Site data sheet*

**Site code\***

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- According to the details required and the time and resources available, the information on fauna refers to the site **or** to the wetland habitat. Therefore, in the following paragraphs **wetland** means either **site** or **habitat**.
- In the European Union countries, special attention should be paid to species listed in Annex II and IV of the Habitat Directive (92/43/EEC), in Annex I of the Birds Directive (79/409/EEC).



**Habitat code**: if the information refers to a particular habitat, complete with the relevant code such as in the *Habitat data sheet*



**Group\***: indicate the group of animals that is described in this box: **1** for *Birds*; **2** for *Mammals*; **3** for *Amphibians*; **4** for *Reptiles*; **5** for *Fish*; and **6** for *Invertebrates*. It is recommended to enter the species by groups.



**Scientific name\***: the Latin name of the species.



**Number**: if known, the estimated number of individuals of the species within the **wetland**. If the number is not known, fill in the next box.



**Abundance**: the scale of abundance of the species within the **wetland**: **1** - *Abundant*; **2** - *Common*; **3** - *uncommon*; **4** - *Rare* (only, to be filled in if the "number" is not known).



**Status**: the status of the species at this **wetland** **1** - *Breeding*; **2** - *Wintering*; **3** - *Resident*; **4** - *Staging*; **5** - *Accidental*.



**Date and number of breeding pairs**: *only* when data are available, for breeding species in the **wetland** (status of breeding or resident). Fill with the month and year of recorded breeding and the estimated number of pairs or "reproductive units" (e.g. singing males for some birds, nesting females for marine turtles, etc.) breeding in the **wetland**. If there are several dates with different information, use more lines for the same species or add a separate sheet with this information.



**Remarks**: complete with the number given to the sheet where you will write any additional information about the species, e.g. rare species, protected species, introduced species, the bibliography number of the reference used, the date of the last observation, the name of the observer, etc..

Habitat code	Gr. <sup>1</sup> *	Scientific name*	Number	Abund. <sup>2</sup>	Status <sup>3</sup>	Date MM/YY	No. of pairs	Remarks no:

(If necessary attach extra forms for more Fauna, and separate sheets for remarks)



## 2.6. Activities and Impacts



- This form should be completed at site level in order to have a broad vision of the site. Nevertheless, if some activities and impacts occur in a particular wetland habitat, you can refer the data to the habitat level, for that purpose you will give the habitat code to the corresponding activity.
- All the references used to compile this form have to be listed in the site *References form*.



**Site code\*:** the code of the corresponding Site data sheet

Site Code \*

--	--	--	--	--	--	--	--	--	--



**Habitat code:** if you want to relate the activity or impact to a specific habitat, complete with the relevant code such as in the *Habitat data sheet*



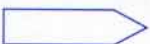
**Activity code\*:** use the numeric codes from **Appendix M** (Natura 2000 list) and fill in as many lines of information as needed to record information on all relevant activities having a positive or negative effect on the site. Please attach extra pages if necessary.



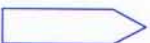
**Position:** use 1 if the activity occurs inside the site; 2 if it occurs outside ; or 3 if it occurs both *inside* and *outside* the site.



**Trend:** specifies the way the activity has been developing. The **first character** refers to the temporal aspects: **0** for *unknown*; **1** for *past activity*, refers to an activity which happened in the past but has stopped at present; **2** for *current activity*; and **3** for *predicted activity*, refers to an activity which is foreseen for the future but has not started yet. The **second character** refers to the trend of a current activity only: **0** for *unknown*; **1** for *activity likely to increase*; **2** for *activity likely to decrease*; **3** for *activity likely to stop*; and **4** for *stable*.



**Importance:** the level and degree of importance of the activity for humans. The **first character** refers to the level of importance: **1** for *subsistence level*; **2** for *local level*; **3** for *regional level*; and **4** for *national level*. The **second character** refers to the degree of importance of the activity at that level: **0** if you are *unable to specify*; **1** for *minor importance*; **2** for *important activities*; and **3** for *very important activities*. For example, 0-3 means that this activity is very important at subsistence level, therefore the local communities depend on it for their survival.



