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Fisheries Research; Studies Conducted by L. Pham et al on Fisheries Research Recently Reported

449 words

26 July 2013

Ecology, Environment & Conservation

ECECON

677

English

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2013 JUL 26 (VerticalNews) -- By a News Reporter-Staff News Editor at Ecology, Environment & Conservation -- Researchers detail new data in Fisheries Research. According to news reporting originating from Christchurch, New Zealand, by VerticalNews correspondents, research stated, "The rehabilitation of native communities by means of eradicating unwanted fish species using piscicides is an example of employing disturbance to achieve conservation successes. Such projects provide a valuable opportunity to test the efficiency of the tool and the impacts on the receiving aquatic communities, as disturbance occurs at a known time."

Our news editors obtained a quote from the research, "The piscicide rotenone' has been widely used to eradicate invasive or unwanted fish species worldwide. However, there is little information regarding the impact on native fish being reintroduced to a stream after rotenone treatment. The mass depletion of aquatic invertebrates due to rotenone dosing is of particular concern, as food-limitation could negatively impact on fish growth, condition and recruitment, compromising the aims of rehabilitation. For the first time in New Zealand, rotenone was employed to eradicate brown trout (*Salmo trutta*) from two streams that also supported populations of banded kokopu (**Galaxias fasciatus**). Impacts on fish and aquatic invertebrates were studied in two treatment and two reference streams in Karori, Wellington. Analysis showed that invertebrate densities declined significantly in the treatment streams in the 2-week to 2-month period after dosing. Following reintroduction after rotenone treatment, banded kokopu condition declined significantly and levels of fish mobility were variable. One year after rotenone dosing, there was recruitment of banded kokopu juveniles in the treatment streams indicating successful reproduction, with no equivalent increase in the reference streams."

According to the news editors, the research concluded: "Results are a positive indication for the use of rotenone as an effective conservation tool to remove unwanted fish species where they threaten native populations."

For more information on this research see: Reintroduction of a native **galaxiid** (*Galaxias fasciatus*) following piscicide treatment in two streams: response and recovery of the fish population. *Ecology of Freshwater Fish*, 2013;22(3):361-373. *Ecology of Freshwater Fish* can be contacted at: Wiley-Blackwell, 111 River St, Hoboken 07030-5774, NJ, USA. (Wiley-Blackwell - www.wiley.com/; *Ecology of Freshwater Fish* - [onlinelibrary.wiley.com/journal/10.1111/\(ISSN\)1600-0633](http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1600-0633))

The news editors report that additional information may be obtained by contacting L. Pham, Dept. of Conservat, Aquat & Reporting Unit, Christchurch, New Zealand.

Keywords for this news article include: Treatment, Christchurch, Fisheries Research, Australia and New Zealand

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PRIZED wilderness

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The Press (Christchurch)

THEPRE

6

English

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The Nevis River offers scenic

pleasure and good trout for fit anglers.

South Island fly anglers explore waters far and wide and are often found fishing challenging waters.

One such water is the Nevis River that rises in the Hector and Garvie mountains of Central Otago before flowing northeast to join the Kawarau River upstream from Cromwell.

The Nevis is a river for fit and agile anglers willing to spend a little time accessing it. In terms of scenic beauty and the occasional chance of a good trout, it's probably one of the last wilderness rivers anyone thinks about, but that's a mistake because the chance of a 5-kilogram trout is enough to excite most anglers.

However, there's a one-fish limit bag, with the fish required to be no more than 400 millimetres in length, and fishing is subject to first obtaining a back-country licence from Otago Fish & Game.

Enjoy the ripples, runs and pools that make this clear water a prime spot to relax in a wilderness setting.

Early season is the best time to access the open tussock land above Nevis Crossing. Deep pools are a feature and steep terrain makes the medium-sized river less accessible below Nevis Crossing and in the upper reaches. The season runs from October 1 to April 30.

Fish & Game staff recommend you try Hamills killer or Mrs Simpson lures. If dry fly fishing, they suggest a coch-y-bondhu or Hardy's favourite and, if nymph fishing, try a weighted hare and copper or pheasant tail.

A recent majority decision of the Environment Court prohibits dams on the Nevis.

"This adds significantly to the river's protection," says Otago Fish & Game chief executive Niall Watson.

"Another layer of protection has been achieved concurrently with the WCO [water conservation order] success, with the Environment Court confirming the whole Nevis Valley as 'outstanding natural landscape', the highest and most protected landscape class in the Central Otago District Plan," says Watson. "Now, we wait for the minister to sign it off."

The entire river and its tributaries have been recognised as containing native fish habitat for the rare Nevis **galaxiid**, found only in the Nevis Valley, the court's decision also recognising a multitude of community interests - scenic, scientific and historical.

Anglers, angling guides, rod and gun clubs and a host of other groups and individuals including Whitewater NZ, Forest and Bird, Public Access New Zealand, the Historic Places Trust and the Clutha Fisheries Trust, along with support from overseas anglers, also featured in the submission round.

It's behind-the-scenes effort throughout the South Island Fish & Game regions that protects the fisheries we all enjoy. Such effort deserves our support.

Document THEPRE0020130721e97m00008

Combined effort to protect rarest native fish

By REBECCA FOX

882 words

8 July 2013

Otago Daily Times

OTGO

English

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Protection ... Concrete weirs such as the one at Akatore Creek (left) near Waihola or the natural waterfall at Whare Flat, keep trout from preying on Otago's endangered native galaxiids. PHOTOS: DOC Endangered ... As rare as the kakapo, Teviot **galaxiid** fish are found in just a handful of remaining populations around Lake Onslow. PHOTO: SIMON MADILL Good habitat ... Deep Stream, the pristine headwaters of Dunedin's water supply, is home to Eldon's **galaxiid**, classified as nationally endangered. PHOTO: DOCTenuous existence ... The dusky **galaxiid**, found only in Otago, shares the same threat status as Hector's dolphin. PHOTO: SIMON MADILL

THE disappearance of 25% of Otago's unique small fish in the past decade means trying to save those remaining is "finger-in-the-dyke stuff", the Department of Conservation warns.

Of the 28 **galaxiid** species in New Zealand, 12 are unique to Otago's streams but their numbers are declining rapidly.

The species' fate is so dire their listing on New Zealand's threat classification system is likely to increase to nationally critical, making the Teviot **galaxiid** as threatened as the kakapo.

"We can't not fight for them. They're in such a bad state we've to go in and defend them the best we can with what tools we have available," Doc freshwater ranger Pete Ravenscroft said.

"It's really alarming, finger-in-the-dyke stuff."

The main threat to the fish in the past 10 years had been trout, he said.

"There's no debate about that. We've just got to find how to stop it."

He was quick to point out Doc was not anti-trout. In fact, under the Conservation Act, it had to protect them.

It was about protecting the populations of galaxiids left and as their preferred habitats were not in the major trout-fishing rivers, fishermen should rest easy, he said.

"There is room for galaxiids, farmers and trout. We just all have to be flexible."

Other factors were involved in their demise, including water quality and quantity, gravel extraction and willow removal.

The problem now was there was less room to compromise as the populations decreased or disappeared altogether. Four of 17 Eldon's **galaxiid** populations had gone, seven of 24 populations of dusky galaxiids and at least one of seven populations of Teviot galaxiids had, too, he said.

As a result, there were rivers and streams previously inhabited by galaxiids that were now empty.

Where galaxiids remained, culverts and waterfalls had prevented trout moving in, Mr Ravenscroft said.

"It happens really fast. They're amazing climbers."

Another factor was that 90% of the remaining galaxiids, such as the Central Otago roundhead, were not on the Doc estate.

Of the 38 known Central Otago roundhead populations, 11 had become extinct in the past five years, 14 were "dead-man-walking" populations, sandwiched between trout populations, and six lived in areas smaller than 100sq m.

Added to that were the unknown populations where Doc had not been granted access to land _ leaving Doc with only three "secure" populations.

"We're totally reliant on the goodwill of landowners."

Part of Doc's response to the threat to galaxiids was the Growing Otago **Galaxiid** project, aimed at getting communities, farmers and schools "in the know" about galaxiids.

Doc ranger and project co-ordinator Lan Pham said many landowners did not know they had galaxiids in their streams so it was about raising the profile of the fish and keeping people informed about galaxiids.

"These fish are uniquely Otago, they're special, and given the opportunity to be involved, everyone is keen."

They had started with communities in Kakanui, where the long-jaw **galaxiid** lived, Ranfurly, which was home to the Central Otago roundhead, and Lawrence, where the lower Clutha flathead lived.

For many farmers, discovering galaxiids in their streams meant nothing more than taking care with farming practices along those waterways.

Mr Ravenscroft said working with Fish and Game had allowed Doc to protect some populations by constructing barriers so trout could not reach the galaxiids.

In one case, after trout were found in a Taieri flathead population, Doc put in a concrete weir and removed the trout.

"There was an immediate response in the population. It's dramatic and quick."

In another, trout were removed from a 700m section of water race after trout got in from an irrigation pond. They electric-fished 400 trout out of the race and would soon return to see how the **galaxiid** population had grown.

"These [examples] are showing we can do it."

Fish and Game council chief executive Niall Watson said trout were introduced to New Zealand in 1864 so there was "no turning back the clock".

Trout feeding on galaxiids was part of the natural ecosystem, just as shags or other birds feeding on trout was.

"Where it gets difficult is non-migratory galaxiids can't compete with trout."

Fish and Game was supportive of Doc's efforts to protect **galaxiid** refuges in the region's small streams and had a formal understanding to manage trout in those situations.

"In several situations we have, we have agreed to the removal of trout from those habitats with threatened galaxiids."

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NO APPEAL ON NEVIS - PIONEER

John Edens
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The Southland Times
SLANDT
3

English

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Pioneer Generation is not appealing against an Environment Court decision that favours a ban on damming and more protection for the remote Nevis Valley.

The Nevis Valley has been the focus of a decade-long battle between Alexandra-based Pioneer Generation, which sought a damming provision, and environmental groups, who want a total ban on damming and blanket protection for the area.

Environmental groups were concerned about the potential impact on the rare fish Gollum **galaxiid**.

A 148-page Environment Court report, with a majority opinion in favour of wider protection and a minority voice recommending scope for a dam in the Nevis Valley, was released last month.

The report will be sent to Environment Minister Amy Adams for a final say.

Pioneer Generation asset manager Peter Mulvihill said the company supported the minority decision by Judge Jon Jackson, who said it was not necessary to prohibit a dam on the Nevis in order to protect the **galaxiid** habitat.

A small dam carefully constructed above the Nevis Crossing would be likely to have a minor effect on the kayaking community and minor effects, or less, on anglers, the judge said.

Mr Mulvihill said the judge's report was a reasonable compromise and the firm was comfortable with arguments that allayed any fears of adverse impact on the **galaxiid** habitat or the fishery.

Pioneer was disappointed by the majority report by commissioners Kathryn Edmonds and John Mills, who recommended increasing the levels of protection afforded to the Nevis catchment. "We were a bit disappointed by the decision reached by the commissioners. It would lock off a significant renewable energy resource for the benefit of a select few."

He said the final decision rested with the minister but there was no real precedent for such a split- decision Environment Court report.

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No debate on Nevis decision; Some councillors yet to read report

By HELENA DE REUS

557 words

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Otago Daily Times

OTGO

English

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DISCUSSION on the recent Environment Court decision on whether damming should be banned on the Nevis River was stifled at the Otago Fish and Game Council's meeting this week, after it was revealed some councillors had yet to read the report.

The 148-page report for Environment Minister Amy Adams was made public two weeks ago, two of the three commissioners recommending a complete prohibition on damming.

The Otago Fish and Game Council met in Tapanui on Wednesday and, while it was not an agenda item, councillors asked for an update on the Nevis issue.

Otago Fish and Game Council chief executive Niall Watson told councillors he did not think anything in the commissioners' decision needed to be contested by the council.

The recommendation by Commissioners Kathryn Edmonds and John Mills, together with the earlier agreement the entire Nevis Valley should be reclassified in the Central Otago district plan as an outstanding landscape of national importance, was a "major improvement" on the protection the area had in the past, Mr Watson told the Otago Daily Times earlier this month.

Judge Jon Jackson took a different view and recommended the potential for a small dam on the river be left open, subject to certain conditions. Both series of recommendations _ the majority view by Commissioners Edmonds and Mills and the minority view by Judge Jackson and the reasons behind those views _ will be forwarded to Ms Adams to make a final decision, ending seven years of debate on the matter.

Councillor Colin Aldridge said he found himself agreeing with Judge Jackson the possibility of a small dam should be left open, subject to conditions.

He said he had stood on a platform of moderation and supported a "fair and reasonable compromise".

Cr John Jillett said that was contrary to everything the Nevis case stood for.

"We have never, ever said we would accept a dam of any sort on the Nevis. The whole substance of this expensive project has been ... that a dam is unacceptable."

Several councillors said they did not feel they could discuss the decision as they had not yet read the report.

Mr Watson said the council had been through a process to develop its position.

"The council has a position on this and I don't think the council's decision can be reversed without some consideration, without some formal warning."

The Nevis report may come before the council at its next meeting.

The debate began in 2006 when the New Zealand and Otago Fish and Game Councils applied for an amendment to the water conservation order to rule out hydro dams on the river.

The application attracted about 250 submissions and was heard in 2009-10 by a special tribunal appointed by the Ministry for the Environment.

The tribunal decided the conservation order should be changed to prohibit damming and diversion to protect a native **galaxiid** fish, a species found only in the Nevis River.

Its finding was challenged by three parties _ Pioneer Generation, which had plans for a small hydro dam on the river, the fish and game councils and recreational kayaking group Whitewater New Zealand.

The Environment Court heard the matter over six days in October and November last year.

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NEVIS DAM APPEAL NOT RULED OUT

John Edens
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The Southland Times
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1

English

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Pioneer Generation will consider an appeal against an Environment Court decision in favour of a prohibition of damming and more protection for the remote Nevis Valley.

The Nevis Valley has been the focus of a decade-long battle between Alexandra-based Pioneer Generation, which sought a damming provision, and environmental groups, who want a total ban on damming and blanket protection for the area.

A 148-page Environment Court report, with a majority opinion in favour of wider protection and a minority voice recommending scope for a dam in the Nevis Valley, was released last week.

The report will be sent to Environment Minister Amy Adams for a final say but parties have a short window in which to appeal against the decision to the High Court.

Pioneer Generation chief executive Fraser Jonker said the company was taking legal advice but was heartened by aspects of the ruling.

Environmental groups were concerned about the potential impact on the rare fish Gollum **galaxiid** but Mr Jonker said the decision would allay such fears.

"In terms of allaying any fears that a hydro scheme would adversely impact on galaxiids, we achieved what we specifically targeted.

"The significant claims that were made about the trout fishery haven't really been supported by either the judge or the commissioners."

Judge Jon Jackson's minority opinion said it was not necessary to prohibit a dam on the Nevis in order to protect the **galaxiid** habitat. A small dam carefully constructed above the Nevis Crossing would be likely to have a minor effect on the kayaking community and minor effects, or less, on anglers, the judge said.

Mr Jonker said the company would consider an appeal but that existing uncertainty in the hydro industry made investment in electricity generation uncertain.

"We will consider an appeal based on the feedback from our legal advisers.

"With the amount of financial and other resource required during any environmental approval [or] appeal processes, combined with the current political uncertainty around investment in the electricity industry, we are likely to focus our investment decisions away from electricity generation in the medium term."

A majority report by commissioners Kathryn Edmonds and John Mills recommended increasing the levels of protection already afforded to the Nevis catchment.

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Freshwater Research; Study Data from National Institute of Water and Atmospheric Research Update Knowledge of Freshwater Research

572 words

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Ecology, Environment & Conservation

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950

English

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2013 JUN 14 (VerticalNews) -- By a News Reporter-Staff News Editor at Ecology, Environment & Conservation -- Investigators publish new report on Freshwater Research. According to news reporting originating in Christchurch, New Zealand, by VerticalNews journalists, research stated, "Amphidromy is a widespread migratory behavioural syndrome exhibited by fish (and some aquatic invertebrates) that spawn in fresh water and whose larvae migrate to pelagic marine (or lentic) habitats for a period of early growth, followed by a return migration to adult freshwater habitats. The fitness advantage of amphidromy has been the subject of prolonged debate, and we examined the hypothesis that amphidromy mainly increases fecundity through the production of small pelagic larvae."

The news reporters obtained a quote from the research from the National Institute of Water and Atmospheric Research, "We compared egg size (a proxy for larval size) of closely related non-migratory and amphidromous fish species in the families Cottidae, **Galaxiidae**, Eleotridae and Gobiidae. To examine how egg size changes in relation to body size within a taxonomic group, we also compared egg size and maximum body size across most species of New Zealand non-migratory and amphidromous galaxiids. Non-migratory species generally have relatively larger eggs than their amphidromous confamilial species. This particular trait has evolved independently several times in each of the four families of amphidromous fish that have given rise to significant freshwater radiations. Amongst the New Zealand galaxiids, mean egg diameter increased with maximum body length for both non-migratory and amphidromous species; however, despite the considerably smaller relative body size of the non-diadromous species, the rate of increase in egg diameter relative to the increase in body size is considerably higher in the non-migratory fish. We propose that amphidromous fish maintain a high level of fecundity by producing small pelagic larvae. In contrast, the relatively large eggs and well-developed larvae of non-migratory species increase larval survival in what are often relatively harsh and unproductive freshwater habitats. Consequently, amphidromous species are likely to have a competitive advantage over their non-migratory relatives when close to a pelagic habitat in which their larvae can grow and develop and then migrate upstream, releasing them from recruitment limitation and giving them a local reproductive advantage over their less fecund non-migratory relatives."

According to the news reporters, the research concluded: "We argue that the persistence and distribution of both life-history strategies across the landscape depends on the relative difference in the net reproductive return for each strategy in relation to distance from a pelagic larval habitat, as mediated by the relative costs of migration and egg size/fecundity relationships."

For more information on this research see: Life histories of closely related amphidromous and non-migratory fish species: a trade-off between egg size and fecundity. *Freshwater Biology*, 2013;58(6):1162-1177.

Freshwater Biology can be contacted at: Wiley-Blackwell, 111 River St, Hoboken 07030-5774, NJ, USA.

(Wiley-Blackwell - www.wiley.com/; *Freshwater Biology* - [onlinelibrary.wiley.com/journal/10.1111/\(ISSN\)1365-2427](http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1365-2427))

Our news correspondents report that additional information may be obtained by contacting G.P. Closs, Natl Inst Water & Atmospher Res, Christchurch, New Zealand.

Keywords for this news article include: Christchurch, Freshwater Research, Australia and New Zealand

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Press Release

Outstanding River A Step Closer To Protection

Otago Fish and Game

576 words

13 June 2013

03:16 PM

Scoop.co.nz

SCCONZ

English

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Outstanding River A Step Closer To Protection

Otago Fish and Game welcomes the Environment Court's majority decision in favour of a complete prohibition on damming on one of New Zealand's most outstanding wild and scenic rivers - the Nevis - which is currently protected by Water Conservation Order (WCO).

Chief executive Niall Watson says the Court's decision on an application to amend the Kawarau WCO (under which the Nevis River is safeguarded) gives a very high level of protection to the Nevis' angling amenity and its other outstanding natural and recreational values including kayaking.

"This recognises the high value placed on the river by the community and the efforts of groups and individuals from across the country in supporting the application through the hearing process," says Mr Watson.

"The decision retains the recent recognition of outstanding characteristics including rare native **galaxiid** fish unique to the Nevis. The decision extends recognition of the river landscape downstream of Nevis Crossing by defining it as wild and scenic rather than just "wild".

Mr Watson points out that the decision is also important in protecting the main low-gradient river reach upstream from Nevis Crossing: "That is the most popular area for angling and the most productive reach of the river from the point of view of the trout fishery.

"It also protects the river fishery amenity downstream of the Crossing."

Mr Watson add that it is important to remember that in a separate but related decision of the Environment Court the whole Nevis Valley has been recognised as an "outstanding natural landscape" in the Central Otago District Plan - this was agreed by all parties.

"All this adds to the Nevis's reputation as a unique recreational area and outdoor natural history museum - it is now up to the Environment Minister to decide whether it will be preserved in perpetuity for all New Zealanders."

The Court's decision was not unanimous, with Judge Jackson in a minority decision recommending the opportunity for a small dam below the Crossing be retained with tight controls on landscape and recreational flows for kayaking. However, Fish & Game would anticipate that the majority decision be given effect with complete protection ordered.

The decision signals the end of a hearing process started in 2006 with an application for a variation to the Kawarau WCO to add protection to the Nevis River in the face of increasing interest in a hydro-electric power generation.

The Court's recommendation will now go to Minister for the Environment Amy Adams for a final decision.

Water Conservation Order (WCO) facts:

- Water Conservation Orders (WCOs) are described as the "National Parks of waterways".
- A WCO is New Zealand's highest level of protection that can be afforded to a body of freshwater.
- There are just 15 WCO-protected water bodies in the country.

- Fish & Game and its licenced anglers and hunters, along with conservation organisations and Iwi, have spent millions of dollars to safeguard some of the country's most outstanding waterways through WCO applications.
- This has enabled the protection of highly-valued sport fisheries (such as trout and salmon), habitat of native species and freshwater-based recreation for all New Zealanders.
- The Government is proposing major changes to the RMA which will have a significant impact on the future of WCOs.

For more information on Water Conservation Orders visit: www.outstandingrivers.org.nz

ENDS

Document SCCONZ0020130613e96d0008h

LONG HISTORY OF LEGAL BATTLES OVER VALLEY PLAN

John Edens in Queenstown

200 words

13 June 2013

The Southland Times

SLANDT

4

English

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In a decade-long battle with Pioneer Generation the Nevis Valley, favoured by anglers, kayakers and backcountry users, was the focus of a fight between the Alexandra- based energy firm and environmental groups.

It was the subject of a Government-appointed special tribunal, which ruled in 2010 that damming should be completely banned on the river and its tributaries to protect native fish.

Rare fauna, including the rare fish Gollum **galaxiid**, flora, and relics of the gold rush boom in the 19th century, were protected.

Pioneer appealed against a complete ban.

Otago Fish and Game said the tribunal did not go far enough in its protection of wild and scenic characteristics and ecology.

After the tribunal recommended a complete ban, three parties appealed to the Environment Court.

Pioneer Generation asked the court to overturn the ban, Whitewater New Zealand asked the court to include protection of kayaking and Otago Fish and Game asked for a wider definition of outstanding natural features to include categorising the valley as wild and scenic.

Pioneer's original plan proposed a 45-megawatt, \$100 million power scheme. john.edens@stl.co.nz

Document SLANDT0020130612e96d0001b

'Green points' hopes

By LYNDA VAN KEMPEN

514 words

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Otago Daily Times

OTGO

English

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A DECISION by the Minister for the Environment, Amy Adams, to ban dams on the Nevis River would give the Government some desperately needed "green points on the board".

That was the suggestion of the Central Otago Environmental Society yesterday in the wake of an Environment Court report on the controversial issue.

The court is divided on whether the water conservation order should be amended to prohibit damming or diversion of the river. Its 148-page report to Ms Adams, who will make the final decision, was made public on Tuesday.

The Environment Court became involved after Pioneer Generation, the New Zealand and Otago Fish and Game Councils and Whitewater New Zealand all appealed against a decision made by a special tribunal, appointed to look into the matter. The tribunal said damming should be prohibited to protect the environment of a native **galaxiid** fish, found only in the Nevis.

The court heard the matter over seven days in October and November last year. Commissioners Kathryn Edmonds and John Mills have recommended a complete ban on damming, while Judge Jon Jackson took a different view and recommended the potential for a small dam be left open, subject to conditions.

The majority decision and minority decision will both be forwarded to Ms Adams.

The environmental society was a party to the appeal and spokesman Graye Shattky, of St Bathans, said the group was heartened to see the majority of the panel confirmed the decision of the special tribunal.

"We understand Judge Jackson's concerns but think this is an opportunity for the minister [Amy Adams] and Government to get some green points on the board, which they desperately need."

In his recommendation, Judge Jackson said after completing its inquiry into the matter, a unanimous decision was not possible from the court.

The minister had discretion to retain the water conservation order in its original form or make some or all the changes recommended, he said.

When he weighed the positive reasons to allow the possibility of a dam against its adverse effects he found "the scales come down strongly on the side of retaining the possibility of a dam".

The potential dam proposed by Pioneer Generation would be very small, about 14ha, and would be invisible except from close by, Judge Jackson said.

If the potential for a dam was left open, any developer would have to apply for consents from the local authorities and a detailed assessment of environmental effects would be made public. Groups and individuals would have the chance to make submissions on the proposal.

Commissioners Edmonds and Mills said before drafting their recommendation, they had the benefit of reading Judge Jackson's reasons for his decision, but they came to different conclusions.

The adverse amenity effect and visual effect and the "damage to the perception of a wild, free flowing river" from a hydro dam, such as that proposed by Pioneer, would be significant, they said.

The potential effect on the kayaking amenity alone, might justify a ban on damming and diversion, the commissioners said.

Document OTGO000020130612e96d0000b

Court divided; back to minister; Nevis River dam decision:

By LYNDA VAN KEMPEN in Alexandra

525 words

12 June 2013

Otago Daily Times

OTGO

English

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Judge Jon Jackson Amy Adams

THE Environment Court is divided over whether damming should be banned on the Nevis River.

Its 148-page report for Environment Minister Amy Adams was made public yesterday and two of the three commissioners recommended a complete prohibition on damming.

Judge Jon Jackson took a different view and recommended the potential for a small dam on the river be left open, subject to certain conditions.

Both series of recommendations _ the majority view by Commissioners Kathryn Edmonds and John Mills and the minority view by Judge Jackson and the reasons behind those views _ will be forwarded to Ms Adams to make a final decision, ending seven years of debate on the matter.

The main protagonists, the Otago Fish and Game Council and energy company Pioneer Generation, received the report late yesterday afternoon.

While the council was optimistic the majority recommendation would carry the most weight with the minister, the energy company said it was too soon to comment on whether a potential dam on the river was a "lost cause".

The debate began in 2006 when the New Zealand and Otago Fish and Game Councils applied for an amendment to the Water Conservation Order to rule out hydro dams on the river.

The application attracted about 250 submissions and was heard in 2009-10 by a special tribunal appointed by the Ministry for the Environment.

The tribunal decided the conservation order should be changed to prohibit damming and diversion to protect a native **galaxiid** fish, a species found only in the Nevis River.

Its finding was challenged by three parties _ Pioneer Generation, which had plans for a small hydro dam on the river, the fish and game councils and recreational kayaking group Whitewater New Zealand.

The Environment Court heard the matter over six days in October and November last year.

Otago Fish and Game Council chief executive Niall Watson said yesterday although Judge Jackson put his recommendation forward "we have to feel confident that the majority decision will be given the most weight and rely on that prevailing".

The recommendation by Commissioners Edmonds and Mills, together with the earlier agreement the entire Nevis Valley should be reclassified in the Central Otago district plan as an outstanding landscape of national importance, was a "major improvement" on the protection the area had in the past, Mr Watson said.

"Quite frankly, based on those things, I don't think a hydro dam [on the Nevis] is a goer."

The majority recommendation gave a high level of protection to the river's angling amenity and its other outstanding natural and recreational values, including kayaking.

It also recognised the river landscape of the Nevis Crossing by defining it as "wild and scenic" rather than just "wild".

"The other important point is the community support for this. Of those initial 250 submissions, nearly all supported a prohibition on damming. The only dissenting voices were Pioneer, Contact and the local bodies," Mr Watson said.

Pioneer's asset manager, Peter Mulvihill, said the company's staff and legal advisers were still analysing the report and its ramifications.

