

Koi Management Programme Project Challenges and Opportunities

Michelle Archer - Workstream Lead
Environmental Consultant Place Group

Te Awa o Waikato Symposium - 28 November 2023



Acknowledgements

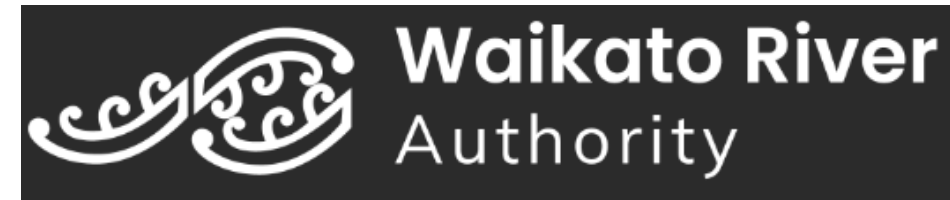
The role of Koi Workstream Lead for Waikato Regional Council is made possible by co-funding provided by the Waikato River Authority and Waikato Regional Council, with ongoing support from the Department of Conservation and Te Riu o Waikato.

Koi Management Programme (KMP) Team

Amy Macdonald - Koi Project Manager

Nigel Binks (DOC) - Workstream Lead

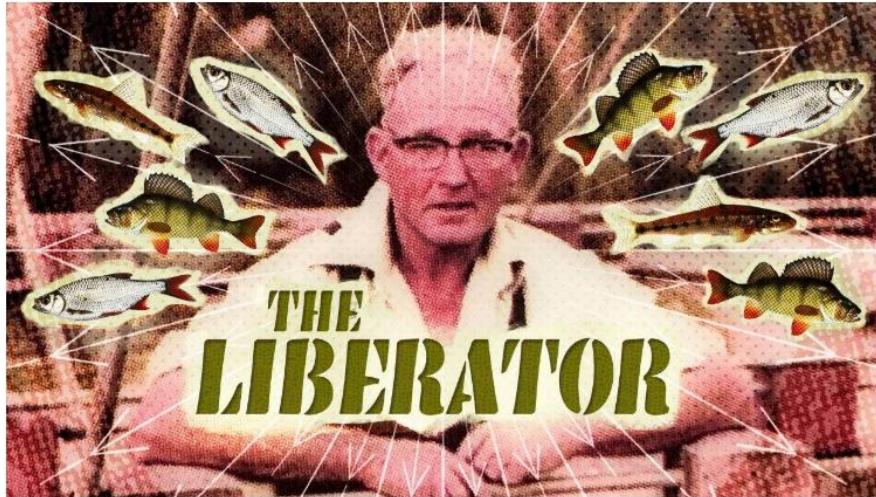
Michelle Archer (Place Group) - WRC Workstream Lead



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Where did koi come from and why do they spread?

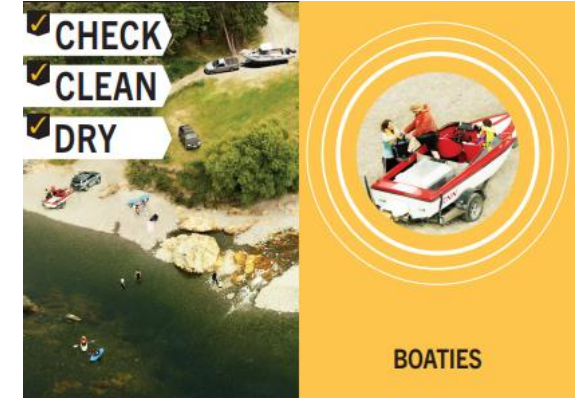


KATHRYN GEORGE/STUFF

Source: Kathryn George - Stuff



Source: New Zealand Herald



Source: Stuff

Koi Management Programme

2021 Application to WRA for a collaborative project focussed on research to understand koi numbers, collating aggregation sites and methods to remove.

Project Partners:

