



Australian Government

Department of the Environment, Water, Heritage and the Arts

Reassessment of the
Tasmanian Freshwater Eel Fishery

October 2009

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Disclaimer

This document is an assessment carried out by the Department of the Environment, Water, Heritage and the Arts of a commercial fishery against the Australian Government *Guidelines for the Ecologically Sustainable Management of Fisheries – 2nd Edition*. It forms part of the advice provided to the Minister for the Environment, Heritage and the Arts on the fishery in relation to decisions under Parts 13A of the *Environment Protection and Biodiversity Conservation Act 1999*. The views expressed do not necessarily reflect those of the Minister for the Environment, Heritage and the Arts or the Australian Government.

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Table 1: Summary of the Tasmanian Freshwater Eel Fishery (TFEF)

Publicly available information relevant to the fishery	<ul style="list-style-type: none"> • Tasmanian <i>Inland Fisheries Act 1995</i>. • Tasmanian <i>Inland Fisheries Regulations 1996</i>. • Inland Fisheries Service Annual Report 2004/2005. • Inland Fisheries Service Annual Report 2005/2006. • Inland Fisheries Service Annual Report 2006/2007. • Inland Fisheries Service Annual Report 2007/2008.
Area	The fishery occurs in 38 of Tasmania's 48 water catchments, concentrated around the north and east of the state. Fishing mainly occurs in artificial impoundments with approximately 1% of waterways open to commercial eel fishing.
Fishery status	Unknown
Target Species	Shortfinned Eel (<i>Anguilla australis</i>) Longfinned Eel (<i>Anguilla reinhardtii</i>)
Byproduct Species	There is no byproduct species harvest within the fishery.
Gear	Commercial fishers are only permitted to use fyke nets and eel traps to take eels. The number, dimensions and mesh sizes of fyke nets that can be used by commercial fishers is also restricted.
Season	No closed seasons are applied to eel fishing in Tasmania.
Commercial harvest	Annual average catch in the region has been approximately 25 tonnes over the last 10 years. Shortfinned eels comprise 98% of this amount.
Commercial Gross Value of product 2003-2007	The small number of operators in the fishery currently prevents the public release of this data.
Take by other sectors	The total catch in other sectors is unknown. Inland Fisheries Service (IFS) advises that recreational catch is thought to be low.
Commercial licences issued 2008	12 eel fishing licenses issued. This number has remained consistent since 1998.
Management arrangements	The fishery is managed under the Tasmanian <i>Inland Fisheries Act 1995</i> and the <i>Inland Fisheries Regulations 1996</i> and through input and output controls including: <ul style="list-style-type: none"> • limited entry; • size limits; • gear restrictions; • spatial closures; and • possession limits (recreational sector).
Export	The catch is largely exported as frozen product to Europe, and live product to Asia with some value added product (mainly smoking) destined for the local domestic market
Bycatch	Bycatch is low, consisting mostly of brown and rainbow trout, tench and redfin perch.

Interaction with Protected Species¹	Interactions with protected species are considered to be minimal with species being released alive.
Ecosystem Impacts	Impacts to the ecosystem are considered to be low with protocols in place including visual inspections, grading and anaesthetising treatments to reduce any translocation risks. These protocols are due to be reviewed in 09/10 by IFS.

¹ 'Protected Species' means all species listed under Part 13 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), including whales and other cetaceans and threatened, marine and migratory species.

Table 2: Progress in implementation of recommendations made in initial assessment of the TFEF