Conservation Genetics; New Conservation Genetics Study Findings Have Been Reported by Investigators at Charles Darwin University

307 words

12 June 2013

Biotech Week

BIWK

827

English

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2013 JUN 12 (NewsRx) -- By a News Reporter-Staff News Editor at Biotech Week -- Investigators publish new report on Conservation Genetics. According to news originating from Darwin, Australia, by NewsRx correspondents, research stated, "Thirteen microsatellite loci were developed and characterised for two fishes from temperate Australia that exhibit atypical diadromous migration strategies. Cloning and sequencing of an enriched partial genomic library was used to develop seven highly polymorphic loci for the catadromous species *Pseudaphritis urvillii* (known as tupong or congolli)."

Our news journalists obtained a quote from the research from Charles Darwin University, "Mean number of alleles per locus was 16.5, and average observed and expected heterozygosity was between 0.90 and 0.87, respectively. Six polymorphic markers characterised for the anadromous species *Lovettia sealii* (known as Tasmanian whitebait) included a mean of 12.3 alleles per locus and average observed and expected heterozygosity of 0.71-0.77, respectively."

According to the news editors, the research concluded: "These microsatellites will be employed to understand regional patterns of recruitment, migration and stock structure."

For more information on this research see: Microsatellite markers for Australian temperate diadromous fishes *Pseudaphritis urvillii* (Bovichtidae) and *Lovettia sealii* (**Galaxiidae**). Conservation Genetics Resources, 2013;5(2):347-349. Conservation Genetics Resources can be contacted at: Springer, Van Godewijckstraat 30, 3311 Gz Dordrecht, Netherlands. (Springer - www.springer.com; Conservation Genetics Resources - www.springerlink.com/content/1877-7252/)

The news correspondents report that additional information may be obtained from D.J. Schmidt, Charles Darwin Univ, Res Inst Environm & Livelihoods, Darwin, NT 0909, Australia.

Keywords for this news article include: Darwin, Genomics, Gene Libraries, Conservation Genetics, Australia and New Zealand

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Document BIWK000020130607e96c000hn

Inspecting NZ's rarest fish

By ANDREW ASHTON

246 words

29 May 2013

Otago Daily Times

OTGO

English

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Endangered . . . Doc Growing Otago's Galaxiids Project co-ordinator Lan Pham shows off New Zealand's rarest native freshwater fish, the lowland longjaw from the Kauru River. PHOTO: ANDREW ASHTON

ABOUT 30 children from Maheno School have met New Zealand's rarest native freshwater fish, as part of a Department of Conservation (Doc) advocacy push to bring the plight of endangered native species to public attention.

A Doc advocacy project to highlight the plight of the country's native freshwater species started five months ago, and Doc's Growing Otago's Galaxiids Project co-ordinator, Lan Pham, said there had been an "amazing" response to it from schools around Otago.

Ms Pham said 80% of the country's populations of **galaxiid** species were threatened by a loss of habitat. The country's rarest native freshwater fish, the lowland longjaw, lived only in North Otago rivers, including the Kauru River, near Maheno.

Maheno School principal Ryan Fraser said Ms Pham had been invited to speak to the school's 36 pupils. because they were completing a project on how special the community was.

Learning about the lowland longjaw fitted "perfectly" with their aims, he said.

"It is a pretty special fish and this is a pretty special area."

The children had all been "pretty excited" when Ms Pham caught a lowland longjaw in the Kauru River using an electric fishing technique, he said.

andrew.ashton@odt.co.nz

Document OTGO000020130528e95t0000e

Funding boost for biodiversity projects

By ANDREW ASHTON

359 words

18 May 2013

Otago Daily Times

OTGO

English

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BIODIVERSITY projects in the Upper Waitaki and Mackenzie Basin have received a funding boost of more than \$50,000 to help protect the area's wetlands and waterways from wilding pine encroachment and stock damage.

Over the past two months Environment Canterbury (ECan) allocated almost \$320,000 to fund biodiversity projects across the region, through the Canterbury Water Management Strategy (CWMS) Immediate Steps Fund, Environment Canterbury's Biodiversity Fund and the Honda Treefund, including three projects in the Mackenzie district.

ECan biodiversity team leader Dr Jo Abbott said all the projects would protect and enhance "a wide variety" of ecosystems.

A total of \$38,400 of Immediate Steps Fund money would be used to fence a 6.4km waterway at Mailbox Creek to exclude sheep and cattle from a spring system that fed a small Department of Conservation-owned lagoon near Lake Tekapo.

Dr Abbott said although it was "rare" to get a complete spring system fenced, the springs fed into an ecologically important lagoon that supported black stilt.

"The springs are important habitat for native fish. Bignose **galaxiid**, lake-locked koaro and other native fish have been recorded."

The Upper Waitaki CWMS zone committee allocated \$13,300 of Immediate Steps funds to two other projects _ one to fence an intermontane stream and associated wetland in the lower Maryburn area, and a second to undertake wilding pine control at a 30ha wetland in Upper Wairepo.

Simons Hill Station owner Glenn Fastier said a \$5300 grant would fund a six-month project to fence a stream, and added the project was a "positive" sign of co-operation between landowners in the Maryburn catchment and the Upper Waitaki CWMS committee.

Doc Upper Wairepo Wetland project manager Peter Willemse said an \$8000 grant would be used to cut down wilding pines that had invaded a newly discovered wetland on private property.

If left in place, the wilding pines would drain the wetland completely, Mr Willemse said.

"It is in a tenure review state of getting some sort of protection. This will be an early step to ensure that what we do is protected for a long time."

Document OTGO000020130517e95i0000o

Molecular Ecology; Investigators from University of Melbourne Release New Data on Molecular Ecology

400 words

10 May 2013

Ecology, Environment & Conservation

ECECON

290

English

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2013 MAY 10 (VerticalNews) -- By a News Reporter-Staff News Editor at Ecology, Environment & Conservation -- Current study results on Molecular Ecology have been published. According to news reporting from Parkville, Australia, by VerticalNews journalists, research stated, "Genetic markers are widely used to define and manage populations of threatened species based on the notion that populations with unique lineages of mtDNA and well-differentiated nuclear marker frequencies should be treated separately. However, a danger of this approach is that genetic uniqueness might be emphasized at the cost of genetic diversity, which is essential for adaptation and is potentially boosted by mixing geographically separate populations."

The news correspondents obtained a quote from the research from the University of Melbourne, "Here, we re-explore the issue of defining management units, focussing on a detailed study of *Galaxiella pusilla*, a small freshwater fish of national conservation significance in Australia. Using a combination of microsatellite and mitochondrial markers, 51 populations across the species range were surveyed for genetic structure and diversity. We found an inverse relationship between genetic differentiation and genetic diversity, highlighting a long-term risk of deliberate isolation of *G.pusilla* populations based on protection of unique lineages. Instead, we adopt a method for identifying genetic management units that takes into consideration both uniqueness and genetic variation."

According to the news reporters, the research concluded: "This produced a management framework to guide future translocation and re-introduction efforts for *G.pusilla*, which contrasted to the framework based on a more traditional approach that may overlook important genetic variation in populations."

For more information on this research see: Balancing genetic uniqueness and genetic variation in determining conservation and translocation strategies: a comprehensive case study of threatened dwarf **galaxias**, *Galaxiella pusilla* (Mack) (Pisces: **Galaxiidae**). *Molecular Ecology*, 2013;22(7):1820-1835. Molecular Ecology can be contacted at: Wiley-Blackwell, 111 River St, Hoboken 07030-5774, NJ, USA. (Wiley-Blackwell - www.wiley.com/; Molecular Ecology - [onlinelibrary.wiley.com/journal/10.1111/\(ISSN\)1365-294X](http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1365-294X))

Our news journalists report that additional information may be obtained by contacting R.A. Coleman, University of Melbourne, Dept. of Genet, Inst Bio21, Parkville, Vic 3010, Australia.

Keywords for this news article include: Parkville, Molecular Ecology, Australia and New Zealand

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Press Release

Hatchery photo shoot for new freshwater fish guide

Eastern Fish and Game

710 words

8 April 2013

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SCCONZ

English

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Rod Morris at work in Fish & Game's Ngongotaha hatchery. Photo: Bryce-Mc-Quillan

Media release from Eastern Fish & Game

Hatchery photo shoot for new freshwater fish guide

One of New Zealand's most respected wildlife photographers, Rod Morris, has paid a visit to the Fish & Game hatchery at Ngongotaha - to photograph trout for a new book on the country's freshwater fish.

Mr Morris has more than 30 years' experience as a wildlife photographer and filmmaker, including more than 20 years with TVNZ's Natural History Unit in Dunedin.

Rod, who's published many books, has teamed up with author Stella Mc Queen (who wrote The New Zealand Native Freshwater Aquarium), to produce a book called A Photographic Guide to Freshwater Fish of New Zealand - to be published by New Holland around Christmas this year.

A brown trout photographed by Rod Morris.

Rod Morris is taking all the photos for the book, relying on Fish & Game officers in both islands to help him shoot certain species.

At the Eastern Region's hatchery in Ngongotaha, in mid-April, he photographed tiger trout and brook char, as well as rainbows and browns. Rod's visit to the hatchery was far from his first; he worked there in the 70's as a trainee in the then Wildlife Service. "Coming back to visit, and staying in the staff quarters was a bit of a nostalgia trip for me."

"Back then we used to worry about getting arthritis as old men, after working in the water on frosty mornings down at the Ngongotaha fish trap!"

Rod recalls the hatchery raised mainly rainbows and brown trout were culled as part of a programme to try and increase rainbow numbers. "I believe we favoured rainbows and even knocked brownies on the head in those days because it was going to be a rainbow fishery.

"But there were these beautiful brownies coming through - just stunning looking fish. More than few were let go rather than tapped on the head they were such beautiful fish. "

After working at the hatchery, Rod joined the Natural History Unit and spent 25 years there.

Tiger trout (Rod Morris photo).

He speaks of his gratitude to Fish & Game for their help with photographing various fish species. "We would be stuffed without Fish & Game's help, both at the hatchery and in terms of mackinaw and Atlantics down south, as again I'll be dealing with Fish & Game, enlisting their help to photograph them."

In the South Island Rod Morris is also targeting fish like splake found in high country lakes.

"There is only one lake in New Zealand with splake (which are a hybrid like tigers), Lake Letitia in the South Island.

"Tigers are a hybrid between a brownie and a brook char trout and splake are a cross between a brook char and Mackinaw. Mackinaw are also very rare in New Zealand, being found only in Lake Pearson."

Rod hopes to work with Central South Island Fish & Game officer Graeme Hughes to photograph Quinntat and sockeye salmon. It won't be the first time - "I worked with him as a Wildlife trainee when I was 20 - it was a long hot summer and we'd go out and rescue trout on some of those Canterbury rivers during the drought."

Rod Morris says that Stella's particular interest is in native **Galaxias**, while his own passion, "especially in terms of photography because of the difficulty of tracking them down, is in the more obscure salmonids," fish which all spawn in cold fresh water and include Atlantic salmon, tigers, mackinaw and brook char. "It's fascinating to be finding out a bit more about them."

Eastern Fish & Game Manager Rob Pitkethley says the hatchery team has been delighted to play host to Rod, especially someone with such historic connections to the facility. He says the book will provide a valuable resource for all those who have an interest in freshwater fish species whether they be sports fishermen, freshwater biologists, staff of agencies involved with water quality or the public - simply interested in what grows in their local streams.

ENDS

Document SCONZ0020130408e9480008j



Column

SMC Heads-Up: GM risk assessment, smoking genes, birds

Science Media Centre

1,759 words

28 March 2013

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SCCONZ

English

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SMC Heads-Up: GM risk assessment, smoking genes and bird extinction

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[How safe is 'safe enough'?](#)

A group of academics claim GM products such as soybeans are not being subjected to sufficient scrutiny from regulators. But regulators counter that there is no evidence of extra risk to justify it.

A recent analysis by Professor Jack Heinemann, director of the University of Canterbury's Centre for Integrated Research in Biosafety, and colleagues, critically examined several regulatory bodies and how they assess genetically modified organisms carrying a modification that produces a molecule that can inhibit other genes (double stranded RNA; dsRNA).

The study, published last week in the journal *Environmental International*, concluded that, "regulatory bodies are not adequately assessing the risks of dsRNA-producing GM products."

The authors put forward their vision for an ideal formal assessment procedure, involving multiple levels of bioinformatic, in vitro, animal and possibly human clinical assessments before approval could be granted in each individual case.

Prof Peter Langridge, an Australian plant geneticist, dismissed the criticism in comments provided to the SMC, stating, "in their article, this group proposes regulatory procedures that are clearly designed to block the technology, not address safety issues."

"The regulatory agencies are not only fully aware of the technology [in question] but they are actively seeking scientific input into the safety assessment. We are fortunate in Australia and New Zealand to have very effective and profession regulatory procedures that have ensured we now enjoy the safest food in our history."

Food biotechnology senior lecturer at the University of Melbourne, Dr David Tribe, added, "the double-stranded RNAs that are discussed in [the paper] are in every bit of food we eat, and in perhaps every plant and animal on the planet, and have been for millennia."

He went on to emphasise that much less is known about conventional plant varieties that come to market without regulatory oversight, in contrast to new crops developed with GM techniques.

Chief Scientist Paul Brent of Food Standards Australia New Zealand, the agency responsible for approving genetically modified products for use in both countries, appeared today alongside Prof Jack Heinemann on Radio New Zealand's Nine to Noon programme to address the issue.

You can read comments in full and further media coverage of the issue on the Science Media Centre website.

Smoking genes predict risk

Your DNA may play a significant role in determining whether or not you end up a smoker - and how easy you find it to kick the habit.

Many large studies have identified particular gene variants that are more common in smokers than other people, suggesting they play a role in nicotine dependence.

Now an international team of researchers have used these genetic clues to develop a 'genetic risk profile', and to see how accurate it is, they have road-tested it on the on a well known sample of Kiwis: the Dunedin Birth Cohort.

Researchers analysed data from the long-term study of 1,000 New Zealanders to identify whether individuals at high genetic risk got hooked on cigarettes more quickly as teens and whether, as adults, they had a harder time quitting.

The results, published today in JAMA Psychiatry, showed that a person's genetic risk profile did not predict whether he or she would try cigarettes. But for those who did try cigarettes, having a high-risk genetic profile predicted increased likelihood of heavy smoking and nicotine dependence.

This link was most apparent for teenagers; Among teens who tried cigarettes, those with a high-risk genetic profile were 24 percent more likely to become daily smokers by age 15 and 43 percent more likely to become pack-a-day smokers by age 18.

As adults, those with high-risk genetic profiles were 22 percent more likely to fail in their attempts at quitting.

"The effects of genetic risk seem to be limited to people who start smoking as teens," said author Daniel Belsky, a post-doctoral research fellow at Duke University.

"This suggests there may be something special about nicotine exposure in the adolescent brain, with respect to these genetic variants."

The authors noted that their genetic risk profile isn't yet accurate enough to be used to identify high-risk teens reliably, but it does highlight the critical adolescent period in addiction development.

"Public health policies that make it harder for teens to become regular smokers should continue to be a focus in antismoking efforts," Belsky said.

You can read international news coverage of the study on the Science Media Centre website.

On the science radar...

The buzz on bees and pesticides, the most exotic meal, the evolution of imaginary animals and who owns your genes?

Pacific bird loss extensive

Over-hunting and deforestation by Pre-European settlers in the Pacific led to extensive loss of bird life, according to a new study.

While human migration into the Pacific region was known to have caused the extinction of many bird species, exact numbers have been sketchy.

Now, in a new study published this week in PNAS, scientists used fossil records from 41 Pacific islands to model the number of birds lost over the last 4,000 years.

Their findings show the extinction toll may have been as high as 1300 bird species - about 10% of the current bird species in the world, say the researchers.

Author Prof Richard Duncan, from the University of Canberra (previously at Lincoln University, NZ), told Science magazine that while hunting would have led to many of the extinctions, burning of forests would also have played a major role.

"You can imagine, when you don't have chainsaws and things, the easiest way to clear forest is to set it on fire," he said.

The authors note that New Zealand got off lightly as it is a large, mountainous and wet island, suffered less deforestation, and had more places for birds to hide from hunters.

You can read a round up of international media coverage on the Science Media Centre website.

Quoted: The Vote, TV3

"If you are still eating poorly after this change then you are offsetting the health costs that you will be generating in the future when the diabetes zombie apocalypse hits, okay?"

-

Economist Geoff Simmons of the Morgan Foundation on a tax on unhealthy food.

New from the SMC

Experts Respond:

GM Regulation: Experts comment on a new paper calling for tighter risk assessments of a particular genetic modification.

In the news:

Pacific bird loss: Human settlement of the Pacific resulted in an immense loss of native bird species. Read coverage of new research.

Flu warning: Experts are encouraging New Zealanders to get their flu jab as a potentially nasty flu season looms.

Sciblogs highlights

Some of the highlights from this week's posts:

Chocolate! and just in time for Easter - Does chocolate lower your stroke risk? Alison Campbell casts a critical eye over the reported benefits of the sweet stuff.

BioBlog

Using the 'bigfoot genome' for 21st century biology - Aimee Whitcroft highlights a neat new 'citizen science' class on unlocking the secrets of genomes - real or not-so-real.

Misc.ience

Visualising plastic pollution in the world's oceans - Guest Blogger Timo Franz (from data, design and development outfit Dumpark) highlights a new visualisation of the 'great Pacific garbage patch'.

GuestWork

Research highlights

Please note: hyperlinks point, where possible, to the relevant abstract or paper.

Predator-free fish streams: Trout threaten the survival of NZ native fish, both by direct predation and competition for resources. A new study confirms the negative impact of introduced brown and rainbow trout species on native **galaxiid** fish. The authors suggest taking advantage of galaxiids' unique climbing abilities - the fish can crawl upwards along steep rock chutes - to create barriers that are impassable to trout.

Science for Conservation

'Smoking genes' predict risk: New Zealand researchers, in collaboration with US and UK colleagues, have developed a 'genetic risk score' and road-tested it on the Dunedin Birth Cohort to see if it can predict who initiates smoking and to what extent. The authors noted the effects of genetic risk seem to be limited to people who start smoking as teens. For instance, among teens who tried cigarettes, those with a high-risk genetic profile were 43 percent more likely to become pack-a-day smokers by age 18.

JAMA Psychiatry

Obesity breathalyser: The content of a person's breath may indicate how susceptible they are to weight gain, according to a recent study. People whose breath has high concentrations of both hydrogen and methane gases are more likely to have a higher body mass index and percentage of body fat, according to the findings. The combination of the two gases signals the presence of a microorganism that may contribute to obesity, say the authors.

Journal of Clinical Endocrinology and Metabolism

Electrifying waggle dance: New research suggests that there is more to the honeybee's waggle dance than meets the eye. During the dance, which directs fellow bees to sources of nectar, the dancing bee emits static and modulated electric fields which, according to the new research, bees can detect and be trained to respond to. The authors conclude that these electric fields are an important and overlooked component in honey bee dance communication.

Proceedings of the Royal Society B

Policy updates

Some of the policy highlights from this week:

R&D spending up: Statistics New Zealand data released today that shows businesses in New Zealand spent \$1.2 billion on research and development in 2012 - an increase of almost 25 per cent since 2010.

Upcoming sci-tech events

- Mad on radium: New Zealand in the atomic age - Cafe Scientifique with Rebecca Priestley - 28 March, lower Hutt.
- Human evolution - we are family - A chalkle meetup with Michael Harvey - 2 April , Wellington.
- Cryptogenomics - using the "bigfoot genome" for 21st century biology - A chalkle meetup with David Winter - 2 April , Wellington.
- What is the value of science in NZ? - NZAS conference - 3 April, Wellington.
- Open data - letting it loose on the crowd - BIG DATA discussion panel with Kim Hill - 3 April, Wellington.
- What if... What you eat controlled your children's genes? - "What if Wednesday" lecture from Prof Ian Shaw - 3 April, Christchurch.
- The Ecological View of Cats - Public talk from John Flux - 4 April, Wellington.

For these and more upcoming events, and more details about them, visit the SMC's Events Calendar.

ENDS

Document SCCONZ0020130328e93s000b7

TROUT A THREAT TO NATIVE FISH

134 words

28 March 2013

Timaru Herald

TIMRUH

5

English

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Researchers are calling for trout to be removed from some streams to protect threatened species of small native fish.

The impact of brown and rainbow trout on two native species, the Canterbury **galaxias** and the alpine **galaxias** in South Island high-country streams, was assessed for a Department of Conservation-funded project. Field studies were carried out in the Broken and Porter rivers of the Waimakariri River catchment and the Acheron riverscape in the Rakaia River catchment.

Authors Darragh Woodford, of the Canterbury University School of Biological Sciences, and Angus McIntosh, of Canterbury University, said experiments showed both species of native fish were vulnerable to trout predation.

Creating trout-free reaches of river with barriers was a possible way to protect the native fish, they said.
Fairfax NZ

Document TIMRUH0020130327e93s00014

Zoology; Investigators at South Australian Museum Describe Research in Zoology

420 words

29 January 2013

Life Science Weekly

LFSW

English

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2013 JAN 29 (NewsRx) -- By a News Reporter-Staff News Editor at Life Science Weekly -- Researchers detail new data in Zoology. According to news reporting from Adelaide, Australia, by NewsRx journalists, research stated, "South Australia is a large Australian state (similar to 1,000,000 km²) with diverse aquatic habitats spread across temperate to arid environments. The knowledge of freshwater fishes in this jurisdiction has advanced considerably since the last detailed catalogue of native and alien species was published in 2004 owing to significant survey and research effort, spatial analysis of museum data, and incidental records."

The news correspondents obtained a quote from the research from South Australian Museum, "The updated list includes 60 native and 35 alien species. New additions to the native fauna include cryptic species of *Retropinna semoni* s.l. (Weber) and **Galaxias olidus** s.l. (Gunther). Two others have been rediscovered after long absences, namely *Neochanna cleaveri* (Scott) and *Mogurnda adpersa* (Castelnau). Range extensions are reported for native populations of **Galaxias brevipinnis** Gunther, *Leiopotherapon unicolor* (Gunther), *Hypseleotris* spp. (hybridogenetic forms) and *Philypnodon macrostomus* Hoese and Reader. There are five new alien species records (all aquarium species) including *Phalloceros caudimaculatus* (Hensel), *Poecilia reticulata* Peters, *Xiphophorus hellerii* Heckel, *Astronotus ocellatus* (Agassiz) and *Paratilapia polleni* Bleeker, with confirmation of *Misgurnus anguillicaudatus* (Cantor). Other range extensions for alien (exotic or translocated native) species in different drainage divisions (various modes of human-mediated dispersal) include *Nematalosa erebi* (Gunther), *Cyprinus carpio* Linnaeus, *Oncorhynchus mykiss* (Walbaum), *Salmo salar* Linnaeus, *Salvelinus fontinalis* (Mitchell), *Melanotaenia fluviatilis* (Castelnau), *Atherinosoma microstoma* (Gunther), *Macquaria novemaculeata* (Steindachner), *Nannoperca australis* Gunther, *Pseudaphritis urvillii* (Valenciennes), and *Hypseleotris* spp. (hybridogenetic forms)."

According to the news reporters, the research concluded: "New records are a combination of greater available information and new incursions, highlighting the need for ongoing detailed surveys and reporting to detect rare native and alien species."

For more information on this research see: Update to the catalogue of South Australian freshwater fishes (Petromyzontida & Actinopterygii). *Zootaxa*, 2012;(3593):59-74. *Zootaxa* can be contacted at: Magnolia Press, PO Box 41383, Auckland, St Lukes 1030, New Zealand. (Magnolia Press - www.mapress.com/; *Zootaxa* - www.mapress.com/zootaxa)

Our news journalists report that additional information may be obtained by contacting M.P. Hammer, S Australian Museum, Ichthyol Sect, Adelaide, SA 5000, Australia.

Keywords for this news article include: Zoology, Adelaide, Australia and New Zealand

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DOC rangers call for more love

By ANDREW ASHTON

343 words

12 January 2013

Otago Daily Times

OTGO

English

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Teeming . . . Doc coastal Otago freshwater ranger Lan Pham shows off some of the aquatic life in Oamaru Creek. PHOTOS: ANDREW ASHTON
Charged . . . Ms Pham conducts an electric fishing demonstration in Oamaru Creek.

DEPARTMENT of Conservation (Doc) rangers say more "**galaxiid love**" is needed to help halt the decline of New Zealand's freshwater fish.

Coastal Otago freshwater rangers were in Oamaru on Thursday to conduct a talk at the North Otago Museum, as part of efforts to raise awareness about endangered freshwater species in Otago. Ranger Lan Pham said 80% of New Zealand's 28 species of galaxiids were endangered in some way.

Ms Pham said although the five species that made up the whitebait catch were well-known, there was very little public awareness of the remaining species.

"The depressing part about it is that not only do we not know a lot about our freshwater species, but we are losing them at an alarming rate.

"There are some rare and endangered galaxiids right here in Otago."

She said the lowland longjaw, which was only found on the Kauru and Kakanui Rivers, was a case in point.

"It's really the kakapo of the water. The population can be down to just 250 individuals, at its lowest point."

The main reasons for the decline of native freshwater life were predation, loss of habitat, land use changes and barriers to migration.

That was why Doc was "spreading **galaxiid love**" through advocacy.

The talk ended with a demonstration of an electric fishing surveying technique in the Oamaru Creek.

North Otago Museum curator Chloe Searle welcomed the presentation, which was attended by about 20 people, as a great chance to learn more about native aquatic life.

Ms Searle also said the talk had fitted in nicely with the museum's current efforts to encourage more interest in the local creek.

"The talk connects with the museum's current Creek Creatures exhibition, a family friendly display about the wildlife in and around Oamaru Creek," Ms Searle said.

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Document OTGO000020130111e91c00002

Physiology; New Physiology Data Have Been Reported by Researchers at University of Canterbury

361 words

28 December 2012

Health & Medicine Week

HAMW

2363

English

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2012 DEC 28 (NewsRx) -- By a News Reporter-Staff News Editor at Health & Medicine Week -- Investigators publish new report on Physiology. According to news reporting originating in Christchurch, New Zealand, by NewsRx journalists, research stated, "Hypoxia represents a significant challenge to most fish, forcing the development of behavioural, physiological and biochemical adaptations to survive. It has been previously shown that inanga (**Galaxias maculatus**) display a complex behavioural repertoire to escape aquatic hypoxia, finishing with the fish voluntarily emerging from the water and aerially respiring."

The news reporters obtained a quote from the research from the University of Canterbury, "In the present study we evaluated the physiological, metabolic and biochemical consequences of both aquatic hypoxia and emersion in inanga. Inanga successfully tolerated up to 6 h of aquatic hypoxia or emersion. Initially, this involved enhancing blood oxygen-carrying capacity, followed by the induction of anaerobic metabolism. Only minor changes were noted between emersed fish and those maintained in aquatic hypoxia, with the latter group displaying a higher mean cell haemoglobin content and a reduced haematocrit after 6 h. Calculations suggest that inanga exposed to both aquatic hypoxia and air reduced oxygen uptake and also increased anaerobic contribution to meet energy demands, but the extent of these changes was small compared with hypoxia-tolerant fish species."

According to the news reporters, the research concluded: "Overall, these findings add to previous studies suggesting that inanga are relatively poorly adapted to survive aquatic hypoxia."

For more information on this research see: Should I stay or should I go?: Physiological, metabolic and biochemical consequences of voluntary emersion upon aquatic hypoxia in the scaleless fish **Galaxias maculatus**. *Journal of Comparative Physiology B, Biochemical, Systemic, and Environmental Physiology*, 2012;182(8):1057-67.