Waikato Regional Council

Waikato River Authority

Department of Conservation

Te Riu o Waikato



Koi Management Programme

Focussed Workstreams

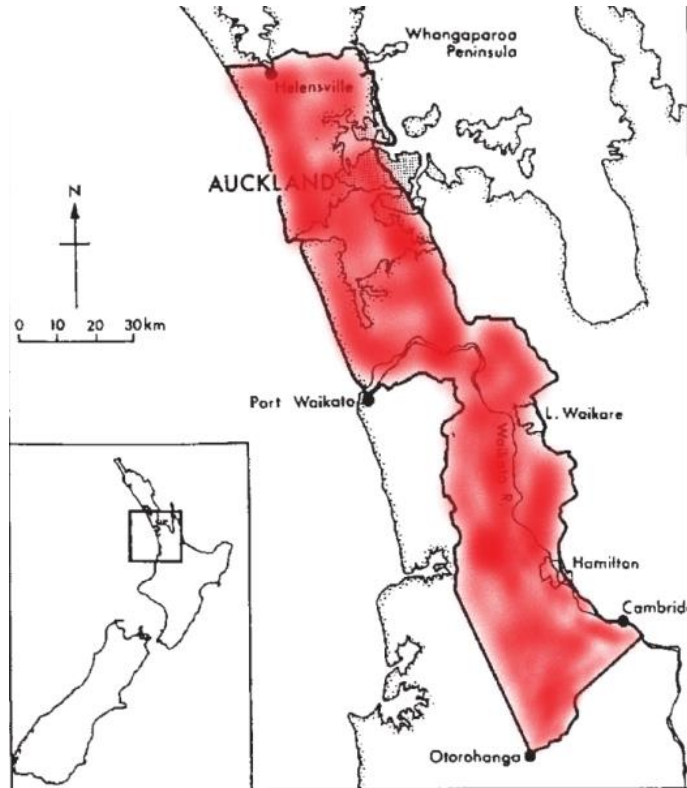
1. High Priority Infrastructure (barrier) projects
2. Operational Support (community projects)
3. Te Riu Governance and Technical Support
4. Targeted programmes and advocacy
5. Aggregations and Surveillance
6. Future funding pathways



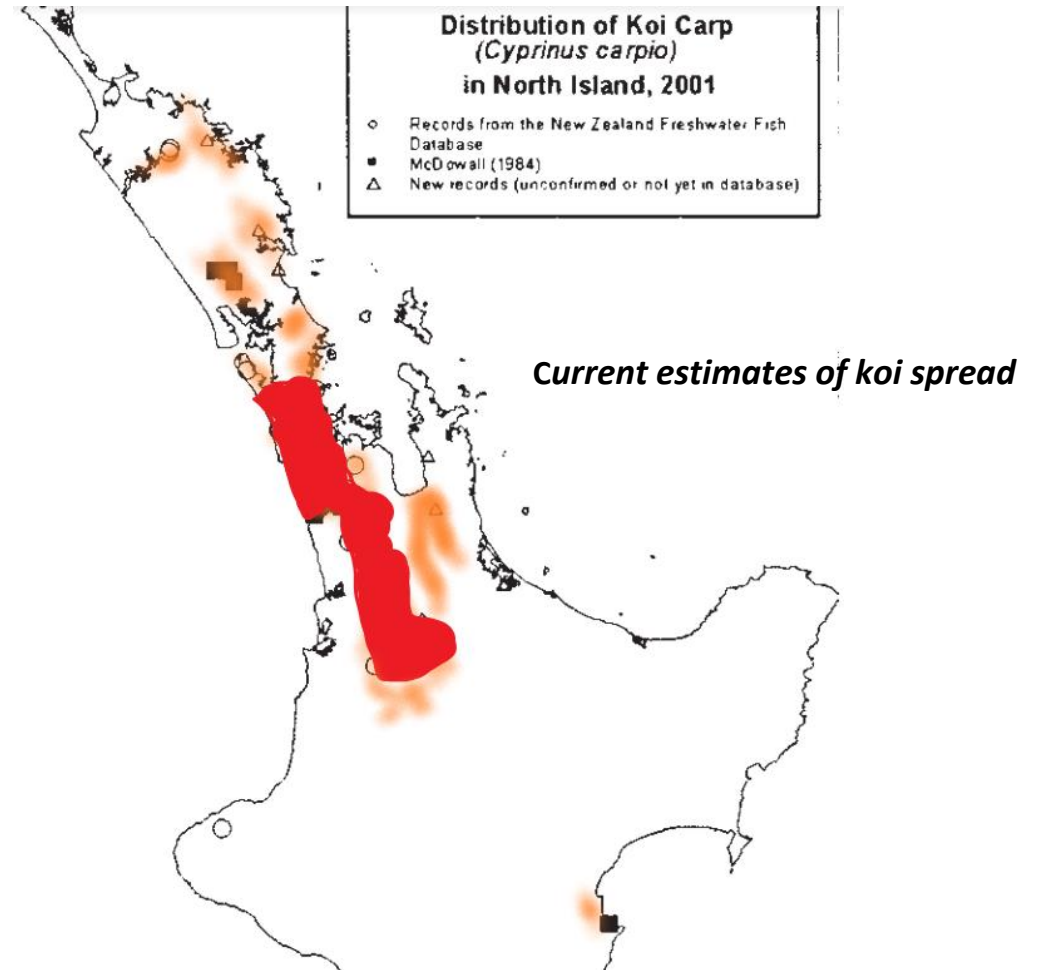
Initial funding was focussed heavily on targeting aggregations of fish - project has pivoted since application