Recommendation	Progress	Recommended Action
<p>1. IFS to advise DEH of any material changes to fishery management arrangements that could affect the criteria on which EPBC Act decisions are based, within 3 months of that change being made.</p>	<p>Met and Ongoing The IFS did not make any material changes to the management arrangements to the fishery that would have affect the criteria on which EPBC Act decisions are based.</p>	<p>This recommendation has been met and will continue to apply under the new exemption for this fishery for the next four and a half years.</p> <p>Refer to Recommendation 2, Table 4</p>
<p>2. By the end of 2005, IFS to develop fishery specific objectives linked to performance indicators and performance measures for target, bycatch and protected species and impacts on the ecosystem.</p>	<p>Ongoing The relative influence of the fishery on the sustainability of the resource compared to factors such as drought and hydro infrastructure has not been established and this has made it difficult to establish meaningful objectives and performance measures. Performance indicators based on fishery dependant measures may not provide a clear and meaningful indication of the health of the resource nor trends. Consequently, addressing this complexity has delayed the Service implementing the requirements of this recommendation particularly whilst fishing activities and management were considered, on balance, to have little impact on the fishery or by-catch or protected</p>	<p>Whilst IFS reports that the fishery is continually managed in an adaptive manner to ensure that target species are harvested within historical limits, bycatch is minimised, protected species interactions are avoided and the environment footprints of the fishery remain negligible.</p> <p>The formalisation of triggers and reference points is considered an important factor in ensuring the continued sustainable management of the fishery and the Department of Environment Water Heritage and the Arts (DEWHA) encourages IFS to progress these recommendations to ensure the long term sustainable management of the fishery.</p> <p>Refer to Recommendation 5, Table 4</p>

	<p>species. Instead the IFS has elected to transfer management effort to on-ground actions that address arising important issues eg fish translocation that make a difference to the local aspects of the sustainability of the fishery. Unfortunately due to these difficulties and resourcing limitations, the Service has been unable to progress the establishment of fishery specific objectives linked to performance indicators and performance measures for target, by-catch, protected species or impacts on the environment.</p> <p>However, despite the absence of a formal suite of stated measures and indicators of the performance of the fishery, the IFS continually manages the fishery in a adaptive manner to ensure that target species are harvested within historical limits, by-catch is minimised and protected species by-catch is avoided, and the environmental footprints of the fishery are negligible.</p> <p>The Service has determined that it will progress this recommendation during 2009-2011.</p>	
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<p>3. IFS to monitor the status of the fishery in relation to the performance measures once developed. Within 3 months of becoming aware of a performance measure not being met, IFS to finalise a clear timetable for the implementation of appropriate management responses.</p>	<p>Not completed The IFS has yet to finalise meaningful performance measures and responses for the fishery. Once this has been completed the status of the fishery will be monitored within this performance framework and develop a clear timetable for a response to meet this recommendation. A fishery performance plan will be developed that will clearly define performance measures to be used in the monitoring of the fishery.</p>	
<p>4. From 2005, IFS to report publicly on the status of the fishery on an annual basis, including explicit reporting against each performance measure once developed.</p>	<p>Ongoing The IFS has not reported on the specific performance measures that were recommended in 2005 although some information on the eel fishery has been made available through IFS annual reports presented to the Tasmanian Parliament and available on the IFS website. The IFS will be reporting on these performance measures through planned annual reports on the fishery.</p>	<p>Annual reports presented to the Tasmanian Parliament have been made available on the IFS website.</p> <p>It is important that reports be produced and presented to DEWHA annually in order for the performance of the fishery and progress in implementing the recommendations in this report and other managerial commitments to be monitored and assessed throughout the life of the declaration.</p> <p>Refer to Recommendation 3, Table 4</p>
<p>5. Should the Australian study on <i>A. reinhardtii</i> determine that eel stocks harvested in the fishery are not panmictic, IFS to investigate the feasibility and need for</p>	<p>Partially met and ongoing A study of stock structure of the short-finned eel has yet to be conducted. The Australian and New Zealand Eel Reference Group</p>	<p>It appears from the studies conducted by other jurisdictions that short and long finned eels form a single panmictic breeding stock and that traditional stock assessment models are therefore not appropriate. As such IFS should liaise with those jurisdictions, whose eel population form a sub-set of the global</p>