Our news correspondents report that additional information may be obtained by contacting M.A. Urbina, School of Biological Sciences, University of Canterbury, Private Bag 4800, Christchurch, 8140, New Zealand.

Keywords for this news article include: Chemistry, Physiology, Biochemical, Christchurch, Australia and New Zealand.

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Document HAMW000020121221e8cs001r9

The Playlist is your weekly guide to gigs, live comedy, theatre, dance,...

1,115 words
14 December 2012
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The Playlist is your weekly guide to gigs, live comedy, theatre, dance, classical, opera, galleries and museums. To have an event listed, email playlist@dompost.co.nz or write to: The Playlist, The Dominion Post, PO Box 3740, Wellington, by noon Friday the week prior to publication. The next Playlist is published on January 18. Photographs must be captioned and in the JPEG format.

GIGS & COMEDY

TODAY

Morrissey, Wellington Town Hall

DJ Marek, B-Lo and Kev Fresh, Bettys, Wellington, 9pm

Denny & The Dynamos, Porirua Club, 7.30pm

Isaac Aesili, Lisa Tomlins, Mike Fabulous and Adan Tijerina, Matterhorn, 10pm

The Cussie Bros, Wairarapa Services & Citizens Club, Masterton, 7.30pm

Home Alone Music Xmas Party - Urbantramper, French for Rabbits, Timothy Blackman, City Oh Sigh, Aro Valley Community Centre, Wellington

The Tommy Guns, Upper Hutt Cosmopolitan Club

Chuckstock Music Festival, Meow, Wellington, 8pm

TOMORROW

LRD JXN, Matterhorn, 10pm

Soul Minerz, Upper Hutt Cosmopolitan Club

MI CASA SU CASA, Bettys, 11pm

SUNDAY

Parcel and Sage, Abode Cafe, Lower Hutt, 11.30am

The Recovery Sessions Clube de Choro (3pm); Dine & Dance (6pm), Southern Cross

The Troubles, Meow, 8.30pm

The Rag Poets, Shepherds Arms Hotel, Wellington, 3pm

MONDAY

Stephen Merchant, Opera House, Wellington

WEDNESDAY

OffTopsTheHead, Poet Bastards, Meow, 8pm

THEATRE

Eschaton, Studio 77, 77 Fairlie Tce, Wellington, December 17-21

Nana Pat and Paula Christmas Quiz, Caffiend Cafe, Petone, December 14 and 15, 8pm

The ImpoSTAR, Bats Theatre, until December 15

The Motor Camp, Centrepont Theatre, Palmerston North, until December 15

The Island Bay Loners' Doomsday Christmas Sing-Along, Bats Theatre, until December 15

A Christmas Carol, Circa Theatre, until December 22

KIDS & FAMILY

Cinderella: The Pantomime, Circa One, until December 23 and January 2-12

Shooting Stars!, Carter Observatory, Wellington, December 19, 7pm

Santa Steam Spectacular, Silver Stream Railway Reynolds Bach Dr, Silverstream, Sunday, 11am-4pm

DANCE

Royal Academy of Dance's Genee International Ballet Competition, St James Theatre, Wellington, December 15

FILM

Patu!, today, 7pm, and Goodbye Pork Pie, tomorrow, 7pm, NZ Film Archive, Wellington

CLASSICAL

Colours of Futuna, Futuna Chapel, Wellington, Sunday, 2pm

Handel's Messiah - New Zealand Symphony Orchestra and Orpheus Choir, Michael Fowler Centre, Wellington, tomorrow

All The Right Notes, Regent Theatre on Broadway, Palmerston North, Sunday, 7.30pm

GALLERIES & MUSEUMS

SHOWING

30 Upstairs, Wellington: Jade Townsend - Let Me Remind You What to Fear; Vivien Atkinson - Space and Time until December 22

Adam Art Gallery, Wellington: We Will Work With You - Wellington Media Collective 1978-1998, until January 22

Alexander Turnbull Library, Wellington: To the Ends of the Earth: Bibles in the Alexander Turnbull Library, until January 19

Aratoi Wairarapa Museum of Art & History, Masterton: Bridget Reweti until February 1; Ian St George - The Iconic Orchid; until December 16; Little Jewels until December 16

Artel Gallery, Paraparaumu: One Square Meal, until December 16

Artrium Gallery, Wellington: All Things Lovely - A Special Christmas Exhibition, until mid- January

Blue Belle Cafe, Wellington: Reflecting on the Bay - Ian Logan, until January 16

Bowen Galleries, Wellington: Brendan O'Brien - Field Movies and Tracey Williams - Camellia Map: Riversdale Road Avondale, until December 31

Cecil Veda Gallery, Wellington: **Galaxias** - Geoffrey Notman, until December 15

City Gallery, Wellington: Kermadec, until February 10; The Sophist's Mirror Ben Cauchi, until February 17; Wayne Youle - Fingers Crossed, December 15-February 10

Dowse Art Museum, Lower Hutt: Jeffrey Harris - By Definition, until January 27; Caravan of Cardboard - Saskia Leek, Dowse Art Museum, December 15; Playuntil April 1; Arcade: Homegrown Video Games until February 24; Lauren Winstone- Holding Holes until February 10.

Exhibitions Gallery of Fine Art, Wellington: My True Love Gave to Me

Expressions, Upper Hutt: All That Glitters - Andrea Bern, Israel Tangaroa Birch, Mark Curtis, Andrea Daly, Lauren Lysaght, Fran Maguire, Darcy Nicholas, Prakash Patel, Reuben Paterson, Alan Preston, Ngataiharuru Taepa and The Royal New Zealand Ballet, until January 13; Tails of Aesop - Sharon Hall, until January 27

Gallery Frames , Wellington: Jan Thomson - Mainland until December 24

Gallery Frames, Wellington: Mainland until December 24

Gilberd Marriott Gallery, Wellington: Felix Harris - Virtual Popcorn, today until January 19

Govett-Brewster Gallery, New Plymouth: Sara Hughes: The Golden Grain, until December 31

Hamish McKay Gallery, Wellington: Marie Shannon - Aachen, Germany, 1995; Jan van der Ploeg, until January 26

Hutt Art Society, Lower Hutt: An Exhibition of Original Prints, until December 16

Kapiti Gallery, Raumati Beach: Christmas Presents, until January 20

Katherine Mansfield Birthplace, Wellington: Her Painted Words, until February 15

Kura Gallery, Wellington: Heirlooms Here After - Owen Mapp and Hanna Eriksen Mapp until December 23

McNamara Gallery photography, Whanganui: Naked Light until January 25

Mahara Gallery, Wellington: Don Driver and Natural World, until January 27

Millwood Gallery, Wellington: 2012 Christmas Exhibition, until December 24

NZ Film Archive, Wellington: Remade until February 2

NZ Portrait Gallery, Wellington: Blue Smoke: Portraits from the Lost Dawn of NZ Popular Music - Chris Bourke, until February 24; 37 Portraits - Doc Ross, until February 24

Ngaio Fine Arts, Wellington: Specially Small, until January 30

Odlin Gallery, Lower Hutt: Impressions II, until December 16

Onslow Historical Society Centre, Wellington: North Road, until December

Pataka Art Museum, Porirua: Wildlife Photographer of the Year, until January 27; Kaitiaki: Recent Paintings - Darryn George, until March 3; 21st Annual Wallace Art Awards, until February 24; Wind It Up, December 15-January 14; Ko wai matou: Te Wananga o Aotearoa Porirua, December 15-January 21.

Page Blackie Gallery, Wellington: 4th Editions; Ann Robinson, Kon Dimopoulos and Harry Watson until December 22

Peter McLeavey Gallery, Wellington: Cave Music - WD Hammond until December 22

Photographers' Gallery Hawke's Bay, Napier: Oodnadatta Track - Joseph Kelly, until January; Tara Jahn-Werner - Floribunda, until January 12

Photospace Gallery, Wellington: Vulnerable - Kaveh Kardan, today until January 19

Quoil, Wellington: Twinkle Twinkle {little gem}, until December 24; Karaka, until December 24

Reserve Bank Museum, Wellington: The Queen's Jubilee in Currency and Film until December

Robert Heald Gallery, Wellington: Jae Hoon Lee - Day and Night and Day, until December 22

Solander Gallery, Wellington: Small Desires until December 24

Suite, Wellington: Ans Westra- Lets Party, until December 22

Taylor-Jensen Fine Arts, Palmerston North: People and Places - Annabel Neall, today until December 24

Te Papa, Wellington: The Mixing Room, until April 2013; Angels and Aristocrats: Early European in New Zealand Public Collections until January 27; Game Masters opens December 15

Thistle Hall, Wellington: Kids' Snapshot:

A Photographic Exhibition by Wellington Children of the Places & Faces of Upper Cuba Street, until December 16

Toi Poneke Gallery, Wellington: Street Shifts - Vanessa Arthur, until December 15

Vincent's Gallery, Wellington: Summer Group Show, until February 6

Zimmerman Contemporary Art Gallery, Palmerston North: Feather Paintings - Beth McGill, until December 31.

Document DOMPOS0020121213e8ce0001p

FREE EVENT

46 words

30 November 2012

Dominion Post

DOMPOS

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English

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Geoffrey Notman's show **Galaxias** has been a sellout. The paintings of the West Coast were all snapped up on opening night, but the exhibition is open until next Friday, allowing the public to check them out. Cecil Veda Gallery, 82 Para St, Miramar.

Document DOMPOS0020121129e8bu0001n

The Playlist is your weekly guide to gigs, live comedy, theatre, dance,...

961 words

30 November 2012

Dominion Post

DOMPOS

15

English

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The Playlist is your weekly guide to gigs, live comedy, theatre, dance, classical, opera, galleries and museums. To have an event listed, email playlist@dompost.co.nz or write to: The Playlist, The Dominion Post, PO Box 3740, Wellington, by noon Friday, the week prior to publication. Photographs must be captioned and in the JPEG format.

GIGS & COMEDY

TODAY

Bare and Back Again - A Burlesque Journey to Middle-earth, The Fringe Bar, Wellington, 8pm

Freedom Express, Wairarapa Services & Citizens Club, Masterton, 7.30pm

Newtown Rocksteady, Southern Cross, Wellington, 10pm

Shenanigans, Upper Hutt Cosmopolitan Club, 8pm

The Rubber Band, The Levin Club, Levin, 8pm

Vorn, Emma Davey & the Monks of Cool, Meow, Wellington, 9pm

Bear Grylls Live, TSB Bank Arena, 7pm

TOMORROW

Dave Murphy, Dougal Speir and Terry Casey (4pm); DJ Cuzzy Bro (6.30pm); Melting Faces (10pm), Southern Cross

Itchycoo Park, Upper Hutt Cosmopolitan Club, 8pm

Bare and Back Again - A Burlesque Journey to Middle-earth, Fringe Bar, 8pm

SUNDAY

Tommy Dufraine, Abode Cafe, Lower Hutt, 11.30am

The Recovery Sessions featuring DJ Verdi (3pm); Dine & Dance (6pm), Southern Cross

The Troubles, Meow, 8.30pm

WEDNESDAY

The Medicine - Standup Comedy Night, Meow, 8.30pm

THEATRE

PSA: Christmas at the Beehive, Bats Theatre, until tomorrow

The ImpoSTAR, Bats Theatre, December 6-15

Bloody Murder, Hutt Repertory Theatre, until December 8

Richard Meros Salutes the Southern Man, Downstage, until tomorrow

The Motor Camp, Centrepoint Theatre, Palmerston North, until December 15

The Tigers of Wrath, Circa Two, until tomorrow

As You Like It, Gryphon Theatre, until tomorrow

KIDS & FAMILY

Cinderella: The Pantomime, Circa One, until December 23 and January 2-12

Christmas Pantomime, Southward Theatre, Paraparaumu, December 6, 11am

DANCE

New Zealand School of Dance 45th Anniversary Graduation Season until tomorrow

Rock & Roll Dance, Harbour City Rock 'n' Roll Club, Northland Community Hall, Wellington, 7.30pm

FILM

Happy 70th Birthday Jimi Hendrix!, NZ Film Archive, Wellington, tonight and tomorrow, 7pm

CLASSICAL

Colours of Futuna, Futuna Chapel, Wellington, Sunday, 2pm

Come and Sing Messiah! The Concert, St James Church, Lower Hutt, Sunday, 6pm

Wellington Chamber Orchestra, St Andrew's on the Terrace, Wellington, Sunday, 2.30pm

Festival Singers - From Shadow to Light, St Ninian's Uniting Church, tomorrow, 4pm

GALLERIES & MUSEUMS

Showing

30 Upstairs, Wellington: Vivien Atkinson. - Space & Time, until December 22

Adam Art Gallery, Wellington: We Will Work With You - Wellington Media Collective 1978-1998, until January 22

Alexander Turnbull Library, Wellington: To the Ends of the Earth: Bibles in the Alexander Turnbull Library, until January 19

Aratoi Wairarapa Museum of Art & History, Masterton: Sibylle Bergemann Photography, until December 9; Gnoissene, until Sunday

Artrium Gallery, Wellington: Black & White Group Exhibition, ends today

Avid Gallery, Wellington: Marilyn Wiseman - Echo

Bartley + Company Art, Wellington: Richard Orjis - Ground, until December 8

Blue Belle Cafe, Wellington: Reflecting on the Bay - Ian Logan, until January 16

Bowen Galleries, Wellington: Ans Westra - Small Landscapes, until tomorrow

Cecil Veda Gallery, Wellington: **Galaxias** - Geoffrey Notman, until December 15

City Gallery, Wellington: Kermadec, until February 10; The Sophist's Mirror, Ben Cauchi, until February 17; Murray Hewitt - The Secrets of Their Own Hearts, until December 9; Artists' Film International, until February 10; Linda Lepou Aitu - Homage to Spirit, until December 9; Campbell Kneale - 201012, until December 9

Dowse Art Museum, Lower Hutt: Jeffrey Harris - By Definition, until January 27

Enjoy Public Art Gallery, Wellington: Menage a Trois COBRA, Yuko Kamei (XYZ Collective, Japan), Charles O'Loughlin, Lisa Radford, Ry Haskings, Taree Mackenzie (TCB Artinc. Australia) until December 8

Gallery Frames, Wellington: Jan Thomson - Mainland until December 24

Govett-Brewster Gallery, New Plymouth: Sara Hughes: The Golden Grain, until December 31

Hamish McKay Gallery, Wellington: Anne- Marie May, Rose Nolan, until December 8

Hedspace Gallery, Masterton: Hanging Together, ends today

Hutt Art Society, Lower Hutt: An Exhibition of Original Prints, until December 16

The Learning Connexion, Lower Hutt: Graduates of Advanced Diploma programme, today until Sunday

McNamara Gallery photography, Whanganui: Ben Cauchi, ends today

Mahara Gallery, Waikanae: Naked Light; Frances Krsinich - Coat of Arms; Bridget Reweti - Excuse Me, You're in My Shot, until Sunday

Millwood Gallery, Wellington: 2012 Christmas Exhibition, until December 24

NZ Academy of Fine Arts, Wellington: Solo 34: Ten Artists take Ten Metres, until Sunday

NZ Film Archive, Wellington: Remade, until Sunday

NZ Portrait Gallery, Wellington: The Gloaming, until December 6

Odlin Gallery, Lower Hutt: Impressions II, until December 16

Onslow Historical Society Centre, Wellington: North Road, until December

Otaki Heritage Museum, Otaki: Sailing Away - Katherine Morrison, ends today

Page Blackie Gallery, Wellington: Paul Dibble - A Decade of Sculpture, until tomorrow

Pataka Art Museum, Porirua: Wild at Art, until December 9; Wildlife Photographer of the Year, until January 27; Kaitiaki: Recent Paintings - Darryn George, until March 3; 21st Annual Wallace Art Awards, December 2-February 24

Photographers' Gallery Hawke's Bay, Napier: NZ Aerial Mapping - Observations, an Aerial Perspective, ends today

Quoil, Wellington: Twinkle Twinkle {little gem}, until December 24

Reserve Bank Museum, Wellington: The Queen's Jubilee in Currency and Film until December

St James Theatre First Floor Gallery, Wellington: Vincents Annual Group Exhibition until December 6

Solander Gallery, Wellington: Small Desires December 1-24

Suite, Wellington: Ans Westra - Let's Party, until December 22

Taylor-Jensen Fine Arts, Palmerston North: People and Places - Annabel Neall, today until December 24

Te Papa, Wellington: The Mixing Room, until April 2013; Angels and Aristocrats: Early European in New Zealand Public Collections until January 27

Thistle Hall, Wellington: The Hi Line - Don Smith, until December 3; The Music Room: The Wrong Side Of The Tracks - Peter Donovan, until tomorrow

Toi Poneke Gallery, Wellington: Street Shifts - Vanessa Arthur, until December 15

Vincents Gallery, Wellington: Emma Gregory, until December 5

Document DOMPOS0020121129e8bu0001f

Biological Invasions; Researchers from University of Canterbury Provide Details of New Studies and Findings in the Area of Biological Invasions

496 words

27 November 2012

Life Science Weekly

LFSW

English

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2012 NOV 27 (NewsRx) -- By a News Reporter-Staff News Editor at Life Science Weekly -- Research findings on Biological Invasions are discussed in a new report. According to news originating from Christchurch, New Zealand, by NewsRx correspondents, research stated, "Non-native trout (*Oncorhynchus mykiss*, *Salmo trutta*) invasions have been implicated in the decline of native **galaxiid** fishes throughout temperate Southern Hemisphere freshwaters. As many **Galaxias** fishes are endangered, knowledge of factors facilitating localised co-occurrence of native and introduced species is needed for both conservation and management."

Our news journalists obtained a quote from the research from the University of Canterbury, "While recent research demonstrates a role for flow-related mediation of trout effects on galaxiids, the mechanism(s) underlying such phenomena remain unclear. Accordingly, we assessed the interplay between environmental conditions and trophic niches for both species across a gradient of co-occurrence and hydrology. In particular, we quantified the trophic position (TP), energy sourcing patterns, and niche breadth based on the abundance of naturally occurring stable isotopes (N-15 and C-13) within muscle tissues for trout and galaxiids in replicate food webs from streams varying widely in size and disturbance regime. We found that both species held similar trophic positions, but TP varied considerably across individuals and sites due to combined effects of body size and hydrological disturbance. Further, patterns in delta C-13 revealed an effect of disturbance on the relative reliance by fish on a key prey taxon, and a ca. 1 aEuro degrees shift in delta C-13 by galaxiids in the presence of trout. Lastly, isotope-based measures of niche width, which were positively correlated with coarse dietary measures of niche width, were similar, albeit variable, for all groups. **Galaxiid** niche width co-varied negatively with relative trout abundance, whereas that for trout did so with stream size. Altogether, our findings demonstrate that both the presence of trout and environmental conditions act in concert to influence where galaxiids are positioned within stream food webs."

According to the news editors, the research concluded: "Perhaps more importantly, they suggest that flexible niches may enable galaxiids to persist in the presence of a species that might otherwise cause their local extinction."

For more information on this research see: Niche flexibility and trout-**galaxiid** co-occurrence in a hydrologically diverse riverine landscape. *Biological Invasions*, 2012;14(11):2393-2406. *Biological Invasions* can be contacted at: Springer, Van Godewijkstraat 30, 3311 Gz Dordrecht, Netherlands. (Springer - www.springer.com; *Biological Invasions* - www.springerlink.com/content/1387-3547/)

The news correspondents report that additional information may be obtained from P. McHugh, University of Canterbury, Sch Biol Sci, Freshwater Ecol Res Grp, Christchurch 1, New Zealand.

Keywords for this news article include: Christchurch, Biological Invasions, Australia and New Zealand

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The Playlist is your weekly guide to gigs, live comedy, theatre, dance,...

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GIGS & COMEDY

TODAY

Shades of Grey, Wainuiomata Memorial RSA

Emerald, Upper Hutt Cosmopolitan Club, 8pm

Taay Ninh, Matterhorn, 10pm

The Wellington City Shake 'Em On Downers, Southern Cross, Wellington, 10pm

Beastwars, Arc of Ascent, Von Thundersvolt, San Francisco Bathhouse, Wellington

Black City Lights, So Laid Back Country China, Meow, Wellington, 9pm

DJ Marek, B-Lo and Kev Fresh, Bettys, 9pm.

TOMORROW

The Eggs, Matterhorn

Twinset (4pm); Uncle Silverback (6.30pm); The Mantarays (10pm), Southern Cross

Thomas Oliver Band, SF Bathhouse

Shadez, Upper Hutt Cosmopolitan Club, 8pm

Jan Preston, St Peter's Hall, Paekakariki, 4pm

High Plains Drifters, Roy Jamieson, Meow, 9pm

Denny & The Dynamos, Paraparaumu RSA, 7.30pm

Mi Casa Su Casa, Bettys, 10pm

Urbantramper, Bodega, Wellington, 9pm

SUNDAY

Chopper, Opera House, Wellington

Tonic, Abode Cafe, Lower Hutt, 11.30am

Rag Poets, Shepherds Arms, Wellington, 3pm

The Recovery Sessions featuring The Dreamers, (3pm); Dine & Dance (6pm), Southern Cross

The Upper Hutt Brass Band, Major Minors Children's Choir, Anita's Dance Academy and Arts A Go Go (2.30pm); Double Click (7pm), Upper Hutt Cosmopolitan Club

The Troubles, Meow, 8.30pm

TUESDAY

Omar Rodriguez Lopez Group, San Francisco Bathhouse

WEDNESDAY

Mighty Quiz (6.30pm), Mighty Mighty, Wellington

The Medicine - Standup Comedy Night, Meow, 8pm

The Session, Matterhorn, 10pm

THURSDAY

The Village People, Wellington Town Hall

THEATRE

Bloody Murder, Hutt Repertory Theatre, November 28-December 8

Wannabe 90's?, Whitireia Theatre, Wellington, Sunday to Tuesday 7.30pm

Richard Meros Salutes the Southern Man, Downstage, today until December 1

The Mousetrap, St James Theatre, until tomorrow

The Motor Camp, Centrepoint Theatre, Palmerston North, until December 15

The Tigers of Wrath, Circa Two, until December 1

As You Like It, Gryphon Theatre, until December 1

Season's Greetings, Kapiti Playhouse, Ruahine St, Paraparaumu, until tomorrow

The Island Bay Loners' Doomsday Christmas Sing-Along, Bats, November 29

KIDS & FAMILY

Cinderella: The Pantomime, Circa One, until December 23 and January 2 to 12

Christmas Pantomime, Hutt City Church, today, 11am

Riddles and Secrets a Zealandia Quest, Zealandia, Wellington, tomorrow and Sunday

DANCE

NZ School of Dance 45th Anniversary Graduation Season, Te Whaea, Wellington until December 1

Express, Whitireia Theatre, Wellington, until tomorrow

FILM

High Society, Wellington Film Society, Paramount, Monday, 6.15pm

CLASSICAL

Colours of Futuna, Futuna Chapel, Wellington, Sunday, 2pm

Bach Choir and Chiesa Ensemble, St Peter's on Willis, Sunday, 4pm

Vector Wellington Orchestra Houstoun plays Rachmaninov, Wellington Town Hall, tomorrow, 7.30pm

New Zealand Opera Society vocal recital featuring Lisa-Harper-Brown, with Christie Cook, Stephen Diaz, Cameron Barclay and Kieran Rayner, St Andrew's on The Terrace, Wellington, Tuesday, 7.30pm

Manawatu Sinfonia, Speirs Centre, Palmerston North Boys' High School, Featherston St, tomorrow, 7.30pm

Paramount Cinema New Zealand Opera Society DVD screening: Jacques Offenbach's Orphee aux Enfers, Monday, 7pm

Kapiti Chamber Choir, St Paul's Anglican Church, Paraparaumu, Sunday 2.30pm

The Wellington Male Voice Choir, St Andrew's on The Terrace, Wellington, Sunday, 2.30pm

The Tudor Consort, St Andrews on the Terrace, Wellington, today

Capital Gospel Show, Old St Paul's, Wellington, Sunday, 7pm

GALLERIES & MUSEUMS

Talks and special events

Talk: Justine Olsen - Decorating the House: Victorian and Edwardian Wellington, Wellington Bridge Club, November 28, 12.30pm

Talk: Textiles of the Islamic World - John Gillow, Cuba Room, 1st floor, Quality Hotel, Wellington, tomorrow, 2pm

Lions Miramar Garden & Art Trail, tomorrow and Sunday

Showing

Adam Art Gallery, Wellington: We Will Work With You - Wellington Media Collective 1978-1998, until January 22

Alexander Turnbull Library, Wellington: To the Ends of the Earth: Bibles in the Alexander Turnbull Library, Monday until January 19

Aratoi Wairarapa Museum of Art & History, Masterton: Sibylle Bergemann Photography, until December 9; Gnoissene, until December 2; Greytown Arts Festival - The Last Piece, until tomorrow

Artrium Gallery, Wellington: Black & White Group Exhibition, until November 30

Bartley + Company Art, Wellington: Richard Orjis - Ground, until December 8

Blue Belle Cafe, Wellington: Reflecting on the Bay - Ian Logan, until January 16

Bowen Galleries, Wellington: Ans Westra - Small Landscapes, until December 1

Cecil Veda Gallery, Wellington: **Galaxias** - Geoffrey Notman, until December 15

City Gallery, Wellington: Kermadec, until February 10; The Sophist's Mirror Ben Cauchi, till February 17; Murray Hewitt - The Secrets of Their Own Hearts, till December 9; Artists' Film International, till February 10; Linda Lepou Aitu - Homage to Spirit, till December 9; Campbell Kneale - 201012, till December 9

Dowse Art Museum, Lower Hutt: Jeffrey Harris - By Definition, until January 27

Enjoy Public Art Gallery, Wellington: Menage a Trois COBRA, Yuko Kamei (XYZ Collective, Japan), Charles O'Loughlin, Lisa Radford, Ry Haskings, Taree Mackenzie (TCB Artinc. Australia) until December 8

Exhibitions Gallery Of Fine Art, Wellington: Graham Downs Corrugated Iron; Rochelle Andrews Flora, until tomorrow

Govett-Brewster Gallery, New Plymouth: Sara Hughes: The Golden Grain, until December 31

Hamish McKay Gallery, Wellington: Anne- Marie May, Rose Nolan, until December 8

Hedspace Gallery, Masterton: Hanging Together, until tomorrow

Hutt Art Society, Lower Hutt: An Exhibition of Original Prints, Monday to December 16

Kapiti Art Gallery, Raumati Beach: KA&C Art Trail, until Sunday

Kapiti Coast Museum, Waikanae: The Great Shoe Shuffle, until Sunday

Kiwi Art House, 288 Cuba St: George Thompson until Sunday

McNamara Gallery photography, Whanganui: Ben Cauchi, until November 30

Mahara Gallery, Waikanae: Naked Light; Frances Krsinich - Coat of Arms; Bridget Reweti - Excuse Me, You're in My Shot, until December 2

Mark Hutchins Gallery, Wellington: The Valley of the Dry Bones - Matthew Couper, until tomorrow

NZ Portrait Gallery, Wellington: The Gloaming, tomorrow to December 6

Odlin Gallery, Lower Hutt: Impressions II, Monday to December 16

Onslow Historical Society Centre, Wellington: North Road, until December

Otaki Heritage Museum, Otaki: Sailing Away - Katherine Morrison, until November 30

Page Blackie Gallery, Wellington: Paul Dibble - A Decade of Sculpture, until December 1

Pataka Art Museum, Porirua: Tweet Me - Tanya Marriott, until Sunday; Wild at Art, until December 9; Wildlife Photographer of the Year, until January 27; Joe Sheehan - Other Stories - Stone Works: 2002-2012, until Sunday

Photographers' Gallery Hawke's Bay, Napier: NZ Aerial Mapping - Observations, an Aerial Perspective, until November 30

Photospace Gallery, Wellington: Catch My Eye - Gabrielle McKone, until tomorrow

Quoil, Wellington: Twinkle Twinkle {little gem}, until December 24

Reserve Bank Museum, Wellington: The Queen's Jubilee in Currency and Film until March

St James Theatre First Floor Gallery, Wellington: Vincents Annual Group Exhibition until December 6

Solander Gallery, Wellington: Menagerie - Annie Smits Sandano, until November 29; Nic Goodwolf - Drifting Sideways, until November 29

Suite, Wellington: Jonathan Campbell, Rob Cherry, Anton Parsons, until tomorrow (Cuba St); Ans Westra - Let's Party, until December 22

Taylor-Jensen Fine Arts, Palmerston North: My Angels - Orit Shem-Tov, until Tuesday

Te Papa, Wellington: The Mixing Room, until April; Angels and Aristocrats: Early European in New Zealand Public Collections until January 27

Thistle Hall, Wellington: The Hi Line - Don Smith, until December 3

Toi Poneke Gallery, Wellington: Street Shifts - Vanessa Arthur, today until December 15

Turnbull Library Gallery Savaged! The Cartoon Colony, until tomorrow

Vincents Gallery, Wellington: Emma Gregory, until December 5

Wellington Central Library: Charming Xiamen until Tuesday

Zimmerman Contemporary Art Gallery, Palmerston North: Cam Munroe and Fran Dibble: A List of Old Truths, until November 29

Document DOMPOS0020121122e8bn0001s

The Playlist is your weekly guide to gigs, live comedy, theatre, dance,...

