

New South Wales



Managing wetlands on your property

GUIDELINES for inland New South Wales



ADDING VALUE TO THE NATURAL ASSETS OF NEW SOUTH WALES

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Introduction

1.1 A vital resource

There are many benefits to managing wetlands on rural properties. They are a vital resource for achieving sustainable production and for safeguarding the health of your property and the local environment.

A recent global study estimated that the world's natural ecosystems are worth US\$33 trillion. Of this, wetlands are thought to be worth US\$14.9 million, or 45% of the total (Ramsar Bureau 2000). The services, functions and values provided by wetlands are good reasons for protecting them through proper management.

These Guidelines provide a “wise use” approach to managing wetlands. They were written with a focus on the management of small to medium-sized wetlands in inland New South Wales.

1.2 Wetland management

The Guidelines describe the process of developing a management plan for your wetland areas in four steps.

We also offer some tips along the way to assist you at each stage of the process, as well as describing case studies that show how others have managed their wetlands.

Finally, we provide some useful websites for those who have access to the internet.

The process outlined below (adapted from the Hawkesbury-Nepean Management Trust 1996) is flexible; the period of time over which you carry out the steps depends on you and the time you have available.

1.3 Resource Folder

The Resource Folder that accompanies these guidelines contains a large amount of helpful information on:

- wetland values,
- relevant legislation and policies,
- a variety of management strategies,
- potential funding sources, and
- lists of contacts for further information.

You may find it useful to keep it handy as a reference when you read through this document.

