

Update Report

On a pathway to extinction? An investigation into the status and management of the longfin eel

December 2014



Parliamentary Commissioner
for the **Environment**
Te Kaitiaki Taiao a Te Whare Pāremata

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Introduction

In April 2013, the Parliamentary Commissioner for the Environment released a report titled *On a pathway to extinction? An investigation into the status and management of the longfin eel*. The report was the outcome of an investigation into the status of the longfin eel and the actions that might be needed in order to ensure the long-term survival of this iconic species.

Over recent years concern about the future of the longfin eel has been expressed by many Māori, environmental groups, the New Zealand Conservation Authority, and some scientists and local government representatives. A petition calling for a moratorium on commercial fishing of longfin eels was presented to Parliament in March 2013.

The Commissioner began her investigation in response to this increasing public concern about the sustainability of the longfin eel fishery and the potential risk of extinction. The Department of Conservation classifies the species as '*At Risk/Declining*'.

Longfin eels have a long, slow lifecycle, breeding only once at the end of an extraordinary and perilous migration thousands of kilometres north into the tropical Pacific Ocean. The nature of their lifecycle means that the species is particularly vulnerable.

A wide range of information was examined during the investigation. The Commissioner made a judgment on the weight of all the evidence available that without much more active intervention, the longfin eel – the largest freshwater eel in the world – will continue on a slow path to extinction.¹

There are three pressures on the longfin eel population – fishing, loss of habitat, and barriers to their migration up and down rivers. However, reducing the allowable catch is the only action with immediate potential to reverse the decline of the species. Consequently, the Commissioner recommended that commercial fishing be suspended, at least for a time.

The Commissioner also recommended that the Department of Conservation make better use of existing policy mechanisms to increase protection of eels and other migratory fish. Central to this is protecting habitat and removing barriers to fish passage along rivers.

The Commissioner's third recommendation was the establishment of an independent panel to review the full range of information available on the status of the longfin eel population. The results of such a review would allow the Minister to consider the recommendation to suspend the commercial catch.



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Reaction to the report

The report was welcomed across the political spectrum and by different groups and scientists with an interest in the health of the longfin eel population.

In a joint statement, the Ministry for Primary Industries and the Department of Conservation committed to working together to review and respond to the recommendations.² A few weeks later the Minister for Primary Industries, Hon Nathan Guy, and the Minister of Conservation, Hon Dr Nick Smith, announced interim measures in response to the report. These included the establishment of an independent review panel. In a joint press statement, the Ministers stated *“Any decision on whether to suspend commercial fishing of the species will be made once we receive the final assessment from the independent panel in November this year.”*³

The Labour Party welcomed the report. Te Tai Tonga MP Rino Tirikatene expressed confidence that Māori will prioritise saving longfin eels (tuna): *“Tuna are a taonga and hapu and iwi have played a leading role in the save-the-eels campaign which has led to the Parliamentary Commissioner’s report ... Now it’s up to us to have the conversations and take the difficult decisions with regards to our quota rights.”*⁴

The Green Party supported the Commissioner’s report, calling on the Government to suspend commercial fishing of longfin eels until the fishery is shown to have recovered.⁵

Māori Party Co-leader Dr Pita Sharples strongly supported the protection of the longfin eel, saying *“Any threat to the eels are a threat to the identity and mana of the iwi and hapu who have a responsibility to protect them... It is outrageous that people are still catching them for profit.”*⁶

Te Wai Māori, a Trust to advance Māori interests in freshwater fisheries, called for the Government to respond urgently to the Commissioner's report. *"In light of the seriousness of the Commissioner's recommendation, this information requires urgent scientific analysis,"* said chairman Ken Mair. *"Eels are a taonga and have been the lifeblood of many iwi and hapu for generations. Eel habitat must be protected as a priority. Every effort must be made to ensure their survival."*⁷

Commercial eel industry spokespeople disagreed with the Commissioner's judgment. Victor Thompson said *"there has been a lot of effort put in to eels and the information Dr Wright is working on is wrong"*. He pointed to the contrast between the Commissioner's findings and the Ministry for Primary Industries assessment that eel fisheries are stable.⁸ Bill Chisholm argued *"the best available scientific data clearly demonstrates that longfin eels have been increasing"*.⁹

In contrast, Forest & Bird welcomed the Commissioner's report. Kevin Hackwell called it *"a well-considered scientific document"* on which *"the Minister needs to act urgently, before it is too late. The longfin eel will not survive without an immediate moratorium ..."*¹⁰

A number of freshwater and fisheries scientists reviewed the report through the Science Media Centre and all but one commended the report.¹¹

University of Otago Associate Professor of Freshwater Ecology Dr Gerry Closs said *"In the longer term, sustainable exploitation of longfin eels can only occur if either the North or South Island is permanently closed to commercial fishing"*. Cawthron Institute freshwater ecologist Dr Roger Young stated *"I think the multiple lines of evidence indicating a decline in the eel population is compelling"*.