**Cover:** the approximate percentage of the site area where this activity occurs.



**Impact code\*:** fill in the dominant impact of each activity, using codes listed in **Appendix N**. If one activity causes more than one impact, it should be recorded in different lines. On the other hand, if the activity causing an impact is not known, the impact should still be recorded in the form, with the corresponding activity field left empty.



**Scale:** to record the extent (positive or negative) of impact of the activity on the wetland values: use **1** for *no major effect*; **2** for *some effect but not significant*; **3** for *some reduction of major wetland values*; **4** for *significant reduction of major wetland values*; **5** for *loss of one or more wetland values*; **6** for *some enhancement of wetland values*; **7** for *significant enhancement of wetland values*; or **0** for *unknown*.



**Remarks no.:** complete with the number given to the sheet where you will write any additional information about each *Activity or Impact* (if needed). Additional information can be for example, the bibliography number of the reference used, which species have been introduced, which habitat has been lost, when did this activity/impact start/stop, etc..

Habitat code	ACTIVITY					IMPACTS		Remarks no.
	Code*	Position <sup>1</sup>	Trend <sup>2</sup>	Import. <sup>3</sup>	cover(%)	code*	Scale <sup>4</sup>	



# 2

## Guidelines for Data Recording

### 2.7. Meteorological Data

**MedWet** **METEOROLOGICAL DATA**

Meteorological station code  Meteorological station name \_\_\_\_\_

World Meteorological Organization Code: \_\_\_\_\_ Altitude (m) \_\_\_\_\_

Evaporation (mm) \_\_\_\_\_ Maximum \_\_\_\_\_ Minimum \_\_\_\_\_ Average (°C) \_\_\_\_\_  
Ice / Snow cover duration (days) \_\_\_\_\_

**TEMPERATURE**

Period of recording (year) from \_\_\_\_\_ to \_\_\_\_\_

Mean monthly temperature (°C)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average (°C)

**RAINFALL**

Period of recording (year) from \_\_\_\_\_ to \_\_\_\_\_

Mean monthly rainfall (mm)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average (mm)

**wind**

Monthly rainfall (mm)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Remarks \_\_\_\_\_

MedWet 2000

## 2.7. Meteorological Data



- The **annual** values of rainfall, temperature and evaporation (see below) refer to the climatologic normal, i.e., the **average** values for the longest reference period as reported by the nearest meteorological centre.



- All the references used to compile this form have to be listed in the site *References form*.



**Meteorological station code:** Give a number to each of the Meteorological stations of the inventory. You will also use this code in the *Site data sheet*.



**Meteorological station name\*:** indicate the name of the meteorological station

Meteorological station code

Meteorological station name\*:



**World Meteorological Organisation Code:** if available, complete with the official code of this meteorological station.



**Altitude\*:** altitude of the meteorological station, in meters.

World Meteorological Organisation Code:

Altitude\* (m):



**Evaporation:** the minimum, maximum and average values of **annual** evaporation recorded, in millimetres.

Evaporation (mm)

Minimum:

Maximum:

Average:



**Ice/Snow cover duration:** the average number of days per year with ice/snow cover on the wetland.

Ice / Snow cover duration (days/year)

### Temperature



**Average\*:** average **annual** temperature calculated for the corresponding period of years



**Mean monthly temperature:** for each month, fill in with the mean monthly temperature in degrees Celsius.



**Period:** period of recording used for the calculation of the means, e.g. "from 1965 to 1995". This reference period will ideally be thirty years if data are available. If data started to be collected more recently, the values will be calculated for the longest reference period possible.

