



Alteration to natural flows

as a key threatening process – *an overview*

The NSW Scientific Committee, an independent body of scientists, has made a final determination to list the ‘alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands’ as a key threatening process under the *Threatened Species Conservation Act 1995* (TSC Act).

What is a key threatening process?

A key threatening process is a process that threatens, or may threaten, the survival or evolutionary development of a species, population or ecological community. A process can be listed as a key threatening process under the TSC Act if it:

- adversely affects two or more threatened species, populations or ecological communities; or
- could cause species, populations or ecological communities that are not threatened to become threatened.

Why list ‘alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands’ as a key threatening process?

The alteration of natural flow regimes is recognised as a major factor contributing to the loss of biodiversity. It has been identified in the decline of number of threatened species, including the Spotted Tree Frog, Blue-billed Duck and the Freckled Duck.

Rivers and streams, and their wetlands and floodplains, are vital components of ecosystems. They support an extremely high diversity of living organisms, and play

an important role in many physical, chemical and biological processes.

The Australian biota is adapted to high levels of natural variability within rivers, streams, floodplains and wetlands. Altering natural flow regimes can have adverse impacts on crucial stages within the lifecycle of many organisms, such as reproduction, recruitment or migration patterns.

Other impacts of alteration of natural flow regimes include:

- reduced habitat for native plants and animals by changing the extent, frequency and duration of flooding of floodplains and terminal wetlands;
- increased water flows to certain areas, including permanently flooding some wetlands;
- degradation of the riparian zone (riverbanks);
- increased habitat for invasive species which favour deeper, more permanent and disturbed habitats; and
- the loss or disruption of ecological function.

FACT SHEET

Is the alteration of natural flows recognised as a threatening process by other agencies or governments?

The Fisheries Scientific Committee has listed the “installation and operation of instream structures and other mechanisms that alter natural flow regimes of rivers and streams” as a key threatening process under the *Fisheries Management Act 1994* (FM Act). Instream structures (such as dams, weirs and levee banks) and mechanisms (such as water extraction, pumping and diversion) alter natural flow regimes and have been recognised as a threat to aquatic biodiversity. NSW Fisheries must prepare a threat abatement plan for the key threatening process.

The following related processes have been listed under the Victorian *Flora and Fauna Guarantee Act 1988*:

- “Alteration to the natural flow regimes of rivers and streams”
- “Prevention of passage of aquatic biota”
- “Alteration to the natural temperature regime of rivers and streams”
- “Increased sediment input into rivers”

What is the statutory effect of the listing under the TSC Act?

The listing of ‘alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands’ as a key threatening process triggers a requirement for the NSW National Parks and Wildlife Service (NPWS) to prepare a threat abatement plan under the provisions of Part 5 of the TSC Act.

Threatening processes must be ‘taken into account’ under Section 5A of the

Environmental Planning and Assessment Act 1979 (EP&A Act).

What is a threat abatement plan?

A threat abatement plan is a statutory planning instrument which identifies measures to manage and reduce the impacts of a key threatening process on the long-term survival of threatened species, populations and ecological communities.

Who is responsible for preparing the plan?

The Director-General of the NPWS is responsible for preparing the threat abatement plan.

During the preparation of the plan the NPWS will consult with other public authorities with an interest in water management issues and may use the expertise of private contractors.

As similar key threatening processes are listed under the TSC Act and the FM Act, NPWS and NSW Fisheries will work closely together in the preparation of threat abatement plans.

Threat abatement planning and the public

The successful abatement of a broad scale threatening process, such as the alteration of natural flow regimes, must involve the wider community.

Mechanisms for community involvement in the threat abatement planning process will include informal consultation during plan preparation and a formal process of public exhibition of the draft threat abatement plan.

What will the plan contain?

In addition to the legislative requirements of a threat abatement plan¹, the plan is likely to:

- co-ordinate existing and proposed actions being implemented across New South Wales to abate the threat to threatened species, populations and ecological communities posed by this key threatening processes;
- provide a framework for the integration of other relevant planning mechanisms associated with water resources;
- review and evaluate current regulatory and non-regulatory mechanisms controlling water useage and water storage;
- examine socio-economic issues that influence water useage and storage on private and public lands;
- investigate opportunities for conservation agreements and joint management agreements;
- identify priority research areas to examine the benefits of maintaining natural flow regimes on the ecological functions of rivers, streams, floodplains and wetlands;
- include a public education program.

