



Ponded pastures

Ponded pastures are pasture systems developed in the low lying areas of the State, particularly coastal areas, by the grazing industry to produce fodder to complement more extensive grazing practices. They involve the construction of earth banks to impound water and the planting of grass species that have adapted to grow in these conditions.

Some of the species that have been used are now regarded as invasive weeds. In addition, the practice of impounding water, particularly in tidal areas, can result in adverse environmental impacts. These include fish habitat loss and disruption to natural freshwater drainage and seawater incursions.

Historical background

Pastoralists in northern Australia have taken advantage of natural wetland systems for grazing since the late 1800s. The construction of artificial ponds in dryland areas commenced in the 1930s and accelerated in the 1970s with the introduction of new pasture species.

Also dating back to the 19th century, banks were constructed in some tidal areas to prevent seawater incursion. Initially these were relatively small structures built across tidal 'runners' or small gullies

where tidal flows penetrated for some distance inland.

With the advent of larger machinery, longer, more extensive banks were constructed parallel to the coast. Although constructed primarily to stop seawater incursion and control erosion, these banks also ponded fresh water and provided opportunities for pasture establishment and more intensive cattle grazing. In areas where unusually high tides are experienced these banks can be several metres in height.

Impacts of ponded pastures

Ponded pastures have contributed to improved productivity in the beef industry, but their impact on tidal areas and natural wetlands through the spread of introduced pasture species and interference with water flow has been substantial.

The species used for ponded pastures include both introduced and native plants, although the native species are considered to be much less productive than the introduced species. The introduced species used in Queensland are para grass (*Brachiaria*



Ponded pastures – pasture species with weed potential are not recommended

mutica), aleman grass (*Echinochloa polystachya* cv. *Amity*) and hymenachne (*Hymenachne amplexicaulus* cv. *Olive*), all of which are native to South America.

These three introduced grasses are now regarded as invasive weeds in natural freshwater wetland systems and waterways such as drains on land used for sugar cane production.

Para grass can grow in water to about 60 cm deep and, although a serious weed of natural wetlands, is confined to shallower areas. However, aleman grass and hymenachne, which can grow in much deeper water, are now established in areas of northern and central Queensland and are actively spreading. Hymenachne has been recognised as a declared pest plant targeted for control under state legislation and one of 20 weeds of national significance.

For many years the fishing and cane growing industries, conservation groups, scientists and a number of government agencies have expressed concern over the detrimental effects the practice was having on the coastal environment, marine productivity, fish migrations, natural wetlands, cropping lands and drainage efficiencies.

Restrictions on use of ponded pastures

Under the *Integrated Planning Act 1997*:

- Operational works above the high water mark, involving the building of a bank or bund wall to establish a ponded pasture on land, other than State coastal land, completely or partly within a coastal management district are assessed against the *Coastal Protection and Management Act 1995* and relevant coastal management plans and policies administered by the Environmental Protection Agency (EPA).
- If identified in a water resource plan, operational works involving the building of a structure for taking overland flow water are assessed against the *Water Act 2000*, and the Code for Assessable Development for Operational Works for Taking Overland Flow Water, administered by the Department of Natural Resources and Water (NRW).
- Operational works involving waterway barrier works and/or any disturbance to marine plants may require approvals under the *Fisheries Act 1994* administered by the Department of Primary Industries and Fisheries (DPI&F).

A ponded pastures policy has also been developed by the Queensland government to address the need for controls over the location, design, and management of ponded pastures.

This policy restricts the development of ponded pastures in the following areas:

- tidal areas
- natural wetlands and adjacent areas
- areas of high conservation value
- areas of high fish habitat value.

The policy provides the following principles:

- new ponded pastures below Highest Astronomical Tide (HAT) level should not be approved
- new ponded pastures above HAT in sensitive environments will be subject to criteria included in industry guidelines
- para grass, aleman grass and hymenachne will no longer be recommended for use in ponded pastures
- existing banks will be assessed in terms of their legality and impact.

Guidelines will be developed by the grazing industry on the development, use and management of ponded pastures covering the following core issues:

- location in relation to sensitive areas
- physical disturbance
- potential for spread of pasture species
- impact on water flows
- interference with fish movement
- soil erosion
- disturbance of acid sulfate soils.

Government services

State government agencies will play an important role in using an integrated education, extension, research and regulatory approach to prevent adverse environmental impacts and to control the spread of current ponded pasture species.

Extension material will highlight the ecological risks associated with ponded pasture development, particularly detrimental changes that may occur to freshwater and estuarine ecosystems, and the risk of spread of ponded pasture species to other areas.

Further Information

For further information, contact your local office of the EPA, NRW or DPI&F. Specific advice on the ponded pastures policy can be obtained from the Land Management Section, NRW, Brisbane on telephone (07) 3896 3894. Copies of the policy are available on the NRW website:

<www.nrw.qld.gov.au> (type 'ponded pastures' in the search box on the home page).

For specific advice on control of pest plant species, contact your Local Government Weeds Officer or local NRW, Land Protection Officer.