#### TEMPERATURE

Average\*:

Mean monthly temperature (°C)

Period of recording\* (years)

from:

to:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

## Rainfall

The rainfall can be recorded in two different ways: the mean monthly rainfall or the monthly rainfall for the last 10 years. You can choose one of them according to the available data. You can also use both of them if you have the mean monthly rainfall for a period of years longer than 10 years plus detailed data for the last 10 years.



**Average\*:** average rainfall calculated for the corresponding period of years.



**Mean monthly rainfall:** for each month, fill in with the mean monthly rainfall, in millimetres.



**Period:** period of recording used for the calculation of the means, e.g. *from: 1965 to: 1995*. This reference period will ideally be thirty years if data are available. If data started to be collected more recently, the values will be calculated for the longest reference period possible.

RAINFALL										Average*:	
Mean monthly rainfall (°C)								Period of recording* (years)		from:	to:
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec



**Monthly rainfall:** there is the option of recording the monthly rainfall data of a series of years (if available, enter data of the last ten years). In the first column fill in with the year and in the following columns complete with the rainfall values in millimetres for each month of the year. Once these data are entered in the MedWet Database, it will automatically calculate monthly means and annual totals.

Monthly rainfall (mm)												
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec



**Remarks:** add any relevant information about climatic features. Information about the main wind, its direction and speed might be of great interest for your wetland, e.g. Mistral and Tramontane in the south of France.

Remarks:

(add extra sheets if necessary)







## 2.8. References

see

Volume V

Mediterranean  
Wetland Inventory;  
Database Manual



- This is a list of key references which should contain all the detailed reference works used to compile the data sheets (including major scientific reports, management plans and others).
- Before starting the inventory, it is recommended to enter all the references in the MedWet Database in order to produce a list which will be available for the compilers. The Database will generate a bibliography number for each reference, then the compiler will only use this number to refer data to the bibliography. If you do not use the MedWet Database yet, it is recommended to establish a list of references (e.g. using a Word Processor) and to give a number to each of them.



**Catchment code\***: if the bibliography refers specifically to the catchment area, fill in the code of the catchment area such as in the corresponding Catchment area data sheet. You should use two separate References forms for catchment area and for site references.



**Site code\***: if the bibliography refers specifically to the site, fill in with the site code taken from the site code such as in the Site data sheet. This form will also contain the references concerning the *Habitat, Flora, Fauna, Activities and Impacts* and *Meteorological data*.

**Catchment code\***

or

**Site code\***

- If you want to mention a new reference which is not in your list:



**Reference\***: If you need to mention a new reference, enter it here. Each reference should be identified by *Author(s)*, *Year* of publication, *Title*, *Publisher* (or name of the *journal* if that is the case) and the *Location* where the reference can be found. Please attach extra pages if necessary.



**Biblio. no.:** give a bibliography number, to each new reference that you just entered.

### Bibliography

**Reference\*** (list the references in the format: authors, year, title, publisher/journal, location)

**Biblio. no.**

- If you want to mention a reference which is already in your list:



**Bibliography numbers:** in general, these numbers will be obtained from the *MedWet Database*, but if you do not use the database give a new number to each new reference. This number will also be used in the data sheets when data refer to a publication.

### Bibliography numbers

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
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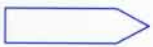


**Key contacts:** a list of agencies, organisations or people with adequate knowledge on scientific research, available data or conservation and management measures at the wetland site, including managers, farmers, landowners, universities, local authorities etc. Please include the full name and address, telephone, fax and e-mail numbers (if available), name of the organisation and field of expertise for all contacts.

### Key contacts

*(Please include organisation, address, telephone and fax, and field of expertise)*

*(add separate sheets if necessary)*



**Maps:** Each map reference should be identified by its *Title*, *Scale*, *Year* of publication, *Source* (the name of the authors or agency responsible for the publication of the maps), *Type* (e.g. topographic, geologic, vegetation, etc.) and the *Projection* used (e.g. UTM, Lambert, etc.).