The dissenter was consultant Dave Allen who said that the Commissioner's *"view has been reached from an unfair appraisal of peer reviewed research information. Long-standing commissioned research is unreasonably picked apart in favour of other research information that fits better with a preconceived view of a resource in decline."*

In August 2013, the Commissioner presented the report to the Local Government and Environment Committee. In its report to Parliament, the Select Committee endorsed the Commissioner's recommendations. The Committee suggested *"that agencies such as the Ministry for Primary Industries undertake regular stocktakes"* and encouraged *"the ministry to use a range of research methods, not simply catch-per unit effort"*.¹²



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Responses to the Commissioner's recommendations

The Commissioner made two recommendations to the Minister for Primary Industries and one to the Minister of Conservation. In June 2013, the Ministers agreed to two of the recommendations (Recommendations 2 and 3). Then, in August 2014, the Minister for Primary Industries announced a package of measures including his decision on Recommendation 1.

Recommendation 1:

The Minister for Primary Industries suspends the commercial catch of longfin eels until longfin eel stocks are shown to have recovered.

The Commissioner found that longfin eels are in trouble and that suspending the commercial harvest was the only way to make a difference reasonably quickly. She noted that a prerequisite to this would be to separate the allowable catches for shortfins and for longfins in the South Island where they are combined.

An interim response from the Minister for Primary Industries in June 2013 indicated that any decision on whether to suspend the commercial catch or not would be made following the final assessment of the independent review panel, which met in November 2013 (see response to Recommendation 3).

In August 2014, following the independent panel's report, the Minister announced his decision not to suspend commercial catch at this time. He said that the *"best available information about the current status of the fishery suggests there is no sustainability concern to warrant closure of the commercial longfin fishery."*¹³

Instead the Minister announced a set of management measures, namely:

- a review of catch limits for longfin eels,
- consideration of separate South Island longfin and shortfin stocks,
- introduction of abundance target levels, and
- improved information from the commercial longfin eel fishery.

The review of North Island and South Island longfin catch limits, which will take place in 2015-16, is to “focus on proposals to lower commercial catches to provide for greater certainty in an increase in longfin eel numbers”.¹⁴

Consultation on separating the shortfin and longfin fisheries in the South Island is to begin in 2015. The Minister acknowledged that this would benefit longfin eel sustainability and ensure that changes to longfin catch limits could be done without impacting shortfin limits.¹⁵

The Minister is also considering setting abundance target levels for longfin eels. The Food and Agriculture Organisation of the United Nations recommends that such targets for vulnerable fish species be set at levels greater than 30% of the original ‘unfished’ population.¹⁶ The independent review panel found that estimates of current longfin eel breeding biomass were as low as 20% of the original unfished biomass.¹⁷ Work to set these target levels would be done by the Ministry’s Eel Science Working Group in 2015 and 2016.¹⁸

Recommendation 2:

The Minister of Conservation directs his officials to use the policy mechanisms available to them to increase the protection for longfin eels and other threatened migratory fish.

Historical and current changes in land use continue to reduce eel habitat. In addition barriers to fish passage – the ability for elvers to travel upstream and for mature eels to travel downriver to migrate and breed – are another cause of the decline of longfin eels. There is little consistency in rules protecting freshwater fish habitat and passage, but the Department of Conservation is well placed to take a lead and has a range of available policy mechanisms.

The Minister for Conservation, Hon Dr Nick Smith, agreed to the recommendation. He responded in June 2013 that “the Department of Conservation will be undertaking legal and policy work to find the most appropriate means to increase the protection of the longfin eel, other migratory fish and their habitats as recommended by the Commissioner.”¹⁹

Subsequently, the Department of Conservation commissioned an independent report to identify and prioritise legal and policy mechanisms to improve the status of longfin eels.²⁰ The Department also identified river catchments that may be particularly important for increasing the numbers of eels going to sea to breed, and assessed whether faunistic reserves could be used to protect eels in these catchments.^{21,22}

The Department has taken other steps to better protect eels within the conservation estate. A new template for updating Conservation Management Strategies includes a policy that concessions for commercial eeling within the conservation estate should not be granted.²³

In October 2013, the Department presented the options for improving the management of eels to the Minister of Conservation. In August 2014 it was announced that key matters being addressed by the Department of Conservation are:

- improved legal protection of some eel populations and better protection of fish passage,
- public awareness and promotion of best practice, for example drain clearing, and
- using Government water policy reform to better manage freshwater fish and their habitat.²⁴

Recommendation 3:

The Minister for Primary Industries directs his officials to establish a fully-independent expert peer review panel to assess the full range of information available on the status of the longfin eel population.