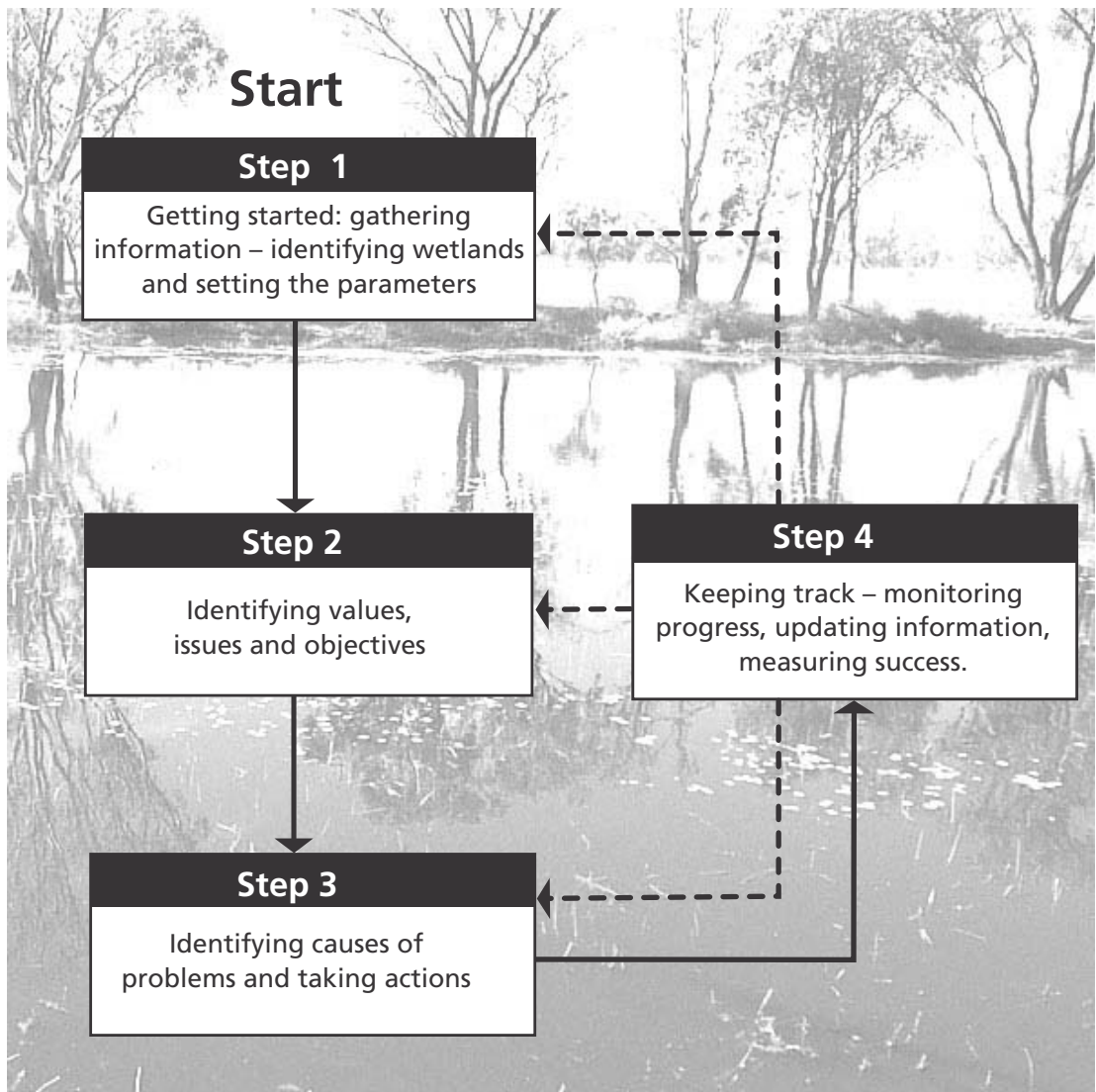


Figure 1 How to develop a plan of management for your wetland

This diagram shows in graphic form the steps needed for developing a plan of management for your wetlands. In the following sections, we will help you along the way with information and advice for each step indicated in this diagram.

To begin working on your plan of management, you commence by identifying and mapping the wetland or wetlands on your property, distinguishing them in role and function from the dams on your property, and understanding who is involved when wetlands cross property boundaries.

Thorough information collection is a very important component of this first stage.

In the second stage, having set the parameters of your wetland in Step 1, you will identify the values, issues and objectives related to your wetlands – what uses your wetland offers, what factors are affecting your wetland, and what objectives you wish to achieve in the management of your wetland.

In Step 3, you will identify the causes of problems in your wetland and what actions you wish to take to alleviate the problems. At this stage you will also need to identify what legislative and planning requirements are in place, what your best management strategies and options are in the light of these, and what funding sources are available to you.

In the last stage, Step 4, you will constantly monitor your progress (as represented by the arrows with broken lines) by observing your wetland for changes, updating your information sources, continuously re-assessing the values, issues and objectives of your wetland, and measuring the success of your actions against your objectives.



Step 1 – Getting started

2.1 Identifying wetlands on your property

Although there are many different definitions of wetlands, under the NSW Wetlands Management Policy they are defined as land that is inundated permanently or temporarily with water that is usually shallow, slow moving or stationary. Wetlands can be fresh, saline or brackish. The inundation determines the type and productivity of the soils and the plant and animal communities living in them¹ (NSW Government 1996).

So how do wetlands differ from dams? Dams are artificial structures, and are usually deeper bodies of water built with steep sides primarily for water storage. As a result of this, the vegetation in and around dams is usually different from that of wetlands.

Wetlands are linked to the rest of the catchment via surface water and groundwater. Some wetlands are visibly linked at the surface, forming wetland complexes that cover a number of properties. Aerial photographs will reveal whether or not this is the case. If they are linked, cooperation with your neighbours will be crucial to the success of locating and managing these wetlands.

Identifying wetland on your property

- Identify the boundary of the wetland on a property map (or on a clear plastic overlay). Ask your local DLWC office or land information centre for an aerial photo to help you to do this. It can be useful to get a map or photo for each of the seasons.
- Note whether or not your wetland is part of a larger complex of wetlands in the catchment.

Wetlands in NSW have been mapped by the NSW National Parks and Wildlife Service (for the Murray-Darling Basin), Department of Land and Water Conservation and the Murray-Darling Basin Commission.

