



Frontispiece. Top—Banded kokopu (*Galaxias fasciatus*). Close up of head and pectoral fins of large adult from the side. Maori: kokopu.

Mid left—Shortjaw kokopu (*Galaxias postvectis*). Side view of head and pectoral fins showing undershot lower jaw. Maori: kokopu.

Mid right—Giant kokopu (*Galaxias argenteus*). Close-up of head, mouth, eye and sensory pores. Maori: kokopu.

Bottom—Giant kokopu (*Galaxias argenteus*). Side view of an adult. Maori: kokopu.

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New Zealand large galaxiid recovery plan, 2003-13

Shortjaw kokopu, giant kokopu,
banded kokopu, and koaro

THREATENED SPECIES RECOVERY PLAN 55

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Cover: Koaro (*Galaxias brevipinnis*). Close-up side view of the head of a large adult.
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Recovery plans

This is one of a series of recovery plans produced by the Department of Conservation. Recovery plans are statements of the Department's intentions for the conservation of particular plants and animals for a defined period. In focusing on goals and objectives for management, recovery plans serve to guide the Department in its allocation of resources and to promote discussion amongst a wider section of the interested public.

After preparing a technical report which was refined by scientists and managers both within and outside the Department, a draft of this plan was sent to the New Zealand Conservation Authority and relevant Conservation Boards for comment. After further refinement, this plan was formally approved by the Regional General Manager (Northern) in November 2004. A review of this plan is due after 10 years (2013), or sooner if new information leads to proposals for a significant change in direction. This plan will remain operative until a reviewed plan is in place.

The Department acknowledges the need to take account of the views of the tangata whenua and the application of their values in the conservation of natural resources. While the expression of these values may vary, the recovery planning process provides opportunities for consultation between the Department and the tangata whenua. Departmental Conservancy Kaupapa Atawhai Managers are available to facilitate this dialogue.

A recovery group consisting of people with knowledge of large galaxiids, and with an interest in their conservation has been established. The purpose of the large galaxiid recovery group is to review progress in the implementation of this plan and to recommend to the Department any changes which may be required as management proceeds. Comments and suggestions relating to the conservation of large galaxiids are welcome and should be directed to the recovery group via any office of the Department or to the Terrestrial Conservation Unit.

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Shortjaw kokopu, giant kokopu, banded kokopu,
and koaro

ABSTRACT

Recovery planning at a national level provides a framework for targeting management actions and research requirements that contribute to the improved security, and thus persistence of, threatened species. Here, the biology and threats to the persistence, on a national scale, of four native freshwater fish species, known collectively as 'the large galaxiids', are discussed. These include the threatened shortjaw kokopu (*Galaxias postvectis*) and giant kokopu (*Galaxias argenteus*), and the non-threatened koaro (*Galaxias brevipinnis*) and banded kokopu (*Galaxias fasciatus*). Degradation of habitat, barriers to recruitment and competition with introduced species are revealed as the main threats to persistence. Descriptions of time-bound management actions and research needs to counteract these factors and improve the security of the large galaxiids are therefore needed to support long-term recovery goals.

This report may be cited as:

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1. Introduction

This recovery plan incorporates four large (up to 240 mm in total length) native migratory galaxiid species: shortjaw kokopu (*Galaxias postvectis*), giant kokopu (*Galaxias argenteus*), banded kokopu (*Galaxias fasciatus*) and koaro (*Galaxias brevipinnis*). Each species is distributed throughout New Zealand in what is currently considered to be one national population (other than land-locked sub-populations). Current and historic landuse change and intensification in New Zealand has resulted in incremental habitat loss for these species, and they are now essentially absent from most of New Zealand's intensively utilised lowland plains (Hanchet 1990; Rowe et al. 2000).

These fish species are descendants of tangaroa (nga uri o tangaroa) and as such are 'nga taonga tuku iho o nga tupuna matua' ('treasures handed down to us from our ancestors'). The Ngai Tahu Claims Settlement Act 1998 requires the Department of Conservation (DOC) to consult and have particular regard to the views of Ngai Tahu when making decisions regarding the management of taonga species, such as giant kokopu.

Under the New Zealand 'threat of extinction' classification system (Hitchmough 2002; Molloy et al. 2002) the shortjaw and giant kokopu are ranked as in Gradual Decline and banded kokopu and koaro are ranked as Not Threatened. A Data Poor (DP) qualifier applies to banded and giant kokopu listings, as confidence in these is low, based on the data available for assessment.

The intention of this recovery plan is to provide strategic guidance to DOC freshwater fish conservation management in order to achieve greater co-ordination nationally and to ensure that the highest priority recovery work is undertaken. This recovery plan is intended to sit alongside Conservancy Conservation Management Strategies as a means to assist with Conservancy and Area business planning. This plan sets out the recovery programme for four large galaxiids over the next 10 years (2003-13). It has been produced in tandem with a New Zealand mudfish recovery plan (DOC 2003a), and a New Zealand non-migratory galaxiid recovery plan (DOC 2004), with the aim of guiding the conservation management of New Zealand's threatened freshwater fish species over the next 10 years. These plans have been produced under the overarching guidance of the DOC Statement of Intent (DOC 2003b), and will be linked to the strategic action plan for freshwater (FreshSAP) currently being produced. While all four species are harvested in their juvenile form as whitebait (McDowall 1965), the scope of this document does not address whitebait fishery management issues.

2. Past and present distribution and population size

2.1 SHORTJAW KOKOPU

Distributed throughout the North and South Islands of New Zealand, this species is known from only a few sites in many regions, and is essentially absent from the East Coast of New Zealand (McDowall et al. 1996) (Figs 1A and 1B). To date, land-locked populations of this species have not been documented. Although the species is one of the five galaxiids contributing to New Zealand's whitebait fishery, it is one of the least known freshwater fish in New Zealand. Until recently, this species had been found at only 2% of sites registered in the New Zealand freshwater fish database. Recent targeted survey work and improved survey technique in the Nelson/Marlborough, Taranaki and West Coast regions has led to the discovery of many new species' locations, with populations being far more abundant than indicated by the national population records (Caskey 1998; Studholme et al. 1999; Jack & Barrier 2000; Eastwood 2001; Jack et al. 2001). Whether this holds true for the rest of New Zealand remains to be verified.

2.2 GIANT KOKOPU

This species is widely distributed throughout much of the North and South Islands of New Zealand, and on Stewart Island, Great and Little Barrier Islands and the Chatham Islands. Land-locked populations exist within several New Zealand lakes. Distribution within this range is variable, with most current records occurring from Westland, Southland, Nelson/Marlborough and Taranaki. The present distribution has decreased significantly compared with that in historical records (Bonnott 2000) (Figs 2A and 2B).

2.3 BANDED KOKOPU

This species is found throughout New Zealand and its offshore islands, and is most abundant at low elevations close to the sea (McDowall 1990; McCullough 1998). As with giant kokopu, land-locked populations occur in some New Zealand lakes. Banded kokopu represent a significant component of the national whitebait catch on the West Coast. While the species remains widespread, it has declined substantially in range and abundance, particularly in intensively developed areas such as the Manawatu and Canterbury plains (McDowall 2000) (Figs 3A and 3B).

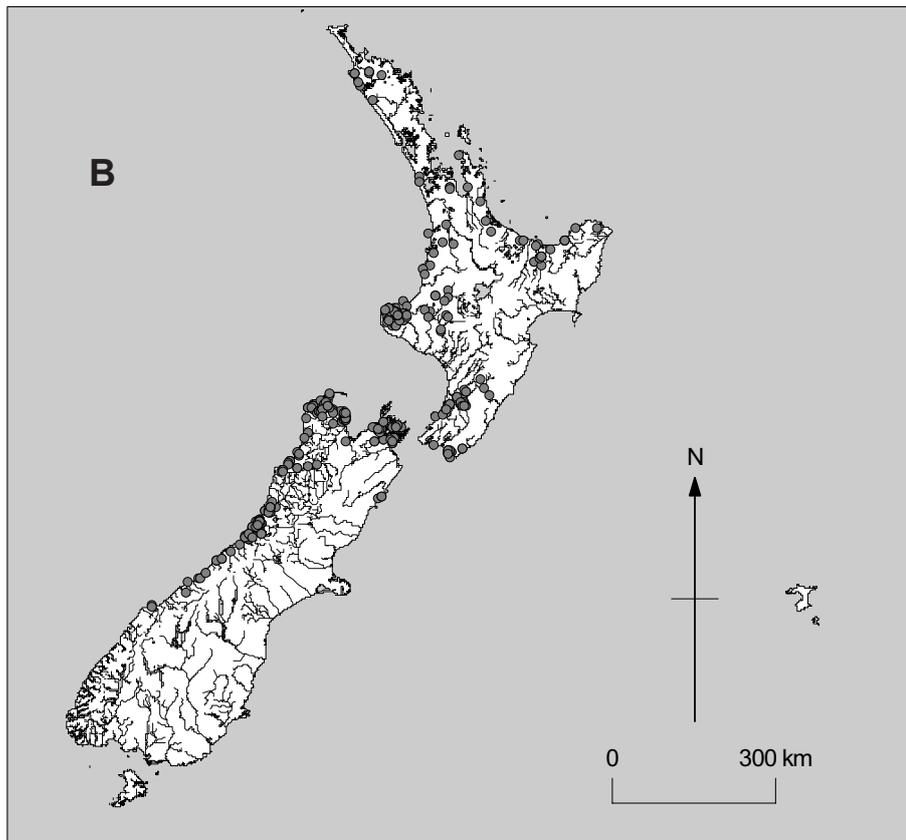
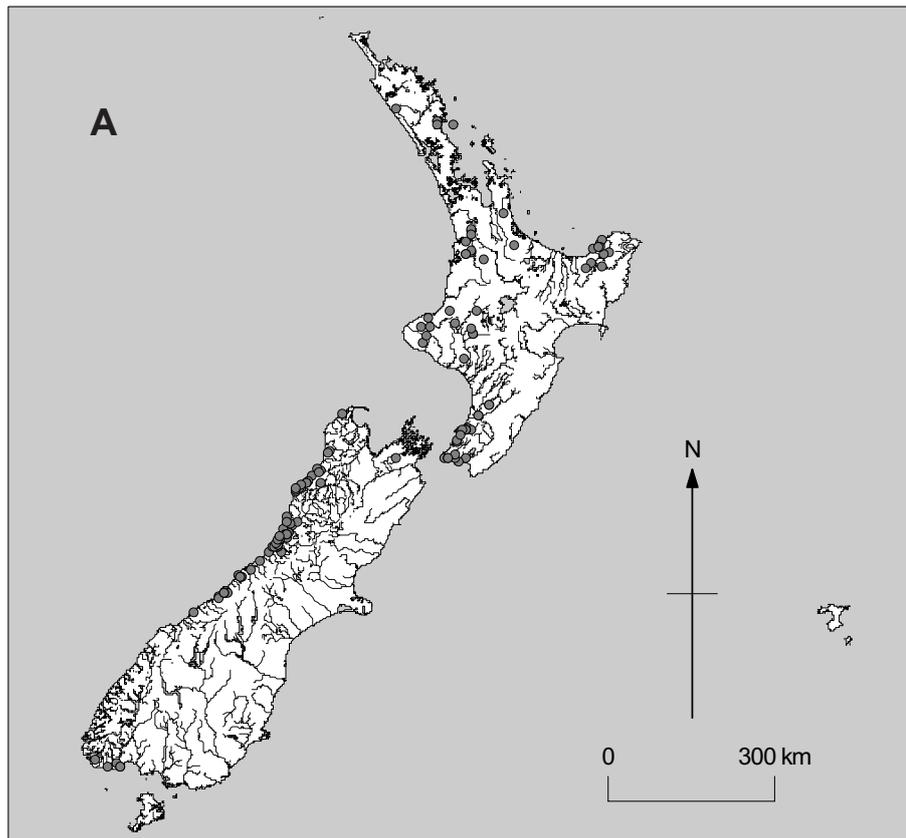


Figure 1. Shortjaw kokopu records in New Zealand: **A.** Prior to 1991; **B.** 1991 to the present.

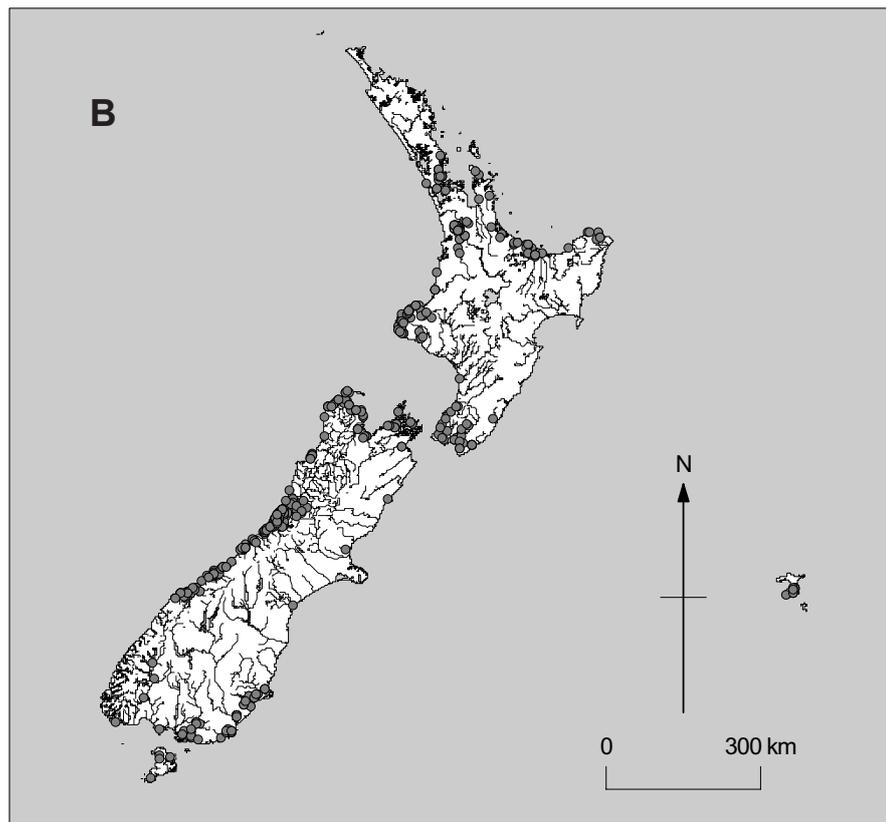
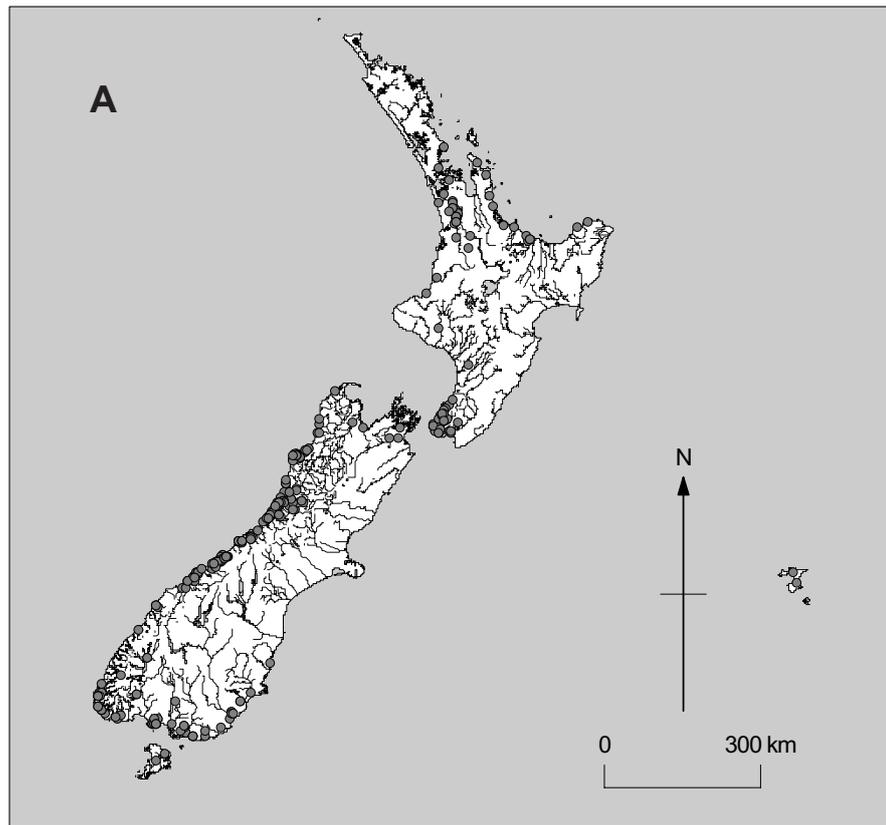


Figure 2. Giant kokopu records in New Zealand: **A.** Prior to 1991; **B.** From 1991 to the present.