<p>research to test the panmixia assumption in <i>A. australis</i>. If it is found that the panmixia hypothesis is not true for <i>A. australis</i>, IFS to develop and implement management measures to ensure that catchment fidelity is adequately taken into account and that sustainability objectives for the stock can still be achieved.</p>	<p>(ANZERG) considered this research issue in 1995 and noted various views on the value and immediate importance of stock structure determination. ANZERG acknowledged that this research was more important for the short-finned fishery than the long-finned eel fishery because short-finned were widely distributed and had a greater New Zealand component. Thus it would be worthwhile to support research to assist with cross jurisdictional management and national and international levels. However, funding opportunities were viewed as limiting given the relative importance of the eel fishery compared to other fisheries. ANZERG agreed to support and promote any research to investigate stock structure and, as a means to achieve this, would specifically encourage post-graduate student research.</p>	<p>population, to determine if stock numbers are in decline across all jurisdictions and, if they are, to review and modify the management plan to ensure the sustainability of the fishery. This action is implemented through recommendation 4.</p> <p>DEWHA considers the action taken by the IFS to be appropriate and does not seek to maintain this recommendation on the TFEF export approval.</p> <p>Refer to Recommendation 4, Table 4 relating to cross jurisdictional cooperation.</p>
<p>6. In the event that commercial quantities of glass eels are able to be harvested from Tasmanian waters, IFS to develop and implement a precautionary management strategy to control the level of glass eel harvest and</p>	<p>Ongoing There has not been any commercial or research harvesting of glass eels since the initial assessment of the ecological sustainable management of the fishery in 2003.</p>	<p>DEWHA considers that whilst there has not been any commercial or research harvesting of glass eels since the initial assessment of the ecological sustainable management of the fishery in 2003, should this occur in the future this should be picked up through performance measures and monitoring put in place.</p>

<p>potential impacts on target and bycatch species and the ecosystem. The strategy is to be reviewable and include objectives linked to performance measures. It should also include mechanisms to enable ongoing monitoring of the fishery and take into account the impact of environmental conditions on the fishery.</p>	<p>Consequently, no action has been undertaken on this recommendation.</p>	<p>Refer to Recommendation 5, Table 4</p>
<p>7. IFS to introduce a system sufficient to monitor bycatch, including protected species, in the TFEF and to identify changes in composition and abundance spatially and temporally.</p>	<p>Met and ongoing The IFS has implemented a logbook system to collect and provide a basis to monitor by-catch (including protected species). Prior to this system information on by-catch was not collected. This system continues to be the primary method to monitor by-catch including protected species. The IFS also uses the system to monitor for incursion or occurrences of pest or other fish. The system is underpinned by random field inspections of nets and records by fishery inspectors. Due to the small size of the fishery and administration/management costs, the IFS has not supported the logbook system by maintaining the original and rudimentary electronic management system.</p>	<p>DEWHA commends the IFS on the logbooks in place to collect data on the fishery and encourages the implementation of a Commercial Eel Fishery database capable of analysing the data collected.</p> <p>Whilst the collection of data and a system to analyse the data available is recognised by DEWHA, measures in place to identify change in the fishery is also considered an important factor in the sustainable management of the fishery.</p> <p>Refer to Recommendation 5, Table 4</p>

	<p>Presently, a Commercial Eel Fishery database is planned to supersede manual collation and reporting to improve capabilities and provide efficiencies in the management and analysis of data. It is expected that this will be completed within 12 months. By-catch dynamics have not appeared to have changed in nature since the initial ecological sustainable management assessment in 2003.</p>	
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Table 3: DEWHAs assessment of the TFEF against the requirements of the EPBC Act related to decisions made under Part 13A

Please Note – the table below is not a complete or exact representation of the EPBC Act. It is intended as a summary of relevant sections and components of the EPBC Act to provide advice on the fishery in relation to decisions under Part 13A. A complete version of the EPBC Act can be found on the DEWHA website.