Maps are available from your local DLWC or NPWS office or the Murray-Darling Basin Commission. Office contact details are listed in Section 9.1 of the Resource Folder (page 29).



Photo courtesy of Dr. Surry Jacobs, Royal Botanic Gardens

¹ Note that many of the principles that apply to naturally occurring wetlands also apply to artificial wetlands. However, those are dealt with in greater detail in other publications such as the *Constructed Wetlands Manual* (DLWC 1998). This document addresses only natural wetlands.

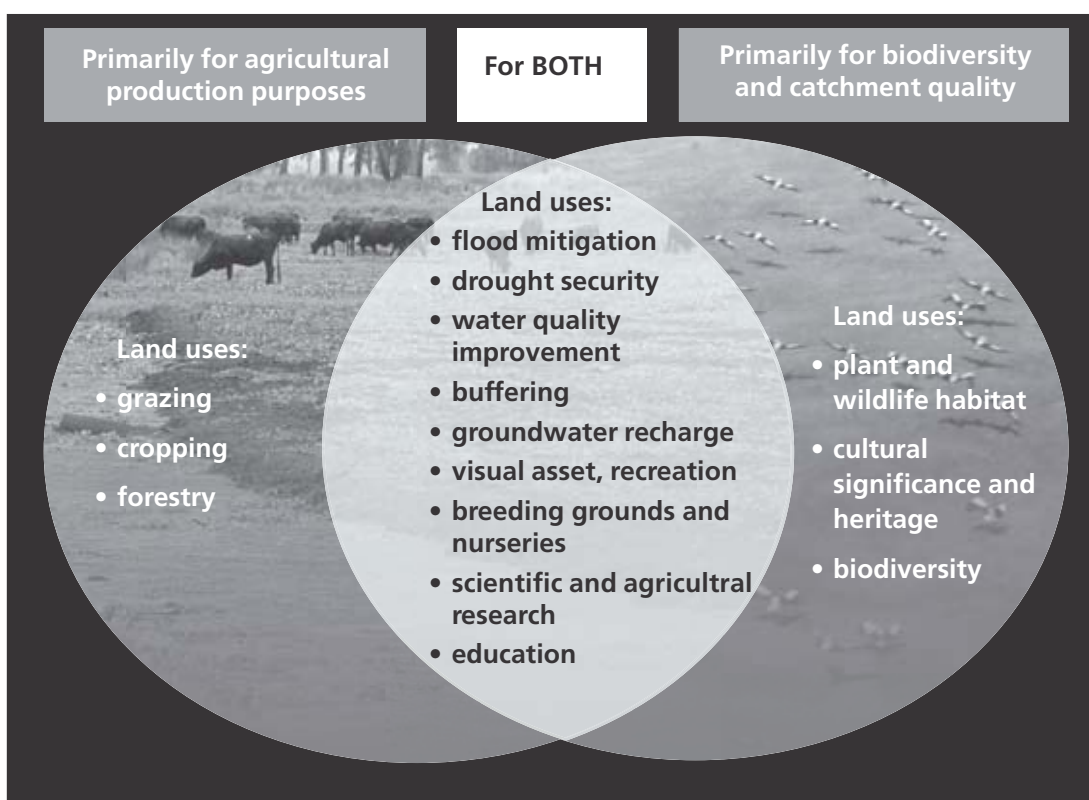
2.2 Wetland services

The diagram on this page summarises some of the important functions of wetlands and how they provide a resource for agricultural or production purposes, as well as biodiversity/catchment quality.

What benefit or value does your wetland have?

- Create a list of benefits your wetland provides (see the diagram below for some ideas). This will be useful in STEP 2 for identifying what wetland services you want to manage.
-

Figure 2 Wetland functions



2.3 Setting the parameters

2.3.1 Who's involved?

If the wetlands on your property are shared with adjacent properties, it is essential to treat them as a single complex so that you can get the best management outcomes. Your wetlands are part of a catchment and are therefore influenced by activities occurring across the catchment.

Who's involved?