The Commissioner's report raised a number of questions about both the quality of the Ministry for Primary Industries' scientific advice and its management decisions. Her report was based on a much wider range of information about longfin eels than that used by the Ministry.

The Commissioner recommended establishing an independent review panel to allow for greater transparency and public trust of scientific advice. The panel's advice would also allow the Minister to consider the first recommendation. As noted earlier under the response to Recommendation 1, the Minister for Primary Industries accepted the recommendation to establish a panel. In December 2013 the findings of the panel were announced and welcomed by the Commissioner.

The panel found that, *“there is a high probability that the longfin eel population has been substantially reduced relative to pristine biomass”*, and that the longfin eel population declined from the early 1990s until the late 2000s. They added that, *“there has been some suggestion that since the late 2000s there has been a slowing, and perhaps even a halting, of these declines”*.²⁵

The panel also concluded that the indicators used by officials are far from adequate, and assessments should be broader and use all available data. It found that the main measure – catch per unit of effort – *“need to be interpreted with caution”* for a number of reasons. As well as suggesting a number of improvements to this measure, the panel recommended a more comprehensive approach be taken, *“in which classical and alternative data sources are used to the full”*.²⁶

After receiving the panel’s report, the Minister for Primary Industries proposed the set of management measures to improve the status of longfin eels as described in the response to the first recommendation. The Ministry is currently working to apply the panel’s recommendations to its research programmes.²⁷



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In conclusion

Work has begun aiming at improving the status of the longfin eel population, but these efforts will need to be followed through.

The Commissioner noted in her report that it would take the combined efforts of central and local government, iwi, and individuals to set the longfin eels on a more sustainable path. Following the report, it is clear that greater effort is being put into improving their protection.

The Local Government and Environment Committee's endorsement of all the Commissioner's recommendations showed support from parties across the political spectrum to take strong action and guarantee the survival of this unique and iconic species.

The Government's response has been heartening, moving quickly to implement two of the three recommendations and committing to a review of catch limits. This should properly assess the wide range of information available, with special regard to the unique characteristics of such a vulnerable species.

Under law, the Minister must take a cautious approach to the management of longfin eels. In the Commissioner's view, this requires the suspension of commercial fishing until it is clear that a recovery is happening and harvest can sustainably resume.

Policy work by the Department of Conservation also requires follow through. The protection of habitat and fish passage needs to be incorporated into rules in council plans, and into practical guidance to landowners and developers.

The Department's report on legal and policy mechanisms to improve the status of eels identified Freshwater Fisheries Management Plans as an immediate and high priority area of work. However, this option was not proposed to the Minister. Instead, continued work on the freshwater reforms under the Resource Management Act was proposed.²⁸

Freshwater Fisheries Management Plans should be pursued in combination with the RMA freshwater reforms to achieve greater protection of eel habitat and consistency across regions.

There are many voluntary initiatives around the country to conduct research, improve habitat, and assist eel migration, often led by Māori. Some have commercial goals, while for others the goal is primarily to restore eel populations.²⁹ The inaugural Māori Eel Symposium showcasing many of these activities and collaborations was held in June this year.³⁰

One example of community and iwi initiative is the tireless effort of Bill Kerrison trapping and transferring eels past dams in the Bay of Plenty for more than 20 years. The Commissioner visited Mr Kerrison's project in conjunction with presenting to the Rangitaiki River Forum in Whakatāne in December 2013.³¹ His work was recently recognised at the New Zealand River Awards.³²

Another example is the exercise of traditional management practices by Waikato-Tainui to prohibit or restrict fishing of eels in the Waikato River catchment. The Commissioner wrote to Waikato-Tainui in support of their proposed bylaws, which were approved by the Minister for Primary Industries and took effect in April 2014.³³

While there is now considerable momentum on actions to improve the plight of longfin eels, the main finding of the Commissioner's investigation must not be forgotten. She concluded that the weight of evidence shows that the longfin eel population is currently in decline.

The Commissioner will closely follow the coming catch limit review by the Ministry for Primary Industries and the long-term work plan of the Department of Conservation. The review of catch limits in particular will be a test of the ability of the fisheries management system to gather the best available information and take a cautious approach to ensure the survival of this extraordinary creature.