1,021 words
9 November 2012
Dominion Post
DOMPOS
17
English

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The Playlist is your weekly guide to gigs, live comedy, theatre, dance, classical, opera, galleries and museums. To have an event listed, email playlist@dompost.co.nz or write to: The Playlist, The Dominion Post, PO Box 3740, Wellington, by noon, Friday, the week before publication. Photographs must be captioned and in the JPEG format.

GIGS & COMEDY

TODAY

Mike Fabulous, Matterhorn, Wellington, 10pm
A Night in Goa Bollywood Rave, Bodega, 9pm
Soul Foundation, Upper Hutt Cosmopolitan Club, 8pm
Pasion Latino Acoustic Duo, Caribbean, Wellington, 7.30pm
Jonathon Harper, Cafe St Paul, Wellington, 12pm
Stone Candy, Triplet, Mangle & Gruff, Meow, 9pm
Joe Blossom, What Noisy Cats, Halcyon Drift, Mighty Mighty, Wellington

TOMORROW

The Doubtful Sounds and Strung Out, Aro Valley Community Hall, Wellington, 1.30pm
Don Luchito, Matterhorn, 10pm
Rival State, Destroy the Night, Solsona Carnival, Bodega, 9pm
Black Emperor, San Francisco Bathhouse, Wellington
Mark Southon, Upper Hutt Cosmopolitan Club, 8pm
Dr Sketchy (4pm); Cape Tribulation, Red Sky Blues, Mighty Mighty
NZ National Poetry Slam Final, Meow, 8pm

SUNDAY

Young Sounds, Abode Cafe, Lower Hutt, 11.30am
Wellington Inter-Club Karaoke Final, Upper Hutt Cosmopolitan Club, 2pm
Clean Standup Comedy Show (4pm); The Troubles, (8pm), Meow

WEDNESDAY

Mighty Quiz (6.30pm), Mighty Mighty, Wellington
The Medicine - Standup Comedy Night, Meow, 8pm
The Session, Matterhorn, 10pm

THEATRE

The Mousetrap, St James Theatre, November 15-24

The Motor Camp, Centrepoint Theatre, Palmerston North, until December 15

Into the Uncanny Valley, Bats Theatre until November 17

Paper Sky, Downstage, Wellington until November 17

Baby Face, Studio 77, November 9-10; 15-17, 7.30pm

The Tigers of Wrath, Circa Two, until December 1

The Truth Game, Circa Theatre until tomorrow

KIDS & FAMILY

Solar Eclipse, Carter Observatory, Wellington, November 14, 9.26am-11.47am

Whitireia Performing Arts 2012 Graduation Show, Whitireia Theatre, Wellington, until tomorrow

DANCE

Royal NZ Ballet Giselle, St James Theatre, Wellington, until Sunday

FILM

Woodenhead, Wellington Film Society, Paramount, November 12, 6.15pm

CLASSICAL

Colours of Futuna, Futuna Chapel, Wellington, Sunday, 2pm

Pietari Inkinen and Vesa-Matti Leppanen, New Zealand Symphony Orchestra, Michael Fowler Centre, Wellington, tomorrow

Bach Cantata Vespers with Ensemble Abendmusik, Lutheran Church, Wellington, tomorrow, 5pm

Renaissance Singers, St Peter's Church, Palmerston North, Sunday, 2pm

GALLERIES & MUSEUMS

Showing

Adam Art Gallery, Wellington: We Will Work With You - Wellington Media Collective 1978-1998, until January 22

Aratoi Wairarapa Museum of Art & History, Masterton: Sibylle Bergemann Photography, until December 9; Gnoissene, until December 2; Greytown Arts Festival - The Last Piece, until November 24

Artrium Gallery, Wellington: Black & White Group Exhibition, until November 30

Avid Gallery, Wellington: Steph Lusted - After Midnight, until November 17 and Christine Thacker - Because the World is Round, until November 17.

Bartley + Company Art, Wellington: Elliot Collins, until tomorrow

Bowen Galleries, Wellington: Joanne Braithwaite - Old Flames, until tomorrow; Kate De Goldi - The ACB with Honora Lee, until tomorrow

Cecil Veda Gallery, Wellington: **Galaxias** - Geoffrey Notman, until December 15

City Gallery, Wellington: Kermadec, until February 10; The Sophist's Mirror Ben Cauchi, until February 17; Murray Hewitt - The Secrets of Their Own Hearts, until December 9; Artists' Film International, until February 10; Linda Lepou Aitu - Homage to Spirit, until December 9; Campbell Kneale - 201012, until December 9

Dowse Art Museum, Lower Hutt: Judy Darragh - Stainless, until Sunday; Ronnie van Hout - I've Seen Things, until Sunday; Jeffrey Harris - By Definition, until January 27

Govett-Brewster Gallery, New Plymouth: Sara Hughes: The Golden Grain, until December 31

Hamish McKay Gallery, Wellington: The Berlin Years - Saskia Leek and Isobel Thom, until tomorrow

Hedspace Gallery, Masterton: Hanging Together, until November 24

Kapiti Art Gallery, Raumati Beach: KA&C Art Trail, until November 25

Kapiti Coast Museum, Waikanae: The Great Shoe Shuffle, until November 25

McNamara Gallery photography, Whanganui: Ben Cauchi, until November 30

Mahara Gallery, Waikanae: Naked Light; Frances Krsinich - Coat of Arms; Bridget Reweti - Excuse Me, You're in My Shot, until December 2

Mark Hutchins Gallery, Wellington: The Valley of the Dry Bones - Matthew Couper, until November 24

Milwood Gallery, Wellington: It's in the Genes - Philip Beadle and Jane McIntosh, until tomorrow

Minerva, Wellington: Lesson with Nancy Crow, until November 17

NZ Academy of Fine Arts, Wellington: WelTec graduate exhibition - Content, until Monday

NZ Portrait Gallery, Wellington: Still Dancing - Stephen A'Court, until November 22

Ngaio Fine Arts, Wellington: No-Commission Exhibition, until Monday

Onslow Historical Society Centre, Wellington: North Road, until December

Otaki Heritage Museum, Otaki: Sailing Away - Katherine Morrison, until November 30

Page Blackie Gallery, Wellington: Paul Dibble - A Decade of Sculpture, until December 1

Paulnache, Gisborne: Matthew Couper - The Whaling and Naching of Teeth, until November 17

Pataka Art Museum, Porirua: Wild at Heart, until December 9; Plimmerton - A Colourful History, until Sunday; The Crystal Chain Gang - Fancy Fools Flight, until Sunday; Peter Trevelyan - Tenuous, until November 19; Joe Sheehan - Other Stories - Stone Works: 2002-2012, until November 25

Photographers' Gallery Hawke's Bay, Napier: NZ Aerial Mapping - Observations, an Aerial Perspective, until November 30

Photospace Gallery, Wellington: Catch My Eye - Gabrielle McKone, November 10-24

Reserve Bank Museum, Wellington: The Queen's Jubilee in Currency and Film until December

Robert Heald Gallery, Wellington: Peter Madden - The Distance Dust Travels, until November 17

St James Gallery, Wellington: Borneo - Janet Andrews, until November 15

Solander Gallery, Wellington: Menagerie - Annie Smits Sandano, until November 29; Nic Goodwolf - Drifting Sideways, until November 29

Taylor-Jensen Fine Arts, Palmerston North: My Angels - Orit Shem-Tov, until November 27

Taupo Museum, Taupo: The Imaginative Life and Times of Graham Percy, until November 16

Te Papa, Wellington: The Mixing Room, until April 2013; Angels and Aristocrats: Early European Art in New Zealand Public Collections until January 27.

Thistle Hall, Wellington: : Up the Punks until Sunday; Bridget Nawalowalo - Arctic on My Mind, until Sunday

Toi Poneke Gallery, Wellington: Toi Poneke Residents' Exhibition 2012, until November 17

Vincents Gallery, Wellington: Jennifer Munro, until November 14

Turnbull Library Gallery Savaged! The Cartoon Colony, until November 24.

Zimmerman Contemporary Art Gallery, Palmerston North: Cam Munroe and Fran Dibble: A List of Old Truths, until November 29

Document DOMPOS0020121108e8b900027

Decision on Nevis reserved

By LYNDA VAN KEMPEN

551 words

8 November 2012

Otago Daily Times

OTGO

English

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Outstanding ... The Nevis Valley. PHOTO: LYNDA VAN KEMPEN

CERTAIN restrictions on Nevis Valley land classified as an outstanding natural landscape will no longer apply after tenure review of those properties, the Environment Court heard yesterday.

The information was highlighted during the final day of evidence on a proposed amendment to the water conservation order on the Nevis River.

The seven-day hearing in Queenstown before Judge Jon Jackson and commissioners John Mills and Kathryn Edmonds concluded yesterday.

The New Zealand and Otago Fish and Game Councils, Whitewater New Zealand Ltd and Pioneer Generation Ltd had appealed against the decision of a special tribunal, appointed by the Ministry for the Environment.

The tribunal found the water conservation order should be amended, prohibiting damming or diversion of the river, to protect the habitat of a native fish known as the Gollum **galaxiid**. Under the present conservation order, the door had been left open for a hydro-electricity dam.

Lawyers for the councils, Whitewater and Pioneer, and 16 other groups and individuals who were parties to the appeal, were asked to make their closing submissions in writing. Judge Jackson has reserved the court's decision on the matter.

The court will make a recommendation to the Minister for the Environment, Amy Adams.

The case was being heard at the same time as an appeal against changes to the Central Otago district plan. Three organisations wanted the boundary of the area defined as an outstanding natural landscape broadened to include the whole Nevis Valley.

Agreement was reached in that case partway through the proceedings, and all parties have now agreed the catchment of the Nevis River _ the entire valley _ should be classified as an outstanding landscape.

Pioneer has plans for hydro-electricity development on the river but has not yet sought resource consents. It owns the pastoral leases for the two properties in the valley, Ben Nevis on the west side of the river and Craigroy on the east side. Those leases are going through the tenure review process, and parts next to the river will be freeholded, subject to covenants.

One of the conditions under the covenants is the Minister of Conservation will "not unreasonably withhold consent to hydro-electricity development" where that is not precluded by the water conservation order.

Central Otago District Council planning consultant David Whitney gave evidence yesterday. In response to a question from Central Otago Environmental Society lawyer Mike Holm, he agreed certain restrictions on land classified as an outstanding landscape would no longer apply after the property had gone through tenure review.

However, other "layers of rules" in the district plan would restrict the development that could be carried out on that land, Mr Whitney said.

"Am I correct to believe that Craigroy and Ben Nevis, going through the tenure review, once it is freehold, it will be possible to erect structures and construct roads on them?" Mr Holm asked.

Mr Whitney said other rules in the plan relating to structures and earthworks would apply.

He believed the resource consent process was the best way to decide whether the river should be dammed.

A similar view was held by the Otago Regional Council, its director of policy and resource planning, Fraser McRae said.

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Document OTGO000020121107e8b80000u

Case ends today

By LYNDA VAN KEMPEN

392 words

7 November 2012

Otago Daily Times

OTGO

English

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THE "wild" character of the Nevis Valley and the impact of a small hydro dam in meeting future demand for electricity generation were among the issues canvassed yesterday in a case before the Environment Court.

Judge Jon Jackson and commissioners John Mills and Kathryn Edmonds will hear the final evidence today in the bid to ban damming or diversion of the Nevis River.

They will make a recommendation to Minister for the Environment Amy Adams on the issue, after a decision by a special tribunal, appointed by the Ministry for the Environment, was appealed to the court.

The legal proceedings began several years ago after the New Zealand and Otago Fish and Game councils sought to amend the Nevis conservation order to rule out hydro development.

Dam proponent Pioneer Generation was one of three groups which objected to the tribunal's decision. The tribunal decided the conservation order should be changed to ban damming and diversion, for only one reason _ to protect the habitat of the native Gollum **galaxiid** fish.

The fish and game councils want the river's wild and scenic landscape values and trout fishery values to be recognised as "outstanding" in the amended order and Whitewater New Zealand has sought a ban on damming to protect the kayaking amenity provided by the river.

Written evidence by former minister of energy David Parker, now the Labour Party's finance spokesman, was tabled in the Environment Court yesterday. Mr Parker was a witness for the fish and game councils and his evidence canvassed New Zealand's energy policy framework and the contribution hydro electricity from a Nevis scheme might make.

"Some may argue that hydro electricity supply from the Nevis will be needed in the future for local needs, e.g. Queenstown. However, the Otago-Southland region is already an exporter of electricity to elsewhere and is almost certain to remain so," he said.

" ... in my opinion, the court ought not to decline the application because of the Nevis River's hydro potential. This potential is relatively insignificant in terms of future national energy supply or energy security."

Recreation and tourism planners, landscape architects and planners also gave evidence yesterday, about the recreational and landscape values of the Nevis, the impact a dam would have, modifications to the landscape, and future demand for electricity.

Document OTGO000020121106e8b70003f

Recreational-use plea to keep river dam-free

By LYNDA VAN KEMPEN

330 words

6 November 2012

Otago Daily Times

OTGO

English

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ANGLERS, kayakers and fisheries scientists pleaded their case yesterday for the Nevis River to remain dam-free.

Six witnesses gave evidence in the Environment Court in Queenstown, appearing for the New Zealand and Otago Fish and Game Councils and Whitewater New Zealand.

The case, before Judge Jon Jackson and commissioners John Mills and Kathryn Edmonds, was in its fifth day and will continue today. It revolves around whether a water conservation order should be amended to keep the river dam-free.

The amendment was sought by the fish and game councils and is being heard by a special tribunal, appointed by the Ministry for the Environment, Amy Adams.

The tribunal decided the conservation order should be changed to ban damming and diversion, to protect the habitat of a native fish known as the Gollum **galaxiid**.

That decision has been appealed to the Environment Court by three parties _ Pioneer Generation, which has plans for a dam on the river, the fish and game councils, who want the river's wild and scenic landscape values and trout fishery values to be recognised as "outstanding", and Whitewater New Zealand, which wants a ban on damming to protect the kayaking amenity provided by the river.

After hearing all the evidence, the court will make a recommendation to the Minister for the Environment on the matter.

Freshwater fisheries scientist John William Hayes said the Nevis catchment was "scientifically outstanding". Damming and impoundment would risk impairing the features of the Nevis trout fishery that made it so special.

Angler Allan Campbell said the Nevis was one of the only remaining unmodified rivers in Central Otago where there was a chance of landing a large trophy trout within an outstanding landscape.

"Isn't it the irony of this case that the publicity attached to this case has made the Nevis more attractive for fishing?" Pioneer counsel Kerry Smith asked him.

"Regrettably, yes," Mr Campbell replied.

Document OTGO000020121105e8b60000k

Aquatic Conservation; Study Results from National Institute of Water and Atmospheric Research in the Area of Aquatic Conservation Published

360 words

26 October 2012

Ecology, Environment & Conservation

ECECON

606

English

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2012 OCT 26 (VerticalNews) -- By a News Reporter-Staff News Editor at Ecology, Environment & Conservation -- Research findings on Aquatic Conservation are discussed in a new report. According to news reporting originating from Hamilton, New Zealand, by VerticalNews correspondents, research stated, "Restoring longitudinal connectivity is a key river restoration goal. This study tested the efficacy of a fish ramp and spoiler baffles for restoring indigenous fish communities upstream of a culvert."

Our news editors obtained a quote from the research from the National Institute of Water and Atmospheric Research, "Beforeafter monitoring showed that installation of the ramp and spoiler baffles increased species richness (mean increase 80%) and total fish density (mean increase 45%) upstream of the culvert. Passage trials on the ramp and baffled culvert were carried out using inanga, **Galaxias maculatus** (Jenyns), a commonly occurring weak-swimming migratory fish. The trials showed that inanga were capable of successfully ascending both the ramp (overall 27.1% success) and culvert with baffles (overall 6.2% success) under the conditions tested (cf. 0% success for this species before retrofitting), but passage efficiency was still relatively low in both cases. Retrofitting of culverts can therefore be effective for restoring upstream fish passage."

According to the news editors, the research concluded: "However, to maximize effectiveness it is essential that restoration goals are well defined and retrofitting solutions are designed appropriately for the target species."

For more information on this research see: Restoring connectivity for migratory native fish in a New Zealand stream: effectiveness of retrofitting a pipe culvert. Aquatic Conservation-Marine and Freshwater Ecosystems, 2012;22(4):489-497. Aquatic Conservation-Marine and Freshwater Ecosystems can be contacted at: Wiley-Blackwell, 111 River St, Hoboken 07030-5774, NJ, USA.

The news editors report that additional information may be obtained by contacting P.A. Franklin, Natl Inst Water & Atmospher Res Ltd, Hamilton, New Zealand.

Keywords for this news article include: Hamilton, Aquatic Conservation, Australia and New Zealand

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Document ECECON0020121019e8aq000h6

Fisheries Research; Study Results from M.J.C. Greer and Colleagues Broaden Understanding of Fisheries Research

437 words

26 October 2012

Ecology, Environment & Conservation

ECECON

605

English

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2012 OCT 26 (VerticalNews) -- By a News Reporter-Staff News Editor at Ecology, Environment & Conservation -- Investigators publish new report on Fisheries Research. According to news reporting originating from Invercargill, New Zealand, by VerticalNews correspondents, research stated, "Complete macrophyte removal to maintain drainage performance in lowland streams can have a negative effect on resident fish communities, but few studies have quantified this impact. Moreover, limited research has been carried out exploring alternative approaches for macrophyte removal that minimise the impact on the resident fish community."

Our news editors obtained a quote from the research, "The aims of this study were (i) to determine how the current practice of removing almost 100% of available macrophyte cover affects native fish populations in lowland New Zealand streams and (ii) to see whether this impact can be reduced by limiting macrophyte removal to alternating 50-m sections of the waterway. Native fish populations were surveyed before and after experimental macrophyte removal for the following three treatments: (i) complete macrophyte removal, (ii) macrophyte removal from alternating 50-m reaches and (iii) control with no macrophyte removal. Radiotelemetry was used to monitor the behavioural response of individual giant kokopu (**Galaxias argenteus**) to the different treatments. The results of this study suggest that current drain management practices reduce CPUE of fish by 60%. Although limiting macrophyte removal to alternating 50-m sections did not minimise the community impacts of drain clearing, large giant kokopu did benefit from this strategy. All tagged giant kokopu remained in stream reaches partially cleared of macrophytes, while in completely cleared reaches all individuals were displaced."

According to the news editors, the research concluded: "These results demonstrate the threat current drain management practices pose to New Zealand native fish and highlight the value of trialling alternative methods of macrophyte removal."

For more information on this research see: Complete versus partial macrophyte removal: the impacts of two drain management strategies on freshwater fish in lowland New Zealand streams. *Ecology of Freshwater Fish*, 2012;21(4):510-520. *Ecology of Freshwater Fish* can be contacted at: Wiley-Blackwell, 111 River St, Hoboken 07030-5774, NJ, USA. (Wiley-Blackwell - www.wiley.com/; *Ecology of Freshwater Fish* - [onlinelibrary.wiley.com/journal/10.1111/\(ISSN\)1600-0633](http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1600-0633))

The news editors report that additional information may be obtained by contacting M.J.C. Greer, Environm Southland, Invercargill, New Zealand.

Keywords for this news article include: Invercargill, Fisheries Research, Australia and New Zealand

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Document ECECON0020121019e8aq000h5

Nevisgalaxiidsubjectoffurtherstudy

By LYNDA VAN KEMPEN

340 words

25 October 2012

Otago Daily Times

OTGO

English

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Three Nevis valley galaxiids on a white tray. PHOTO: RICHARD ALLIBONE

THE small native fish under the spotlight during the debate over whether the Nevis River should be dammed has now had some more light shed on it.

A special tribunal recommended in 2010 the existing water conservation order on the river be amended to ban damming, to protect the Gollum **galaxiid** _ a species found only in the Nevis.

That recommendation is now the subject of an Environment Court hearing in Queenstown.

Pene Williams, counsel for the Director-general of Conservation, Al Morrison, told the court this week Mr Morrison remained "neutral" on the special tribunal report.

However, evidence would be presented by the Department of Conservation, as part of its role was to advocate for the conservation of freshwater fisheries generally.

The Nevis River catchment was home to a native non-migratory **galaxiid** fish, which was variously known as the Gollum **galaxiid**, the Smeagol **galaxiid** and the Nevis **galaxiid**, Ms Williams said.

Last year, the Director-general commissioned a study by Shannan Crow into the shape characteristics of the Nevis **galaxiid** compared with the Gollum **galaxiid**. That research revealed there was a "significant difference" between the two fish, she said.

Dr Crow will give evidence later in the hearing, as will Pete Ravenscroft, who is carrying out research on the Nevis **galaxiid**.

That work programme on the Nevis **galaxiid** is to gain more information on its population, its spawning habitat and other characteristics of its behaviour "to ensure appropriate management actions are taken to protect the fishery", Ms Williams said.

Fish experts agreed the Nevis **galaxiid** was separate and genetically distinct from the Gollum **galaxiid**.

If a dam was constructed and there was no impoundment beyond the Nevis crossing, the experts had agreed the greatest threat to the ongoing survival of the Nevis **galaxiid** was predation by trout, she said.

That information had been gleaned since the special tribunal considered the matter.

The **galaxiid** known by the tribunal as Gollum was the Nevis **galaxiid**.

Document OTGO000020121024e8ap0000d

GOLLUM TOO PRECIOUS TO RISK IN DAM

159 words

24 October 2012

Timaru Herald

TIMRUH

2

English

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The decades' old bid to open up the Nevis River for damming is back on - and a tiny, extremely rare native fish, the Gollum **galaxiid**, is playing a central role.

The three-week Environment Court hearing, sitting under Judge Jon Jackson, began in Queenstown yesterday.

The bid to dam the river for hydro power generation first began in the 1960s, but was formalised by Pioneer Energy in 1993.

In her opening submission, the lawyer for New Zealand and Otago Fish and Game, the Clutha Fisheries Trust, White Water New Zealand and Central Otago White Water, Maree Baker-Galloway, said new evidence on the Gollum **galaxiid** would offer "additional reasons to justify a complete damming prohibition."

Judge Jackson was now free to "fix" mistakes that had become accepted in past hearings that were "fundamentally flawed," Ms Baker-Galloway said.

She said wild and scenic values, and fisheries values could be addressed. Fairfax NZ

Document TIMRUH0020121023e8ao0000o

GOLLUM TOO PRECIOUS, SAY OPPONENTS OF DAMMING NEVIS

Grant Bryant
313 words
24 October 2012
The Southland Times
SLANDT
3

English

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The decades-old bid to open up the Nevis River for damming is back on, and a tiny, extremely rare native fish, the gollum **galaxiid**, is playing a central role.

The three-week Environment Court hearing under Judge Jon Jackson began in Queenstown yesterday.

The bid to be able to dam the river for hydro power generation began in the 1960s, but was formalised by Pioneer Energy in 1993.

Last year Pioneer went to the High Court to try to prevent Fish and Game from presenting evidence on native fish.

It argued that Fish and Game was a sport fishing body and lobbying to protect a river on the basis of protecting a native fish - which grows to only 13cm long and cannot be caught in a sport fishing context - was not fair.

Pioneer's High Court bid failed and Fish and Game are now free to present evidence on the gollum during the hearing. In her opening submission, Maree Baker-Galloway, legal counsel for New Zealand and Otago Fish and Game, the Clutha Fisheries Trust, White Water New Zealand and Central Otago White Water, said new evidence on the gollum **galaxiid** would offer "additional reasons to justify a complete damming prohibition". Judge Jackson was now free to "fix" mistakes that had become accepted in past hearings that were "fundamentally flawed," Ms Baker-Galloway said.

"Because there has been a previous judgment on some of the facts and issues before you in this proceeding, this does not prevent you from inquiring into those matters again," she said. ". . . it is open to you not only to reassess the merits of previous findings . . . such as wild and scenic values, and fisheries values, but also to fix provisions that with the benefit of hindsight are flawed on a more fundamental."

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Document SLANDT0020121023e8ao0000v

What: A small native fish that grows up to 13cm long.

147 words

24 October 2012

The Southland Times

SLANDT

3

English

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What: A small native fish that grows up to 13cm long.

Known as: **Galaxias** gollumoides - named after the Lord of the Rings character with big, googly eyes.

Where is it found: Only in creeks and streams flowing into the Nevis River.

Why is it so special: Similar species have been found in Southland and the Catlins but the Gollum galaxia is considered genetically distinct because of its isolation.

How did that happen: Today, the Nevis River runs roughly north, about 50km, from the Nokomai Range to the Kawarau River but scientists say that more than half a million years ago it used to run the other way. Mountain "uplift" relating to the titanic meeting of the Australian and Pacific plates, which formed the Southern Alps, "captured" the river and the flow reversal isolated the tiny fish.

Document SLANDT0020121023e8ao0000o

Society opposes any Nevis damming

By LYNDA VAN KEMPEN

569 words

24 October 2012

Otago Daily Times

OTGO

English

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Possible dam site . . . The location of a possible hydro dam on the Nevis River. PHOTO: LYNDA VAN KEMPEN

THERE is no "credible" dam project for the Nevis River, the Central Otago Environmental Society claims.

It made the comment on the opening day of evidence in an Environment Court hearing in Queenstown yesterday. The case revolves around whether a water conservation order should be amended to prohibit the building of any hydro-electric dam on the river. The amendment was sought by the New Zealand and Otago Fish and Game Councils and it attracted more than 240 submissions which were heard by a special tribunal, appointed by the Ministry for the Environment.

The tribunal decided the conservation order should be changed to ban damming and diversion, to protect the habitat of a native fish known as Gollum **galaxiid**, (**Galaxias gollumoides**).

That decision has been appealed to the Environment Court by three parties: Pioneer Generation, which has plans for a dam on the river, the fish and game councils, who want the river's wild and scenic landscape values and trout fishery values to be recognised as "outstanding", and Whitewater New Zealand, which wants a ban on damming to protect the kayaking amenity provided by the river.