### Maps

<b>Title:</b>		<b>Scale: 1: 000</b>	<b>Year:</b>
<b>Source:</b>	<b>Type:</b>	<b>Projection:</b>	

*(add separate sheets if necessary)*



**Aerial photographs:** information on the aerial photographs covering the wetland site. Each photograph reference should be identified by its *Title*, *Scale*, *Year*, *Source* (the name of the authors or agency responsible for the publication of the photographs) and *Type* (e.g. black & white, infra-red, etc.).

### Aerial photographs

<b>Title:</b>		<b>Scale: 1: 000</b>	<b>Year:</b>
<b>Source:</b>	<b>Type:</b>		

*(add separate sheets if necessary)*







# 3

## Reference List

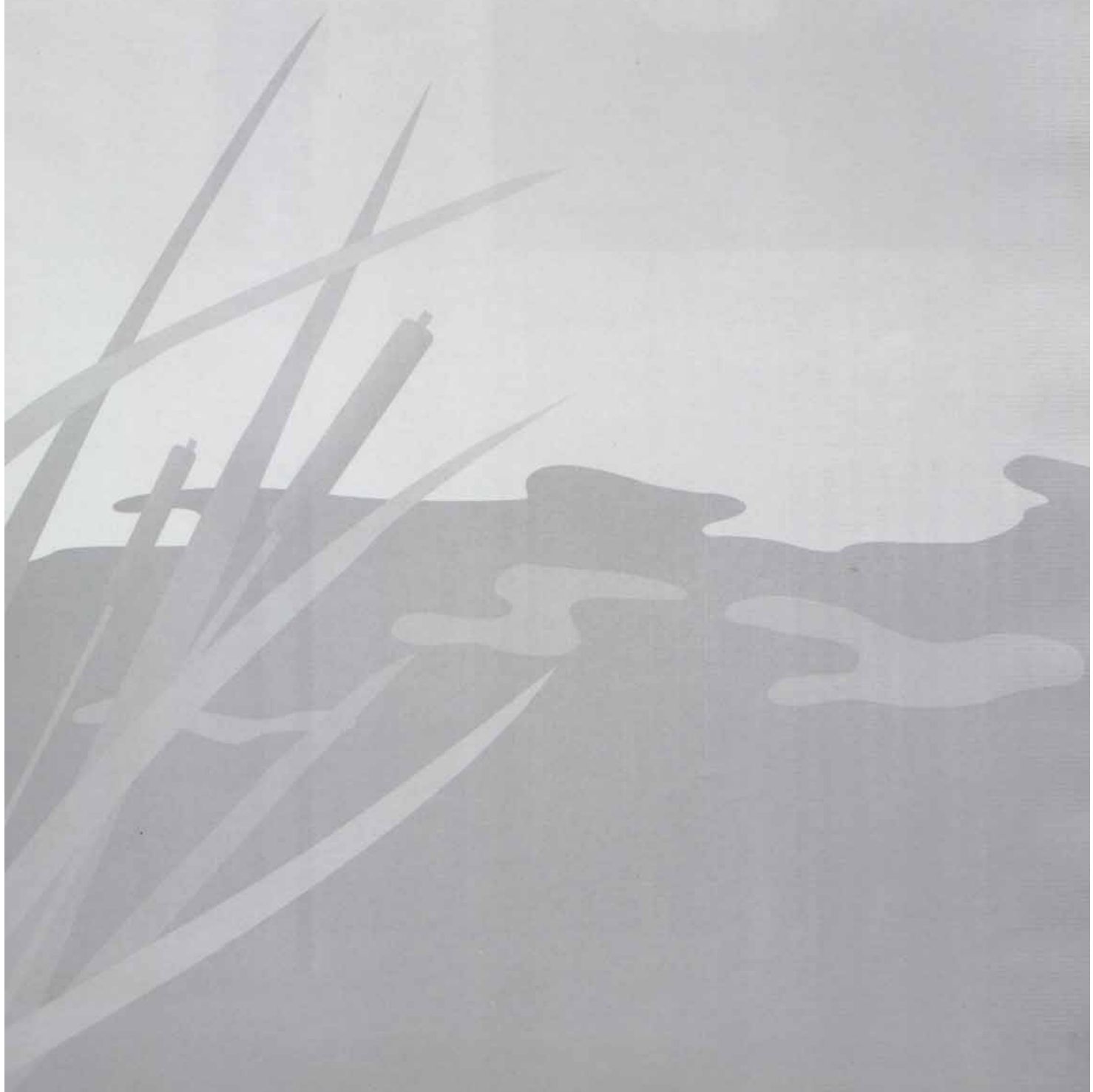


### 3. Reference List

- Cowardin, L.M. Carter, V., Golet, F.C. & Laroe, E.T. 1979. *Classification of wetlands and deep water habitats of the United States*. US Fish and Wildlife Service. 131 pp.
- Devillers P. & Devillers-Terschuren J.1993. *A classification of palearctic habitats and preliminary habitats in Council of Europe Member States*. Report to the Council of Europe Convention on the Conservation of European Wildlife and Natural Habitats. 268 pp.
- European Communities - Commission. 1992. *CORINE LandCover*. European Environment Agency Task-Force. 22 pp.
- Gordon, N.D., McMahon T.A. & Finlayson B.L. 1992. *Stream hydrology: an introduction to ecologists*. John Wiley & Sons Ltd, Chichester, UK. 526 pp.
- Finlayson, M. & Moser, M. (eds.) 1991. *Wetlands*. Facts on File, Oxford.

# 4

# Appendices



## Codes for Catchment Areas

- A national list should be created for each country. The corresponding code will be given to each catchment or sub-catchment. The code can have up to four digits.

The list of the catchment areas for Portugal and Spain are presented here, as examples

