NSW GOVERNMENT | Department of Primary Industries

FACTSHEET

Endangered Ecological Community of the Snowy River Catchment in NSW

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Introduction

The aquatic ecosystem in the catchment of the Snowy River in NSW has been significantly altered by river regulation and diversion, habitat modification, land use practices and the introduction of pest and weed species. Many aquatic habitats are now degraded, and many native species have experienced substantial declines in their numbers and distribution – some to the point where they are now listed as threatened.

The aquatic ecological community of the Snowy River catchment in NSW has been listed as an **endangered ecological community** (EEC), meaning that it is likely to become extinct in nature, unless the circumstances and factors threatening its survival and evolutionary development cease to operate.

Listing as an endangered ecological community has several legal implications, including the establishment of heavy penalties for harming (without appropriate authority) species or habitats that form part of the community (see 'Legal implications'). Potential impacts on the endangered ecological community must be considered during development assessment processes, and the NSW Department of Primary Industries may prepare a recovery plan for the endangered ecological community.

Description

The aquatic ecological community in the catchment of the Snowy River in NSW includes all native fish and aquatic invertebrates within all rivers, creeks and streams.

The community includes 19 native fish species including the River Blackfish and Southern Pygmy Perch and hundreds of native invertebrate species, many of which have not been comprehensively studied.

The listing includes the:

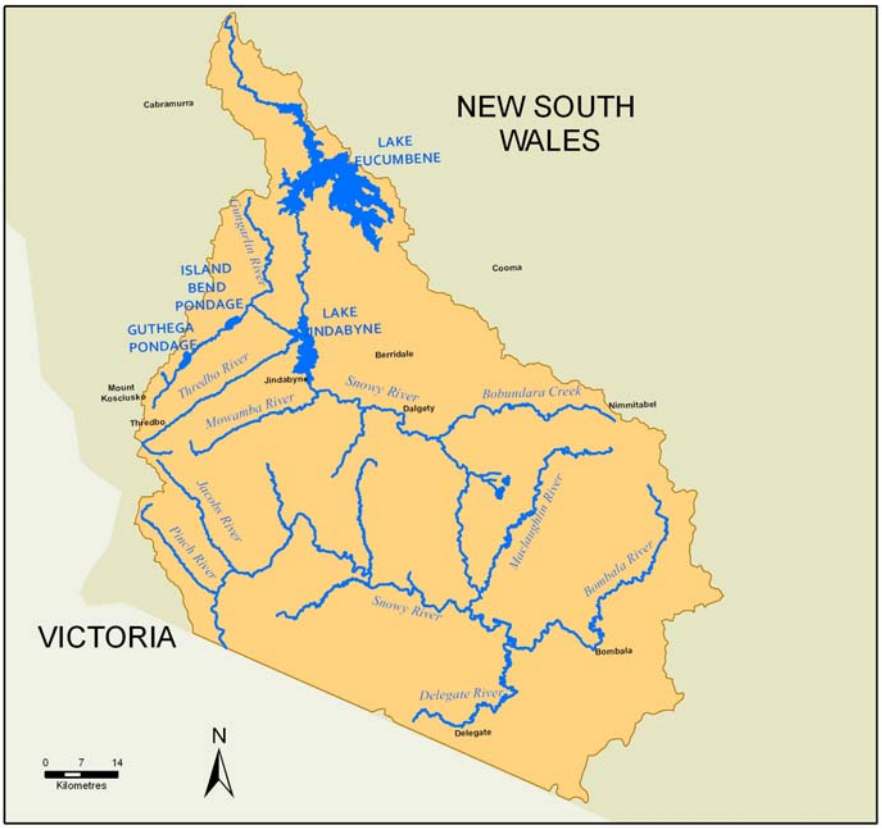
- Snowy River
- Eucumbene River
- Thredbo (or Crackenback) River
- Gungarlin River
- Mowamba River
- Bombala River
- McLaughlin River
- Delegate River
- Pinch River
- Jacobs River, and
- the river bed channel inundated by Jindabyne, Eucumbene, Island Bend and Guthega Dams.

However, the listing excludes the ecological communities that have developed in the waters of the impounded artificial lakes behind these dams.

Habitat and ecology

The Snowy River rises in the Australian Alps in south eastern NSW and follows an indirect route south into Victoria to discharge into Bass Strait at Marlo. The Snowy River was Australia's largest snowmelt river; known for its flood flows during Spring and other features of the environment that form an integral part of the river system, including deep channels and pools, falls and cascades.

The Snowy River, Kosciusko National Park. Photo: Danny Henderson



Snowy River Endangered Ecological Community

The distribution is indicative only. It cannot be considered comprehensive and may contain errors and omissions. NSW DPI and its employees disclaim any liability for any act undertaken on the basis of the information in the map and any consequences of such acts.

Legend

Area of Endangered Ecological Community

Date: 7/05/2012

The catchment is comprised of a series of related ecological communities that are linked by the stream network. The threatening processes acting upon each of these ecological communities vary depending on the position of the waterways within the catchment.

Within the NSW portion of the Snowy River catchment, approximately 990 km of streams (44%) are located in national parks and reserves. However, because of the connected nature of stream networks, these waterways are affected by factors outside of the protected areas.

Why is the aquatic community threatened?

Four major dams; Guthega Pondage, Island Bend Pondage, Eucumbene and Jindabyne, and several smaller diversion structures have been constructed in the Snowy River catchment as part of the Snowy Mountains Hydro-Electric Scheme (SMS).

