

**A FIVE-YEAR MANAGEMENT
STRATEGY FOR THE
RECREATIONAL TROUT FISHERY**

FISHERIES MANAGEMENT PAPER NO. 250

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Government of **Western Australia**
Department of **Fisheries**

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FOREWORD

In August 2004, the Fish and Fish Habitat Protection Program of the Department of Fisheries released Fisheries Management Paper No. 179 ('A draft policy for the translocation of brown trout (*Salmo trutta*) and rainbow trout (*Oncorhynchus mykiss*) into and within Western Australia for the purposes of recreational stocking, domestic stocking, commercial and non-commercial aquaculture'). This paper contained a range of proposals for community discussion on the translocation of trout for domestic stocking, recreational stocking, non-commercial and commercial aquaculture that took into account the previous 2002 review of the trout fishery.

The Recreational Fishing Advisory Committee (RFAC) was concerned about the time delay in progressing this issue and recommended that the issue of trout stocking for recreational purposes be progressed in isolation. This matter was referred to the Recreational Freshwater Fisheries Stakeholder Sub-Committee (RFFSS) to progress the recreational aspects of stocking trout within State public waters. This strategy represents a significant step in ensuring the appropriate level of management is provided for the translocation of trout into and within Western Australia for recreational purposes. It is also hoped that this policy will serve as a guide for the management and translocation of trout for recreational stocking. A policy for the translocation of live trout for commercial and non-commercial aquaculture purposes will be developed through a separate process.

The discussion paper for a five-year management strategy for the recreational trout fishery (Fisheries Management Paper No. 234) was released for public comment in September 2009. It attracted a moderate level of comment with 17 written submissions being received from a variety of stakeholders. The RFFSS considered these submissions and took into account the issues raised in developing the recommendations contained within this paper.

When considering the stocking of trout into rivers and dams of the south-west of Western Australia, a holistic approach needs to be adopted. This approach needs to take into account the social and economic value of the trout fishery and the potential impacts that introduced trout may have on natural aquatic systems, native species and potentially introducing diseases and parasites. It should be recognised that land management practices and reduced rainfall have drastically altered many freshwater systems in the south-west of Western Australia. These changes are likely to be ongoing and will need to be factored in when considering the appropriateness of future stocking proposals.

As Chairperson, I would like to thank all the members of the RFFSS for their voluntary efforts and patience during the comprehensive review process. Their efforts will go a long way to assisting the management of the recreational trout fishery in Western Australia.

Kay Webber
Chairperson

1.1 Stocking of Trout

Recommendation 1

River systems and dams within the south-west of Western Australia to be divided into three categories based on stocking activities, to establish an appropriate level of environmental protection while providing for sustainable recreational stocking activities. These categories are:

Category 1 – Closed Waters - Waters where the recreational stocking of trout will not be approved. The waters in this category have been identified as comprising pristine or unique aquatic environments, or containing threatened or protected species vulnerable to trout stocking.

Category 2 – Restricted Waters – Waters where the recreational stocking of trout may be approved, as deemed acceptable by a translocation risk assessment process. Restricted waters have been identified as containing areas of high conservation value in sections of the waterway. They may include tributaries and/or sections of the waterway where the recreational stocking of trout will not be approved if populations of threatened or critically endangered species (as defined under the Environment Protection and Biodiversity Conservation Act 1999) or areas of special significance are threatened by the introduction of trout. The waters in this category have also had a clear history of recreational stocking.

Category 3 – Open Waters - Waters that are approved to be recreationally stocked with trout. The waters provided for in this category have been identified as areas of lower conservation value and the introduction of trout will have lower impact on the existing ecosystem. These waters have a clear history of recreational stocking.

Recommendation 2

Recreational trout stocking guidelines for river systems and dams are clearly set out and followed according to Table 1 (page 13)

Recommendation 3

Any proposal to stock brown or rainbow trout outside the provisions of this proposed management paper be considered on a case-by-case basis, through the Department of Fisheries' translocation risk assessment and/or the aquaculture licensing process.

Recommendation 4

The Department of Fisheries is to maintain a schedule of individual public waters within Category 2 and 3 waters where the stocking of either rainbow trout or brown trout for recreational purposes is permitted. Any request to cease stocking practices in individual waters within Category 2 and 3 is to be considered by the Department of Fisheries in collaboration with Recfishwest on a case-by-case basis, and approved by the Department of Fisheries' Chief Executive Officer.

Recommendation 5

The Department of Fisheries in collaboration with Recfishwest will be responsible for the development of the annual trout stocking strategies for State public waters in accordance with the trout translocation policy. Stocking approval for public waters will be sought from the

Department of Fisheries' Chief Executive Officer prior to any stocking activities, by providing formal advice in relation to annual stocking proposals. Advice should include the size, number and life stage of the fish to be stocked and the proposed stocking dates and locations. It should also detail the individuals and groups represented throughout the decision-making process.

Recommendation 6

Recreational stocking activities in public waters may only be undertaken by the Department of Fisheries, or by persons authorised by the Department of Fisheries' Chief Executive Officer, and under conditions specified by the Department of Fisheries' Chief Executive Officer.

Recommendation 7

The Pemberton Freshwater Research Centre should be the primary source of fish for recreational stocking purposes. Fish should be disease tested to the satisfaction of the Department of Fisheries' Senior Fish Pathologist prior to release.

Recommendation 8

If fish for recreational stocking purposes is sourced from locations other than the Pemberton Freshwater Research Centre, they must be from a licensed hatchery. Fish should be disease tested to the satisfaction of the Department of Fisheries' Senior Fish Pathologist and will be assessed on a case-by-case basis through a translocation risk assessment process.

Recommendation 9

Applications to import brown or rainbow trout from other States will be considered on a case-by-case basis through a translocation risk assessment process. Prior to the importation of trout from interstate, written authority is required from the Chief Executive Officer of the Department of Fisheries, as required under the Memorandum of Understanding with the Environmental Protection Authority (EPA).

1.2 Recreational Fishing Management Arrangements

Recommendation 10

The combined daily bag limit for brown and rainbow trout on the West Coast and South Coast Bioregion remain at four fish.

Recommendation 11

The reduced daily bag limit (two) for Waroona Dam and Logue Brook Dam be lifted to four.

Recommendation 12

The minimum legal size limit for brown and rainbow trout remain at 300 millimetres, measured from the point of the snout to the tip of the tail.

Recommendation 13

Recreational fishers can use a maximum of one rod, reel or handheld line at any time.

Recommendation 14

The restrictive gear conditions on Waroona Dam and Logue Brook Dam (artificial lures only) be lifted to conform to state-wide rules.

Recommendation 15

- (a) The current trout closed season (1 May to 31 August) should be reduced to 1 July to 31 August.
- (b) The closed season should apply to all line fishing (excepting the waters described in Recommendation 15c).
- (c) The following waters remain open all year to line fishing:
 - Blackwood River
 - Donnelly River
 - Murray River
 - Serpentine River (between the Serpentine Pipe-Head Dam and Serpentine Falls only)
 - Warren River
 - Logue Brook Dam
 - Wellington Dam
 - Big Brook Dam
 - Glen Mervyn Dam

Recommendation 16

The Minister approve the amendment to Order No. 10 of 1999 to remove the closed season relating to Stirling Dam and Samson Brook Dam. The prohibition of fishing in these drinking water supplies are governed under the Metropolitan Water Supply, Sewerage and Drainage Act 1909 and Country Areas Water Supply Act 1947 by the Department of Water.

Recommendation 17

The Minister approve the amendment to Order No. 10 of 1999 to remove the closed season relating to the waters of Lake Leschenaultia, including all streams, brooks and tributaries flowing continuously or intermittently into the lake, as it is no longer applicable. Under this plan, Lake Leschenaultia is not currently recreationally stocked with trout and there is no recommendation to stock this water in the future.

SECTION 2 MEMBERSHIP AND TERMS OF REFERENCE

The former Minister for Agriculture, Forestry and Fisheries established a Recreational Freshwater Fisheries Stakeholder Sub-Committee (RFFSS) of the Recreational Fishing Advisory Committee (RFAC) in 2004 to ensure issues relating to the viability and sustainability of marron, trout and other recreational freshwater species were addressed in an integrated manner.

Past trout stocking practises have been developed by the trout stocking sub-committee of the RFAC through the annual production of a trout-stocking list. The establishment of the RFFSS formalised the activities of the trout stocking committee, ensuring all decisions relating to trout stocking are made in conjunction with other inland fishery groups.