The hearing has been set down for three weeks and lawyers for the appellants and parties to the appeal made their opening submissions yesterday before Judge Jon Jackson and commissioners John Mills and Kathryn Edmonds.

Mike Holm, for the environmental society, which is a party to the appeal, said Pioneer was not asserting there was a specific hydro project which had been costed. Expert witnesses, who had yet to present their evidence in court on behalf on Pioneer, were "cautious" about the hypothetical dam, he said.

"It will only be possible to address the real likelihood of a dam on the Nevis following cross examination."

Kerry Smith, for Pioneer, pointed out that the generation company was seeking to preserve the ability to apply for consent to put a dam on the river, "which is somewhat different from presenting a resource consent application".

"No particular hydro-electric power scheme has been proposed by Pioneer Generation Ltd but its evidence provides information about an indicative scheme to give some context," he said.

Pioneer had already said it would limit the extent of any proposed dam in any future resource consent application so impounded water did not go beyond the Nevis Crossing bridge. Any lake would be about 14ha.

The company also accepted that the water conservation order might impose an obligation for any resource consent hearing to consider the **galaxiid** fish.

Evidence would be given that a ban on damming because of a perceived threat to galaxiids was "unsustainable" Mr Smith said.

Maree Baker- Galloway, for the fish and game councils and Whitewater New Zealand, said the damming prohibition was needed to protect the outstanding fishery.

"If the inundation footprint is restricted to just downstream of the Nevis Crossing, it will inundate an area of the Nevis fishery that is very different from the majority of the fishery in terms of scenery, access and landscape, " she said

"Because of the slow growth rate of trout in the Nevis, the fishery is extremely sensitive to change ... therefore very vulnerable and in need of protection."

Introducing a dam would also spoil the experience for those kayaking on the river.

Small fish, large headache

By LYNDA VAN KEMPEN

375 words

27 September 2012

Otago Daily Times

OTGO

English

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ROXBURGH farmer Glen McDonald only recently discovered "half the world's population" of the Teviot flathead **galaxiid** fish is living on his family farm.

The news came to light because of the Otago Regional Council's water quality plan changes.

The Director-general of Conservation has made a submission to the changes which suggests the inclusion of "areas with significant aquatic values" and restricts activities in zones 1 and 2 of those areas.

"The most significant habitats of acutely threatened indigenous freshwater fish should be protected from activities (such as waterway disturbance) that potentially may adversely affect them," the submission said.

Maps of those areas were included.

Mr McDonald has objected to the proposal and aired his views at yesterday's water plan hearing in Alexandra.

He said he was told about the galaxiids after asking the Department of Conservation why the family property at Lake Onslow, which he manages, had parts that were designated zone 1 and 2 areas of significant aquatic value.

"There's 300 of these fish in my creek which is apparently half the world's population, they said. The last thing I want to do is harm the fish and I'm happy for them to be protected but my point is, this whole proposal by Doc is poorly conceived."

The fish appeared to be thriving under the current farming regime and there had been no consultation with the landowners before the area was included in zones 1 and 2 by Doc, he said.

"The stated aim of water plan change 6A is to maintain good water quality, not to maintain habitats for indigenous flora and fauna," Mr McDonald said.

The plan change should not be used to create "de facto" Doc reserves on private land without consultation, he said.

On Tuesday, panel member Clive Geddes said there had been a "large number of submissions" about the Doc submission, saying the issues raised were never intended to be addressed through the plan change.

He said the panel would have to consider whether it was appropriate for Doc to use the plan change in such a way.

The director-general's submission will be heard by the panel in Dunedin on October 9.

Document OTGO000020120926e89r0000g

Marine Ecology; Research Results from University of Melbourne Update Understanding of Marine Ecology

443 words

21 September 2012

Ecology, Environment & Conservation

ECECON

608

English

© Copyright 2012 Ecology, Environment & Conservation via VerticalNews.com

2012 SEP 21 (VerticalNews) -- By a News Reporter-Staff News Editor at Ecology, Environment & Conservation -- A new study on Marine Ecology is now available. According to news reporting out of Melbourne, Australia, by VerticalNews editors, research stated, "Egg size is one of the most frequently used surrogate measures of maternal investment and is strongly related to fitness-determining traits, such as offspring size in many marine animals, but the relationship is not universal. Because the amount of yolk allocated to eggs is finite, not all fitness-determining traits can be simultaneously maximised, and trade-offs should be expected."

Our news journalists obtained a quote from the research from the University of Melbourne, "The results of the present study show that egg size (quantified as cross-sectional area) poorly predicts the size of larval morphological traits (length, yolk sac area, oil globule area, myomere depth, and eye area) in the native Australian fish **Galaxias maculatus**. Egg size was correlated with yolk sac size and larval body depth, but it explained <13% of the total variation in these traits. Moreover, egg size did not predict the time it took for larvae to hatch, nor did it predict the duration from hatching to starvation. However, when egg size and yolk sac size (i.e. yolk remaining at hatching) were both included as predictors, the fits with larval traits improved greatly ($r^2 = 0.02$ to 0.46 for larval length, $r^2 = 0.11$ to 0.17 for myomere depth, and $r^2 < 0.001$ to 0.14 for eye area). These findings indicate that there is a trade-off between the quantity of yolk at hatching and the size of larval morphological traits in *G. maculatus*."

According to the news editors, the researchers concluded: "The remaining unexplained variation may be a consequence of trade-offs with other unmeasured traits, such as metabolic rate, and the potential that egg size is not a good proxy for maternal investment."

For more information on this research see: Trade-offs obscure the relationship between egg size and larval traits in the diadromous fish **Galaxias maculatus**. Marine Ecology-Progress Series, 2012;461():165-174. Marine Ecology-Progress Series can be contacted at: Inter-Research, Nordbunte 23, D-21385 Oldendorf Luhe, Germany.

Our news journalists report that additional information may be obtained by contacting D. Semmens, University of Melbourne, Dept. of Zool, Melbourne, Vic 3010, Australia.

Keywords for this news article include: Melbourne, Marine Ecology, Australia and New Zealand

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Document ECECON0020120914e89I000ca

SURVIVAL OF 'BAIT NOW IN OUR HANDS

#BB# Peter

596 words

10 September 2012

The Press (Christchurch)

THEPRE

6

English

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It's time for action to conserve natural habitat for whitebait.

The three most important factors for any whitebaiter are safety, patience, and optimism - the greatest of which is optimism, but is it misplaced?

"The quieter the silence among 'baiters on the river, and the lower the number of vehicles in the hotel car park - the bigger the run," is often said. But, according to some fisheries and environmental experts, that will be nothing compared to the silence that will occupy the river banks if this native species does not get the protection it needs.

The verbal picture has been painted by Michael Hickford in experiments to ascertain the breeding regime of inanga (whitebait) in estuarine waters, and identifying the most appropriate habitat for their spawning cycle.

His conclusion is that something as simple as hay bales strategically placed in estuarine waters is helpful in redressing the loss of natural habitat.

These small fish - most commonly the inanga (**Galaxias maculatus**), accompanied by koaro (*G. brevipinnis*), and banded kokopu (*G. fasciatus*) head upstream for overhead cover and waterside vegetation in which to deposit their eggs. Progressive destruction of habitat has been identified as a significant problem for the whitebait resource which were once caught in huge numbers.

Today, the Conservation Department, responsible for whitebait regulations and the resource, has seen many riverside farms fenced off to leave the rough-berm vegetation into which high tides carry spawning 'bait. But that's not enough protection for the resource, that continues to diminish.

Intensification of farming and forestry will eventually drive whitebait to extinction, according to Mike Joy, a senior lecturer in environmental science/ecology at Massey University.

"We have really done some major damage to the rivers when we have two thirds of the native fish on the threatened species list, and that's as bad as anywhere in the world," he said recently on television.

"This clean, green image that is so crucial to us is being lost. This is the miner's canary telling us we have gone too far.'

Whitebait, entering estuaries and rivers from the sea, make their way on a predetermined course to complete a journey of life. It is their destiny, as with all life, to perpetuate the species.

Those that successfully survive the gauntlet of 'baiters seek a secluded section of river that has extensive fine root systems or overhanging vegetation to protect the eggs and keep them moist when the tide drops.

The eggs, which look like boiled sago, cling to the vegetation until the next spring tide calls them to become a part of the cycle of life.

Thus the major problem affecting the whitebait fishery is the destruction of habitat. As adult whitebait tend to live in natural swamps and bush-covered streams, it is in the best interest of whitebaiters to ensure that adequate areas of these habitats remain.

What about the tidal influence on this species? The late Bob McDowell, who studied whitebait for many years, said "they run when they are ready, and not before". So much appears to depend upon sea currents in determining where runs will occur.

But perhaps we should be listening to what Hickford and Joy have been saying, and more importantly, taking action to ensure the survival of this native species.

If you value this resource, you are going to have to do something about it.

Email your opinion to me at peter.shutt@mediamate.co.nz or text 027 6888 428, and please let me see your whitebaiting photographs.

Document THEPRE0020120909e89a0000g

THE TAONGA OF WHITE GOLD

938 words

8 September 2012

The Nelson Mail (NZ)

NELSON

15

English

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Water, water, everywhere but I had cabin fever and had to get out of the house . . . Bad weather is frustrating for anyone but the recent weather and heavy rainfall is enough to drive any outdoorsman barmy. You can only do so much work around home before you need to get outside, stand in the water, feel the sun on your face, and the wind in your hair.

Fortunately my father Stuart is always up for an adventure, whatever the conditions, and we headed forth this week on a local whitebaiting foray.

Immediately after torrential rain, our first attempt was a washout with high riverflows and brown swirling currents - we didn't even get our nets out of the truck. Leaving our gear in the Hilux overnight, we had better conditions the next day and best of all there wasn't another whitebaiter in sight. The river was still high and muddy but just fishable and worth a go.

Setting up one net, we stopped for a cup of tea while sitting on an old truck tyre deposited by the tide. It was a near perfect seat and we chatted about our favourite "possie" and how we must have been going there since the '70s as a family.

Back in the good old days other whitebaiters would even sit on the banks drinking flagons of beer and lighting bonfires to keep warm. Sometimes we caught whitebait and sometimes we didn't but it was always great fun and I have valued memories of whitebaiting there with my father, brother, grandparents, other family, and friends.

One time in school holidays, boyhood chum Nigel Riley and I struck it just right when the whitebait "ran" and dark compact schools of bait charged into our nets and filled our buckets.

Whitebait are curious little fish and are the juvenile forms of five species of the fish family **Galaxiidae**. At about 4-5 centimetres long, depending on species, the inanga, koaro, and kokopu run upriver each spring after life on the high seas to run the gauntlet of anglers using set, scoop, and sock nets to harvest this iconic Kiwi delicacy. There is always something magical about being on-stream when the whitebait are running and whitebait fever takes hold as every man and his dog chase the treasured "white gold".

Today at our spot wasn't one of those days but the sun shone and the company was awesome. Maybe I could have taken a book or some work to read but there is always too much going on around our estuarine areas to ever get bored.

Pukekos squawked, pied stilts squeaked, and skylarks pirouetted upwards into the sky with melodic song. On the ground, the rushes blew, crabs scurried, and the tide pushed up the creek.

In the background murmur I could hear heavy road traffic, but lying on the sun-warmed tyre I even fell asleep at one stage. "Study to be quiet" was the motto of Izaak Walton, famed author of *The Compleat Angler* in 1653, and it's so true. Sometimes we all need to escape from the rat race and become human beings again, rather than just slaves to the clock, calendar and the almighty dollar.

Alas, soon it was time to go. Stuart had had lots of joy but no whitebait and I didn't expect much myself. But, as we hoisted my net, we could see a multitude of translucent little fish wriggling, and it was pleasing to have a nice little "pudding" in the soft folds of my net.

Dad was impressed, and it was great to have enough 'bait to share for a first taste of this prized delicacy sizzling fresh in the pan and drizzled with lemon juice.

Here in Nelson-Tasman we are fortunate that our rivers are still in reasonable shape, although we could look after them much better.

It's noticeable these days that they don't clear fast like they used to after heavy rain, often running yellow from headwater forestry operations, among other causes.

At least it's not as bad as the Manawatu River in the North Island which is heavily fouled with treated sewage and farm run-off and according to Cawthron Institute is one of the worst polluted rivers and streams across North America, Europe, Australia and New Zealand.

New Zealand scientist Dr Mike Joy is a vociferous defender of our national lowland waterways, regularly featuring in the news, and often speaking of native fish like whitebait becoming extinct in many areas in years to come due to habitat loss and degradation. He likens native fish to the proverbial canaries in the mineshaft as a prime indicator of environmental health.

Personally, I've always admired a man like Dr Joy, who has the technical knowledge and the testicular fortitude to tell it how it is, without fear of job security or political ridicule.

The Government has tried hard to get our environmental house in order with the Land & Water Forum and the latest National Policy Statement on Freshwater, but now seems to be backing away in the political battle of economy versus environment. I don't believe it's a one-dimensional argument, a choice of either/or, and believe neglecting the environment today will be bad for the economy of tomorrow.

Proponents of increased development argue for 'balance' or even 'give and take'. Unfortunately when it comes to our precious rivers, oceans, and valued taonga like whitebait, it would seem there has been a lot of taking over the past 150 years, and very little giving.

Document NELSON0020120908e89800024

Court to consider damming of Nevis

By LYNDA VAN KEMPEN

457 words

7 September 2012

Otago Daily Times

OTGO

English

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THE next round in the battle over whether damming should be prohibited on the Nevis River will be played out in the Environment Court, starting next month.

Three weeks has been allowed for the court sitting in Queenstown, starting on October 23, to hear evidence on two different cases, both relating to the Nevis.

Earlier this year, Environment Court Judge Jon Jackson said because there would be some "cross-over" of evidence in the two matters, they could be heard at the same time.

One case revolves around whether a conservation order on the Nevis River should be amended to prohibit any hydro-electric dam on the river.

The debate began in 2006 when the New Zealand and Otago Fish and Game Councils applied for the amendment. The application attracted more than 240 submissions and was heard in 2009-10 by a special tribunal appointed by the Ministry for the Environment.

The tribunal decided the conservation order should be changed to prohibit damming and diversion, to protect a native fish, Gollum **galaxiid**, a species found only in the Nevis River.

Its finding was challenged by three parties _ Pioneer Generation, the Fish and Game councils and recreational kayaking group Whitewater New Zealand.

Pioneer had been considering options for a hydro-electric scheme on the Nevis and the councils wanted the river's wild and scenic landscape values and trout fishery values to be recognised as "outstanding".

Whitewater New Zealand wanted a prohibition on dams to protect the "nationally outstanding whitewater kayaking amenity" provided by the river.

Because of those three submissions, the Environment Court will now hold an inquiry into the matter and provide a report and recommendation to the Minister for the Environment, Amy Adams.

Sixteen groups or individuals are involved as parties to the case.

The second case before the court next month relating to the Nevis is an appeal against Central Otago District Plan Change 5.

The appellants are the Otago Fish and Game Council and the New Zealand Historic Places Trust.

The case focuses on the landscape and heritage values of the Nevis Valley.

The district council introduced 23 changes to its district plan last year, most aimed at greater protection against development of rural land. Among the changes, the council introduced a three-tier classification of rural landscapes, defining areas as either an "outstanding natural landscape", a "significant amenity landscape" or "other rural landscape".

Fish and Game wants the Nevis Valley to be classified as an "outstanding natural landscape" rather than a "significant amenity landscape." The trust has asked for the cultural and heritage values of the Nevis to be recognised in the district plan.

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Document OTGO000020120906e8970000g

Fish Biology; Scientists at Deakin University Target Fish Biology

364 words

7 September 2012

Chemicals & Chemistry

CHEMEC

5767

English

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2012 SEP 7 (VerticalNews) -- By a News Reporter-Staff News Editor at Chemicals & Chemistry -- Investigators publish new report on Fish Biology. According to news originating from Warrnambool, Australia, by VerticalNews correspondents, research stated, "The biology of three landlocked and a riverine population of **Galaxias** maculatus were examined in western Victoria, Australia. All systems supported reproducing populations of these fish, including Lake Corangamite which had salinities that on occasion reached 82."

Our news journalists obtained a quote from the research from Deakin University, "Spawning sites in Lake Corangamite were located in adjacent tributaries and not in the main lake as was the case for other populations. The smallest fish were found in the fresh water Lake Purrumbete and the largest in the hypersaline Lake Corangamite. The size at which 50% of the population attained sexual maturity varied across sites, with fish maturing at a smaller size in Lake Purrumbete, followed by the Merri River, Lake Bullen Merri and Lake Corangamite. Condition was higher in the freshwater Lake Purrumbete and there was no relationship between condition and temperature, conductivity, turbidity and pH; but there was a positive relationship between condition and dissolved oxygen."

According to the news editors, the researchers concluded: "Length frequency analysis suggested that the majority of fishes live for a year."

For more information on this research see: Aspects of the biology of **Galaxias** maculatus. Journal of Fish Biology, 2012;81(3):1085-100. Journal of Fish Biology can be contacted at: Blackwell Publishing Inc, 350 Main St, Malden, MA 02148, USA. (Wiley-Blackwell - www.wiley.com/; Journal of Fish Biology - [onlinelibrary.wiley.com/journal/10.1111/\(ISSN\)1095-8649](http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1095-8649))

The news correspondents report that additional information may be obtained from L.J. Laurenson, School of Life and Environmental Sciences, Deakin University, P O Box 423, Warrnambool, Vic 3280, Australia.

The publisher's contact information for the Journal of Fish Biology is: Blackwell Publishing Inc, 350 Main St, Malden, MA 02148, USA.

Keywords for this news article include: Warrnambool, Fish Biology, Australia and New Zealand.

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Document CHEMEC0020120831e897002cs

Paleontology; Recent Findings in Paleontology Described by Researchers from University of New South Wales

394 words

22 August 2012

Journal of Engineering

JOENG

7326

English

© Copyright 2012 Journal of Engineering via VerticalNews.com

2012 AUG 22 (VerticalNews) -- By a News Reporter-Staff News Editor at Journal of Engineering -- Researchers detail new data in Paleontology. According to news reporting originating from Sydney, Australia, by VerticalNews correspondents, research stated, "Fish remains described from the early Miocene lacustrine Bannockburn Formation of Central Otago, New Zealand, consist of several thousand otoliths and one skeleton plus another disintegrated skull. One species, *Mataichthys bictenatus* Schwarzahns, Scofield, Tennyson, and T. Worthy gen. et sp. nov., an eleotrid, is established on a skeleton with otoliths in situ."

Our news editors obtained a quote from the research from the University of New South Wales, "The soft embedding rock and delicate, three-dimensionally preserved fish bones were studied by CT-scanning technology rather than physical preparation, except where needed to extract the otolith. Fourteen species of fishes are described, 12 new to science and two in open nomenclature, representing the families **Galaxiidae** (**Galaxias** *angustiventris*, *G. bobmcdowalli*, *G. brevicauda*, *G. papilionis*, *G. parvirostris*, *G. tabidus*), Retropinnidae (*Prototroctes modestus*, *P. vertex*), and Eleotridae (*Mataichthys bictenatus*, *M. procerus*, *M. rhinoceros*, *M. taurinus*). These findings prove that most of the current endemic New Zealand/southern Australia freshwater fish fauna was firmly established in New Zealand as early as 19-16 Ma ago. Most fish species indicate the presence of large fishes, in some cases larger than Recent species of related taxa, for instance in the eleotrid genus *Mataichthys* when compared to the extant *Gobiomorphus*."

According to the news editors, the researchers concluded: "The finding of a few otoliths from marine fishes corroborates the age determination of the Bannockburn Formation as the Altonian stage of the New Zealand marine Tertiary stratigraphy."

For more information on this research see: Fish remains, mostly otoliths, from the non-marine early Miocene of Otago, New Zealand. *Acta Palaeontologica Polonica*, 2012;57(2):319-350. *Acta Palaeontologica Polonica* can be contacted at: Inst Paleobiologii Pan, Ul Twarda 51, 55, 00-818 Warsaw, Poland.

The news editors report that additional information may be obtained by contacting W. Schwarzahns, University of New South Wales, Sch Biol Earth & Environm Sci, Sydney, NSW 2052, Australia.

Keywords for this news article include: Sydney, Technology, Paleontology, Australia and New Zealand

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Document JOENG00020120817e88m002pa

Ecology; Researchers at University of Otago Target Ecology

427 words

10 August 2012

Ecology, Environment & Conservation

ECECON

680

English

© Copyright 2012 Ecology, Environment & Conservation via VerticalNews.com

2012 AUG 10 (VerticalNews) -- By a News Reporter-Staff News Editor at Ecology, Environment & Conservation -- Current study results on Ecology have been published. According to news reporting out of Dunedin, New Zealand, by VerticalNews editors, research stated, "Parasite avoidance is increasingly considered to be a potential driving factor in animal migrations. In many marine and freshwater benthic fish, migration into a pelagic environment by developing larvae is a common life history trait that could reduce exposure to parasites during a critical window of developmental susceptibility."

Our news journalists obtained a quote from the research from the University of Otago, "We tested this hypothesis on congeneric fish (family **Galaxiidae**, genus **Galaxias**) belonging to a closely related species complex sampled from coastal streams in southeastern New Zealand. Migratory **Galaxias** have larvae that migrate to pelagic marine environments, whereas the larvae of non-migratory species rear close to adult habitats with no pelagic larval phase. Both migratory and non-migratory fish are hosts to two species of skin-penetrating trematodes that cause spinal malformations and high mortality in young fish. Using generalized linear models within an Akaike information criterion and model averaging framework, we compared infection levels between migratory and non-migratory fish while taking into account body size and several other local factors likely to influence infection levels. For one trematode species, we found a significant effect of migration: for any given body length, migratory fish harboured fewer parasites than non-migratory fish. Also, no parasites of any kind were found in juvenile migratory fish sampled in spring shortly after their return to stream habitats. Our results demonstrate that migration spares juvenile fish from the debilitating parasites to which they would be exposed in adult stream habitats."

According to the news editors, the researchers concluded: "Therefore, either the historical adoption of a migratory strategy in some **Galaxias** was an adaptation against parasitism, or it evolved for other reasons and now provides protection from infection as a coincidental side-effect."

For more information on this research see: Migration as an escape from parasitism in New Zealand **galaxiid** fishes. *Oecologia*, 2012;169(4):955-63. (Springer - www.springer.com; *Oecologia* - www.springerlink.com/content/0029-8549/)

Our news journalists report that additional information may be obtained by contacting R. Poulin, Dept. of Zoology, University of Otago, PO Box 56, Dunedin, New Zealand.

Keywords for this news article include: Dunedin, Ecology, Australia and New Zealand.

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Document ECECON0020120807e88a000jn

Farmer fined for cleaning waterway

COURT REPORTER

351 words

14 July 2012

Otago Daily Times

OTGO

English

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FARMERS have been warned not to take "the law into their own hands" and instead seek advice when it comes to cleaning out waterways, Environment Court Judge Laurie Newhook says.

Farmer John Andrew Carruthers was convicted and fined \$5400 in the Dunedin District Court yesterday on two charges brought by the Otago Regional Council for breaches of the Resource Management Act between May 1 and October 27, 2010, in an area between the Otago Central Rail Trail and Ngapuna Rd, between Middlemarch and Hyde.

One charge related to the disturbance of the bed of an unnamed tributary of Lug Creek, and the second to 390m of waterway pugged by stock.

Judge Newhook said Mr Carruthers felt he had a right to excavate the waterway but the court had found during a three-day hearing in April that he did not.

"He has paid the penalty with a quite long and probably expensive defended case."

The message from this case was that people should seek guidance from the regional council when planning such work and then a resource consent.

"They can't go and just rip into it."

Alistair Logan, counsel for the Otago Regional Council, and Mr Carruthers' counsel Colin Withnall QC agreed the sedimentation generated by the digging and pugging did not flow from the unnamed waterway to Lug Creek, and the effects of the work were not more than minor and primarily in the 390m of stream excavated, he said.

There was no effect on trout or on **galaxiid** populations.

"He considered himself entitled to clean out the creek. That was his honest belief but it was incorrect."

Mr Logan indicated the starting point for a fine should be \$25,000 but given the agreement on the lack of effects that was considered too high.

If Mr Carruthers had applied for a resource consent for the work, it probably would have been granted, he said.

Judge Newhook fined him \$5400 plus \$1356 in legal costs and \$307 for photocopying.

He ordered 90% of the fine to go to the Otago Regional Council.

Document OTGO000020120713e87e0000k

Freshwater Research; Reports on Freshwater Research Findings from University of Adelaide Provide New Insights

387 words

13 July 2012

Ecology, Environment & Conservation

ECECON

554

English

© Copyright 2012 Ecology, Environment & Conservation via VerticalNews.com

2012 JUL 13 (VerticalNews) -- By a News Reporter-Staff News Editor at Ecology, Environment & Conservation -- Investigators publish new report on Freshwater Research. According to news reporting out of Adelaide, Australia, by VerticalNews editors, researchers stated "Increased hydraulic diversity could be a means to promote fish diversity in rivers, but little is known of the behaviour of fish in hydraulic environments. This study concerns the behaviour of two species of small native Australian freshwater fish in variable hydraulic environments and ecological habit, with regard for (a) whether the apparent differences in swimming ability are reflected in the behaviour of the species and (b) the influence of changing hydraulic conditions on their patterns of use."

Our news journalists obtained a quote from the research by the authors from the University of Adelaide, "An artificial channel was constructed with three levels of discharge, and fish were allowed to swim freely for 3?h without human interference. Their movements and habitat choices reflected their swimming ability and ecological habit, in that the stronger swimming, pelagic common **galaxias (Galaxias maculatus)** spent most time cruising in the open channel, preferring the turbulent inflow, and the demersal flat-headed gudgeon (*Philypnodon grandiceps*) remained in the shelter of boulders. In effect, the **galaxias** changed their behaviour with changes in hydraulic conditions, while the gudgeons continued to use their preferred habitat."

According to the news editors, the researchers concluded: "This study, therefore, provides support for the use of hydraulic diversity as a tool to foster fish diversity."

For more information on this research see: Behaviour of two small pelagic and demersal fish species in diverse hydraulic environments. *River Research and Applications*, 2012;28(5):543-553. *River Research and Applications* can be contacted at: Wiley-Blackwell, 111 River St, Hoboken 07030-5774, NJ, USA. (Wiley-Blackwell - www.wiley.com/; *River Research and Applications* - [onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1535-1467](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1535-1467))

Our news journalists report that additional information may be obtained by contacting N.N. Kilsby, University of Adelaide, Sch Earth & Environm Sci, Adelaide, SA 5005, Australia.

Keywords for this news article include: Ecology, Adelaide, Freshwater Research, Australia and New Zealand

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Document ECECON0020120706e87d000ex

Marine Biology; New Findings from B.O. David and Co-Authors in the Area of Marine Biology Published

395 words

15 June 2012

Ecology, Environment & Conservation

ECECON

138

English

© Copyright 2012 Ecology, Environment & Conservation via VerticalNews.com

2012 JUN 15 (VerticalNews) -- By a News Reporter-Staff News Editor at Ecology, Environment & Conservation -- Investigators publish new report on Marine Biology. According to news reporting originating in Hamilton, New Zealand, by VerticalNews journalists, researchers stated "Worldwide, human-mediated disruption of river networks by artificial structures negatively affects migratory fish species. To creatively solve part of this problem, we assessed the effectiveness of mussel spat ropes for improving fish passage past perched culvert structures."

