Managing fire in wetland grazing

GUIDELINES FOR GRAZING IN THE GWYDIR WETLANDS AND MACQUARIE MARSHES

SECTION SIX

Contents

Introduction

Fire is a common phenomenon in many Australian landscapes and as a result many native plant species are adapted to fire. In wetland areas, some graziers have historically used fire to manage reed beds.

Burning and wetlands

Wetland vegetation is generally sensitive to burning. Burning too frequently or at the wrong time of year can damage the resilience of wetland ecosystems.

Advantages of burning in wetlands include (Allan 2000):

- stimulation of new growth producing a feed source for native and introduced animals; and
- removing impenetrable growth of plants such as reed, sedges and bulrushes.

Disadvantages of burning in wetlands can include (Allan 2000):

- destroying habitat used for breeding, feeding and shelter;
- increasing the competitive advantage of introduced weed species;
- a loss of viable seed in wetland soil (especially if soil moisture level is low when burnt);
- increased predation of seed by insects;
- changes in vegetation composition and structure;
- exposing roots and rhizomes; and
- erosion of soil and a decrease in water quality.

Burning regimes

Different types of vegetation have different requirements and tolerances of fire regimes:

- **Burning frequency** is the number of times a fire goes through an area over a time period. Burning frequency plays an important role in determining what flora and fauna are present in an area.

  Increasing the burning frequency decreases populations of some native plant species and favours other plant species. Some graziers indicate that if the frequency of burning is limited wetlands can become very dense. This may mean that:
  - animals may have difficulty in grazing areas; and
  - hot, damaging fires could occur in the future.

  The Nature Conservation Council (2007) indicate that scientists have not yet studied the role of fire in inland floodplain wetlands, but that intervals of at least seven years are suggested.
- **Fire intensity** refers to the heat of a fire and the rate of burning:
  - High intensity fires are very hot and can severely limit community regeneration if they occur when wetlands are dry.
  - Low intensity fires (cool burns) often result in patchy burning of reed beds.

  Fire intensity in wetlands depends on:
  - plant community composition (e.g. large dry reed beds); and
  - inundation and soil moisture.
- **Seasonality** determines fire intensity and can influence the frequency of burning:
  - Burning inundated wetlands, or wetlands that have moist soils (where flooding is expected), during winter results in lower intensity burning.

Reed beds provide wildlife habitat and it is thought that maintaining high levels of biomass will assist in the spread of flood waters throughout inundated wetlands.

Burning during late summer or autumn can cause significant damage to wetland ecosystems if there are large fuel loads, wetlands are dry and flooding does not occur once surface plant material is burnt. Wetlands burnt in this way take very long periods to recover because fire can destroy:

- roots;
- rhizomes; and
- tubers.

Recommendations

It is recommended that burning is not used as a tool for managing vegetation in wetlands.

However, **occasional** burning may required in some situations for the control of introduced feral animals (e.g. pig and fox habitat control in Marsh Club-rush beds) and fire hazard reduction. However, to minimise the negative effects of a fire in wetlands:

- appropriate authorities need to be consulted and any necessary permits obtained;
- burns should be conducted no more frequently than once every seven years;
- target wetland areas should have some level of inundation or damp, saturated soils;
- where possible, fire breaks around wetlands should be established; and
- different areas of wetland vegetation adjacent to the burn site are left unburnt to provide habitat for native animals.

A grazier's perspective:

One of the survey participants stated that he liked to burn Marsh Club-rush beds every four to five years depending on the need. He tries to do this in late winter with water covering the soil to offer some protection. He does this to control pig, fox and cat habitats and to promote the free movement of water through the vegetation.

He avoids burning Water Couch because of its feed value during winter and in dry periods.

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