Lakes Waahi (left) and Puketirini. Source Flightworks

Background on Koi (*Cyprinus rubrofuscus*)



Auckland– Waikato koi carp containment area (Koi carp Containment Area Boundary Notice 1990, NZ Gazette, 11 October 1990,

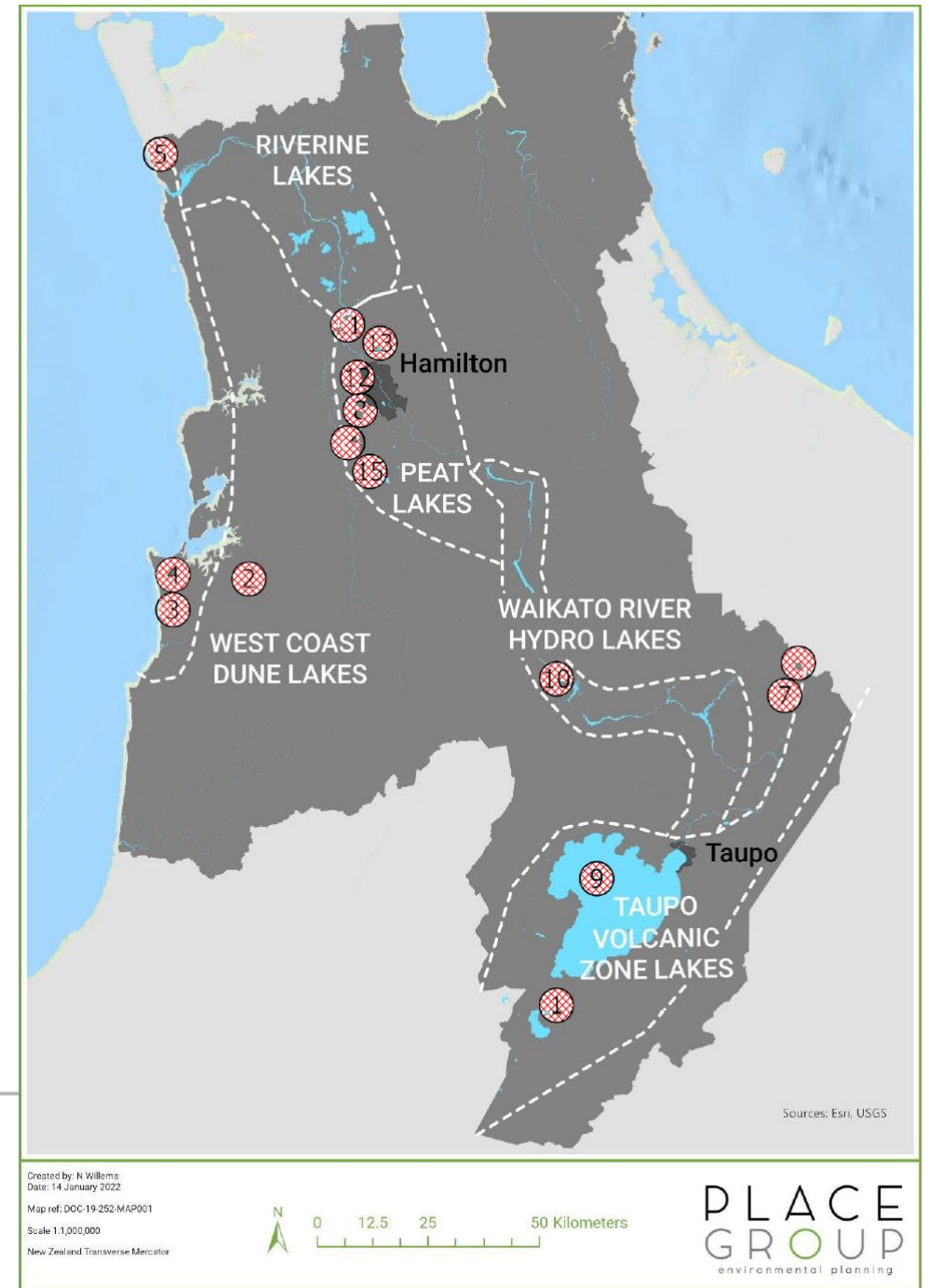


Koi free Lakes in the Waikato

Pest fish free - Rotopounamu, Koroha, Harihari, Taharoa Lakes, Parkinson, Ngahewa, Ngapouri, Tutaeinanga, Koromatua.

Some pest fish, no koi - Taupo, Waikato Hydro Lakes (except Karapiro), Pikopiko, Horsham Downs Lakes (Whakatangi, Komakorau, Kainui, Areare), Otamatearoa, Rotoiti, Puketi, Mangakaware, Rotopiko Maratoto.