For many years nearly 99% of the Snowy's natural flow (at Jindabyne) was diverted to the western side of the Great Dividing Range. This has now been reduced to about 85% of the natural flow diverted.

Dams and weirs have regulated natural flows thereby affecting the normal reproductive and other biological cues of species in the ecological community (spawning, migration etc.).

Reduced flows affect water quality such as dissolved oxygen and temperature in the reaches immediately downstream from Jindabyne and Eucumbene Dams. They also affect the ability of fish to migrate and complete their life cycle as natural barriers drown-out less frequently. Combined with in-stream structures, this has had a major impact on species that must return to estuarine or marine waters to spawn such as Australian Bass.

Large in-stream structures, particularly Jindabyne Dam, caused thermal pollution for many years. The release of warm water from above the thermocline in the dam altered the natural temperature regime downstream, with adverse effects on fish survival, reproduction, migration and distribution. This issue has now been largely addressed.

The presence of introduced fish species (Goldfish, Eastern Gambusia, Brown Trout, Redfin Perch, Atlantic Salmon, Brook Trout, Rainbow Trout, Oriental Weatherloach and Yabbies) have a range of detrimental impacts including predation, competition, modification of habitat and providing vectors for the spread of disease and parasites.

The degradation of riparian vegetation through clearing, and the introduction and spread of weeds and exotic plants, such as willows, degrades habitat quality. Similarly, the loss of in-stream aquatic vegetation has reduced spawning sites, and removed nursery areas and food sources for fish and other organisms.

The introduction of sheep, cattle and rabbits combined with historical land use practices, such as clearing of riparian vegetation and mining, has significantly increased the rate of erosion and subsequent siltation in waterways. It has also removed potential habitat and reproductive sites for some fish species.

For all ecosystem components, the Snowy River catchment is typically in the poorest condition of all coastal catchments in NSW.

Snowy River, Ironmungy Nature Reserve, Dalgety
Photo: Danny Henderson

Conservation and recovery actions

Significant changes to the management and sharing of water within the Snowy River Catchment occurred after the corporatisation of the Snowy Mountains Hydro-Electric Authority. Flows to the Snowy River downstream of Jindabyne Dam have been increased and the dam has been modified to enable the release of water from above the thermocline.

Similarly, a major investment in removal of willows and other invasive riparian vegetation from the Snowy River channel has been completed.

Future actions that could be undertaken to assist the recovery of the EEC include:

- Conserve and where possible restore aquatic habitats through the protection of aquatic and riparian vegetation.
- Prevent sedimentation and poor water quality by improving land management practices, conserving and restoring riparian vegetation and using effective erosion control measures.
- Reinstate large woody habitat (snags) in waterways where appropriate.
- Identify and prioritise threats in the EEC.
- Develop and implement control programs for introduced species, and ensure any fish stocking events are conducted in compliance with the NSW Freshwater Fish Stocking Fishery Management Strategy.
- Provide fish passage by removing redundant barriers, modifying road crossings and installing fishways in consultation with affected stakeholders.

What are the implications for fishing and fish stocking?

An interim order is in place authorising continued recreational fishing for native species such as Australian Bass. NSW DPI will prepare a Species Impact Statement to assess the impact of recreational fishing for native species in the catchment and, once complete, the public will be given the opportunity to comment before final recreational fishing arrangements are implemented.

The ecological communities that have developed in the impounded waters of the major dams (Eucumbene, Jindabyne, Guthega, and Island Bend) are excluded from the determination and hence fishing in these waters is not affected by the listing of the EEC.

Similarly, fishing for Trout and Salmon is not affected, as these are not indigenous species. Stocking of Salmonids will continue to be regulated and conducted in accordance with the NSW Freshwater Fish Stocking Fishery Management Strategy.

Eucumbene River above the tree line
Photo: Michael Piontek

Legal implications

Subject to the special arrangements applying to recreational fishing, the listing of the EEC in the catchment of the Snowy River in NSW has given all native fish and other aquatic invertebrates within its boundaries the status of endangered species.

Harming a member of an EEC is an offence. Penalties can include fines of up to $220,000 and up to two years imprisonment.

Harming, buying, selling, or possessing a threatened species is also an offence. Penalties can include fines of up to $220,000 and up to two years imprisonment. Severe penalties also apply for damaging the habitat of an EEC without approval.

Damage includes actions such as dredging riverbeds and constructing in-stream barriers that block the free passage of fish, or damaging the spawning areas of native fish.

Clearing activities authorised by a property vegetation plan approved under the *Native Vegetation Act 2003* are permitted, provided the native vegetation reform package had the benefit of biodiversity certification at the time the property vegetation plan was approved.

Clearing that constitutes a routine agricultural management activity is permitted, as are certain routine farming practice activities other than clearing – provided the activities are to the minimum extent reasonably necessary, and all other relevant statutory approvals or authorities have been obtained.

The impact of developments or activities that require consent or approval (in accordance with the *Environmental Planning and Assessment Act 1979*) must be assessed and considered by consent or determining authorities. Where such actions are likely to result in a significant impact on a threatened species or its habitat, a detailed Species Impact Statement must be prepared.

Strategies to be adopted for promoting the recovery of the EEC must be set out in the NSW DPI Priorities Action Statement.

A recovery plan may also be prepared for the EEC in accordance with the provisions of the *Fisheries Management Act 1994,* to promote its recovery.

Bibliography and further reading

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For further information

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Impounded waters of Eucumbene Dam. Photo: Michael Piontek