Part 13A

Section 303DC Minister may amend list	DEWHA assessment of the TFEF
<p>(1) Minister may, by instrument in published in the Gazette, amend the list referred to in section 303DB (list of exempt native specimens) by:</p> <ul style="list-style-type: none"> (a) including items in the list; (b) deleting items from the list; or (c) imposing a condition or restriction to which the inclusion of a specimen in the list is subject; or (d) varying of revoking a condition or restriction to which the inclusion of a specimen in the list is subject; or (e) correcting an inaccuracy or updating the name of a species. 	
<p>(3) Before amending the list referred to in section 303DB (list of exempt native specimens), the Minister:</p> <ul style="list-style-type: none"> (a) must consult such other Minister or Ministers as the Minister considers appropriate; and (b) must consult such other Minister or Ministers of each State and self-governing Territory as the Minister considers appropriate; and (c) may consult such other persons and organisations as the Minister considers appropriate. 	<p>DEWHA considers that the consultation requirements have been met. The public comment period on the TFEF submission sought comment on the submission for the TFEF and provided sufficient opportunity for consultation with other persons and organisations.</p> <p>No public comments were received during the mandated 20 day consultation period.</p> <p>A letter to the Tasmanian Minister for Primary Industries and Water the Hon David Llewellyn MP advises him of the intention to declare the fishery exempt from the export provisions of the EPBC Act.</p>

(5) A copy of an instrument made under section 303DC is to be made available for inspection on the Internet.	The instrument for the TFEF made under sections 303DC will be gazetted and made available on the DEWHA website.
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Section 303FR Public consultation	DEWHA assessment of the TFEF
(1) Before making a declaration under section 303FN, the Minister must cause to be published on the Internet a notice: <ul style="list-style-type: none"> (a) setting out the proposal to make the declaration; and (b) setting out sufficient information to enable persons and organisations to consider adequately the merits of the proposal; and (c) inviting persons and organisations to give the Minister, within the period specified in the notice, written comments about the proposal. 	Under the EPBC Act, a decision to amend the List of Exempt Native Specimen (LENS) does not require a public consultation period. However, a public notice, which set out the proposal to grant export approval to the TFEF and included the submission for the TFEF was released for public comment which closed on 14 September 2009. No public comments were received.
(2) A period specified in the notice must not be shorter than 20 business days after the date on which the notice was published on the Internet.	A public notice, which set out the proposal to grant export approval to the TFEF and included the submission for the TFEF was released for public comment on 12 August 2009 and closed on 14 September 2009, a total of 22 business days.
(3) In making a decision about whether to make a declaration under section 303FN, the Minister must consider any comments about the proposal to make the declaration that were given in response to the invitation in the notice.	No public comments were received on the submission.

Part 16

Section 391 Minister must consider precautionary principle in making decisions	DEWHA assessment of the TFEF
(1) The Minister must take account of the precautionary principle in making a decision under section 303DC and/or section 303FN, to the extent he or she can do so consistently with the other provisions of this Act.	The precautionary principle has been considered when making a decision to include specimens on the LENS.
(2) The precautionary principle is that lack of full scientific certainty should not be used as a reason for postponing a measure to prevent	

degradation of the environment where there are threats of serious or irreversible environmental damage.	
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Objects of Part 13A

- (a) to ensure that Australia complies with its obligations under Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and the Biodiversity Convention;
- (b) to protect wildlife that may be adversely affected by trade;
- (c) to promote the conservation of biodiversity in Australia and other countries;
- (d) to ensure that any commercial utilisation of Australian native wildlife for the purposes of export is managed in an ecologically sustainable way;
- (e) to promote the humane treatment of wildlife;
- (f) to ensure ethical conduct during any research associated with the utilisation of wildlife; and
- (h) to ensure the precautionary principle is taken into account in making decisions relating to the utilisation of wildlife.

Final recommendations to the IFS for the TFEF

The material submitted by IFS indicates that the TFEF operates in accordance with the Australian Government *Guidelines for the Ecologically Sustainable Management of Fisheries 2nd edition*. DEWHA considers that the fishery is well managed and unlikely to have an unacceptable or unsustainable impact on the environment in the medium term. Overall, DEWHA recognises that the limited entry, input controls, spatial management, and gear restrictions are conservative and suggest that the fishery is being managed in an ecologically sustainable way.