The news reporters obtained a quote from the research by the authors, "We used a before-after-control-treatment design to test our hypothesis that relative abundances of 'young-of-the-year' migratory fish species would increase following rope installation in a New Zealand stream. Results following remediation indicated a significant three-to four-fold increase in fish abundance relative to a control stream. Although four species (banded kokopu (**Galaxias fasciatus**), redfin bullies (*Gobiomorphus huttoni*), longfin eels (*Anguilla dieffenbachii*) and shortfin eels (*Anguilla australis*)) were present at both the treatment and control stream sites, the increased fish relative abundance at the treatment site was driven primarily by an increase in 'young-of-the-year' banded kokopu. The present study has shown that mussel spat ropes can significantly improve fish relative abundances above severely perched culverts, but may not be effective for all species present."

According to the news reporters, the researchers concluded: "Future use of ropes for evaluating passage efficacy for other species, and for a wider range of barrier situations globally, may greatly extend the application of this cost-effective tool."

For more information on this research see: Remediation of a perched stream culvert with ropes improves fish passage. *Marine and Freshwater Research*, 2012;63(5):440-449. Marine and Freshwater Research can be contacted at: Csiro Publishing, 150 Oxford St, PO Box 1139, Collingwood, Victoria 3066, Australia. (CSIRO Publishing - www.publish.csiro.au; Marine and Freshwater Research - www.publish.csiro.au/nid/126.htm)

Our news correspondents report that additional information may be obtained by contacting B.O. David, Waikato Reg Council, Hamilton, New Zealand.

Keywords for this news article include: Hamilton, Marine Biology, Australia and New Zealand, Marine And Freshwater Research

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Document ECECON0020120608e86f0003v

SAVE THE RIVER

229 words

1 June 2012

The Marlborough Express

MALEXP

22

English

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Has the Wairau been saved now that TrustPower has shelved its dam canal plans? No.

The braided river system is under threat from invasive weeds, predators and agricultural runoff. The world's largest single population of black-fronted terns, 12 to 15 per cent of New Zealand's total, is in trouble from four-wheel- drives, black backed gulls, harrier hawks, rats, cats, dogs, hedgehogs and mustelids. They need weed- free boulder banks for breeding.

They also feed on some of the many species of native fish, the **galaxiid** family, which include whitebait. These fish only flourish where there is overhanging vegetation in which to lay their eggs. Grazing to the river edge destroys their breeding habitat.

So whitebaiters need to be concerned. Some (but not enough) progress is being made by farmers, encouraged by Fonterra, fencing and planting natives around the spring-fed streams feeding the Wairau.

DOC does not have the resources to enhance this entire ecosystem. The Government cuts to staff and funding mean they are as endangered as the black fronted tern.

So we hope the valiant Save the Wairau campaigners will continue with their efforts by supporting conservation work by good farmers and volunteer groups.

Maybe one day we will see populations of wrybill return and not just the single pair who looked in last season.

NOZZ and ALISON FLETCHER

Picton

Document MALEXP0020120601e8610002i

GALAXIAS IN HIGH ALTITUDE LAKE

756 words

7 April 2012

Timaru Herald

TIMRUH

18

English

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F or Pareora angler and hunter Alastair Midgley the sight of some very unusual fish in the Mt Aspiring National Park lake situated high in the mountains at about 900 metres altitude triggered his interest in native fish and the steep terrain they must have negotiated to reach this altitude. Access would likely have been via a narrow high velocity stream exiting the lake.

"There were plenty of these fish in the edge-water.

"The larger ones were quite colourful and approached perhaps 18 to 20cm length.

"In these larger fish the top of their back was a gold colour, and they had blue flanks.

"In many respects they reminded me of whitebait because they had no dorsal fin and our helicopter pilot suggested they resembled the small fish he has seen climb up whitebait buckets as they tried to escape from baiters," he said.

Having consulted several fish identification charts, I've come to the conclusion that Alastair has happened upon a thriving community of a species known as the climbing **galaxias**.

A Niwa report indicates the climbing **galaxias** is unlikely to be confused with the other diadromous whitebait species because of its shape. It is elongate and slender, shaped almost like a tube. The sides and back are covered in a variable pattern of golden blotches and bands that gleam and glitter in the sun, making the climbing **galaxias** a very attractive fish indeed.

These fish live a basically benthic lifestyle and in most respects behave like the common **galaxias**, a closely related **galaxiid**.

They inhabit mainly clear streams, often deeply shaded and relatively fast-flowing, although it sometimes occurs in lakes, particularly in Tasmania.

Climbing **galaxias** also have the ability to penetrate well inland in many river systems, and thus have a more widespread distribution than the other whitebait species.

A major distinguishing feature of this species is its ability to climb up very steep surfaces such as waterfalls, wet rocks and the sluices of hydro dams, and this gives rise to one of its common names.

Even juveniles of the species are capable of climbing up and over the sides of buckets after being trapped in whitebait nets. Their climbing ability is not unique among **galaxias** species, but it reaches its greatest expression in the climbing **galaxias** which have special features that enhance their climbing abilities.

The downward orientation of their fins and the strong, backward-facing ridges on the front part of their fins possibly contribute to this ability.

G. brevipinnis eggs are believed to be washed downstream to the sea where the young live for about six months before returning to freshwater as part of the large mixed species schools known as whitebait.

They were once part of a commercial whitebait fishery in Tasmania, but now fishing for them has been restricted to recreational anglers with significant restrictions on allowable tackle and methods.

Land-locked populations have a similar lifestyle except that the young spend the first part of their life in inland lakes and backwaters etc.

These fish are generalised carnivores of invertebrates including aquatic and terrestrial insects, mayfly, caddisfly larvae and amphipods.

Their distribution extends to coastal streams in south-eastern Australia from Adelaide and Kangaroo Island in South Australia, through coastal Victoria including Wilsons Promontory, Tasmania, Flinders and King Islands

and up the New South Wales coast to around Sydney, as well as New Zealand including the Chatham, Auckland and Campbell Islands.

The climbing **galaxias** or the Koaro (*G. brevipinnis*), is a fish of the family **Galaxiidae** found in Australia, New Zealand and nearby islands.

The name climbing **galaxias** is used in Australia, and Koaro in New Zealand. Further vernacular names include short-finned **galaxias**, broad-finned **galaxias**, Cox's mountain **galaxias**, and Pieman **galaxias**.

So there you are. Thanks to the comprehensive documentation provided by Niwa, the mystery of this high-altitude observation appears to have been solved.

It rather supports my theory that anglers are very astute observers of the environment and the species therein. * * * * *

It's fin clipping time at the salmon hatchery sites on the Rangitata and Waitaki rivers.

Volunteers to assist with this task at the McKinnon's Creek hatchery on the Rangitata River are asked to be at George Rd at 9.45am today.

Volunteers to assist in a similar working bee at the raceway at Bells Pond are asked to be on site at 2pm on Sunday, April 8.

"If we can get 30 people it should only take about an hour," said Linn Koevoet.

Document TIMRUH0020120406e8470002j

'DRAMATIC' RETURN OF FRESHWATER SPECIES

693 words

31 March 2012

Dominion Post

DOMPOS

15

English

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A first-time experiment with a waterborne poison has paid off, with native freshwater koura and kokopu now thriving at Karori reservoir after predatory trout were culled from the upper dam and its tributaries. Matt Stewart reports.

DAVID MOSS, Conservation Department freshwater aquatic threats ranger, is "blown away" as he watches freshwater crayfish (koura) staking out their territory and schools of juvenile banded kokopu (a type of whitebait) returning to the wildlife sanctuary.

The recovery comes just a year after a programme to eliminate introduced brown trout was carried out by Zealandia with DoC support.

The trial elimination programme used the poison rotenone - known to Kiwi gardeners for its other application as the cabbage pesticide derris dust.

It was the first New Zealand test in flowing water - previously the fish-killing piscicide had been used only in still water such as lakes and ponds.

The poison stops trout breaking down oxygen, effectively suffocating them.

DoC is the only body licensed to administer rotenone for fish control and the successful trial has seen native freshwater species "making a dramatic comeback" in the upper Karori reservoir and the streams flowing into it.

Mr Moss said staff "fished madly" as many of the native species as possible were rounded up in netted areas of the stream above the operation area high up in the catchment.

Portable 1000 litre dams were used at the poison dosing site to mix and release the poison downstream.

The poison was then fed into the stream for six hours and the koura and kokopu returned once the toxicity had abated.

Freshwater crays could "sense" trout and would ghetto-ise themselves by retreating to "tiny little backwater eddies" but with trout no longer a threat the species is back, in the mainstream pools, boldly holding territory.

February surveys recorded no trout in the elimination zone, while schools of juvenile banded kokopu - one of five species in the **Galaxiidae** family that make up the whitebait runs which enter our rivers each spring - have bounced back.

"It's a massive recovery - better than we expected or even hoped," Mr Moss said. "In sampling over the previous three years, we saw/caught just two banded kokopu compared with 467 caught and thousands seen this year. As for koura we saw seven last year and 158 this year."

Banded kokopu are the only native fish in the upper catchment, because of their ability to be landlocked by the dam. They do not need to migrate to the sea that they would naturally do.

THE programme was five years in the planning and highlights Zealandia's mandate to restore the native ecosystem in the valley's pest-protected "eco-island".

Although several other surveys will be needed to confirm the absence of trout and to gauge how beneficial the programme has been for other native species such as freshwater invertebrates, early signs are encouraging.

"It really looks like this will be another conservation success," Zealandia conservation manager Raewyn Empson said. Some 67 per cent of New Zealand's native fish species are considered threatened or at risk.

While habitat destruction, such as the draining of wetlands and removal of native plants growing alongside streams is a major threat to these species, predation by introduced trout is also significant.

"Elimination of trout in New Zealand's larger waterways is neither desired nor practical but, in special catchments like we have within the sanctuary valley, the opportunity to restore freshwater native ecosystems is an important one and will help maintain New Zealand's unique biodiversity.

"Protecting these fish and other native species is just as important as saving 'popular' species such as the kiwi."

Ms Empson said the initial success of the programme suggested rotenone poisoning might be an option for the lower lake in the sanctuary.

A population of introduced perch and brown trout in that lake has had a severe impact upon water quality and perch, like trout, are voracious predators of native species.

Any such decision is some years off, however, as more studies are needed and other considerations, such as cost and resource consent, have to be taken into account.

Document DOMPOS0020120330e83v0001I

Chalcogens; Reports from University of Canterbury Highlight Recent Research in Chalcogens

277 words

27 March 2012

Life Science Weekly

LFSW

English

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2012 MAR 27 - (NewsRx.com) -- "How fish oxygen consumption is modulated by external PO₂ has long been a matter of interest, yet is an experimentally complicated question to answer. In this study closed and semi-closed respirometry were used to evaluate the oxygen consumption rate of the scaleless **galaxiid** fish, inanga (**Galaxias maculatus**) as a function of decreasing external PO₂," scientists writing in the journal Comparative Biochemistry and Physiology A-Molecular & Integrative Physiology report.

"Both respirometry techniques showed that as environmental oxygen levels declined, oxygen consumption rates also decreased. At no point did inanga regulate oxygen consumption. This is strong evidence that inanga is an oxyconformer," wrote M.A. Urbina and colleagues, University of Canterbury.

The researchers concluded: "Partitioned respirometry experiments showed that skin plays an important role in oxygen uptake in this fish species, and cutaneous oxygen uptake may have an important role in shaping the oxygen consumption response to hypoxia."

Urbina and colleagues published their study in Comparative Biochemistry and Physiology A-Molecular & Integrative Physiology (A novel oxyconforming response in the freshwater fish **Galaxias maculatus**. Comparative Biochemistry and Physiology A-Molecular & Integrative Physiology, 2012;161(3):301-306).

Additional information can be obtained by contacting M.A. Urbina, University of Canterbury, Sch Biol Sci, Christchurch 8140, New Zealand.

The publisher of the journal Comparative Biochemistry and Physiology A-Molecular & Integrative Physiology can be contacted at: Elsevier Science Inc, 360 Park Ave South, New York, NY 10010-1710, USA.

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Marine Biology; Reports from Cawthron Institute Add New Data to Research in Marine Biology

301 words

9 March 2012

Ecology, Environment & Conservation

ECECON

295

English

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2012 MAR 9 - (VerticalNews.com) -- According to the authors of recent research from Nelson, New Zealand, "The effects of coastal floodgates on fish distribution are largely unknown. In this study, we used Dual-frequency Identification Sonar (DIDSON) to assess the effect of tidal floodgates on movement of diadromous juvenile galaxiids in a New Zealand estuarine system and test the suitability of DIDSON as a tool for monitoring behaviour of small fish."

"DIDSON allowed observations of juvenile **galaxiid** movements over 24 h through contrasting gated and un-gated culverts. More than twice as many fish were recorded passing the un-gated culvert than the gated culvert. Movement occurred during the day and night and was highest at the un-gated culvert just before high tide. By contrast, movement past the gated culvert was highest during low tide, when the gate was open," wrote K. Doehring and colleagues, Cawthron Institute.

The researchers concluded: "DIDSON is suitable for discretely observing in situ behaviour of small fish at night or in turbid water and will assist to identify design and operational needs for fish-friendly floodgates."

Doehring and colleagues published their study in New Zealand Journal of Marine and Freshwater Research (Suitability of Dual-frequency Identification Sonar (DIDSON) to monitor juvenile fish movement at floodgates. New Zealand Journal of Marine and Freshwater Research, 2011;45(3):413-422).

For additional information, contact K. Doehring, Cawthron Inst, Nelson, New Zealand.

Publisher contact information for the New Zealand Journal of Marine and Freshwater Research is: Taylor & Francis Ltd, 4 Park Square, Milton Park, Abingdon OX14 4RN, Oxon, England.

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Doc gains three conservation areas

By JAMES BEECH

421 words

3 March 2012

Otago Daily Times

OTGO

English

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Still standing ... The stone chimney remains from the original Trotter's Homestead, built in 1859. The Trotters Historic Reserve is one of three newly conservation areas near Kingston. PHOTO: JIM COAWELL

THREE areas of public conservation land, including an early moa-hunting site, have been created from 6500ha acquired by the Department of Conservation (Doc).

Land originally part of the Greenvale and Allendale pastoral leases near Kingston was transferred to the department in November 2011 as a result of the Land Information New Zealand led High Country Tenure Review programme.

The three areas were described as Trotter's Historic Reserve, an addition to the Eyre Mountains/Taka Ra Haka Conservation Park and Robert Creek Conservation Area.

The new 17ha Trotter's Historic Reserve, at the mouth of Allen Creek, includes an early moa-hunting site known by historic record, although no physical evidence remains, and the ruins of the first Trotter's Homestead, built by William Sinclair Trotter, who arrived in the district in 1859.

The stone chimney from the first homestead and the remaining outlying stone ruins were cleared in late February by Doc staff, with the help of a team of volunteers, Doc Wakatipu visitor and historic assets ranger Jim Coawell said.

"The walls we uncovered were beautifully made, dead plumb, dead straight and beautifully put together.

"The corners of the ruins are most interesting, with every second stone placed on its end, which is not something I've seen a lot of locally."

Asked why Doc sought to acquire the land, area manager Greg Lind said the Eyre Mountains/Taka Ra Haka Conservation Area and Robert Creek Conservation Areas both contained significant beech forests, shrublands, alpine vegetation and extensive valley floor wetlands,

"These two areas are perhaps easiest recognised as the ... landscapes visible across Lake Wakatipu on the drive south from Queenstown," Mr Lind said.

"Many threatened species such as kea, New Zealand falcon/karearea, rock wren and several different species of **galaxiid** fish are present in these two areas. A number of threatened plant species also occur, some of which can only be found in the Eyre Mountains."

Recreation opportunities included plans for the 180km Round the Mountain cycleway to run past the Trotter's Homestead, one of several cycleways being developed nationally, as well as easier foot access to Glen Allen Scenic Reserve and hunting for red deer, chamois and pigs.

The land will become part of the Wakatipu open hunting permit, which can now be obtained online.

Document OTGO000020120302e8330001d

Marine Biology; New Findings from National Institute of Water and Atmospheric Research Describe Advances in Marine Biology

297 words

2 March 2012

Ecology, Environment & Conservation

ECECON

106

English

© Copyright 2012 Ecology, Environment & Conservation via VerticalNews.com

2012 MAR 2 - (VerticalNews.com) -- According to the authors of a study from Christchurch, New Zealand, "We examined ontogenetic changes in morphology of four non-migratory 'flathead' **galaxiid** fishes and interspecific differences. Geometric analyses were used to determine where ontogenetic shifts occur, examine growth trajectories between taxa and compare interspecific differences with taxa standardised to each of three sizes."

"Ontogenetic changes in all taxa were mostly associated with the pelvic and anal fins developing slower than overall length. Growth trajectories differed between all taxa except **Galaxias** 'southern' and G. 'northern', with the largest interspecific differences occurring in the overlap between the anal fin and the caudal flange. This overlap discriminated taxa at each of the three size classes despite ontogenetic changes. Morphological shifts suggest that habitat use changes with size," wrote S.K. Crow and colleagues, National Institute of Water and Atmospheric Research.

The researchers concluded: "Interspecific differences shown in geometric shape require structural linkages before suggestions can be made on identification or systematics."

Crow and colleagues published the results of their research in New Zealand Journal of Marine and Freshwater Research (Ontogenetic changes in morphology of flathead **galaxiid** fishes (Osmeriformes: **Galaxiidae**) in South Island, New Zealand. New Zealand Journal of Marine and Freshwater Research, 2011;45(4):689-702).

For additional information, contact S.K. Crow, Natl Inst Water & Atmospher Res, Christchurch, New Zealand.

The publisher of the New Zealand Journal of Marine and Freshwater Research can be contacted at: Taylor & Francis Ltd, 4 Park Square, Milton Park, Abingdon OX14 4RN, Oxon, England.

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Biogeography; Reports from University of Otago Add New Data to Research in Biogeography

450 words

24 February 2012

Science Letter

SCLT

English

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2012 FEB 24 - (NewsRx.com) -- According to the authors of recent research from Dunedin, New Zealand, "The aim of this study was to determine the contributions of Gondwanan vicariance and marine dispersal to the contemporary distribution of **galaxiid** fishes. This group has been central in arguments concerning the roles of dispersal and vicariance in the Southern Hemisphere, as some taxa have marine life history stages through which transoceanic dispersal may have been facilitated, yet other galaxiids are entirely restricted to freshwaters."

"Location Southern Hemisphere land masses of Gondwanan derivation. Methods Biogeographic hypotheses of Gondwanan vicariance and marine dispersal were tested using four lines of evidence: (1) concordance of species-area phylogenetic relationships, (2) molecular estimates of lineage divergence times with a priori expectations based on plate tectonics, (3) reconstructions of ancestral dispersal capabilities, and (4) reconstructions of distribution inheritance scenarios (using the dispersal-extinction-cladogenesis model to infer historical ranges and dispersal and extinction events). Results Phylogenetic relationships were reconstructed from 4531 mitochondrial and nuclear nucleotide characters, and 181 morphological characters, across 53 of the 56 presently recognized species. Phylogenetic relationships were generally well resolved and supported among galaxiids using the combined dataset, and conflicting relationships between molecular and morphological datasets typically received low topological support from either or both datasets. Transoceanic disjunctions were exhibited at 16 nodes, but only three pre-dated relevant continental fragmentation events; furthermore, ancestral distribution inheritance scenarios for two of these nodes reflected cladogenesis within, rather than between, Gondwanan land masses, and ancestral marine dispersal capability could not be rejected for all three. Instead, the four lines of evidence surveyed suggest that Gondwanan vicariance occurred twice, but in both instances was preceded by marine dispersal between land masses, and in at least one instance was initiated by the cessation of marine dispersal subsequent to continental fragmentation," wrote C.P. Burrige and colleagues, University of Otago.

The researchers concluded: "Main conclusions Gondwanan vicariance appears to have been preceded by marine dispersal in the few instances where it may explain contemporary **galaxiid** distribution, such that these biogeographic mechanisms may sometimes have a synergistic relationship."

Burrige and colleagues published their study in the Journal of Biogeography (Marine dispersal as a pre-requisite for Gondwanan vicariance among elements of the **galaxiid** fish fauna. Journal of Biogeography, 2012;39(2):306-321).

For additional information, contact C.P. Burrige, University of Otago, Dept. of Zool, Dunedin, New Zealand.

Publisher contact information for the Journal of Biogeography is: Wiley-Blackwell, Commerce Place, 350 Main St, Malden 02148, MA, USA.

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Still valley flooding fears

BY TRACEY ROXBURGH

466 words

21 February 2012

Otago Daily Times

OTGO

English

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Jon Jackson

PIONEER Generation Ltd has been asked to confirm the scope of its appeal over proposed damming on the Nevis River, amid fears it could get permission to flood the whole Nevis Valley.

The call came from lawyer Maree Baker, representing the New Zealand and Otago Fish and Game councils and Whitewater New Zealand Ltd, a recreational kayaking group, at a pre-hearing conference before Environment Court Judge Jon Jackson in Queenstown on Thursday.

She was also acting on agency instructions for eight "section 274 parties".

"In papers there have been media statements by Pioneer that its area of interest [in the Nevis] has actually shrunk. Section 274 parties may be of the impression it's a formal modification of the appeal," Ms Baker said.

In June last year, the Otago Daily Times reported Pioneer Generation wanted to allay fears it would "flood the Nevis Valley" if it gained consent for hydro-electric development.

At that time, Pioneer Generation chief executive Fraser Jonker said the company was giving an undertaking its plans for hydro development "will effectively leave the valley alone".

The geographic upper limit of any proposed development would be the Nevis Crossing, he said.

Under the water conservation order (WCO), hydro development in the Nevis is not ruled out. However, changes to the order were proposed by the New Zealand and Otago Fish and Game councils to prohibit any damming or diversion of the river.

A tribunal appointed by the Ministry for the Environment heard the views of more than 240 submitters in 2009-10 and recommended the order be changed to ban damming, to protect the habitat of the Gollum **galaxiid**, a rare native fish found only in the upper Nevis.

In 2010, the tribunal found in favour of the change, which was appealed to the Environment Court by Pioneer, the Fish and Game councils and Whitewater New Zealand.

Ms Baker said if the special tribunal decision was overturned and revised to the original wording it would be a "very special case".

"If that clause was reinstated, that effectively allows for resource consent applications for dams for the entire valley floor."

She sought confirmation Pioneer's interest was limited to two specific points on the map and not a larger geographical area.

Judge Jackson told Pioneer Generation Ltd counsel Kerry Smith a confirmation of Pioneer's scope could help some parties prepare their evidence.

"There is a difference between reading something in a newspaper ... and what's said in court."

Mr Smith told the court evidence would be "based on an assumption of inundation further upstream than the Nevis Crossing".

Judge Jackson established an evidence exchange timetable and set a three-week hearing date to begin on October 22.

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Document OTGO000020120220e8210000b

Stranded-fish policy floated; New direction suggests designated refuge waters be identified

By JOHN GIBB

415 words

13 February 2012

Otago Daily Times

OTGO

English

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BETTER times may lie ahead for trout left stranded in dried-up streams over summer, with policy changes mooted so they can be shifted to safety.

The Otago Fish and Game Council has approved a recommendation from council chief executive Niall Watson to develop a new policy on relocating stranded trout to yet-to-be-identified "refuge waters", in consultation with the Department of Conservation.

In a report tabled at the council's latest meeting, held in Dunedin on Saturday, Mr Watson noted that the "prolonged dry spell" over the Christmas holiday period had resulted in some small streams going dry.

In turn, this meant some fish had been stranded, and had died.

Fish and Game had traditionally not tried to salvage small juvenile fish from streams that dried up because this would involve "a huge commitment of time".

Exceptions were streams such as Quartz Creek at Wanaka where stranded fish were large spawning rainbow trout, he said.

Advice to the public had usually been that moving fish without permission breached the Conservation Act, but it was clear that people in local communities, when "confronted by stranded fish", often tried to rescue them anyway.

Such actions risked damaging "discrete populations" of rare native **galaxiid** fish, depending on where the relocated trout were put, but trying to enforce compliance orders was unlikely to succeed.

"As an alternative, it is suggested that designated refuge waters be identified in catchments where streams are prone to running dry," he said.

In that way, salvaging fish from within a catchment and putting them into a designated refuge area, such as at a dam within the same catchment, would have already been approved by Fish and Game and Doc.

"This is a more pragmatic approach and initial discussions with Doc suggest they would support it," he said.

Trout strandings had been caused by an "over allocation of water to out of stream uses" by way of mining privileges, sometimes in combination with natural stream flow characteristics.

Fish and Game efforts were mainly focused on remedying the situation through the setting of "minimum or residual flows".

Mr Watson said in an interview that the new policy had yet to be developed, in consultation with Doc, but offered a good way of saving stranded fish, providing a positive outlet for community concerns, and avoiding ecological damage caused by putting trout in the wrong place.

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Document OTGO000020120212e82d0000u

Life Science Research; Scientists at University of Canterbury Target Life Science Research

447 words

2 January 2012

Global Warming Focus

GLOWRM

107

English

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2012 JAN 2 - (VerticalNews.com) -- A report, "Synergistic interactions within disturbed habitats between temperature, relative humidity and UVB radiation on egg survival in a diadromous fish," is newly published data in Plos One. "Anthropogenic impacts, including urbanization, deforestation, farming, and livestock grazing have altered riparian margins worldwide. One effect of changes to riparian vegetation is that the ground-level light, temperature, and humidity environment has also been altered," scientists in Christchurch, New Zealand report.

"**Galaxias maculatus**, one of the most widely distributed fishes of the southern hemisphere, lays eggs almost exclusively beneath riparian vegetation in tidally influenced reaches of rivers. We hypothesized that the survival of these eggs is greatly affected by the micro-environment afforded by vegetation, particularly relating to temperature, humidity and UVB radiation. We experimentally reduced riparian vegetation height and altered shading characteristics, tracked egg survival, and used small ground-level temperature, humidity and UVB sensors to relate survival to ground-level effects around egg masses. The ground-level physical environment was markedly different from the surrounding ambient conditions. Tall dense riparian vegetation modified ambient conditions to produce a buffered temperature regime with constant high relative humidity, generally above 90%, and negligible UVB radiation at ground-level. Where vegetation height was reduced, frequent high temperatures, low humidity, and high UVB irradiances reduced egg survival by up to 95%. Temperature effects on egg survival were probably indirect, through reduced humidity, because developing eggs are known to survive in a wide range of temperatures. In this study, it was remarkable how such small variations in relatively small sites could have such a large effect on egg survival. It appears that modifications to riparian vegetation and the associated changes in the physical conditions of egg laying sites are major mechanisms affecting egg survival. The impacts associated with vegetational changes through human-induced disturbances are complex yet potentially devastating," wrote M.J. Hickford and colleagues, University of Canterbury.

The researchers concluded: "These effects are particularly important because they affect a very small portion of habitat that is required to complete the life history of a species, despite the wide distribution of adults and juveniles across aquatic and marine environments."

Hickford and colleagues published their study in Plos One (Synergistic interactions within disturbed habitats between temperature, relative humidity and UVB radiation on egg survival in a diadromous fish. Plos One, 2011;6(9):e24318).

For more information, contact M.J. Hickford, Marine Ecology Research Group, School of Biological Sciences, University of Canterbury, Christchurch, New Zealand.

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Document GLOWRM0020111230e8120003g

FISH AND GAME WINS RIGHT NOT TO LIMIT EVIDENCE

John Edens
388 words
23 December 2011
The Southland Times
SLANDT
2

English

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Otago Fish and Game has won a legal victory in a decade-long battle with Pioneer Generation over the Nevis Valley.

The Central Otago valley is the focus of a fight between environmental groups and Pioneer about the energy firm's plans to dam the river.

Justice Lester Chisholm's reserved decision in the Dunedin High Court dismissed the energy firm's application to limit the scope of evidence in a pending Environment Court hearing.