The RFFSS was tasked to review the current recreational trout stocking management guidelines and to oversee the development of a five-year management strategy for the ongoing monitoring and adaptive management of the recreational trout fishery.

The RFFSS consisted of the following membership:

Members:

Kay Webber	Chairperson
Nathan Harrison	Department of Fisheries
Frank Prokop	Recfishwest
Harry Vosper	Western Australian Trout and Freshwater Angling Association
Peter Ryall	Freshwater finfish licence holder representative
John McConigley	Freshwater finfish licence holder representative
John Evans	Marron licence holder representative
David Morgan	Marron licence holder representative

Observers:

Rod Brooks	Water Corporation
Stephen Watson	Department of Water
Denam Bennetts	Department of Environment and Conservation

Executive Support:

Andy Warmbrunn	Fisheries Management Officer (Department of Fisheries)
Eileen Ferguson	RFAC Executive Officer (Department of Fisheries)

The RFFSS Terms of Reference were:

- To develop a five-year strategy for the management of recreational freshwater fisheries in Western Australia;
- To identify key short, medium and long term issues facing recreational freshwater fisheries in Western Australia, in particular the trout and marron fisheries;
- Consult with key stakeholder groups on management options for recreational freshwater fisheries in Western Australia; and
- Make recommendations via the RFAC to the Minister for Fisheries on the future management arrangements for recreational freshwater fisheries in Western Australia.

In September 2009 Fisheries Management Paper No. 234 was released. This was a discussion paper for public comment on the five-year management strategy for the recreational trout fishery. The RFFSS would like to thank the individuals and associations who took the time to complete submissions on the proposals and issues outlined in the discussion paper.

A total of 17 written submissions were received. Appendix A is a list of the names of individuals and organisations that forwarded submissions on Fisheries Management Paper No. 234.

The comments and suggestions put forward in the submissions provided valuable feedback for the RFFSS when formulating the final proposals in this paper. They not only considered the frequency with which issues were raised, but also discussed the validity of the various comments. All matters raised in the submissions were carefully considered by the RFFSS, prior to finalising the recommendations contained in this report.

In 2010 the Recreational Fishing Advisory Committee and its subcommittees, which include the RFFSS, were abolished. Recfishwest are now recognised as the peak industry body that provides advice on fisheries management and acts as the recreational fishing advocate group. In the future any trout management proposals and the annual trout stocking strategy will be developed by the Department of Fisheries in collaboration with Recfishwest.

3.1 Designated Stocking Activity

This document describes the recommended trout stocking programs to service recreational fishing within freshwater areas in the lower south-west of Western Australia. The stocking is dependent upon the annual production of fish from the Pemberton Freshwater Research Centre.

3.1.1 Recreational trout stocking policy

The Department of Fisheries will stock rainbow trout and brown trout into specified public inland waters of the lower south-west of WA, subject to the following stocking policy and other provisions of this Fisheries Management Paper.

Trout Stocking Policy

1. Trout species will be restricted to the traditionally stocked species: rainbow trout (*Oncorhynchus mykiss*) and brown trout (*Salmo trutta*)
2. Three categories will define waters which are either closed, restricted or open to recreational trout stocking, taking into account the sustainability requirements of native species, as well as other environmental, social and economic issues
3. The Department of Fisheries will produce the stock of trout species for stocking programs
4. The Department of Fisheries will carry out stocking in order to meet the objectives of this Fisheries Management Paper

3.1.2 Categorisation of river systems and dams

The categorisation of rivers systems and dams has been created taking into account the assessment criteria outlined in Fisheries Management Papers No. 179 (Appendix B) and No. 234. Any modifications to the river systems or dams and to the stocking guidelines take into account these criteria.

Recommendation 1

River systems and dams within the south-west of Western Australia are divided into three categories based on stocking activities to establish an appropriate level of environmental protection, while providing for sustainable recreational stocking activities. These are:

Category 1 – Closed Waters - Waters where the recreational stocking of trout will not be approved. The waters in this category have been identified as comprising pristine or unique aquatic environments, or containing threatened or protected species vulnerable to trout stocking¹.

¹ Native fish species of the south-west of Western Australia most vulnerable to predation and competition with trout include:

- Trout minnow (*Galaxias truttaceus*);
- Spotted minnow (*Galaxias maculatus*);
- Western mud minnow (*Galaxiella munda*);
- Western minnow (*Galaxias occidentalis*); and
- Native freshwater crayfish species.

Category 2 – Restricted Waters – Waters that may be approved to be recreationally stocked with trout, as deemed acceptable by a translocation risk assessment process. Restricted waters have been identified as containing areas of high conservation value in sections of the waterway. These waters may include tributaries and/or sections of the waterway where the recreational stocking of trout will not be approved if populations of threatened or protected species, or areas of special significance are threatened by the introduction of trout. The waters in this category have also had a clear history of recreational stocking.

Category 3 – Open Waters - Waters that are approved to be recreationally stocked with trout. The waters provided for in this category have been identified as areas of lower conservation value, where the introduction of trout will have lower impact on the existing ecosystem. These waters have a clear history of recreational stocking.

3.2 Stocking Guidelines

3.2.1 Recreational trout stocking guidelines

The stocking guidelines have been developed through the consideration of historical stocking practices, current access to the fishery, recreational fishery values and environmental protection.

Since its inception, the Recreational Freshwater Fisheries Stakeholder Sub-Committee (RFFSS) annually developed the recreational trout stocking strategy based on the available figures of production from the Pemberton Freshwater Research Centre and the stocking figures and locations of previous years.

It is recommended that the translocation of trout for stocking in public water bodies for the purposes of recreational stocking will only be permitted within Category 2 and 3 river systems and dams. No private dams should be stocked in any category one catchments. Private dams in category two or three areas may be stocked, subject to approval.

The following are examples of waters that fall under each of the categories described under Recommendation 1.

3.2.1.1 Category 1 – Closed Waters

The following three waters are the most recent waters in the south-west of Western Australia to be closed to recreational trout stocking.

Bancell Brook

Bancell Brook is used to supply irrigation water and is a relatively unregulated system between the Darling Scarp and the lower Harvey River. Most of the native fish species that are found in Bancell Brook are located downstream of the South Western Highway and include western minnow, western pygmy perch and nightfish. Recreational stocking of trout has been ceased in the hope that by removing the trout, native species are able to expand their distribution within the brook and move into upstream waters. There is also a self-maintaining population of rainbow trout in this system (Morgan and Beatty, 2008).

Shannon River

The Shannon River is the only medium-sized catchment remaining on the south coast of Western Australia with no private (cleared) land. The river runs through the Shannon National Park. Though the Shannon River is a small river with low or intermittent flow in summer, it provides representative native marron (Fisheries Management Paper No. 156).

Some of the native fish species found in the Shannon River include the vulnerable Balston's pygmy perch, the 'rare' mud minnow, the black-stripe minnow, western minnow, western pygmy perch, nightfish and salamander fish (Appendix D).

Margaret River

The Margaret River is the only river in the world that contains the hairy marron (*Cherax tenuimanus*), also referred to as Margaret River marron, which is found almost exclusively in the upper reaches of the river. The hairy marron is listed as 'critically endangered' under the *Environment Protection and Biodiversity Conservation Act 1999*. As crustaceans form part of the diet of both rainbow trout and brown trout, recreational stocking ceased in the Margaret River in 1997 in order to reduce the threat of predation on hairy marron.

The Margaret River also contains a variety of native fish species including Balston's pygmy perch, mud minnow, western minnow, nightfish and western pygmy perch.

Goodga River and Angove River

The Goodga River and Angove River are located within the Albany coast drainage basin, with sections of both rivers located within Two Peoples Bay Nature Reserve. The western trout minnow (*Galaxias truttaceus hesperius*) which is listed as 'critically endangered' under the *Environment Protection and Biodiversity Conservation Act 1999* once had a historical distribution in Western Australia in the King, Kalgan, Goodga and Angove Rivers but is now only found in the Goodga and Angove Rivers.

No recreational stocking of trout has occurred within the Goodga and Angove Rivers in the past and the recreational stocking of trout in these two rivers will not be considered in the future.

3.2.1.2 Category 2 – Restricted Waters

Blackwood River

The Blackwood River begins in the far wheatbelt and flows in a general south-westerly direction before entering the ocean from the Hardy Inlet at Augusta. The health of the Blackwood River increases towards the estuary and much of the river flows through State forest. As a consequence of clearing and farming inland, there is a very high input of highly salinised and eutrophic water down the river in the wet season.

Historically, brown and rainbow trout stocking occurred largely in tributaries near Bridgetown and Balingup. Since the 1970s, many of the tributaries of the Blackwood were stocked with rainbow trout and this practice is still continuing.

Of the many tributaries of the Blackwood River, the following tributaries have been closed to recreational trout stocking due to the presence of native fish, which have been recognised as threatened species:

- Milyeannup Brook
- Red Gully
- Rosa Brook
- Ellis Creek
- McAfee Brook
- Adelaide Brook
- Poison Gully

Donnelly River

The headwaters of the Donnelly River arise between Bridgetown and Manjimup, approximately 60 km inland, before flowing in a south-westerly direction where the river discharges into the Southern Ocean (Hodgkin and Clarke, 1989). The main tributary of the river is Barlee Brook. Due to the isolation of the Donnelly River, the major course of the river has not been dammed for private or public water supply.

The Donnelly River drainage basin contains national parks, Department of Environment and Conservation reserves, and significant coastal dune lakes within the D'Estrecoasteaux National Park.

Populations of restricted fish species have been documented in the past within the Donnelly River. These include the mud minnow, salamander fish, black-striped minnow, and Balston's pygmy perch, which is listed as 'Vulnerable' under the *Environment Protection and Biodiversity Conservation Act 1999*. The Donnelly River is one of only two rivers in the south-west of Western Australia that houses all of the region's endemic fishes.

Balston's pygmy perch has been located in Fly Brook during past research undertaken by Morgan *et al.* (1998). The RFFSS agreed to cease the stocking of Fly Brook while further research is undertaken to determine the population size of Balston's pygmy perch, and if pygmy perch are still located in this section of the Donnelly River.

The recreational stocking of trout will continue in the Donnelly River, although further research is required into the current distribution of vulnerable and endangered native fish species within the river.

King River

The King River rises east of Redmond and flows for approximately 27 km into Oyster Harbour, north east of Albany. Recreational trout stocking has been recorded in the King River since the 1970s.

As indicated in Fisheries Management Paper No. 156, the King River is one of many of the waterways in this area providing an important refuge for a number of rare or vulnerable species of aquatic fauna, including Balston's pygmy perch, western trout minnow and the mud minnow. One submission indicated that King River forms part of the western most boundary of a number of these species, with populations at the extremes of a species' range normally being a priority for protection as they harbour genetic variations within the population. It is also thought that Balston's pygmy perch has disappeared from the King River.

The western trout minnow (*Galaxias truttaceus hesperius*), listed as 'critically endangered' under the *Environment Protection and Biodiversity Conservation Act 1999*, was historically found in the King River, but is now only found in the Goodga and Angrove Rivers.

The recreational stocking of trout will continue in the King River, although further research is required into the current distribution of vulnerable and endangered native fish species within the river.

Warren River

Much of the Warren River is within State forest and the D'Entrecasteaux National Park. It is known to contain populations of western pygmy perch, nightfish and the near-threatened mud minnow. Since the introduction of brown trout into the Warren River, it has been a long-established trout fishing water. After establishing spawning populations in the 1930s, brown trout used to be the primary trout species in these waters. However, in recent years there have been greater numbers of rainbow trout introduced into the waters.

The recreational stocking of trout will continue in the Warren River, although further research is required into the current distribution of vulnerable and endangered native fish species within the river.

3.2.1.3 Category 3 – Open Waters

Brunswick River

The Brunswick River is a tributary of the Collie River, rising in the Darling Range and flowing generally south-south-west for about 48 km into the Collie near Australind. The upper branches of the Brunswick River are located in a large area of bauxite strip-mining and tailings ponds. The river has been regularly stocked with trout since the mid 1970s, which has created a consistent and worthwhile fishery.

Collie River

One of the larger rivers in the south-west of Western Australia, the Collie River is about 154 km long, flowing westwards from its source in the Darling Range to its mouth in Leschenault Estuary.

The hydrology of the Collie River has been largely modified due to the construction of multiple water supply dams, diverting the river around coalmines and training the river to reduce flooding. Most of the land surrounding the Collie River has undergone extensive clearing in order to support agriculture and mining activities (ANRA, 2007).

Historical stocking occurred in the Collie River drainage basin in the upper branches of the Collie River, Wellington Dam and the popular fishery of Butlers Gorge below Wellington Dam. Rainbow trout stocking has continued to occur in recent years.

Harvey River

The Harvey River is approximately 90 km in length, rising near Mount Keats and flowing southerly, westerly, and then northerly into the Harvey estuary. The Harvey River once meandered through a long, low-lying seasonal wetland on the coastal plain. Construction of a major diversion to the ocean and two dams, which supply water to the Perth metropolitan area, has significantly changed the natural hydrology of the river.

Historic stocking of Harvey River included Samson and Stirling Dam, but these are now closed for recreational fishing by the Department of Water as they are public drinking water supplies. The centre of Harvey River has been historically stocked with rainbow trout and brown trout and it is proposed that this practice should continue.

The waterways of this basin feed into the Ramsar-listed Peel-Yalgorup System. Actions that are likely to have a significant impact on Ramsar wetlands are a trigger for Commonwealth assessment under the *Environment Protection and Biodiversity Conservation Act 1999*.

Studies by Morgan and Beatty (2003) found that no native fish were found in the upstream pristine environment where trout and gilgies occurred, while downstream in the drain section three native fish were found, despite little riparian vegetation or in-stream habitat.

Murray River

The Murray River has been regularly stocked with trout since the 1930s. Since this time, an extremely popular rainbow trout fishery has developed. The river is one of the larger rivers of the south-west of Western Australia, flowing 134 km from where it forms at the junction of the Hotham and Williams River, to where it flows into the Peel Inlet at Yunderup.

The waterways of this basin also feed into the Ramsar-listed Peel-Yalgorup System. Actions that are likely to have a significant impact on Ramsar wetlands are a trigger for Commonwealth assessment under the *Environment Protection and Biodiversity Conservation Act 1999*.

Due to lower rainfall and reduced productivity, this river has not been stocked in the last five years.

Serpentine River

The Serpentine River rises in the Darling Scarp, draining forested areas to the east of the scarp, passing through the Youarling State Forest and then the Serpentine National Park. The river then flows through Serpentine Dam and over the Serpentine Falls, before meandering across farmland on the Swan coastal plain and discharging into the Geogrup lakes wetlands system, which connects with the Peel Inlet.

The Serpentine River has had a long history of trout stocking, commencing in 1947, which provided high quality trout fishing close to Perth. The upper reaches of the river have been subject to algal blooms in recent years.

Due to historical stocking of rainbow trout, in Serpentine Dam, Gooralong Brook and Dirk Brook, it was requested that Serpentine River also be included in the recommended list for future stocking activities.

Irrigation Dams

Irrigation dams are man-made structures that rely on winter rainfall. These waters are not of a high conservation value, nor do they contain threatened or endangered species.

Special circumstances relating to the recreational trout stocking of private dams linked to public waters may be addressed on a case-by-case basis through exemptions. No private dams should be stocked in any category one catchment area. Private dams in category two or three areas may be stocked, subject to approval.

Recommendation 2

Recreational trout stocking guidelines for river systems and dams are clearly set out and followed according to Table 1.

Table 1 Rivers and dams to be recreationally stocked with trout

Category 2		
Water	Species to be stocked	Area to be stocked
Blackwood River	rainbow trout	Main channel and tributaries upstream of Jalbarragup Crossing. See section 4.2.1.2 for details on closed tributaries.
Donnelly River	rainbow trout	Main channel and all of its tributaries except Fly Brook.
King River	rainbow trout	Main channel and all of its tributaries.
Warren River - Lefroy Brook	rainbow trout, brown trout	Main channel and all of its tributaries.
Category 3		
Rivers		
Brunswick	rainbow trout	Main channel and all of its tributaries.
Collie	rainbow trout	East of South West Highway, below the headwaters of the highest accessible dam or reservoir.
Harvey	rainbow trout, brown trout	Main channel and all of its tributaries.
Murray	rainbow trout	Main channel and all of its tributaries.
Serpentine	rainbow trout	Between the Serpentine Pipe-Head Dam and Serpentine Falls only.
Dams		
Waroona	rainbow trout	
Logue Brook	rainbow trout	
Harvey	rainbow trout, brown trout	
Oakley	rainbow trout	
Big Brook	rainbow trout	
Glen Mervyn	rainbow trout	
Norrilup	rainbow trout	

Recommendation 3

Any proposal to stock brown or rainbow trout outside the provisions of this proposed management paper will be considered on a case-by-case basis, through the Department of Fisheries' translocation risk assessment and/or the aquaculture licensing process.

3.2.2 Schedule of waters

Recommendation 4

The Department of Fisheries is to maintain a schedule of individual public waters within Category 2 and 3 waters where the stocking of either rainbow trout or brown trout for recreational purposes may be permitted. Any request to cease stocking practices in individual waters within Category 2 and 3 is to be considered on a case-by-case basis, and approved by the Department of Fisheries' Chief Executive Officer.

3.3 Translocation Management

3.3.1 Management responsibility

Past stocking practices were the responsibility of the trout stocking sub-committee of the Recreational Fishing Advisory Committee (RFAC) and were developed using annual trout production stocking lists. This process was formalised in 2004 by the formation of Recreational Freshwater Fisheries Stakeholder Sub-Committee (RFFSS), enabling decisions relating to recreational trout stocking to be made in conjunction with other inland fishery groups.

In 2010 the RFAC and its subcommittees, which included the RFFSS, were abolished. Recfishwest are now recognised as the peak industry body that provides advice on fisheries management and acts as the recreational fishing advocate group. In the future the annual trout stocking strategy will be developed by the Department of Fisheries in collaboration with Recfishwest.

Recommendation 5

The Department of Fisheries in collaboration with Recfishwest will be responsible for the development of the annual trout stocking strategies for State public waters in accordance with this fisheries management paper. Stocking approval for public waters shall be sought from the Department of Fisheries' Chief Executive Officer, prior to any stocking activities by providing formal advice in relation to annual stocking proposals. Advice should include the size, number and life stage of the fish to be stocked, and the proposed stocking dates and locations. It should also detail the individuals and groups represented throughout the decision-making process.

3.4 Stocking Practices

3.4.1 Stocking responsibility

The Department of Fisheries took over the responsibility of stocking trout in the 1970s. Before this time, nominated anglers released trout given to them by the Department. This practice was not ideal, as there was potential for fish to be released in areas other than designated. There was also the risk that improper release techniques were employed, compromising survival rates. Anecdotal information suggests that after the Department started carrying out the stocking, there was a marked improvement in catches recorded in several public waters, such as the Murray River and Blackwood River. This was likely due to the specialised transport equipment and improved stocking protocols.

To reduce the potential impact on the environment of stocking trout, there is a need to mitigate the risk of illegal and accidental introductions. As such, it is appropriate for restrictions regarding stocking responsibility to be in place.

Recommendation 6

Recreational stocking activities in public waters may only be undertaken by the Department of Fisheries, or by persons authorised by the Department of Fisheries' Chief Executive Officer, and under conditions specified by the Department's Chief Executive Officer.

3.4.2 Source of stock

The introduction of exotic or non-endemic parasites and diseases is always a potential risk with fish translocation. Western Australia is fortunate in that a number of significant diseases affecting trout and other fish in other States and Territories are not present here.

The most significant trout disease in Western Australia has been the bacterium *Mycobacterium marinum*. The bacterium remains viable in the environment for long periods of time and is practically impossible to eradicate once present. If the bacterium is present in the water, the trout usually become infected when they are stressed, generally from high temperatures and poor water quality. Symptoms include lethargy, skin darkening, kidney lesions, inflammation and ulceration of the skin. This disease is now controlled through hatchery management and culling of infected fish.

Historically, trout for recreational translocations have been stocked from the Pemberton Freshwater Research Centre. This centre is specially designed for trout production and includes protocols and facilities to reduce the risk of disease. Trout are bred especially so they can tolerate increased heat, which makes them better suited to Western Australian conditions. Current management practices are applied to control *Mycobacterium marinum* at the centre and disease testing for *epizootic haematopoietic necrosis* virus (EHNV) is also undertaken annually. Salmonid and non-salmonid finfish are susceptible to EHNV, transmitted through the movement of carrier fish. Symptoms include abdominal distension, pallor of skin and fins, a loss of equilibrium and flared opercula.

The disease-risk status of each individual aquaculture facility may potentially vary, depending on the diversity of the aquaculture activities undertaken at each location. It is proposed that those fish to be sourced by the Department of Fisheries for recreational stocking purposes will primarily be sourced from the Pemberton Freshwater Research Centre and disease tested to the satisfaction of the Department of Fisheries' Senior Fish Pathologist prior to release.

There is also concern for potential introductions or artificial enhancement of harmful symbionts in natural waterways, despite the trout having a 'disease-free' status. The introduction of trout, and even disease-tested trout, to waterways may increase the presence of parasites, due to an additional host source being available.

Such limitations to stocking procedures and disease testing will aid to reduce the risk of the unintentional release of non-endemic and or exotic parasites and diseases into the State's aquatic environments. Should fish need to be sourced from other locations, this shall be assessed on a case-by-case basis, through the translocation risk assessment process.

The risk of disease and any required risk minimisation protocols that are associated with the source of stock, will be communicated to the external provider of trout stock through either the translocation assessment or aquaculture licensing processes.

Recommendation 7

The Pemberton Freshwater Research Centre should be the primary source for fish for recreational stocking purposes. Fish should be disease tested to the satisfaction of the Department of Fisheries' Senior Fish Pathologist prior to release.

Recommendation 8

If there is a requirement to stock fish from alternate locations the stock must be from a licensed hatchery and must be disease-tested to the satisfaction of the Department of Fisheries' Senior Fish Pathologist. These fish should be assessed on a case-by-case basis, through a translocation risk assessment process.

3.4.3 Importation of stock

There are a number of diseases present in other States, which are currently not found in Western Australia that affect brown and rainbow trout. If these diseases are introduced to the trout aquaculture industry in Western Australia, the impacts could be significant. Furthermore, many of these diseases are infectious to native Australian species and if released to natural waterways have the potential to dramatically effect ecological systems. The relatively disease-free status of trout in Western Australia also gives our aquaculture industry a competitive advantage over other States (with the exception of Tasmania).

The Australian Quarantine and Inspection Service (AQIS) has banned the introduction of live or fresh trout products into Western Australia from overseas, due to the disease risk posed. Appropriate controls on the importation of trout from interstate will minimise the risk of introducing new diseases and prevent the transfer of diseases to wild populations of native fish.

Recommendation 9

Applications to import brown or rainbow trout from other States will be considered on a case-by-case basis through the translocation risk assessment process. Prior to the importation of trout from interstate, written authority is required from the Chief Executive Officer of the Department of Fisheries, as required by the *Fish Resources Management Regulations 1995*.

3.4.4 The use of triploid trout

There are potentially a number of direct benefits of using polyploid trout for stocking activities, but there has been limited adoption of triploid or polyploid technology in Western Australia. The benefits of triploid trout include female trout being genetically sterile and so not able to produce self-sustaining populations when released. Energy requirements for producing eggs and searching for suitable spawning grounds are instead used for growth, increasing the size and condition of the fish. This improvement in size and condition enhances the fishing for the recreational angler.

At the time of publication, the Pemberton Freshwater Research Centre was the only centre in Western Australia with a hydrostatic pressure chamber. As a result, it is able to produce polyploid fish (both triploid and tetraploid fish) more reliably. The hatchery has been producing triploid fish for many years and research is being undertaken into creating a tetraploid line of fish to be used in the selective breeding program to improve growth and temperature tolerance of the fish.

One main difference in the development of triploid and tetraploid fish is that tetraploid fish are fertile. When they are bred with normal diploid fish, all progeny are triploid, sterile and grow much faster. One of the major uses of this research will be to supply temperature-tolerant (Moloney et al, 2003), fast-growing, sterile fingerlings to overseas stocks, which have ‘crashed’ due to increase in temperatures from climate change.

Currently, techniques to determine polyploids are time-consuming and require expensive equipment. Polyploids are usually determined by analysing the chromosome number, cell size or the DNA content of the cell. Triploid fish have three sets of chromosomes (one more than normal/diploid fish), their cells are 30 per cent larger and each cell contains 30 per cent more DNA than diploid fish. Tetraploid fish have four chromosomes, have 100 per cent larger cells and each cell contains 100 per cent more DNA than a diploid fish. It is important to be able to determine if fish released are in fact triploid and therefore sterile.

With limited use in Western Australia, the success of implementation of polyploidy trout cannot be quantified and more research is required into the method of ‘polyploidizing’ and into an efficient, accurate process of determining polyploidy fish. It is therefore proposed that any application received in relation to the translocation of polyploid trout for any of these purposes will be assessed on a case-by-case basis.

The majority of received submissions that refer to triploid trout indicated support for the use of triploid trout, with the requirement for more research into the technology prior to adoption of the use of the fish.

3.5 Management Controls

3.5.1 Possession limits

Possession limits for trout are primarily used as a social control measure to prevent the accumulation of excessive quantities of fish taken by individuals on a fishing trip, and set a clear ceiling for socially acceptable catch levels.

For brown and rainbow trout, the possession limits only apply to the West and South Coast Bioregion, as trout have historically only been stocked in these regions. Currently, rainbow trout and brown trout are classified as Category 1 ‘high risk’ fish under the *Fish Resources Management Regulations 1995*. This is due to their high social value as opposed to sustainability risks. The combined recreational daily bag limit for brown and rainbow trout is four fish.

The numbers of trout that are being stocked each year are declining and it is proposed in this plan that only a limited number of drainage basins are potentially stocked. For that reason, there is no recommendation to change the current daily bag limit.

Historically, Lake Navarino (Waroona Dam) and Logue Brook Dam have both been stocked with ex-brood stock. To ensure these fish were not immediately fished out at the beginning of the season, the *Fish Resources Management Regulations 1995* was amended to include certain conditions for trout fishing in these waters, such as introducing a possession limit of two.

Due to a recent decline in the quality of trout fishing in Waroona Dam and Logue Brook Dam, the RFFSS cannot justify these waters to remain as trophy waters. Therefore, it is proposed that the bag limit for trout at Waroona Dam and Logue Brook Dam should be increased to four fish per angler, so as to standardise the daily bag across all trout fishing waters on the West Coast and South Coast Bioregion.

Recommendation 10

The combined daily bag limit for brown and rainbow trout on the West Coast and South Coast Bioregion remain at four fish.

Recommendation 11

The reduced daily bag limit (two) for Waroona Dam and Logue Brook Dam be lifted to four.

3.5.2 Minimum legal size limits

Minimum size limits are usually based on the breeding biology of a species, and in the case of trout, are set to help enhance recreational fishing quality by increasing the average size of the fish available. As a Category 1 fish, being a highly targeted species, it ensures that the fry and yearlings stocked reach a reasonable size before being taken from the fishery.

For brown and rainbow trout, the minimum legal size limit is 300 millimetres total length, measured from the point of the snout to the tip of the tail. There is no recommendation to change this minimum size limit.

Recommendation 12

The minimum legal size limit for brown and rainbow trout remain at 300 millimetres total length, measured from the point of the snout to the tip of the tail.

3.5.3 Permitted fishing method

Regulations have been put in place to spread the catching of trout over the season so the catch is made more challenging for recreational fishers, which adds to the enjoyment of the fishery.

Currently the only permitted fishing method for rainbow and brown trout is a single rod, reel or line, or a single line held in the hand. The RFFSS believed that this might be too restrictive and it would cause compliance issues for recreational fishers on fishing trips, when more than one rod or reel might be taken on a trip. However, submissions received were opposed to only being in 'possession' of one rod as fishers felt it was too restrictive (some fishers may carry up to five different rods at any one time on a trout fishing trip). Members felt the current regulations restricting fishing to 'use' of a single rod, line or lure was more in keeping with the need to restrict effort but not impact on the ability of fishers to travel with two or more rods.

At Waroona Dam and Logue Brook Dam, anglers are only allowed to use artificial lures with no bait attached. Due to the recommendation that these two dams no longer be classified as trophy waters, the RFFSS recommended that this restriction be lifted so that the permitted fishing methods are consistent across all trout fishery waters.

Recommendation 13

Recreational fishers can use a maximum of one rod, reel or hand held line at any time.

Recommendation 14

The restrictive gear conditions on Waroona Dam and Logue Brook Dam (artificial lures only) be lifted to conform to state-wide rules.

3.5.4 Closed recreational season

The extent of trout stocking within Western Australian waters was historically more extensive than at present. This is reflected in the current legislative controls for closed seasons over trout waters.

Under current management strategies, a closed season exists from 1 May to 31 August, with exceptions for a number of waters. Waters open all year include Murray River, Blackwood River, Donnelly River and Warren River, and the Serpentine River between the Serpentine Pipe-Head Dam and Serpentine Falls.

The production cycle of trout only allows recreational stocking at certain times of the year, with trout artificially spawned in July each year. Closed seasons were implemented to allow the trout to be stocked and to allow the fish (especially the ex-brood stock) to acclimatise to their environment before being fished. Season openings help to profile the sport, with large numbers of recreational fishers attending the opening days.

The RFFSS originally proposed that the current trout season be maintained. However, after considering the submissions received, it was agreed that the closed season be reduced to a two-month closure from the existing four-month closure. This allows enough time for ex brood and yearling stocks to acclimatise to their new environment, as well as providing some protection for trout in tributaries during peak winter flows. To be effective the closure should apply to all line fishing (including redfin and cobbler), which will simplify rules and allow for effective compliance. All waters currently open to trout fishing all year will remain open. A shorter closed season will also allow greater social and economic benefits to be enjoyed by local communities in the south-west of Western Australia.

Stirling Dam and Samson Dam are currently included in a list of trout waters open all year. At the time of this report, Stirling and Samson Dams have both been closed to recreational fishing as public drinking water supply dams. They are governed by the Department of Water under the relevant state legislation of the *Metropolitan Water Supply, Sewerage and Drainage Act 1909* and *Country Areas Water Supply Act 1947*. The condition relating to these dams within Order No. 10 *Prohibition on fishing (trout) Order 1999* of the *Fish Resources Management Act 1994* is no longer applicable, as they are governed under the above stated legislation.

A closed season from 1 May to 30 November exists for the waters of Lake Leschenaultia. This condition is no longer applicable as Lake Leschenaultia is no longer stocked with either rainbow trout or brown trout. There is no recommendation in this report to potentially stock it in the future. Therefore it is recommended that the provisions relating to the closed season for Lake Leschenaultia be removed from the legislation.

Recommendation 15

- (a) The current trout closed season (1 May to 31 August) should be reduced to 1 July to 31 August.
- (b) The closed season should apply to all line fishing (excepting waters described in 15c below).
- (c) The following waters remain open all year to line fishing:
 - Blackwood River
 - Donnelly River
 - Murray River
 - Serpentine River (between the Serpentine Pipe-Head Dam and Serpentine Falls only)

- Warren River
- Logue Brook Dam
- Wellington Dam
- Big Brook Dam
- Glen Mervyn Dam

Recommendation 16

The Minister approve the amendment to Order No. 10 of 1999 to remove the conditions relating to Stirling Dam and Samson Dam as the prohibition on fishing in these drinking water supplies are governed under the Metropolitan Water Supply, Sewerage and Drainage Act 1909 and Country Areas Water Supply Act 1947 by the Department of Water.

Recommendation 17

The Minister approve the amendment to Order No. 10 of 1999 to remove the closed season relating to the waters of Lake Leschenaultia, including all streams, brooks and tributaries flowing continuously or intermittently into the lake, as it is no longer applicable. Under this plan, Lake Leschenaultia is not currently recreationally stocked with trout and there is no recommendation to stock this water in the future.

3.5.5 Grant of recreational fishing licence

Under current legislation, fishing for all freshwater fish (other than crustaceans) in waters south of 29° south latitude above the tidal influence, including all lakes, dams, rivers and their tributaries, requires a licence. As such, possessing a licence is a requirement to fish for brown trout and rainbow trout.

The RFFSS supported the requirement of this condition. They were also supportive of the condition that people under 16 years of age are not required to hold a licence if they are in the company of an adult with a licence.

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SECTION 5 APPENDICES**APPENDIX A NAMES OF INDIVIDUALS AND ORGANISATIONS
WHO FORWARDED SUBMISSIONS**

Milligan, Shane

McConigley, John

Ryall, Peter

France, Tony

Recfishwest

Masters, Bernie

Fragomeni, Peter

Gellatly, Dr David C

The Western Australia Trout and Freshwater Angling Association Inc.

Coghlan, Scott

Harvey River Restoration Taskforce Inc

Vuckovic, Peter

Doepel, Kim

Goodlich, Tony

Murdoch University, Freshwater Fish Section, Centre for Fish & Fisheries Research

Hocks, Fraser

APPENDIX B SUMMARY OF SUBMISSIONS RECEIVED IN RESPONSE TO DISCUSSION PAPER ‘A FIVE- YEAR MANAGEMENT STRATEGY FOR THE RECREATIONAL TROUT FISHERY’ (FISHERIES MANAGEMENT PAPER NO. 234)

This summary of submissions is based numerically on submissions received – it does not attempt to weight submissions received from clubs, organisations and individuals. The Recreational Freshwater Fisheries Stakeholder Sub-Committee (RFFSS) reviewed all the comments raised in the various submissions. The RFFSS considered not only the frequency but also the validity of issues raised.

Stocking of trout

Proposal 1 River systems and dams within the south-west of Western Australia are divided into three categories based on stocking activities to establish an appropriate level of environmental protection, while providing for sustainable recreational stocking activities.

Seven responses supported, four opposed.

Key issues raised:

- That further restrictions are not wanted.
- Trout stocked only to Warren River to reduce impact on native species.
- More research needed.

Proposal 2 Recreational trout stocking guidelines for river systems and dams are clearly set out and are followed according to Table 1.

Seven submissions supported, three opposed.

Key issues raised:

- Balance needed between trout and native fish in Category 2 – Restricted Waters.
- Opposition to trout that impact on native species.

Proposal 3 Any proposal to stock brown or rainbow trout outside the provisions of this proposed management paper be considered on a case-by-case basis, through the Department of Fisheries’ translocation risk assessment and/or the aquaculture licensing process.

Eight submissions supported, two opposed.

Key issues raised:

- Concerns about case-by-case assessment.
- Relating to the stocking of private dams linked to public waters - no private dams should be stocked in any Category 1 catchment. Private dams in Category 2 or 3 areas may be stocked, subject to approval.
- Approvals should not be needed for waters adjacent to waters in Category 2 and 3.

Proposal 4 The Department of Fisheries is to maintain a schedule of individual public waters within Category 2 and 3 waters where the stocking of either rainbow trout or brown trout for recreational purposes is permitted. Any request to cease stocking practices in individual waters within Category 2 and 3 is to be considered by the RFFSS on a case-by-case basis, and approved by the Department of Fisheries' Chief Executive Officer.

Supported by all who commented on this proposal.

Proposal 5 The RFFSS is responsible for the development of the annual trout stocking strategies for State public waters in accordance with the trout translocation policy. Stocking approval for public waters shall be sought prior to any stocking activities, from the Department of Fisheries' Executive Director, by providing formal advice in relation to annual stocking proposals. Advice should include the size, number and life stage of the fish to be stocked and the proposed stocking dates and locations. It should also detail the individuals and groups represented throughout the decision-making process.

Supported by all who commented on this proposal.

Key issue raised:

- The Department of Fisheries should inform public of reasons why, and for how long, any cessation of stocking is occurring

Proposal 6 Recreational stocking activities in public waters may only be undertaken by the Department of Fisheries, or by persons authorised, and under conditions specified by the Department of Fisheries' Chief Executive Officer.

Supported by seven submissions, one opposed.

Key issue raised:

- Conditions too restrictive. "The Department should not be given the opportunity to object"

Proposal 7 The Pemberton Freshwater Research Centre should be the primary source of fish for recreational stocking purposes and disease tested to the satisfaction of the Department of Fisheries' Senior Fish Pathologist prior to release.

Supported by all who commented on this proposal.

Key issues raised:

- Brown trout should be sourced from New South Wales
- Opposition to breeding of minnows/galactids
- Trout should have preference over other species

Proposal 8 If fish are required to be stocked from locations other than the Pemberton Freshwater Research Centre, they must be from a licensed hatchery, disease tested to the satisfaction of the Department of Fisheries' Senior Fish Pathologist, and shall be assessed on a case-by-case basis, through the translocation risk assessment process.

Supported by all who commented on this proposal.

Proposal 9 Applications to import brown or rainbow trout from other States will be considered on a case-by-case basis through a translocation risk assessment process. Prior to the importation of trout from interstate, written authority is required from the Chief Executive Officer of the Department of Fisheries, as required under the Memorandum of Understanding with the Environmental Protection Authority (EPA).

Supported by all who commented on this proposal.

Recreational Fishing Management Arrangements

Proposal 10 The combined daily bag limit for brown and rainbow trout on the West Coast and South Coast Bioregion remain at four fish.

Four submissions supporting and seven supporting a bag limit of two.

Proposal 11 The reduced daily bag limit (two) for Waroona Dam and Logue Brook Dam be lifted to four.

Four submissions supported, six opposed.

Key issues raised:

- If daily bag dropped to two (proposal 10) reject
- Harvey Dam to be dropped to two

Proposal 12 The minimum legal size limit for brown and rainbow trout remain at 300 millimetres, measured from the point of the snout to the tip of the tail.

Supported by all who commented on this proposal.

Proposal 13 Recreational fishers can use a maximum of two rods, reels or hand held lines at any time.

Two submissions supported (one with conditions), 10 opposed.

Key issue raised:

- Submissions were opposed to this issue based on the need to allow fishers to carry more than one rod.

Proposal 14 The restrictive gear conditions on Waroona Dam and Logue Brook Dam (artificial lures only) be lifted to conform with State wide rules.

Three submissions supported, eight opposed.

Key issues raised:

- Some submissions (four) favoured all waters to be artificial lures only.
- One submission inclusion of Harvey Dam as artificial lures only

Proposal 15 (a) The current trout closed season (1 May to 31 August) should be reduced to 1 July to 31 August.

Five submissions supported, four opposed.

Key issues raised:

- Retain current closure
- Three month closure
- Two month closure

Proposal 15 (b) The closed season should apply to all line fishing.

Supported by all who commented on this proposal.

Proposal 15 (c) The following waters remain open all year to line fishing:

- Blackwood River
- Donnelly River
- Murray River
- Serpentine River (between the Serpentine Pipe-Head Dam and Serpentine Falls only)
- Warren River
- Logue Brook Dam
- Wellington Dam
- Big Brook Dam
- Glen Mervyn Dam

Nine submissions supported, two conditionally supported, one opposed.

Key issue raised:

- Conditional support if:
 - Logue Brook Dam closed
 - Open waters restricted to Murray, Blackwood, Donnelly and Warren

Proposal 16 The Minister approve the amendment to Order No. 10 of 1999 to remove the closed season relating to Stirling Dam and Samson Dam as the prohibition of fishing in these drinking water supplies are governed under the Metropolitan Water Supply, Sewerage and Drainage Act 1909 and Country Areas Water Supply Act 1947 by the Department of Water.

Supported by all who commented on this proposal

Proposal 17 The Minister approve the amendment to Order No. 10 of 1999 to remove the closed season relating to the waters of Lake Leschenaultia, including all streams, brooks and tributaries flowing continuously or intermittently into the lake, as it is no longer applicable. Under this plan, Lake Leschenaultia is not currently recreationally stocked with trout and there is no proposal to stock this water in the future.

Supported by all who commented on this proposal.

**APPENDIX C MEMORANDUM OF UNDERSTANDING
BETWEEN THE DEPARTMENT OF FISHERIES AND
THE ENVIRONMENTAL PROTECTION AUTHORITY**

14

**Memorandum of Understanding
between**

the Environmental Protection Authority and
the Fisheries Department of Western Australia

**the environmental assessment of translocationa of live
aquatic non-endemic species into or within Western
Australia**



 **Environmental Protection Authority**

1. Purpose

The objectives of this Memorandum of Understanding are:

- (a) To facilitate an efficient and effective assessment process for translocation proposals while maintaining the responsibilities of all parties.
- (b) To minimise the risk to terrestrial and aquatic environments where translocation of aquatic organisms occurs with particular reference to:
 - * maintenance of water quality
 - * maintenance of the integrity of stream and river banks
 - * maintenance of genetic composition and biodiversity
 - * protection from the introduction of disease.
- (c) To promote a commitment to continual improvement in environmental performance within the aquaculture industry.

2. Obligations

This Memorandum of Understanding (MOU) clarifies arrangements between the Environmental Protection Authority (EPA) and the Fisheries Department of Western Australia (FDWA) for the environmental assessment of translocation proposals of live non-endemic aquatic species into or within Western Australia for aquaculture or recreational fishing stock enhancement purposes.

The procedures in this MOU are designed to ensure that appropriate assessment occurs on translocation proposals.

Through this MOU, the EPA and FDWA have established procedures for the efficient implementation of their duties, while retaining the responsibilities of both parties. The MOU is not a formal delegation of powers under the Environmental Protection Authority Act but provides administrative arrangements concerning the FDWA environmental assessment process for translocation proposals.

The EPA does not abrogate its responsibilities in regard to environmental assessment and the EPA can, under the *Environmental Protection Act 1986*, call in any proposal for assessment, including those that are identified by FDWA as not requiring environmental impact assessment as a result of the assessment process outlined within this document.

This MOU is predicated upon the following principles:

1. That the Environmental Protection Authority has lead responsibility for environmental protection in the State;
2. That the Fisheries Department of Western Australia has lead responsibility for the management and development of aquaculture, recreational fishing and fisheries-related activities in the State and the protection of fish habitats;
3. That the conservation significance of environmentally sensitive areas must be identified and recognised when assessing translocation proposals in these environments.