In making its assessment, DEWHA considers that the range of management measures are sufficient to ensure that the fishery is conducted in a manner that does not lead to over-fishing and that stocks are not currently overfished. Taking into account the limited entry, spatial closures, gear restrictions, minimum size limits, use of bycatch excluder screens, and the restocking programs in place, DEWHA considers that fishing operations are managed to minimise their impact on the structure, productivity, function and biological diversity of the ecosystem.

DEWHA is satisfied that the fishery will not be detrimental to the survival or conservation status of the taxon to which it relates in the medium term. Similarly, it is not likely to threaten any relevant ecosystem in the medium term. To contain and minimise the risks in the longer term the recommendations listed below have been made. DEWHA believes that product taken in the fishery should be exempt from the export controls of Part 13A of the EPBC Act, with that exemption to be reviewed in four and a half years.

DEWHA considers that the operation of the fishery does not, or is not likely to, adversely affect the survival in nature of a listed threatened species or population of that species, or the conservation status of a listed migratory species, cetacean or listed marine species or a population of any of those species. DEWHA also considers that under the management regime operators are required to take all reasonable steps to avoid the killing or injuring of protected species, and the level of interaction under current fishing operations is low.

Recommendations are provided below with a brief explanation of the related issue/intent. Unless a specific time frame is provided in the recommendation each recommendation must be addressed within the life of the declaration (four and a half years).

Table 4: Tasmanian Freshwater Eel Fishery Assessment– Summary of Issues, and Recommendations October, 2009

ISSUE	Final Recommendation
<p><u>General Management</u> Export decisions relate to the arrangements in force at the time of the decision. In order to ensure that these decisions remain valid and export approval continues uninterrupted, DEWHA needs to be advised of any changes that are made to the management arrangements and make an assessment that the new arrangements are equivalent or better, in terms of ecological sustainability, than those in place at the time of the original decision. This includes operational and legislated amendments that may affect sustainability of the target species or negatively impact on byproduct, bycatch, protected species or the ecosystem.</p>	<p>Recommendation 1: Operation of the fishery will be carried out in accordance with the management regime in force under the <i>Inland Fisheries Act 1995</i> and the <i>Inland Fisheries Regulations 1996</i></p> <p>Recommendation 2: IFS to inform DEWHA of any intended amendments to the management arrangements that may affect the assessment of the TFEF against the criteria on which <i>Environment Protection and Biodiversity Conservation Act 1999</i> decisions are based.</p>
<p><u>Annual Reporting</u> It is important that reports be produced and presented to DEWHA annually in order for the performance of the fishery and progress in implementing the recommendations in this report and other managerial commitments to be monitored and assessed throughout the life of the declaration.</p> <p>Annual reports should include: a description of the fishery; management arrangements in place; research and monitoring outcomes; recent catch data for all sectors of the fishery; status of target stock; interactions with protected species; impacts of the fishery on the ecosystem in which it operates; and information outlining progress in implementing conditions and recommendations resulting from the previous accreditation of the fishery (for a complete description of annual reporting requirements, see Appendix B of the Guidelines available from the DEWHA website at http://www.environment.gov.au/coasts/fisheries/publications/guidelines.html).</p>	<p>Recommendation 3: IFS to produce and present reports to DEWHA annually as per Appendix B to the <i>Guidelines for the Ecologically Sustainable Management of Fisheries 2nd Edition</i>.</p>