### Catchment areas (up to two digits)

#### PORTUGAL

<b>MI</b>	Rio Minho
<b>LI</b>	Rio Lima
<b>DO</b>	Rio Douro
<b>DV</b>	between Douro and Vouga
<b>VO</b>	Rio Vouga
<b>VM</b>	between Vouga and Mondego
<b>MO</b>	Rio Mondego
<b>ML</b>	between Mondego and Lis
<b>LI</b>	Rio Lis
<b>LT</b>	between Lis and Tejo
<b>TE</b>	Rio Tejo
<b>TS</b>	between Tejo and Sado
<b>SA</b>	Rio Sado
<b>SM</b>	between Sado and Mira
<b>MR</b>	Rio Mira
<b>GU</b>	Rio Guadiana
<b>AL</b>	Algarve

#### SPAIN

<b>01</b>	Norte de España
<b>02</b>	Duero
<b>03</b>	Tajo
<b>04</b>	Guadiana
<b>05</b>	Guadalquivir
<b>06</b>	Sur de España
<b>07</b>	Segura
<b>08</b>	Júcar
<b>09</b>	Ebro
<b>10</b>	Pirineo Oriental

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## Bioclimates

The bioclimatic classification adopted is the one proposed by Emberger, which was specifically created for the Mediterranean region. There are two predominant factors to define the Emberger's classification of Mediterranean climates: the drought, represented through the highest pluviothermic quotient; and the temperature, represented through the average temperature of the coldest month, which determines the risk of ice and the exclusion of several species.

The Pluviometric Quotient is given by the expression:

$$Q = \frac{1000 \cdot P}{\frac{M+m}{2} \cdot (M-m)}$$

**P** is the annual precipitation in mm

**M** is the average of the maximum temperatures of the hottest month (in °K)

**m** is the average minimum temperatures of the coldest month (in °K)

Five bioclimates are considered:

1. Saharian
2. Arid Mediterranean
3. Semi-arid Mediterranean
4. Sub-humid Mediterranean
5. Humid Mediterranean

The geographical delimitation of these divisions are available for several countries in the Mediterranean basin. Otherwise it can be calculated with the following graph:

