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The 'shifting baseline' of New Zealand's whitebait fishery

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"A Christchurch gentleman returning from a holiday trip to the West Coast recently, has reported a remarkable thing while in Westport.

"He reported tons of whitebait being caught in the river and along the beach, and the enormous number secured proving too much for the local canning factory, which has run out of tins. The whitebait could not be shipped away, as no boat was in, and the residents are 'sick of the sight of them', so that several tons have been carted to the beach and buried."

This was reported in an October 1910 issue of the Marlborough Express. With the whitebait season beginning on August 15, it is timely to consider the state of the whitebait fishery in New Zealand.

Looking back in time reveals levels of resources (as well as waste) in the whitebait fishery that would astound most of us today. This bountiful supply of whitebait is regarded as almost mythical and held up as a nostalgic notion of good times long gone, beyond our own living memories.

Writer and environmental provocateur George Monbiot refers to a name coined by fisheries scientist Daniel Pauly, called "shifting baseline syndrome". This refers to how people perceive the state of their environment within the scale of their own lifetime.



A whitebaiter clears his scoop net while fishing for whitebaitin Mokau. New Zealand whitebait numbers are now in decline and with several species being threatened, calls are increasing to revise and tighten whitebait fishing regulations around the country.

People tend to refer to their own experience of the environment, and the resources contained within that, in accordance to what they have observed through their early life as "normal".

When resources such as fish, animals or plants become depleted, then shifting baseline syndrome comes into play. Calls to restore the environment by campaigners or scientists then centre around what levels we have experienced personally through our own observations.

Restoration efforts then focus on restoring the environment or resources to that baseline level.



DOC Rangers monitoring whitebait compliance in the Wairau River. Fishers who break whitebait regulations can have their gear seized and be fined up to \$5000.

What is easily forgotten is that human lives are short. This can obscure the longer-term picture: that resources we regard as "normal" have often been well depleted before our own lifetimes.

This impaired vision is referred to as "environmental generational amnesia" by Peter Kahn, professor of psychology at Washington University, to describe how people recognise ecological changes only in their own lifetimes.

Kahn describes this collective amnesia as "one of the central psychological problems of our lifetime" because it leads us to ignore the long-term state of the environment, in favour of what we perceive to be normal conditions, or seemingly intractable problems faced in the short space of our own lives.

"Shifting baseline syndrome was originally a term applied to ocean fisheries, but the implications of this thinking can extend to other environmental areas, including whitebait.

Jane Goodman, from DOC's Freshwater Team in Nelson, has identified knowledge and research gaps around migratory galaxiids and the whitebait fishery in a 2018 paper.

Gaps in knowledge are still very significant. The pressures and threats to our whitebait species are well known: impeded fish passages in waterways, habitat degradation, decreased water flows, harvesting, introduced species and climate change.

Yet the magnitude of these impacts are not well understood. There are also significant gaps in knowledge around whitebait life cycles and stock structures, which may vary greatly between species and regions in New Zealand, according to the paper.

New Zealand whitebait are made up of the juvenile forms of native fish such as giant kokopu, shortjaw kokopu, banded kokopu, koaro and inanga, collectively known as galaxiids. There's a sixth non-galaxias species, the common smelt or paraki, which is also defined as whitebait under fisheries regulations.

The whitebait we net have grown from eggs laid by adult whitebait in the previous autumn. These juveniles spend winter out at sea and before migrating back up streams or waterways to develop into adults.

The different migratory galaxiid species vary in their habitat preference and occurrence around New Zealand. Some species migrate considerable distances inland, due to their rock and waterfall climbing ability.

Adults can live in any freshwater habitat from lowland wetlands to alpine tarns. All species maintain some landlocked populations, but some species more than others. The variation in the migratory behaviour of different species makes management and understanding of whitebait populations complex.

To understand the conservation, ecology and management of our migratory galaxiids and whitebait fishery, it is important to shift our perception of what we regard as "normal" in our environment and life time.

In 1906, the Marlborough Express spoke to George McDonald, resident at Wairau Pa for more than 50 years. McDonald's observations therefore extended back to the mid 1850s as a child and he also was able to recount the observations of his forefathers before him.

In McDonald's lifetime, he observed the degradation of resources in the Wairau. Speaking back then, he pointed to factors such as trawlers operating outside the Wairau Bar and "drains being cut everywhere as the result of the pakeha's occupation of the land, and the snug places for the rangiriri [whitebait] to turn into were yearly being decreased".

He also pointed to the almost total loss of the matapura [or small fat eel], a prized resource of local Maori, blaming this on the draining of swamps.

Early 20th century baseline observations will differ from our own. But they are useful pointers to how things once were and how things could be, for future generations.

Shifting our perspective from the short term to the long term requires a jump in assumptions about what is normal in our environment. Challenging perspectives isn't always easy. A wider and longer-term appreciation of knowledge around whitebait, along with addressing threats such as habitat loss, are key to the future wellbeing of whitebait in New Zealand.

New Zealand's whitebait season runs from August 15-November 30 everywhere except the West Coast of the South Island, where the season starts on September 1 and ends on November 14. Fishing is permitted between 5am and 8pm only, or between 6am and 9pm when daylight saving comes into effect.

DOC administers regulations regarding fishing methods, timing, location and net size to ensure that enough young fish get upstream to mature and subsequently create new whitebait for the future.

For all fishers, it's important to check requirements such as; using one net at a time; staying within 10m of your net and ensuring your net doesn't exceed more than one third of the water channel width.

There are substantial penalties for offending against whitebait regulations. Fishing gear can be seized and fines imposed up to \$5000 for offenders.

Pamphlets outlining regulations are available at sport shops or your local DOC office or online at [The Whitebaiter's Guide to Whitebaiting](#).

More information: [Conservation ecology and management of migratory galaxiids](#).

- *The Marlborough Express*

Link: <https://www.stuff.co.nz/environment/105724601/the-shifting-baseline-of-new-zealands-whitebait-fishery>