<p><u>Cross Jurisdictional Cooperation</u></p> <p>Research conducted under the auspices of the ANZERG has indicated that all Australian and New Zealand shortfinned and longfinned eels (<i>Anguilla australis</i> and <i>A. reinhardtii</i> respectively) form part of a single genetic breeding stock – whose spawning area is believed to be located in the Coral Sea.</p> <p>DEWHA has been advised that ANZERG are not conducting any research programs into eel populations in Australian or NZ fisheries at present and encourages IFS to be engaged with relevant cross jurisdictional organisations.</p> <p>Eels are harvested in Queensland, New South Wales, Victoria, South Australia, Tasmania and New Zealand and, therefore, DEWHA considers cross jurisdictional communication vital in identifying and addressing any new threats to the sustainability of eel stocks.</p> <p>Given the difficulty in traditional stock and biomass assessments for these species, IFS is encouraged to maintain close links with other jurisdictions to ensure management arrangements consider changes in the broader eel population.</p>	<p>Recommendation 4: IFS to collaborate with other jurisdictions in pursuing consistent and complementary research needs and management arrangements for target species.</p>
<p><u>Formalisation of performance indicators and measures.</u></p> <p>In the 2004 assessment of the TFEF, DEWHA recommended that IFS develop fishery specific objectives linked to performance indicators and performance measures for target, bycatch, protected species and impacts on the ecosystem. Additionally, within three months of becoming aware that a performance measure had not been met, IFS were to finalise a clear timetable for the implementation of appropriate management responses.</p> <p>In response to previous recommendations, IFS reports that the fishery is continually managed in an adaptive manner to ensure that target species are harvested within historical limits, bycatch is minimised, protected species interactions are avoided and the environment footprints of the fishery remain negligible.</p> <p>The formalisation of triggers and reference points is considered an important factor in ensuring the continued sustainable management of the fishery and DEWHA encourages IFS</p>	<p>Recommendation 5: By 1 November 2012 IFS to:</p> <ul style="list-style-type: none"> (a) develop and implement fishery specific objectives linked to performance indicators and performance measures for target, bycatch, protected species and impacts on the ecosystem; (b) to monitor the status of the fishery in relation to the performance measures once developed; and (c) within 3 months of becoming aware of a performance measure not being met, IFS to finalise a clear timetable for the implementation of appropriate management

<p>to progress this recommendation to ensure the long term sustainable management of the fishery.</p>	<p>responses.</p>
<p><u>Ecological Risk Assessment (ERA)</u></p> <p>In the 2009 submission, IFS indicate that they are yet to conduct an ERA for the TFEF, and have advised that due to the nature and scale of the fishery there are limited resources available to undertake an ERA at this time. DEWHA consider that an ERA is an important component for the sustainable management of target stocks and the aquatic ecosystem and ideally would be completed as part of the ongoing development and refinement of the management arrangements for the fishery.</p> <p>At this time, limited information and resources are available on the risks associated with the TFEF and the management arrangements in place to respond to risks. As such, DEWHA recommends that, as part of this declaration, IFS undertake an ERA for the TFEF and implement subsequent management responses, as appropriate, to any risks identified.</p> <p>ERAs assess the potential impact, both direct and indirect, that a fishery’s activities may have on all aspects of the aquatic ecosystem and should form a large part of an agency’s approach to fisheries management. This is a cost and time efficient way of screening activities and identifying key ecological priorities for the management of a fishery. Impacts posed by a fishery are assessed against key ecological components, including: retained species, non-retained species and the general ecosystem.</p> <p>Following the preparation of the ERA, all current management measures must be taken into account to avoid an over-estimation of the actual risks and to ascertain if further management measures are required. The management arrangements in place, or proposed, should respond to the identified risks should be detailed in the report.</p> <p>DEWHA considers the management of ecological risks critical to the ongoing sustainable</p>	<p>Recommendation 6: IFS to:</p> <ul style="list-style-type: none"> (a) undertake an ERA for the TFEF; and (b) identify and implement appropriate management responses, to address and mitigate risks and impacts identified in the ERA.

management of the TFEF and it is important that priority be given to this work.

DEWHA recommends that the report specify a comprehensive review period no greater than five years, with more regular review of key management components as appropriate and general review of information as it becomes available.

DEWHA expects that the ERA report including relevant management responses, will be made publicly available on the IFS website as part of its management documents, which allows for clear articulation and justification of management arrangements in place for the fishery.

List of Acronyms

TFEF	Tasmanian Freshwater Eel Fishery
IFS	Inland Fisheries Services
DEWHA	Department of the Environment, Water, Heritage and the Arts
ANZERG	Australian and New Zealand Eel Research Group
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
ERA	Ecological Risk Assessment
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
LENS	List of Exempt Native Speciment