Memorandum of Understanding for the environmental assessment of translocation of live aquatic non-endemic species into or within Western Australia

The parties to this MOU recognise that it facilitates the administration of the following legislation:

- * Environmental Protection Act 1986
- * Fish Resources Management Act 1994 and Regulations.

The Department of Environmental Protection (DEP) provides technical and professional services to the EPA. The DEP also performs many of the procedural arrangements on behalf of the EPA when carrying out environmental impact assessment.

The development of this MOU has involved extensive consultation between the EPA, DEP and FDWA. The FDWA has also undertaken an extensive review of the issues associated with translocation. The review process has included public consultation. Results have been published in Fisheries Management Paper No. 58 (1993) and Fisheries Management Paper No. 85 (1995) available from the FDWA.

3. Interpretation

The Fish Resources Management Act 1994 defines 'fish' generally as any aquatic organism of any species (whether alive or dead), except aquatic mammals, aquatic reptiles, aquatic birds, amphibians or pearl oysters of the species *Pinctada maxima*.

Translocated aquatic organisms are those species, both native and introduced, which have been transferred, live, to waters outside their natural or previous distributional ranges. Therefore translocated aquatic organisms include not only species which are imported into a country but also the movement of species or strains within a country to regions in which they previously did not exist.

Translocation proposals can be categorised into five types:

- Type A Introduction of an exotic (foreign) species from overseas into (Western) Australia.
Any proposed introduction of a foreign fish from overseas is considered under the *Commonwealth Wildlife Protection Act* (1982) by the Australian Nature Conservation Authority and any such proposal is outside the scope of the assessment process set down in this MOU.
- Type B Introduction into Western Australia of an exotic (foreign) species that has been previously introduced into another state of Australia.
- Type C Introduction of an Australian aquatic species from another state into Western Australia.
- Type D Further spread of a species previously introduced into Western Australia.
- Type E Extension of the natural distribution of a Western Australian native species into a drainage basin(s) outside of its natural distribution.
- Type F Translocation of a native Western Australian species within its natural distribution-
 - (a) Between drainage basins

- (b) Within a drainage basin

For Type E translocations, it may need to be established whether or not the species has subspecies or genetically different strains in different drainage basins or parts of its distribution.

This MOU and associated translocation assessment process does not relate to:

- (i) the translocation of species into Western Australia from overseas;
- (ii) the translocation of fish into or around Western Australia for aquarium/ornamental purposes;
- (iii) the translocation of fish into and around Western Australia for the restaurant trade;
- (iv) the translocation of fish into and around Western Australia for the purposes of scientific experimentation;
- (v) the translocation of pearl oysters of the species *Pinctada maxima* for the purposes of pearl culture; and
- (vi) the translocation of species for which specific translocation proposals are in place.

These matters will be managed separately by the FDWA on a case by case basis with appropriate liaison with the EPA.

4. Translocation Proposal Management System

4.1 Environmental Policy

To reduce the risk of release or escape of non-endemic, aquatic species and to minimise the environmental impacts when this occurs.

4.1.1 The environmental policy is predicated under the following assumptions:

- a) All species translocated for aquaculture purposes may escape or be released into, or spread in, the natural environment at some time and place.
- b) Every species translocated has the potential to impact on the Western Australia environment to some degree.
- c) The degree of impact will depend on the characteristics of the species and the condition of the environment.

4.2 Procedure

The FDWA will assess translocation proposals in accordance with the following arrangements:

- (a) All proponents seeking to translocate aquatic organisms into or within Western Australia for the purposes of aquaculture or recreational fishing stock enhancement will need to make application to the FDWA under Regulation 176 (1) (b) of the Fish Resources Management Regulations 1995.
- (b) All applicants will need to follow a set of guidelines provided by the FDWA and submit a formal application as well as a 'translocation synopsis' (Attachment 1).
- (c) The application and 'translocation synopsis' will be assessed by the FDWA against a decision-making schema (as described in Attachment 2) and in accordance with the following principles:

Principles of Assessment

- 1. Introductions into Australia of foreign species in the first category (Type A) must be assessed at a national level because of the susceptibility to disease and ecological competition of our unique and evolutionary isolated fauna, as a whole. These translocations are not the subject of this MOU or translocation guidelines.
- 2. Any species to be translocated must undergo a risk management assessment prior to translocation and, for it to be acceptable, the assessment must show that it presents a low risk to the Western Australian environment. The risk assessment procedure will be conducted in accordance with the principles outlined in "Risk Management", Australian/New Zealand Standards AS/NZS 4360:1995.
- 3. The risk assessment should be based upon the best available scientific knowledge of the species' biological status, which is supplied in the 'translocation synopsis' accompanying the translocation application. Proposed foreign introductions to Australia are often disallowed on the basis of an obvious very dangerous capability (eg. poison spines) or diseases. However the other categories of translocation which are addressed at the State level usually involve lesser, and less obvious, potential risk. In these cases, the translocation decision needs to weigh the justification of significant economic and social benefits of the translocation against the biological risk.
- 4. Western Australia spans an exceptionally wide range of climatic and geographic conditions and contains water bodies which range in environmental value from highly modified or degraded to near pristine in condition. Consequently, it may not be possible on biological or management grounds to have a single statewide policy for a species. It may be that a species will have net benefits to some areas of the State but have negative impacts in other areas.
- 5. If approved, Type B translocations will necessitate some form of quarantine and health testing. Type C, D and E translocations also may require quarantine and health testing.

6. All water accompanying translocated fish must be adequately treated to ensure that no disease organisms or invertebrate flora or fauna enter, or are spread within, Western Australia accidentally.

4.3 Implementation and operation

4.3.1 Roles and responsibilities

A schematic representation of the assessment process under the MOU is provided in Figure 1 and explained below.

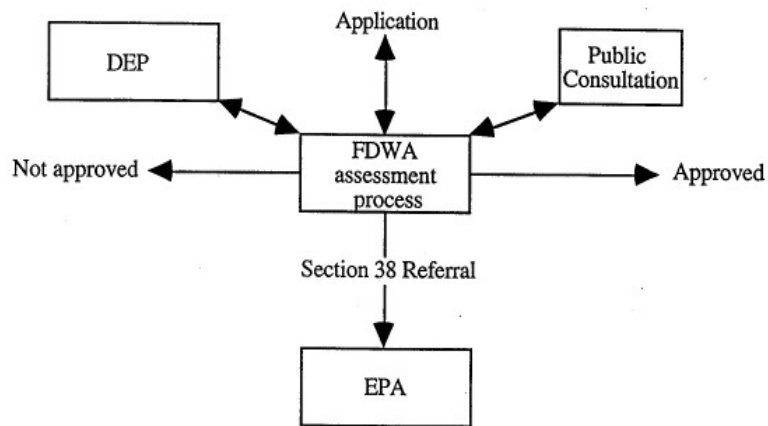


Figure 1 Schematic representation of the MOU assessment process for applications for translocation aquatic species.

Fisheries Department of Western Australia

Assessment of Applications

- * Applications will be assessed by the FDWA using the 'translocation synopsis' and associated decision-making schema. A statement of decision will be prepared by the assessing officer(s) within the FDWA (Attachment 3). In the event that an application is refused, a copy of the decision statement will be provided to the applicant.
- * If an application for translocation relates to more than one inland drainage basin (refer to Attachment 4) or more than one marine geographic area, separate assessments will be made.
- * If the application for translocation relates to either of the two following classifications, the application will not be approved:

Memorandum of Understanding for the environmental assessment of translocation of live aquatic non-endemic species into or within Western Australia

- drainage basins, or areas within drainage basins evaluated as being of high conservation value using all available environmental and biological data; or
- buffer areas where the translocation into a drainage basin that adjoins a high conservation value area would threaten the conservation status of the adjoining drainage basin.

Classification of particular areas will be developed over time using available environmental and biological data and incorporated into the translocation guidelines published by FDWA.

Public Consultation

Prior to any approval being granted for a translocation proposal, FDWA will seek comment from the public by way of a public advertisement. Specifically, consultation with the public and/or specified interest groups will be included at a number of points in the decision-making schema. A copy of the 'translocation synopsis' questionnaire will be provided to interested parties as part of the public consultation process.

It may be that following an assessment of public comment received on a particular proposal the Executive Director of Fisheries determines at that point that the proposal should not be approved.

If further assessment is undertaken and additional consultation is considered necessary by the FDWA at a later point in the decision-making schema for that proposal, the opportunity for comment will only be provided to those individuals and groups who provided comment at the initial decision-making point.