In preparing the plan, federal, state and local government initiatives, policies and regulations will be considered.

How is the plan implemented?

The NPWS has the primary accountability for implementing the threat

abatement plan. However, it is likely that other public authorities will also need to be involved (such as NSW Fisheries, Department of Land and Water Conservation and NSW Agriculture). When preparing the plan the NPWS will consult with relevant authorities to seek cooperative implementation of measures included in the plan.

The threat abatement plan will inform planning processes. For example:

- local councils and other public authorities may consider the plan when assessing proposed developments or activities;
- water management committees should take the plan into account when preparing water sharing plans and water management plans under the *Water Management Act 2000*.

In addition, public authorities that are responsible for implementing measures identified in the plan must take any appropriate action available to them to implement those actions and must not make decisions that are inconsistent with the provisions of the plan.

Will the plan be applicable to rural and urban environments?

The alteration of natural flow regimes is an issue throughout New South Wales regardless of land tenure and land use.

Consequently, to effectively abate the ensuing impacts of altered flow regimes, the threat abatement plan will need to examine urban and rural issues relating to water management across New South Wales.

¹ See sections 75 and 77 of the TSC Act.

Will the listing result in new restrictions to water management?

The listing of alteration to natural flow regimes as a key threatening process will not change the current laws regulating water management in New South Wales.

The listing will not affect the exemption from licensing under the TSC Act for the carrying out of routine agricultural activities.

If a proposed development or activity involves the alteration of natural flow regimes will a species impact statement be required?

The requirement to prepare a species impact statement (SIS) arises in two situations:

1. The proposal is to occur on land that is, or is part of, critical habitat as declared under Part 3 of the TSC Act²; and/or
2. The proposal is likely to have a significant effect on threatened species, populations or ecological communities, or their habitats.

If the proposal involves the alteration of natural flow regimes through land that is, or is part of, critical habitat, a SIS will be required unless the Director-General of the NPWS is satisfied that the impact of the proposal will be trivial or negligible. In such cases, the Director-General of the NPWS may dispense with the requirement for a SIS.

If the land to be developed is not critical habitat, then a decision must be made as to whether the proposal is likely to

² At the time of publication, no areas of critical habitat had been declared.

significantly affect threatened species, populations or ecological communities, or their habitats. To make this decision, the factors contained in the 'eight-part test'³ must be taken into account.

The test currently requires consideration of threatening processes specifically in relation to the type of action proposed. The listing of alteration of flow regimes as a key threatening process will need to be considered in deciding whether or not there is likely to be a significant effect.

A determination of 'significance' is based upon the combined consideration of all relevant matters and the particular facts of the proposal. Consequently, answering one factor in the affirmative may not necessarily result in a positive determination if the answers to the other factors point to the opposite conclusion.⁴

Will the listing affect the way public authorities carry out current water management activities?

The listing of the alteration of natural flow regimes as a key threatening process will not alter the current legislative requirements applying to water management by public utilities.

As is currently the case, if the carrying out of water management activities does not require consent or approval under the *Environmental Planning and Assessment Act 1979* but is likely to result in one or more of the following:

³ The 'eight part test' is contained in section 5A of the *Environmental Planning and Assessment Act 1979* and section 94(2) of the TSC Act.

⁴ For further information on 'eight-part test' refer to the NPWS circular entitled 'Threatened Species Management Information Circular No. 2: Threatened Species Assessment Under the EP&A Act: The 'Eight Part Test' of significance.

- harm or pick a threatened species, population or ecological community;
- damage to the habitat of a threatened species, population or ecological community (including critical habitat),

a licence under Part 6 of the TSC Act may be required. A licence issued under the TSC Act may be extended to include protected fauna and protected native plants.

The alteration of natural flow regimes and compliance with other laws

The TSC Act is not the only law that affects water management in New South Wales. There are a number of laws with regulatory provisions to protect native plants and animals. Following is a brief description of the key laws.

Water Management Act 2000

The *Water Management Act 2000* (WM Act) is the principal piece of legislation that controls water management across New South Wales. The WM Act is administered through the Department of Land and Water Conservation (DLWC).