- If the wetland crosses property boundaries, identify the other people in your local area, such as neighbours, who are likely to have some connection with the wetland and speak to them about it.
 - Make a note of any benefits they identify and add these to your list.
 - Also make a note of any concerns others may have about the health of the wetland, and any general information they can provide you with.
-

2.3.2 What do I already know?

Take a look at the questions below and think about what you already know. Space is available in the following pages to make a note of this information.

What do I already know about my wetland?

- How often is there water in the wetland?
 - How long does the water stay?
 - What is the main source of water?
 - Where does it appear to enter from and where does it exit? Does the water terminate in the wetland or flow through?
 - How have the flows changed over time?
 - How close is the wetland to a river? Another wetland?
 - What structures, such as weirs and regulators, affect the flow?
 - How much water is required for a healthy wetland?
 - How often is there rainfall? How quickly does water evaporate from the wetland?
 - What is the soil type in and around the wetland? Are there any acid soils? Are there any salinity problems?
 - Are there plants in and around the wetland?
 - What eats the plants – sheep/cattle/native animals?
 - What colour is the water? Is it cloudy or clear? Is there ever a “scum” on the surface?
 - What does the wetland smell like? Is it a strong smell and is it always there or just when the water level is low?
 - Is the wetland disturbed by machinery?
 - Do birds come to the wetland to feed? To nest? To breed?
 - Are there fish or frogs in the wetland?
-

2.4 Information gathering

Collect information on each of the topics below. The material contained in Section 2 “Information Sources” of the Resource Folder (page 2) may be of help to you at this point.

2.4.1 Current uses

Using the table provided over the page, make notes on the current use of wetlands on your property and in the catchment. Some issues you may like to consider when filling in this table are:

- Who are the local stakeholders and which are the impacted properties?
- Is machinery disturbing the wetland?
- What are the most common uses of land in your catchment?
- What types of land uses occur upstream of your wetland?

Current uses

On your property

.....

.....

.....

In your catchment

.....

.....

.....

2.4.2 Historical value/uses

How much has your property and the catchment changed over time? Take into account changes in flow patterns, construction of weirs, dams, levees etc, flood events, draining, filling, bushfires and droughts.

Historical value/uses

On your property

.....

.....

In your catchment

.....

2.4.3 Biological condition

Answer the following questions to find out the biological condition of your wetland.

Biological condition

What lives in your wetland?

.....

Does anything eat the plants – sheep/cattle/native animals?*

.....

Do birds come to the wetland to feed? To nest? To breed?

.....

Are there fish or frogs in your wetland?

.....

*See Information Collection Sheets for Plants and Animals on the following pages. You will find a list of Field Guides in Section 7 of the Resource Folder (page 26).

2.4.4 Climate and geology

Ask yourself the following questions to ascertain the local climate and geology.

Climate and geology	
Average rainfall; rate of evaporation	
Seasonal rainfall patterns	
How quickly does water evaporate from the wetland?	
What is the soil type in and around the wetland?	
Are there any acid soils?	
Any salinity problems?	
Local temperature information	

2.4.5 Hydrology

Ask yourself the following questions to ascertain the water flow and wetland hydrology.

Water flow and wetland hydrology	
How much water is required for a healthy wetland?	
How often is there water in the wetland?	
How much does the water level fluctuate?	
What structures affect flow?	
How long does the water stay?	
What is the main source of water?	
Where does it appear to enter from and where does it exit?	
Does the water terminate in the wetland or flow through?	
How have the flows changed over time?	
How close is the wetland to a river? To another wetland?	
What structures, such as weirs and regulators, affect the flow?	

2.4.6 Water quality

Ask yourself the following questions to ascertain the water quality of your wetland.

Water quality	
What colour is the water in the wetland? Cloudy or clear?	
Is there surface scum or algae?	
Do you know what it is?	
Is there odour present? How often?	
What lies near the wetland or above it?	
Are there plants in or around the wetland?	What type?
Is anything lying dead in the water?	
Are there any records of fish kills?	