Otago Fish and Game chief executive Niall Watson said he was delighted with the decision.

Pioneer wanted to prevent Fish and Game presenting evidence about a native fish, Gollum **galaxiid**, a species found only in the Nevis.

The energy company argued Fish and Game should be able to present evidence relating to sport fishing, not native species.

But Justice Chisholm said there was no justification in restricting the wide terms of fishing.

"Such an approach would defeat the statutory objective which is, amongst other things, to confer wide powers on regional Fish and Game councils to advocate before the Environment Court."

Mr Watson said it was important all values were considered by the Environment Court.

The natural and recreational values of the valley and river deserved national recognition and it was pleasing Pioneer failed, he said. It was an outstanding trout fishery with important flora, fauna and heritage sites.

"It's been a real marathon.

"It's significant because the special tribunal said dams should be prohibited on the basis of native fish alone.

"This is the end of a long saga."

The High Court decision paves the way for a full Environment Court hearing after a Ministry of the Environment-appointed tribunal recommended prohibiting damming on the river to protect Gollum **galaxiid**.

Three parties appealed to the Environment Court; Pioneer Generation asked the court to overturn the ban, Whitewater New Zealand asked the court to include protection of kayaking and Otago Fish and Game asked for a wider definition of outstanding natural features to include landscape and trout fisheries.

Mr Watson said he expected the Environment Court to call a pre-hearing conference to decide a timetable before a full hearing next year.

Pioneer Generation has a right of appeal to the Court of Appeal.

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Document SLANDT0020111229e7cn0005a

BATTLE RAGES OVER VALLEY'S FUTURE DAMN THE DAM? TIMELINE

WILLIAMS David

3,258 words

3 December 2011

The Press (Christchurch)

THEPRE

2

English

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A power company wants to dam the remote Nevis River in Otago at just about this spot. The debate is raging, including greenie versus greenie.

Dam plans for a remote Central Otago valley have prompted a raft of public processes before a consent application has even been made. DAVID WILLIAMS reports.

Peter Mulvihill ambles past an imposing tor rock, crushing hieracium under his boots. A cool breeze carrying the hint of snow caresses the swaying tussocks, matagouri bushes and prickly stemmed spaniards. This is Speight's country - a television advertisement for the beer has been filmed here. But this idyllic scene hides a bitter battle.

"It was never our intention to stuff the place up," says Mulvihill, Otago power company Pioneer Generation's asset manager. He's overlooking the Nevis Valley, about halfway between Queenstown and Alexandra.

Below, sheep and cattle graze peacefully in the sun-drenched, glacier-carved valley. Although it's hemmed in on almost all sides by mountains, there's a feeling of open space.

Isolated clusters of trees hide homesteads, farm buildings and baches. The Nevis River writhes along the bare valley's eastern side, splitting the two farm stations Pioneer bought into to enable its hydro-electric dam proposal. After the waters drift under the Nevis Crossing bridge, it speeds up, turning white, and races through a steep gorge to the Kawarau River.

Away from the remote valley, in the region's courthouses and council offices, a fracas rages over the valley's future.

It's a typical Otago battle - over power and water. After all, the Nevis is just over the hill from the Clyde dam. But this latest tangle of hearings is happening before a resource consent application has even been lodged.

It's a fight over a possibility.

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To C3

Back at Pioneer Generation's squat, pale-yellow building on the northern fringe of arid Alexandra, in an industrial area near the town's golf course, chief executive Fraser Jonkers tries to regain the moral high ground.

After an unsuccessful Environment Court mediation, Pioneer surprisingly announced its trump card in the confidential negotiations - that it will not pursue a dam in the lower Nevis Valley.

"If we were prepared to do that during the [mediation] we should stick with what we said," Jonkers says.

According to an Otago Regional Council newsletter, parties to the mediation signed a non-binding agreement but the talks still broke down.

A cynic might accuse the company of setting up the lower valley dam as a straw man, so it could slip through its actual plans for a dam and tunnel below the crossing.

But Jonkers says the lower Nevis was only ever an option and it was forced to defend it at the WCO hearing, because the hearing was about "all or nothing".

Now he's pinning his hopes on a dam below the crossing. One above has too many logistical problems.

Pioneer was created out of the electricity reforms of the 1990s, from what used to be the Otago Central Electric Power Board. Wholly owned by the Central Lakes Trust, it's a power generator with no retail customers.

It is tiny compared to giants like Meridian and Contact Energy, but big for a local generator. Last year it generated enough power for 26,000 homes.

Jonkers, a South African, has headed Pioneer for a year. He looks the part of a power company chief executive, with his bright white shirt, dark suit trousers and polished shoes. But he's difficult to pin down, seemingly pulling on the woolly jersey of a greenie to speak one minute and adopting the hardened edge of a New York stock trader the next.

A year ago, Jonkers crested Duffers Saddle for the first time and looked down on the Nevis for the first time.

He recalls: "I looked down this valley and I thought to myself, gee, there's no way a resource consent process would ever allow us to dam anything there.

"You make up your own mind but that's the feeling I got.

"It's been messed up by farming already, but I wouldn't like to see it flooded."

He follows with another surprisingly open comment: that the board has "for years" been questioning the company about the costs being spent to defend its Nevis options. Jonkers quickly switches tack.

Pioneer is sticking with the idea of a smaller dam, or weir, as Jonkers calls it, below the Nevis Crossing bridge, at the entrance to the gorge.

At this stage the company envisages a 10-hectare reservoir and a 6km-long tunnel being punched through the mountain to a power station about 2km upstream from the confluence with the Kawarau, not far from a popular bungee jumping operation.

It will operate on the run-of-the-river: when there's rain it will generate; if there's none it won't. There will be enough character of the river left to satisfy most people, he says.

But, of course, there are no final plans yet, he says.

The Nevis might be a flagship project for the company, he says. In one go, it could double its capacity and, in turn, double its \$160 million worth. He's cagey on figures, but says a dam and tunnel on the Nevis will cost more than \$100 million.

"I don't think we would easily give up on it," he says. "The Nevis is one thing and the river is another thing, but it's also a bit of a principle. Our business is hydro generation; it's the majority of what we do."

"Testing" the environment is inherent in the business, he says. "If we don't challenge something like the Nevis we may as well shut shop and go somewhere else and do something else." In the sun-dappled Nevis, members of the Otago Goldfields Heritage Trust show off the valley's historical features. Officially the trust is
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"comfortable" with Pioneer's change of plans. But its president, Martin Anderson, the former information services director at Otago University, says the company will still face "a lot of public opposition" over a dam below the crossing.

A dam would flood The Dell, a popular picnic spot.

Those not au fait with gold mining might be disappointed by a Nevis tour. Highlights include piles of tailing stones, the backwash of hand- sluicing or dredging, and depressions in the ground that used to carry water. Mining implements rust in the open air as old stone huts, some made from brake stones from horse-drawn carts, are reclaimed by the land.

Agricultural scientist Mike Floate, a trust committee member, spices things up with stories about the miners' spending. It was the publicans, dancing girls and prostitutes who made the money, he says with a grin.

Asked if celebrating mining was essentially the worship of the environmental vandals of the past, the colourful Floate says: "It's a good job there was no concern about environmental impact in those days or there'd be nothing to see now!"

Anderson steers a moderate course.

"It's just one activity in a long line of development in the region; gold just happened to be first," he says.

"And people have a thirst for their roots."

To C4

Local historians hail the valley's mining longevity. Gold was discovered here in 1862 and mining continued, in earnest, from the following year until about 1950. Claims are still being worked today.

On a sunny day, it's easy to romanticise about gold mining, but it could be a horrible, harsh place. Old bridges were washed away by chunks of ice, as the frozen river thawed, and the hills seem to whisper stories of loneliness and isolation. Some records show that "miners [were] driven mad by drink".

The first warden's report on Nevis gold field, written in 1865, captures its worst moments: "The Nevis is so isolated and remote from every centre of population that it is just beginning to be discovered. This cold, sequestered, and ice-bound region, hemmed in on all sides except where it opens to the Kawarau will probably never attract a very large population. It will be a storehouse of wealth to the hardy adventurers who are prepared to brave its inclement climate."

Central Otago poet Brian Turner doesn't try to pretty up the valley. In his book, *Into The Wider World*, he says a warm day in the Nevis can be "pure magic", but it can also be "bone- chillingly cold".

At a bench table outside Alexandra's restored courthouse, now a popular cafe, Turner stirs his coffee slowly and deliberately. At times his low, nasal rumblings are hard to follow, spoken through his shaggy grey beard, dotted with brown patches.

In recent years, Turner, with artist Grahame Sydney, has been one of the highest-profile opponents of power developments in Central Otago, such as Meridian's planned Project Hayes windfarm. The driver in "our camp", he says, is a world-view of illiterate global economics, plundering of finite resources and impending ecological disaster.

"There's hardly anywhere on the planet now, relative to 100 years ago, that you can call pristine, but that's no reason why you should destroy the best of what remains."

Nature is not a commodity, rather a community to which we belong, he says.

"I can't think of a river or stream in New Zealand that I was familiar with when I was a teenager that is in anywhere near as good a condition now as it was then. And the trend has been all the one way.

"So the real extremists, it seems to me, are the people who are advocating the continuance of all this stuff, and the truly responsible and understanding are those that are trying to stop it."

He breaks into a spluttering laugh: "We're still swimming upstream on that one." In one of the Nevis River's tributaries, Yellow Creek, Pioneer's Mulvihill leads a search for the elusive gollum fish. He spies a small one, about two centimetres long, at the first bend but it quickly flicks out of view. Mulvihill's moleskins are muddied in the pursuit but no more appear. The glaringly white net finds only rocks.

"Maybe you should have come in here with a better fisherman," Mulvihill quips.

As the Environment Court hearing draws nearer the Nevis River runs obliviously on, while a steady stream of people come to worship the mining heritage.

This upsets Jonkers.

"They've created history that we sell this region on and that people protect dearly . . . are we stopping ourselves from making history? I always think, in 100 years from now what will people say of the people that lived through the 2000s, what did they leave behind for us?"

So that's what it comes down to? What version of history do we want? Can we curb our electricity use or are more dams inevitable?

Anderson, of the goldfields trust, says: "I think once people start paying real money for power bills, everyone's perceptions on power and how it's produced is going to change dramatically."

There are so many strands - power and water, as well as a connection to our land and history - it's hard to pick out the most important bit.

It seems appropriately summarised by a submission to the Walking Access Commission, which is trying to heal the urban-rural divide over appropriate access to publicly- owned land. It says: "The land and the waters of New Zealand are a treasure for all those who feel they are New Zealanders, and access to these in part historically defines the values of our society."

Now society has to decide what those values are.

TIMELINE

From 1400s: Nevis Valley used as trail route and for moa hunting by Maori.

Late 1850s: Valley settled by pastoral farmers.

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1863: Mining starts.

1866: Valley reaches its peak population of 600 people

1950: Strong continuous mining ends.

1960s: Otago Central Electric Power Board (OCEPB) starts investigating feasibility of a hydro scheme in Nevis Valley.

1967: Conceptual hydro design produced.

1990: Kawarau water conservation order (WCO) application made.

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2008-09: Special tribunal appointed and hearings held.

2009: Preliminary proposals for Ben Nevis and Craigroy tenure review publicly notified.

August 2010: Special tribunal decision released.

April 2011: Environment Court mediation lapses.

June 2011: Pioneer announces it is abandoning a storage dam above the Nevis Crossing.

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BATTLE RAGES OVER VALLEY'S FUTURE

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English

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2006: Fish & Game applies to vary the WCO. 2008-09: Special tribunal appointed and hearings held. 2009: Preliminary proposals for Ben Nevis and Craigroy tenure review publicly notified. August 2010: Special tribunal decision released. April 2011: Environment Court mediation lapses. June 2011: Pioneer announces it is abandoning a storage dam above the Nevis Crossing. ----- Peter Mulvihill ambles past an imposing tor rock, crushing hieracium under his boots. A cool breeze carrying the hint of snow caresses the swaying tussocks, matagouri bushes and prickly stemmed spaniards. This is Speight's country - a television advertisement for the beer has been filmed here. But this idyllic scene hides a bitter battle.

"It was never our intention to stuff the place up," says Mulvihill, Otago power company Pioneer Generation's asset manager. He's overlooking the Nevis Valley, about halfway between Queenstown and Alexandra.

Below, sheep and cattle graze peacefully in the sun-drenched, glacier-carved valley. Although it's hemmed in on almost all sides by mountains, there's a feeling of open space.

Isolated clusters of trees hide homesteads, farm buildings and baches. The Nevis River writhes along the bare valley's eastern side, splitting the two farm stations Pioneer bought into to enable its hydro-electric dam proposal. After the waters drift under the Nevis Crossing bridge, it speeds up, turning white, and races through a steep gorge to the Kawarau River.

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CAPTION:

Bare beauty: The Nevis Valley seen from just below Duffers Saddle.

Picture: DAVID WILLIAMS

Claimed: A gold claim sign fixed to a post near the Nevis Crossing.

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THE BATTLE FOR THE NEVIS

1,038 words

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The Southland Times

SLANDT

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English

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2011 NOV 11 - (VerticalNews.com) -- "The effect of extended incubation (delayed hatching) on larval morphology in the terrestrially spawning common **galaxias Galaxias** maculatus was investigated by inducing larvae to hatch 1 and 2 weeks after the normal 2 week incubation period. After 1 week of extended incubation, larvae were larger (longer in standard length, L-S, and greater in body depth) compared to controls (larvae that experienced normal incubation durations)," researchers in Melbourne, Australia report.

"After 2 weeks of extended incubation, larvae were smaller (shorter in L-S and smaller in body depth) than larvae that experienced 1 week of extended incubation. Furthermore, eye area increased while yolk-sac size decreased monotonically with increasing incubation duration. These results suggest that larvae experiencing long periods of extended incubation are using somatic tissue to meet their metabolic demands. Larvae that experienced 2 weeks of extended incubation succumbed to starvation sooner than control larvae, but hatching success was not significantly different. Temperature mediated the effect of extended incubation on the morphology of larvae at hatching, most likely, through its effects on developmental rate and efficiency of yolk utilization," wrote D. Semmens and colleagues, University of Melbourne.

The researchers concluded: "This study demonstrates some of the consequences of terrestrial spawning with extended incubation, which will assist in determining why this intriguing behaviour has evolved several times in a diverse range of taxa."

Semmens and colleagues published their study in the Journal of Fish Biology (Extended incubation affects larval morphology, hatching success and starvation resistance in a terrestrially spawning fish, **Galaxias** maculatus (Jenyns 1842). Journal of Fish Biology, 2011;79(4):980-990).

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Department of Conservation rangers highlight creatures that may be gone before...

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The Press (Christchurch)

THEPRE

4

English

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Department of Conservation rangers highlight creatures that may be gone before you realised they were going.

Black-billed gull/tarapuka (*Larus bulleri*) If you look closely among the scavenging gulls, you may spot the odd black beak or black webbed-foot among the red, white and grey throng. These parts belong to the world's most threatened gull, the tarapuka or black-billed gull.

Description: These are the only gulls you'll find breeding inland on braided rivers. They are smaller and more delicate than the more common red-billed gull and the black-backed gull, and have white plumage and greyish wings with black tips. Mature gulls have black legs and beaks.

Distribution: Black-backed gulls are only found in New Zealand. During breeding time, September to January, they nest in colonies on the gravel islands of the South Island's braided rivers. Recent studies show their population has declined by 85 per cent during the last 35 years. Outside of the breeding season, you are likely to see them feeding on insects around paddocks, beaches and towns.

Threats: Introduced predators - cats, hedgehogs, stoats, ferrets, weasels and dogs, and wilful human disturbance of nests. There have even been cases where people have used the colonies for shotgun practice, with 16 shot birds found on the Ashley River in 2006.

What people can do to protect them: Leave the nesting colonies alone. Keep your dog on a lead if walking by braided rivers during nesting time. Report anyone seen harming or disturbing these birds to the DOC hotline (0800 362 468). Join a local river care group (doc.govt.nz/canterburygroups). - Sarah Ensor, community relations ranger for DOC's Waimakariri area office in Rangiora

Whitebait, inanga/inaka (*Galaxias maculatus*) Whitebait, those tiny, transparent creatures found in our streams, are the young of some of New Zealand's precious native fish. Inanga are the fish most commonly caught in the whitebait catch in Canterbury. They arrive as juveniles in our rivers by the tens of thousands. However, the many threats to this species mean their mortality is very high and recent research found that more than 50 per cent of all eggs laid did not survive to hatch.

Description: Adult inanga are slender, silvery fish about 10 centimetres long. In autumn each year, the adults move down the lowland streams to the tidal area to spawn on big spring tides among riparian vegetation. The eggs hatch on the next spring tide. The tiny fry are swept out to sea, where they grow to the juvenile fish we recognise as whitebait. After several months at sea, these small fish return to fresh water in spring. Most inanga live for only one year and die after spawning.

Distribution: Found in places as diverse as Chile, Australia and Argentina, inanga are the most widely distributed native freshwater fish in the world.

Threats: Continuing degradation of lowland waterways and the destruction of spawning sites. Predators, both marine and freshwater species, such as shags, herons, brown trout and eels. Then there are whitebaiters.

What people can do to protect them: Protect the spawning grounds. Fencing the riparian tidal margins increases egg survival by allowing the vegetation to grow dense and maintain humidity. Fencing the upper reaches can improve water quality and habitat. Catch whitebait only according to the regulations doc.govt.nz/whitebait. - Anita Spencer, biodiversity ranger for DOC's Mahaanui area office in Christchurch

Hector's dolphin/upokohue (*Cephalorhynchus hectori hectori*) These dolphins are under serious threat. They are most at risk during summer when they come close inshore to breed, putting them in danger from nets, boat propellers and pollution.

The introduction of cheap-to-produce monofilament nets and a large increase in inshore fisheries, including the use of set nets and mechanised trawling, have led to a large increase in the bycatch of Hector's dolphins and a dramatic decrease in their numbers.

Description: Hector's dolphins, and the even more threatened North Island sub-species Maui dolphins, are among the world's smallest dolphin. Adult Hector's dolphins often don't exceed 1.5 metres in length and weigh between 40 kilograms and 60kg. They have a dark, rounded dorsal fin. Their bodies are a distinctive grey, with white markings and short snout.

Distribution: Hector's dolphins are endemic to New Zealand and are found mainly around the South Island, but their distribution is patchy. Populations are concentrated between Haast and Farewell Spit in the west, Banks Peninsula in the east, Te Waewae Bay and Porpoise Bay/ Te Whanaga aiahe in the south and Cloudy Bay in the north.

They are generally found in waters less than 100m deep.

Threats: Because they are slow to breed, deaths from being caught in nets, hit or harassed by boats, or poisoned by pollutants in the water are even more devastating to their population.

What people can do to protect them: Don't abuse their friendly, inquisitive behaviour. Obey the marine mammal regulations and slow down or stop when in contact with the dolphins. Let the dolphins come to you and if they decide to move away, let them go. Making sudden changes in speed or direction should be avoided. - Derek Cox, biodiversity ranger for DOC's Mahaanui area office in Christchurch

Longfin eels/tuna (*Anguilla dieffenbachii*) A dark, toothy monster lurks in the depths of our lakes and waterways, but there are many reasons to be in awe of the magnificent longfin eel.

Description: Longfin eels grow from one millimetre in length to up to 2m. They are legendary climbers and have made their way well inland in most river systems, even those with barriers, like waterfalls and dams. Longfin eels breed only once, at the end of their life. When they are ready to breed, they leave New Zealand and swim 5000km into the tropical Pacific to spawn. There, the females lay millions of eggs that are fertilised by the male. The larvae reach New Zealand by drifting on ocean currents.

Distribution: Longfin eels are found only in New Zealand.

Threats: Longfin eels are "in decline" and there is no doubt that habitat loss is a large cause. Changes caused by hydro development, drainage and irrigation schemes and river diversions reduce their habitat and the water available for aquatic life. Culverts and dams can prevent their migration. A big increase in eel fishing has led to significant stock reductions in some areas, with a marked decline in the average size caught. Longfin eels can live for up to 80 years and are slow-growing, which also limits their fecundity.

What people can do to protect them: Protect wetlands, particularly in lowland areas. Take only what you need when eel fishing. Killing an adult that reproduces only once obviously has a big effect on the population. - Rosemary Clucas, freshwater ecology ranger for DOC's Raukapuka area office in Geraldine

Basking shark (*Cetorhinus maximus*) The second-largest living fish, after the whale shark, it used to be commonly seen off the Canterbury coast, often in large groups of 50 or more. Records of basking sharks off the Canterbury coast have declined dramatically since the mid-1990s. Coastal residents, pilots and skippers familiar with basking sharks all say the same thing: "Basking sharks used to be fairly common, but we haven't seen any for ages". Add to this the decline in the basking shark bycatch in commercial fisheries and there is reason for concern.

Description: They grow up to at least 9m, with reports of up to 12m in length. However, like the whale shark, they are filter-feeders and are not to be feared by humans.

Distribution: They are found in all the world's temperate oceans. In New Zealand, they are mostly seen around the South Island and lower half of the North Island, swimming slowly at the surface with their mouth wide open to filter small planktonic animals.

Threats: The International Union for Conservation of Nature's Red List assesses basking sharks as vulnerable globally and endangered in the Northeast Atlantic and Northwest Pacific. Their biggest threats are humans, who use them as a source of food, for their fins and oil. Off the coast of Canterbury, many have been caught in nets as bycatch. Climate changes may also have affected their food sources.

What people can do to protect them: Abide by the set-net fishing regulations, which also prohibit the commercial fishing of basking sharks. Report sightings of the sharks to your local DOC office. - Fraser Maddigan, biodiversity ranger for DOC's Mahaanui area office in Christchurch

Department of Conservation rangers highlight species that may be gone before you...

1,415 words

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THEPRE

4

English

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Department of Conservation rangers highlight species that may be gone before you knew they were there. When we think of endangered species in New Zealand our first thoughts are kiwi or kakapo. However, the following local species could be lost from under our noses before we even knew they existed.

Orange-fronted parakeet/ kakariki karaka (*Cyanoramphus malherbi*) Most people are unaware that in three beech valleys, high in the Southern Alps, a critically endangered parakeet is fighting for survival. In a green forest it is a brief, green blur zooming about the canopy at high speed. Even if they saw a likely suspect, it would more probably be the almost identical yellow-crowned parakeet. When our native parakeets are spotted, a common response is: "They must be Australian!"

Description: The orange-fronted parakeet is a little bigger than a budgie and has a tail nearly as long as the rest of its body. They are green all over except for azure-blue edges to the primary wing feathers, a lemon-yellow crown and an orange stripe (frons) just above the bill. The much more common yellow-crowned parakeet has a golden-yellow crown with a bright scarlet stripe above the bill, and is a yellower green. Orange-fronts generally feed high in the canopy, on seeds, flowers and insects. They are fast, agile flyers and climb all over the place. They breed in holes in beech trees from late December through to April and lay up to 10 eggs, sometimes having two or more clutches. Lifespan in the wild is unsure, but an old bird might be one about 6 or 7.

Where they are found: The only natural populations of kakariki karaka exist in three valleys in Canterbury; the Hawdon and Poulter valleys in Arthur's Pass National Park and the South Branch of the Hurunui within Lake Sumner Forest Park. The Hawdon valley provides by far the best chance to see one. There are translocated birds at islands in Fiordland, the Marlborough Sounds and the Bay of Plenty.

Threats: Introduced predators, in particular the rat. Rats eat females and eggs when they nest. Over 85 per cent of all orange-fronted parakeets were lost during the big rat plague of 2001. However, stoats, possums, cats and hedgehogs are all killers too.

What people can do to protect them: Raise awareness of our native parakeet. Do a school project on the species. Let others know of its existence and plight. Go see if you can spot one for yourself.

doc.govt.nz/orange-fronted-parakeet

- John Kearvell, biodiversity ranger for DOC's Waimakariri Area Office in Rangiora

Long-tailed bat/pekapeka (*Chalinolobus tuberculatus*) What New Zealander flies like a swallow, is the size of your thumb, has a fur coat and lives for up to 20 years? Not sure? Nor are many of the people who share their homes with one of New Zealand's few terrestrial native mammals-the long-tailed bat or pekapeka.

Description: Pekapeka are nocturnal, insect-feeding mammals. They have been described as natural insecticides, as a single bat can consume over 600 insects in one night. Bats are dependent on old trees with cavities for breeding. They prefer to roost in native trees but will roost in introduced trees if they have for natural cavities.

Where they are found: Once common in Christchurch, South Canterbury now supports the only known long-tailed bat population on the East Coast of the South Island. This population is limited to a small area from Peel Forest in the north, southwards through the foothill gorges of the Orari, Waihi, and Te Moana rivers, Geraldine, and the Kakahu and Opihi rivers. Geraldine is one of the few towns in New Zealand where it is possible to see long-tailed bats. They flit like large butterflies at dusk as they emerge from giant totara and matai in Talbot Forest.

Threats: Introduced predators - rats, stoats and possums. Loss of native forest is also a major problem.

What people can do to protect them: Protect native forest remnants such as Peel and Talbot forests, and undertake predator control. If you think you have a roosting tree, ask DOC to check it out.

doc.govt.nz/longtailedbat.

- David Anderson, biodiversity ranger for DOC's Raukapuka Area Office in Geraldine

Kaki/black stilt (*Himantopus novaezelandiae*) Few know that the world's rarest wading bird is now only found in Canterbury (And it sports the colours red and black). Many are unaware that kaki exist simply because few of the critically endangered bird remain.

Description: Kaki are incredibly delicate, with a fully mature adult weighing only 260 grams. Young birds are a motley white and black colour, but when they reach two years they become completely black with long, red legs and a very long, black beak. Females usually lay a clutch of four speckled eggs which are incubated by both the male and female birds. They feed on aquatic insects like mayflies, caddisflies, midges and waterboatmen, along with snails and fish.

Where they are found: Kaki used to reside throughout the whole of New Zealand but are now mostly found in the Mackenzie Basin and Waitaki region where there are approximately 200 birds left (there were just 23 birds in 1981) . Your best chance of seeing kaki is to take a tour of the visitor hide in Twizel. Tours can be booked through the local DOC office during spring and summer.

Threats: Predation by stoats, ferrets, wild cats and hedgehogs. Invasive weeds within riverbeds and wetlands can also be a problem as they provide hiding places for predators.

What people can do to protect them: If you see a kaki outside of the Mackenzie and Waitaki Basin regions please report it. The bird may have colour identification bands on its legs and if you can determine these it is very useful information to pass on. Failing that, a digital image would be much appreciated (TwizelAO@doc.govt.nz).

doc.govt.nz/kaki - Kiersten McKinley, community relations ranger for DOC's Te Manahuna Area Office in Twizel

Canterbury mudfish/kowaro (*Neochanna burrowsius*) I guess a small, secretive, well- camouflaged, nocturnal animal with a name like mudfish is never going to become the country's national icon but these little Cantabrians are pretty neat when you study them more closely.

Description: Mudfish are a **galaxiid** - this family also contains whitebait species. The adults are brown and have a cigar-shaped body with reduced fins so they can swim eel-like through vegetation in waterways. The bones in their head are strong, thought to help them burrow down into the substrate when water recedes in late summer. Mudfish can spend up to two months underground in moist chambers waiting for the water to return, but this is physiologically hard on the fish, and mortality can be as high as 30 per cent. However, this adaptation means that mudfish can live in places other fish can't and has led to their nickname of the "Fish and Chip Fish" as farmers used to dig them up with their potatoes.

The adults lay eggs on aquatic vegetation in late winter and spring. After two weeks, the eggs hatch and one-centimetre-long larvae emerge. The larvae are diurnal which helps avoid predation by their parents!