The WM Act provides for the development of water sharing plans and water management plans by community-based Water Management Committees and may:

- allocate the volume of water to be used for various purposes, including irrigation and environmental flows;
- identify the timing of water extraction for various purposes;
- discuss the natural flow regime of a catchment or sub-catchment.

Water plans must be consistent with government advice and policy, including the Interim State Water Management Operating Plan (SWMOP), which sets the overarching policy context, targets and strategic outcomes for the State's water resources.

Fisheries Management Act 1994

The *Fisheries Management Act 1994* (FM Act) addresses the management of fish⁵, and their habitats, within NSW. The objects of the Act include the conservation of biodiversity in addition to the promotion of commercially viable fisheries and quality recreational fishing opportunities. The FM Act outlines the appropriate management strategies to allow for the sharing of fisheries resources between various users. A similar process has been listed on the FM Act as a key threatening process in recognition of the impacts imposed on aquatic biodiversity.

Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (EP&A Act) seeks to encourage ecologically sustainable development by managing the development process and the effects of development on the environment.

The EP&A Act provides for the preparation of environmental planning instruments (EPIs). There are three types of EPIs; local environmental plans (LEPs), regional environmental plans (REPs) and state environmental planning policies (SEPPs).

⁵ 'Fish' is defined under the FM Act as "marine, estuarine or freshwater fish or other aquatic animal life at any stage of their life history (whether alive or dead)". It includes oysters and other aquatic molluscs, crustaceans, echinoderms, beachworms and other aquatic polychaetes. However, 'fish' does not include whales, mammals, reptiles, birds or amphibians.

Such instruments may include provisions for the protection or preservation of vegetation. They may also include provision to protect and conserve native animals and plants, including threatened species, populations and ecological communities, and their habitats.

SEPP 14 – Coastal Wetland

The aim of this policy is to ensure that coastal wetlands are preserved and protected in the environmental and economic interests of the State.

The policy applies to mapped coastal wetlands in local government areas with frontage to the Pacific Ocean excluding those in the Sydney metropolitan area and lands dedicated or reserved under the *National Parks and Wildlife Act 1974*.

The policy requires that the consent of the local council, and the agreement of the Director of Urban Affairs and Planning, must be obtained prior to carrying out any clearing, levee construction, drainage or filling, of lands identified by the policy. Such development also requires an environmental impact statement to be lodged with the development application.

National Parks and Wildlife Act 1974

The *National Parks and Wildlife Act 1974* (NPW Act) provides for the establishment, preservation and management of national parks, historic sites and certain other areas. The NPW Act also provides for the protection of certain native fauna and native plants, and Aboriginal relics.

Under the NPW Act it is offence to harm protected fauna or pick protected native plants (including water-dependent species). In relation to lands managed by the NPWS it is an offence to cut, fell, remove, damage or destroy any vegetation without the consent of the Director-General of the NPWS.

Commonwealth Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is administered through the Commonwealth department, Environment Australia. The Act provides a framework for the environmental assessment and approval of actions that have, will have, or are likely to have a significant impact on a matter of ‘national environmental significance’.

The matters of ‘national environmental significance’ are; world heritage properties, Ramsar wetlands of international importance, nationally threatened animal and plant species and ecological communities, internationally protected migratory species, Commonwealth marine areas, and nuclear actions.

An action that is likely to have a significant effect on such matters may require approval from the Commonwealth Minister for the Environment.

For more information

Additional information sheets regarding the listing and a copy of the NSW Scientific Committee final determination are available from your nearest directorate NPWS office (contact details are provided on the following page) and also over the internet at www.npws.nsw.gov.au/threatened.htm.

Information on the legislation administered by the NPWS (including the *National Parks and Wildlife Act 1974* and the *Threatened Species Conservation Act 1995*) is available over the internet at www.npws.nsw.gov.au/about/legislat.htm.

Information on the *Water Management Act 2000* is available from the Department of Land and Water Conservation and over the internet at www.dlwc.nsw.gov.au.

Information on the *Environmental Planning and Assessment Act 1979* (including environmental planning instruments) is available from the Department of Urban Affairs and Planning and over the internet at www.duap.nsw.gov.au.

Information on the *Environment Protection and Biodiversity Conservation Act 1999* is available from Environment Australia and over the internet at www.environment.gov.au.

State and Commonwealth legislation can be down loaded from the internet at www.austlii.edu.au.



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