This public consultation is additional to and separate from any public consultation that may be required by the EPA as part of its formal assessment process.

Department of Environmental Protection

The FDWA will refer to the Department of Environmental Protection for comment:

- * those applications which following the assessment process are considered by the FDWA to be marginal cases; and
- * those applications which are proposed to be approved subject to either a large number of conditions or conditions which are considered to be of special importance.

Environmental Protection Authority

As a result of the assessment under this MOU the Executive Director of FDWA may decide that a proposal being assessed may be of a nature that it should be referred to the EPA under Section 38 of the *Environmental Protection Act 1986*.

In addition if there are differing views on a particular assessment between the DEP and FDWA, the proposal will be referred to the EPA by FDWA.

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Translocation proposals that have been referred to the EPA by either FDWA or any other body will be treated as a referral under Section 38 of the *Environmental Protection Act 1986*.

The EPA shall also have an audit role to ensure that translocation proposals have been assessed in accordance with this MOU and associated guidelines.

4.3.2 Documentation

The proponent will be required to complete the 'translocation synopsis' which will form the basis of the application to translocate aquatic organisms for the purposes of aquaculture or recreational fishing stock enhancement.

Public comment will be sought by way of a public advertisement. Comments will be reviewed as part of the assessment process.

Where proposals are referred to the DEP written documentation will be provided to FDWA.

A copy of the "Statement of Decision" will be provided to the proponent if requested.

Proposals referred to the EPA shall include a copy of the following information:

- 'translocation synopsis';
- any public comments received on the application;
- comments provided from the DEP or other Government Agency;
- a copy of the "Statement of Decision"; and
- any other relevant information.

4.4 Internal audit and performance assessment

It will be the responsibility of each organisation to evaluate its involvement in the assessment process against its own performance indicators.

4.5 Review

This MOU will be reviewed by both parties in three years from date of signature. This MOU can be changed prior to the three year review with the written agreement of both parties.

The translocation guidelines and 'translocation synopsis' will be reviewed by FDWA on a continuous basis and will be amended as considered necessary by the Executive Director of FDWA. Any amendments which he considers significant will be referred to the EPA for advice. The EPA and DEP will be informed of any changes made.

5. Audit by the EPA of the Translocation Proposal Management System

The EPA will conduct an audit of the implementation of the Translocation Proposal Management System every 12 months or at such other periods greater than twelve months as the EPA so determines.

The purpose of the audit will be to:

- (a) determine compliance with the system set out in the MOU;
- (b) determine whether the system has been properly implemented and maintained;
- (c) identify areas of potential improvement; and
- (d) examine the effectiveness of the internal review procedure, including its ability to achieve the objective of continuous improvement.

The method of audit will be determined by the EPA during the first twelve months of operation following discussions between the EPA and FDWA.

AGREED TO BY

RK Treloar

 Chairman
 Environmental Protection
 Authority

25/4/97

 Date

P. Hoyle

 Executive Director
 Fisheries Department

26/6/97

 Date

APPENDIX D ASSESSMENT CRITERIA

Rivers and dams of the south-west of Western Australia be permitted for recreational stocking activities through the consideration of the following criteria evaluating economic, social and environmental aspects:

- Past recreational stocking practices
- Quality of and access to individual recreational fisheries
- The environmental values/beneficial uses of the area into which stocking is proposed to take place
- Ability of introduced trout to impact on existing food chains and webs and other existing ecosystem processes
- Presence of habitats or native species of special significance
- Presence of Ramsar wetlands
- Presence of non-native predatory species
- Distribution of native fish recognised as threatened under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) and the Wildlife Conservation Act 1950 (WC Act) *
- Distribution of native fish vulnerable to predation from or competition with trout

Table 2 Threatened native freshwater species of Western Australia and their distribution.

Species	Status	Waterway
Balston's pygmy perch (<i>Nannatherina balstoni</i>)	Vulnerable (EPBC Act) Rare or is likely to become extinct (WC Act)	Blackwood River, Donnelly River and King River
Western trout minnow (<i>Galaxias truttaceus hersperius</i>)	Critically Endangered (EPBC Act) Rare or is likely to become extinct (WC Act)	Goodga and Angove River
Mud minnow (<i>Galaxiella munda</i>)	Rare or is likely to become extinct (WC Act)	Blackwood River, Donnelly River, Warren River and King River
Margaret River marron (hairy marron) (<i>Cherax tenuimanus</i>)	Critically Endangered (EPBC Act) Rare or is likely to become extinct (WC Act)	Margaret River

River	Freshwater Cobbler	Salamander fish	Western Minnow	Trout Minnow	Common Jollytail	Mud Minnow	Black-stripe Minnow	Western Pygmy Perch	Balston's Pygmy Perch	Nightfish
Arrowsmith			*					*		
Hill								*		*
Moore	*		*			*		*	*	*
Swan	*		*				*	*		*
Canning	*		*					*		*
Serpentine			*					*		*
Murray	*		*					*		*
Harvey	*		*		*			*		*
Collie	*		*					*		*
Preston	*		*					*		*
Brunswick	*		*				*	*		*
Capel			*					*		
Abba/Ludlow			*					*		*
Carbanup			*					*		
Vasse			*			*		*		*
Margaret			*			*		*	*	*
Blackwood	*	*	*			*	*	*	*	*
Donnelly	*	*	*			*	*	*	*	*
Warren	*		*			*		*		*
Gardner		*	*			*	*	*	*	*
Shannon		*	*			*	*	*	*	*
Deep		*	*			*	*	*	*	*

River	Freshwater Cobbler	Salamander fish	Western Minnow	Trout Minnow	Common Jollytail	Mud Minnow	Black-stripe Minnow	Western Pygmy Perch	Balston's Pygmy Perch	Nightfish
Walpole		*			*	*		*		*
Frankland	*	*	*			*	*	*		*
Kent			*		*	*		*	*	*
Denmark			*	*		*		*	*	*
Hay			*			*		*	*	*
King			*			*		*	*	*
Kalgan			*					*		*
Goodga				*	*	*		*	*	
Angove				*	*	*		*	*	
Waychinnicup			*							
All rivers east of Pallinup					*					

**APPENDIX E NATIVE FISH OF SOUTH-WEST WESTERN
AUSTRALIA AND THEIR DISTRIBUTION BY
RIVER SYSTEM**

Compiled by D. Morgan and S. Beatty, Centre for Fish & Fisheries Research, Murdoch University

Key – Rivers highlighted in white are currently stocked with trout by the Department of Fisheries.

SECTION 6 GLOSSARY

Appropriate level of protection - The level of protection deemed appropriate by the State, establishing measures to protect environmental health.

Bio-security - The level of security, generally associated with biological risks such as disease and feral species' introductions.

Commercial aquaculture - The stocking of fish for commercial aquaculture purposes. The translocation of trout for stocking in farm dams or ponds on private property for pay-fishing ventures is also considered commercial aquaculture.

Category 1 fish - Fish classified as generally being long-lived, slow-growing, mature at plus-four years, form semi-resident populations, are vulnerable to localised depletion due to their life history, or are low abundance or highly targeted.

Department of Fisheries translocation risk assessment process - Risk assessment process established to assess the risk of the translocation of non-endemic species into and within the State, in accordance with a Memorandum of Understanding established with the Environmental Protection Authority.

Diploid trout - Trout having the normal number of sets of homologous chromosomes.

Domestic stocking - The stocking of fish on private property for non-commercial recreational purposes.

Endemic - Native to and exclusive to a particular geographical region.

Ecologically Sustainable Development - "Using, conserving and enhancing the community's resources so ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased". Refer to the *National Strategy for Ecological Sustainable Development, 1992*.

Fish - As per the *Fish Resources Management Act, 1994* and includes eggs, ova, fry, fingerlings and adults or as detailed.

Native - Indigenous animal or plant.

Non-commercial aquaculture - The stocking of fish for non-commercial aquaculture purposes.

Non-endemic - A species that exists or is translocated beyond its natural range.

Polyloid trout - Trout having more sets of homologous chromosomes than normal trout (see tetraploid trout and triploid trout).

Recreational stocking - The stocking of fish in public water bodies for recreational fishing purposes.

Tetraploid trout - Trout having four sets of homologous chromosomes generally achieved through artificial breeding techniques, which are usually fertile with larger growth, increased longevity and biological vigour.

Translocation - Movement of aquatic organisms.

Triploid trout - Trout having three sets of homologous chromosomes generally achieved through artificial breeding techniques, which usually represent reduced fertility, increased longevity and biological vigour.