Where they are found: Mudfish occur at low elevations in Canterbury-from around Oxford south to the southern banks of the Waitaki River. Historically they were more widespread throughout the Canterbury Plains in wetlands that are now drained. Found in spring-fed streams, ponds and wetlands and modified waterways.

Threats: New Zealand's second most endangered native fish has the highest threat ranking of "nationally critical". The draining and clearing of the Canterbury Plains has isolated populations and made them vulnerable to extinction, due to secondary factors such as harsh summer droughts or predation. Most mudfish are found on private property and few sites have any form of legal protection. Natural predators include eels, herons and brown trout.

What people can do to help protect them: Canterbury mudfish can exist in a productive farming landscape if sites are managed responsibly. The presence of aquatic vegetation is important. This is a good time of year to look in your ponds and streams and see if you can spot the young larvae.

doc.govt.nz/mudfish - Anita Spencer, biodiversity ranger for DOC's Mahaanui Area Office in Christchurch

Document THEPRE002011114e7ar0008h

Chance of dam rests on admissibility-of-evidence ruling

By LYNDA VAN KEMPEN

596 words

27 October 2011

Otago Daily Times

OTGO

English

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A HIGH Court hearing yesterday signalled the next round of legal proceedings in the battle over whether a hydro-electric dam could be built on the Nevis River.

An Environment Court hearing on the matter is on hold pending the result from yesterday's fixture in the High Court at Dunedin. Pioneer Generation asked the court to determine whether the New Zealand and Otago Fish and Game Councils could present evidence on native fishery habitat to the Environment Court.

Justice Lester Chisholm has reserved his decision but said "it is not the purpose of this jurisdiction, and this court, to get involved in factual issues like you want me to get involved in here."

The councils had earlier applied for an amendment to the existing water conservation order on the Nevis so damming or diversion was banned. A special tribunal considered the views of 248 submitters and its finding, in August last year, was in favour of the amendment.

The tribunal, set up by the Ministry for the Environment, said the ban was needed to protect the habitat of a native fish called **Galaxias gollumoides**, a species only found in the Nevis.

The tribunal's recommendations have been appealed by three parties _ Pioneer, the fish and game councils and Whitewater New Zealand.

Pioneer wants the option left open for potential hydro development on the river. The councils are seeking the river's wild and scenic landscape values and trout fishery values to be recognised as "outstanding" when the matter is reconsidered. Whitewater New Zealand wants protection of the "nationally outstanding" whitewater kayaking amenity provided by the river.

The Environment Court will hold an inquiry and make recommendations to the Minister for the Environment.

Pioneer Generation counsel Susan Rowe told the High Court the fish and game councils should not be permitted to present evidence to the Environment Court on the native fishery habitat as it was outside the terms of their statutory authority.

Pioneer's intention was not to obtain a "blanket ban" on the councils' advocacy at the Environment Court, but rather to restrict them to subjects within their statutory powers.

Fish and game had responsibility for sports fish habitat management, maintenance and enhancement, but advocacy on native fish habitats and enhancement was the responsibility of the Department of Conservation, she said.

The councils had not proven any relationship between the habitat of sports fish and the habitat of native fish.

Justice Chisholm asked if Pioneer was seeking to "noble" the fish and game councils so they could not make any submissions on galaxiids.

Counsel for fish and game, Jackie St John, said Pioneer was "effectively" asking for the councils to be excluded from the Environment Court process.

"Fish and game's concern is if its role is proscribed unnecessarily _ that might limit the evidence the Environment Court receives and the impact of the inquiry," she said.

"It would also unduly fetter the Environment Court's ability to run its own inquiry and set an unhealthy precedent."

A restriction on the evidence it could present would prevent Fish and Game from opposing and testing Pioneer's submission to the Environment Court.

"The effect of a prohibition [on damming] is that it preserves and protects gollum **galaxiid** and it also, coincidentally, protects the sports fishery, in its existing state."

The galaxiids were matters that related to the councils' function and interests, Ms St John said.

She believed a link had been made between the habitat of native fish and that of sports fish.

Document OTGO000020111026e7ar0000k

Finds prove there's life in maars

By JOHN GIBB

596 words

12 October 2011

Otago Daily Times

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Ancient secrets ... University of Otago geologists Associate Prof Daphne Lee and Dr Jon Lindqvist examine a piece of kauri gum, believed to be more than 20 million years old. PHOTO: GERARD O'BRIEN

UNIVERSITY of Otago researchers have proved there really is life in maars.

And a recently discovered "treasure trove" of thousands of fossilised flowers, fruits, mummified leaves, insects and other ancient specimens found in Otago-Southland is likely to help revolutionise the understanding of the origins of New Zealand's modern flora and fauna.

Otago University geologist Associate Prof Daphne Lee is "absolutely over the moon" to have gained a \$767,000 grant, over three years, from the prestigious Marsden Fund, to study the fossils, and to help collect many more.

A maar is a shallow, circular crater of volcanic origin, which is often filled with water.

Otago researchers have found fossils in many contexts, including preserved in fine lake sediments, or in amber, including in maar lakes, oil shale lakes, and swamp and river deposits.

All the finds have been made on private land, including near Middlemarch, and in the Nevis Valley, near Cromwell, and at Landslip Hill, near Gore.

A paleobotanist, Prof Lee is one of 26 Otago University principal investigators to have gained grants totalling \$17.8 million in the latest annual Marsden funding round.

Her research project is titled "Life in and beyond maars" and raises the possibility of a "revolution in understanding" of large changes in the environment and in plant and animal life that occurred 23 million to 10 million years ago, during the Miocene period.

The origins and history of New Zealand terrestrial biota _ all plant and animal life _ were "complex, controversial and poorly understood".

"These fossils provide a remarkably comprehensive window into the world from which the distinctive modern day biota originated," she said.

The "exquisitely well-preserved" Miocene fossils and analysis of ancient sediments would enable researchers to "reconstruct whole Miocene ecosystems".

Dr Dallas Mildenhall, from GNS Science, Lower Hutt, is co-principal researcher in the project, which also involves Otago geology research fellow Dr Jon Lindqvist and Dunedin paleobotanist Jennifer Bannister, as well as other colleagues in Australia and Germany.

Finding and analysing the ancient fossils was "always exciting", Prof Lee said.

"You can't predict what you're going to find," she said.

"It's been buried for 10 to 20 million years and we're the first people to ever see it.

"Everyone wants to travel back in time but we're the only ones who can actually do it," she joked.

The "stunning array" of fossil finds, including flowers containing pollen, fruits and seeds, as well as microscopic algae had come from the recently-found sites, mainly over the past three years.

Many of these types of organism were rarely preserved as fossils and hardly ever with such detail.

Otago's climate 23 million years ago was likely to have been warmer than it is today, perhaps similar to temperatures in southern Queensland, about 20degC throughout the year, researchers said.

Early in their investigation, researchers have already achieved a series of fossil "firsts".

Three months ago they made the first confirmed discovery of a fossilised insect in kauri gum _ a tiny mite.

Discovered at a lakesite in 2008 were two fossil orchids, which are the only known orchid fossil specimens throughout the world.

A 15cm-long fossilised fish found about five years ago by Prof Lee is, at 23 million years old, the world's oldest known fossilised **galaxiid** fish.

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ALL AT SEA

BINGHAM Peter
866 words
11 October 2011
Taranaki Daily News
THDAIL
15
English

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It's the season for whitebait and the delicacy has been running. Associate editor Peter Bingham and fish guru Peter Bennett try two different recipes.

Whitebaiting brings out the best No 8 wire ingenuity in Kiwis.

Catching the "white gold" requires skills that vary from river to river and at \$120 a kilogram (retail) it's big business for some, particularly in the South Island.

In Taranaki it's a seasonal pastime for most and largely the domain of people at the back end of their working lives. Big catches on our more popular rivers can provide a financial return (either over or under the table) but for the majority it's just the chance of catching a few cups of the delicacy that drives them.

Some of the private stands on the Mokau and Tongaporutu rivers are works of art and some of the mechanisms used for getting nets in and out of the river deserve patenting.

The "bloody good nature" of some whitebaiters is the often the source of a feed for many of us.

The fine chaps at Egmont Seafoods (ESL) sort of fall into that category. They don't get to fish the tide but they do know someone who knows plenty of others who do. Cascade Whitebait, based on the West Coast of the South Island, is their supplier of both fresh and frozen.

"People get hung up on the price but we kept ours as low as possible," Peter Bennett said. "We only make about \$20 a kilo but people like them so we get them in. Pound for pound they're still cheaper than oysters."

ESL sells 20kg to 30kg a week and you can buy them in an assortment of pack sizes.

They're interesting critters, whitebait. There are five varieties but the most common is **Galaxias maculatus** (inanga) which is a market favourite because of its transparency.

Everybody seems to have their personal recipe for cooking whitebait so we decided on the "battle of the Petes" this week.

Pete Bennett cooked a feed for his workers (and the bank manager who just happened to time his visit to perfection). It was a simple recipe that produced a nice thick fritter served on an english muffin. He placed a dollop of fritter mix (see recipe) in a ring on a hot plate and cooked it until the whitebait on top of the fritter turned white.

"The rings are an efficient way of making a consistent fritter and you don't have to flip them. They fit perfectly on a muffin."

He insists on using free-range eggs "because of their wholesome deep colour" and ESL gets a ready supply from the Okato business of Barry and Ruth Proffitt.

Driven by a need to try something different, I decided to sautee mine. This was new territory and proved more finicky than the "riverbank" method where you whisk a couple of eggs with enough whitebait to make a juicy fritter. But it was a novel alternative and served on a bed of fluffy potato mash, garnished with lemon zest, salt, pepper and parsley. The taste of the whitebait seemed more pronounced but it was too easy to eat them in haste. Fritters last longer.

The secret to the taste was to cook them only until they turned white. Too long and they become toothpicks.

BING'S SAUTEED WHITEBAIT

250gm of whitebait

garlic butter

flour

parsley

salt and pepper

z These are best cooked in half-cup servings. For each serving thoroughly drain the whitebait and spread them out on a dry teatowel. Lightly sprinkle flour over the whitebait and lift the corners of the towel to ensure an even coating. After removing the excess flour, place the coated whitebait into a hot fry pan containing the melted garlic butter. Use a slice to toss the fish until they just turn white. This will only take a few seconds. You can serve them as you go and they are perfect on a bed of fluffy mashed potatoes and grated lemon rind. Garnish the finished dish with lemon juice, salt, pepper and parsley.

PETE'S WHITEBAIT FRITTER ON TOASTED ENGLISH MUFFIN

250 grams of whitebait

1 free range egg

salt and pepper to taste

1 sprig finely chopped parsley - (optional)

egg rings or similar - (approx 75mm diameter x 10mm high)

packet of english muffins

1 lemon

z Beat egg with vigour. Add salt, pepper and parsley and beaten egg into the whitebait and gently fold through as though you were massaging a sore shoulder. Cut the muffin through the middle, lightly butter and put face down into hot pan or skillet. Place your egg rings or whatever on the hotplate and spoon in the whitebait mixture to the desired amount. If you don't have rings, don't worry, these are only to keep the shape consistent. Cook until the top bait is white through - should be about 3 to 5 minutes. Place the fritters on top of the muffin, sprinkle some more salt and pepper to taste and squeeze a small amount of lemon juice to zing the taste buds. Makes six muffin-sized fritters.

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Mine does green deal over gold

204 words

28 September 2011

Bay of Plenty Times

APNBPT

English

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OceanaGold and the Department of Conservation have reached agreement on the proposed expansion of the Macraes gold mine.

OceanaGold sought to extend its operations on to the private land it holds and DoC was keen to minimise any impact on rare native plant and animal species.

The expansion of the gold mine, New Zealand's largest, will create nearly 600 jobs in East Otago.

DoC's Otago conservator Marian van der Goes said under the agreement, OceanaGold will sign a covenant to permanently protect and enhance 155ha of comparable habitat.

“OceanaGold has also agreed to fund a \$100,000 programme to maintain and enhance populations of roundhead **galaxias**, an acutely threatened fish,” Ms van der Goes said. “There are no grand or Otago skinks in the affected area but the habitat of other lizard species, birds and 10 to 15 rare plant species will be affected.”

The Macraes mine, near Palmerston, has been operating since 1990 and produces more than 3 million ounces of gold a year.

The consents have been sought by OceanaGold to enable the mine to operate for another 10 years. If consents are granted, work is expected to begin before the end of the year.- APNZ

Document APNBPT0020110928e79s0001d

Oceana Gold says mine expansion will create almost 600 jobs

ehoolihan

141 words

25 September 2011

Radio New Zealand News

RNZNEW

English

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Oceana Gold says the expansion of the Macraes Flat mine in East Otago is expected to generate almost six-hundred jobs during its 10- year life span.

The Asia Pacific gold producer and the Department of Conservation have reached an agreement on expanding the mine.

The Macraes project general manager, Bernard O'leary, says the company will sign covenants that will permanently protect one-hundred-and-55 hectares of comparable habitat.

Oceana Gold will also fund a one-hundred-thousand dollar programme to maintain populations of an acutely threatened fish, the roundhead **Galaxias**.

In turn, the department will not oppose applications for the mine's expansion.

Mr O'leary says the expansion will begin as soon as resource consents are accepted from the Otago Regional Council and Waitaki District Council.

Document RNZNEW0020110924e79p003ei

Agreement reached between Oceana Gold and DOC

jhorne

111 words

24 September 2011

Radio New Zealand News

RNZNEW

English

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The Department of Conservation and Oceana Gold have reached an agreement on a proposed mine expansion.

The Asia Pacific gold producer wants to extend its Macrae's mine which is on private land, but the East Otago area is also home to rare native plant and animal species.

The agreement will result in Oceana Gold signing covenants that will permanently protect one-hundred-and-55 hectares of comparable habitat.

The company will fund a one-hundred-thousand dollar programme to maintain populations of an acutely threatened fish, the roundhead **Galaxias**.

In turn, the Department will not oppose applications for the mine's expansion.

Document RNZNEW0020110923e79o005he

Mining company pays Doc \$100,000

By REBECCA FOX

276 words

24 September 2011

Otago Daily Times

OTGO

English

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THE Department of Conservation will receive \$100,000 from gold-miner Oceana Gold in return for taking a neutral stance on an application to expand the East Otago gold mine.

The director-general of conservation, concerned about the loss of habitat for the Taieri flathead galaxiids, longfin eel and the indigenous flora, had asked for the resource consents for the mine expansion to be declined. However, yesterday he told the hearing panel through counsel Pene Williams that the payment and a trout barrier would sufficiently deal with adverse effects of the project.

"For these reasons the director-general now neither supports nor opposes the resource consent applications," she told the fourth day of the hearing in Dunedin.

The payment would fund maintenance and protection work for roundhead galaxiids in the Kyeburn catchment, she said.

Department of Conservation Resource Management Act planner Bruce Hill said Doc might be seen to have sacrificed the resident population of galaxiids, "which it had", due to the understanding of the inherent inflexibility of the mining operation and its importance to the region.

"We could not devise a means by which the adverse effects of the MPIII project on those resident galaxiids could be avoided without seeking a decline of the project or either feasibly remedying or mitigating the adverse effects."

The fund would allow for "biodiversity offset" which would provide for a net benefit to Otago's non-migratory **galaxias** flock, he said.

Doc freshwater ranger Pete Ravenscroft said the fund would give Doc "better bang for its buck" by protecting galaxiids in the Kyeburn rather than the mine-affected Deepdell Creek.

Document OTGO000020110923e79o00017

Oceana Gold agrees to conservation measures

Department of Conservation (DoC)

198 words

23 September 2011

02:21 PM

Fuseworks Media

FUSMED

English

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Agreement has been reached between the Department of Conservation (DOC) and Oceana Gold on the company's proposed Macraes mine expansion.

Oceana Gold wants to extend its operations on private land it holds and DOC is keen to minimise any impact on rare native plant and animal species.

DOC says the agreement addresses its concerns about impact of the proposal and, as a result, the department has agreed to neither support nor oppose the applications for resource consents from the Otago Regional Council and the Waitaki District Council for the Macraes Phase III Project.

The Otago Conservator Marian van der Goes said after today's Oceana Gold hearing in Dunedin, "The agreement will see Oceana signing covenants that will permanently protect and enhance 155ha of comparable habitat as a result of the project," Ms van der Goes said.

Oceana has also agreed to fund a \$100,000 programme to maintain and enhance populations of roundhead **galaxias**, an acutely threatened fish.

There are no grand or Otago skinks in the affected area but the habitat of other lizard species, birds and 10-15 rare plant species will be affected.

Document FUSMED0020111124e79n005pv

Oceana Gold agrees to protection programme

NZPA

196 words

23 September 2011

03:45 PM

Mediacom

NZPAME

English

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Document NZPAME0020110923e79n0002u

Get a wriggle on

442 words

8 September 2011

Hawke's Bay Today

APNHBT

English

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WHITEBAIT season is upon us again. The river banks are dotted with DIY architecture, and populated with hordes of net-wielding gourmets on the lookout for a familiar flash of silver - those **galaxiid** sprats making the pilgrimage from their marine nursery to their freshwater adult home.

Whitebait is a global term for a variety of juvenile fish eaten whole. In New Zealand it refers to the young of five different native fish of the **Galaxias** genus: the inanga, koaro, banded kokopu, giant kokopu and shortjaw kokopu.

At the whitebait stage the five are almost impossible to tell apart. The inanga is the most common and its life cycle the best-documented.

Eggs are laid and fertilised in estuary vegetation on a spring tide, and the next spring tide triggers the hatching. As the tide recedes, the larvae are washed out to sea, where they spend the winter fattening up on plankton. Their return to fresh water heralds the beginning of spring and the rumbling of human bellies.

In the days before refrigeration excess fish were dried for export or even composted or fed to the chickens. In 1887 the first whitebait canneries were established on the Waikato and West Coast with canning continuing until the 1950s, eventually superseded by new technology and a steadily diminishing whitebait population.

The decline can be blamed on pollution, overfishing and the wanton draining of wetlands. The eggs need plenty of foliage to keep them shaded and moist as the spring tide ebbs. This possibly explains why the West Coast whitebait fishery remains so comparatively viable as the largely inaccessible coastal wetlands remain untouched - but even they have been decimated.

On the west coast of both islands the preferred method is to use scoop nets whereas over here on the east coast the preferred method is to use set nets which through a variety of funnels direct the whitebait into the end of the net, some with and some without traps. A strip of white board can be used as a ``marker bar" which highlights passing whitebait.

And if you are confident of getting a few whitebait take a couple of eggs, some butter, a gas stove, and a small skillet with you, along with a loaf of fresh bread so you can cook up a few patties while you are there. Simply whisk the whitebait through a couple of eggs and fry.

Personal choice will dictate whether you add anything else to the egg mix, such as a can of beer, but most hardened whitebaiters are quite happy to put the whitebait between two slices of buttered white bread and bliss out.

Document APNHBT0020110908e7980000s

Natives settle into new home OurTreasures

448 words

6 September 2011

Northern Advocate

APNNAD

English

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Last week we acquired some New Zealand native fish, ready for Conservation Live Day on September 11, to replace the eels we have held in our aquarium since Matariki.

Four fish set out from the Maharangi Institute at Wellsford, accompanied by David Cooper to install and set up the tank, but only three arrived at their destination of Kiwi North. The common bully was fatter than when they set out from Wellsford and the torrent fish was nowhere to be found. We had all believed that they could live peacefully together provided they were the right size. We now have a giant kokopu, a common bully and a koura (freshwater crayfish). More will be coming.

The giant kokopu is found only in New Zealand. It was the first of its species to be discovered and its colour and pattern led to the name **Galaxias**, referring to the profusion of stars in the galaxy.

It grows to a length of up to 45cm. It is one of the five species that occur in the whitebait runs that enter rivers each spring. Little is known of their spawning habits. It is thought that the adults migrate to a common spawning site but it has never been observed or any eggs discovered.

Like all galaxiids it lacks scales and has a thick, leathery skin covered with mucus. They prefer still or slow-moving rivers and lurk undercover. In their native habitat their food ranges from terrestrial insects which have fallen into the water to koura. (We hope we have the size ratio right in this case.) We are feeding our one giant kokopu (more than one and they fight) on frozen bloodworms, worms and mealworms.

The koura, or fresh water crayfish, is dark green and mottled like the stones at the bottom of the stream and is hard to see as it is so well camouflaged. As koura mostly move about at night looking for food, waving feelers and black beady eyes are the only part of the crayfish that can be seen during the day. We have been informed that they are partial to potato and carrot. We have been observing some delightful koura housekeeping behaviour as it picks up stones and moves them to a more desirable site. It is obviously completely at home.

The common bully is found in many habitats, streams, lakes, rivers and wetlands. They feed on insects and crustacea and have a flexible diet utilising what their habitat offers and the occasional torrentfish.

Come and see these interesting fish on Conservation Day, Sunday, September 11. Kiwi North (Whangarei Museum, Kiwi House and Heritage Park) is open daily 10am-3pm.

Document APNNAD0020110906e79600008

Nets set to capture share of secretive, sought-after native fish

715 words

3 September 2011

The New Zealand Herald

NZHLD

English

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The whitebait season is under way around the country, with the West Coast of the South Island opening two days ago. The rest of the country opened on August 15, and while catches have been slow, the fishing usually improves later in spring.

Whitebaiters are traditionally protective about their spots, which are called stands and can change hands for considerable sums.

The whitebaiting culture is contrary to all other fishing. Many people live on the river side in cabins and baches and caravans for the season, and some make a reasonable income.

The regulations are set and administered by the Department of Conservation, because they involve native fish. But outside of the season and certain netting restrictions and hours when fishing is allowed, whitebaiting is wide open to amateur commercialism. There is no quota. Anybody can catch whitebait and sell them on the side of the road. Of course there are legitimate buyers, but there is no limit on volumes.

Theories abound for the lack of whitebait running at certain times. Some say the tides were not big enough to hatch the eggs, which displays a certain understanding of the biology involved. That in itself is unusual, for the life story of the little fish is unique. They don't run up the rivers to spawn, as is commonly argued. In fact it is the reverse.

What we know as whitebait are the young of five members of the native **galaxiid** family - inanga (the most common), banded kokopu, koaro, giant kokopu and short-jawed kokopu. Smelt are often found with them, as are the larger, silver, cucumber-smelling fish which aficionados discard.

The name kokopu is commonly seen on streams, where the road sign will say Kaikokopu Stream, which refers to the traditional values of the stream as a fishery for whitebait in times gone by. Kai says food, and kokopu says whitebait.

Apart from smelt, the adults are secretive fish which are rarely seen and live in swamps and fast-flowing streams and rivers. But they need the natural habitat with bush-clad banks and the clearing of bush from catchments has contributed much to the demise of whitebait. This is why the South Island's West Coast is the premier whitebait region, as much of the original bush and forest remains.

The adult fish migrate downstream in autumn to lay eggs on stream-side grasses and reeds on a high tide, and the eggs are exposed until the next spring tide a month later, when they are inundated, hatch and are swept out to sea.

Another factor affecting the fishery is stock grazing on the stream banks, destroying any eggs. After hatching, the tiny fish grow quickly, but many are eaten by birds and other fish. In spring the juvenile fish migrate back up the rivers and streams as the whitebait we know so well.

Of course not everybody can catch their own whitebait, and many fans rely on fish shops where the price creeps higher every year, topping \$200 a kilo in some outlets.

But buyer beware: whitebait is a generic term which is also applied to the young of various saltwater fish, and whitebait which is imported from other countries and sold under the familiar name has no resemblance in taste or appearance to what is regarded as real whitebait. If unsure about the origin of the prospective dinner in the shop window, the price is the best indicator.

We once learned a new recipe in Mokau, home of whitebait on the North Island's west coast. Don't put flour in the mix; it goes gluggy. If you want to bulk it up a bit, use a spoonful of breadcrumbs instead. Chopped parsley can also be added to fritters.

Fishing is permitted between 5am and 8pm, or 6am and 9pm when daylight saving applies. The season runs from August 15 to November 30, except for the West Coast of the South Island, where it is September 1 to November 14. On the Chatham Islands, the season runs from December 1 to February 28.

More fishing action can be found on Rheem Outdoors with Geoff, 5.30pm on TV3, and on the new internet television channel www.FishnHunt.Tv

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Document NZHLD00020110902e7930002p

Marine Biology; Findings from University of Melbourne in Marine Biology Reported

356 words

2 September 2011

Ecology, Environment & Conservation

ECECON

66

English

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2011 SEP 2 - (VerticalNews.com) -- According to the authors of recent research from Parkville, Australia, "Applying uniform population models and management strategies to widespread species can be ineffective if populations exhibit variable life histories in response to local conditions. **Galaxias maculatus**, one of the world's most widely distributed fish species, occurs in a broad range of habitats and is highly adaptable, making it an ideal species for examining variation in life history traits across large geographic scales."

"Here, we examine the spawning biology and early life history of diadromous *G. maculatus* in coastal rivers in Victoria, Australia, and compare them to other populations throughout its range. We predicted that traits associated with these critical life stages, especially those that respond to environmental conditions that vary geographically, such as seasonal cues and temperature, are likely to vary across large spatial scales. We found that spawning occurs later in Victoria than in New Zealand (NZ) and South America, but migration back to rivers occurs at the same time in Victoria and NZ, but not South America. *G. maculatus* returning to rivers are also smaller and younger in Victoria than those in NZ. Other traits, like some attributes of spawning schools and spawning habitats, did not vary across large scales," wrote N.C. Barbee and colleagues, University of Melbourne.

The researchers concluded: "Researchers and managers should be cautious when making broad assumptions about the biology of widely distributed species."

Barbee and colleagues published their study in *Marine and Freshwater Research* (Large-scale variation in life history traits of the widespread diadromous fish, **Galaxias maculatus**, reflects geographic differences in local environmental conditions. *Marine and Freshwater Research*, 2011;62(7):790-800).

For additional information, contact N.C. Barbee, University of Melbourne, Dept. of Resource Management & Geog, Parkville, Vic 3010, Australia.

Publisher contact information for the journal *Marine and Freshwater Research* is: Csiro Publishing, 150 Oxford St., PO Box 1139, Collingwood, Victoria 3066, Australia.

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DOOMSAYER PROFESSOR STILL HAS A CHANCE

ABOUT

298 words

18 August 2011

The Southland Times

SLANDT

7

English

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Southland's largest shipwreck was the Waikouaiti (362 feet and 3926 tons gross), which struck Dog Island and sank on November 28, 1939. Note the irony of the largest ship running into the largest lighthouse in Southland.

zThere have always been doomsayers predicting the end of the world and a visiting climate change expert was reported in the Otago Witness in September 1874: "Professor Plantamour, who foresaw our destruction by celestial fire last summer, has so far corrected his error as to prophesy that the Earth's inhabitants will be frozen to death in the year 2011. This date frees him at least from the embarrassment of being twitted of a second mistake." We'll know in several months whether or not he was right.

zSouthland's rarest freshwater fish is the Gollum **galaxias**, which is known from only a few swamps on Stewart Island. It gets its name from the resemblance of its large eyes to those of the troubled Gollum, from J R R Tolkien's Lord of the Rings.

zSouthland's shore whaling stations operated from 1829 to 1858. Stations were situated at Preservation Inlet, Fortrose, Waikawa, Bluff, Omaui, Sandy Point and Riverton. In the 1830s a large inshore whaling fleet added to the toll of whales and almost all were gone within two decades.

zEducation in Southland became free, secular and compulsory in 1877. Children aged between 5 and 15 attended free and attendance was compulsory between ages 7 and 13 for at least half the time the school was open. In reality, compulsory attendance was an ideal simply not achievable for many reasons.

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Document SLANDT0020110831e78i00097

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