Notes

- 1 The Commissioner used the phrase “*slow path to extinction*” because longfin eels can live as long as a hundred years, so even if recruitment into the population completely stopped, it would be a long time before the last longfin eel died.
- 2 *Longfin eel report welcomed*. Ministry for Primary Industries and the Department of Conservation media release. 17 April 2013.
- 3 Hon Nathan Guy and Hon Dr Nick Smith. *Interim measures on longfin eels announced*. Government media release. 7 June 2013.
- 4 *Labour welcomes longfin eel report*. Labour Party media release. 17 April 2013.
- 5 *Longfin eels need a lifeline*. Green Party media release. 17 April 2013.
- 6 *Māori Party calls for urgent action to protect long-finned eels*. Māori Party media release. 17 April 2013.
- 7 *Urgent review of Longfin eel information needed*. Te Wai Māori Trust media release. 17 April 2013.
- 8 *Longfin eels in decline – expert*. The Timaru Herald. 18 April 2013.
- 9 *Longfin eels will be driven to extinction*. Manawatu Standard. 18 April 2013.
- 10 *PCE’s report vindicates campaign to save native eels*. Forest & Bird media release. 17 April 2013.
- 11 Science Media Centre. *Science Alert: Experts respond. PCE’s Longfin eels report – 17 Apr 2013*. <http://www.sciencemediacentre.co.nz/wp-content/uploads/2013/04/PCEs-Eels-report-Reaction-from-experts-contacted-by-the-SMC.pdf>.
- 12 *Report of the Local Government and Environment Committee*. September 2013. Report of the Parliamentary Commissioner for the Environment, On a pathway to extinction? An investigation into the status and management of the longfin eel.
- 13 Hon Nathan Guy, Cabinet paper *Proposed management measures for longfin eel fisheries*, 1 August 2014, p2.
- 14 Hon Nathan Guy, Cabinet paper, p4. The South Island catch limits will be reviewed regardless of whether the longfin and shortfin fisheries are separated. MPI, pers com. 5 December 2014.
- 15 Hon Nathan Guy, Cabinet paper, p4. The Minister noted that “*Further statutory consultation is required with tangata whenua and stakeholders before the stocks could be separated*”.
- 16 Cochrane and Garcia (Eds.). 2009. A fishery manager’s guidebook. FAO. p36.
- 17 Haro A, Dekker W, Bentley N. 2013. Independent review of the information available for monitoring trends and assessing the status of New Zealand freshwater eels. p19.

- 18 Hon Nathan Guy, Cabinet paper, p4.
- 19 Hon Nathan Guy and Hon Dr Nick Smith. *Interim measures on longfin eels announced*. Government media release, 7 June 2013.
- 20 Pierre, J. 2013. *Legal and policy mechanisms to improve the status of the longfin eel*. Internal report drafted for the Department of Conservation. The report recommended a variety of options including: restricting eel fishing in key areas through the use of *faunistic reserves*; developing Freshwater Fisheries Management Plans; improving technical information related to fish passage for better implementation of the Freshwater Fisheries Regulations; updating Conservation Management Strategies to better protect eels; and maintaining involvement in the Ministry for the Environment's freshwater management reforms under the RMA.
- 21 Pierre et al. 2014. Spatial protection approaches for improving the conservation status of the longfin eel (*Anguilla dieffenbachii*).
- 22 The departmental submission states that faunistic reserves would prohibit all fishing, and recommends that changes should be made to the legislation to allow protection of certain species and continued fishing of others.
- 23 Department of Conservation Departmental Submission 30 October 2013, p5.
- 24 Hon Nathan Guy, Cabinet paper, p5.
- 25 Haro et al. 2013. pp 19-20.
- 26 Haro et al. 2013. pp 8, 12.
- 27 The MPI's Eel Science Working Group is currently coordinating additional research, which includes improving the catch per unit of effort indicator, adjusting for selectivity of the electrofishing method, establishing reference points (such as biomass and fishing mortality rate at the maximum sustainable yield), and recording the number and age distribution of elvers arriving at hydrodams. MPI, pers com. 3 December 2014.
- 28 Department of Conservation Departmental Submission 30 October 2013, pp 6, 8.
- 29 Project Tuna in Rangitāne is a joint research project between iwi and scientists looking at opportunities for sustainably harvesting wild glass eels to support an eel aquaculture industry (see http://waimaori.maori.nz/eel/documents/12_Maurice_Takarangi_Rangitaane_tuna_presentation.pdf). The Kete Tangariki project near Whāngārei aims to improve eel habitat and populations for customary and commercial harvesting (http://waimaori.maori.nz/eel/documents/13_Tohe_Ashby.pdf).
- 30 Māori Eel Symposium 2014. <http://waimaori.maori.nz/eel/index.htm>
- 31 The Commissioner has also presented her report at a longfin eel exhibition in Carterton organised by members of Ngati Kahungunu.
- 32 New Zealand River Award Winners 2014. <http://nzriverawards.org.nz/2014-new-zealand-river-awards/>
- 33 The bylaws contain a wide range of protections, from prohibiting commercial harvesting of migrating females, to lowering the maximum weight of commercially harvested eels. Waikato –Tanui Fisheries Area bylaws, Updated 12 March 2014. <http://www.fish.govt.nz/en-nz/Maori/Waikato-Tainui+Fisheries+Area+Bylaws.htm>