Blue Springs (Upper Waihou River)



1 - Examples Existing Interventions



Puketirini Stream: Source C Baker

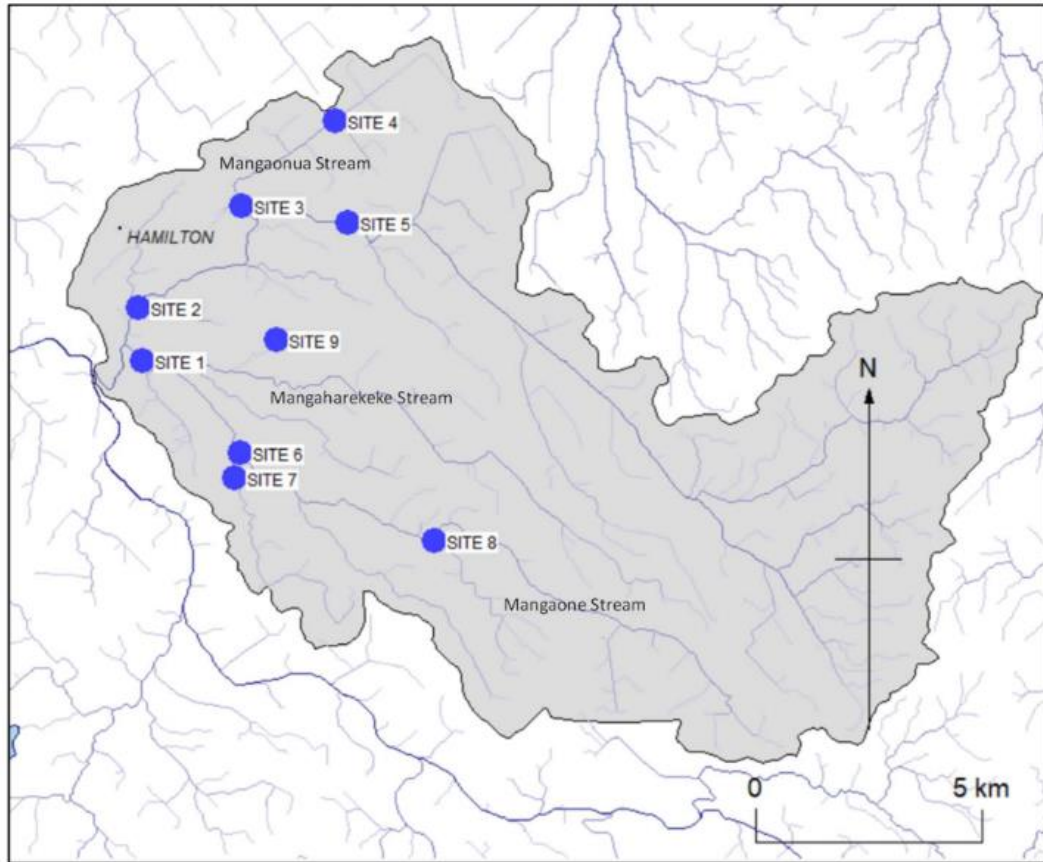


Lake Kainui Outlet: Source M Archer



Lake Areare Outlet: Source J Gumbley

1 - Infrastructure Options



Mangaonua Stream: Source Dr. C Baker NIWA



Wai Roto-iti: Source N Willems Place Group

2 - Community Projects



3 - Te Riu o Waikato Support

- Te Riu are a governance partner and advisory member on the KMP.
- Te Riu o Waikato undertakes fishing in Lake Waikare and are working on processing options for koi. *This work is not funded by the KMP.*
- Provided a vessel to assist in initial biomass trials.



4 - Targeted Programmes and Advocacy

- Biomass trials completed in Lake Waahi April 2022
- Drones tested and confirmed as a reliable tool for surveillance
- Koi activity assessment using drone videography is underway in lakes Waahi, Whangape, and Rotongaro
- Advocacy for koi carp control is underway with multiple Waikato River mana whenua



5 - Aggregations and Surveillance

- Known koi aggregations sites are recorded.
- Fishing is not a component of this workstream.
- Surveillance continues in discrete areas throughout the region to delimit koi and find koi free catchments, e.g. Mystery Creek.
- Completed eDNA sampling in 12 koi free lakes that Waikato Regional Council visit each month - koi detected in Mangahia.
- University of Waikato is conducting research to test eDNA detection methodology, to establish a SOP for koi detection in lakes



6 - Pathways

- Next steps (post KMP) for koi management, could include looking at legislation.
- Consultation with key parties.
- Requires cost benefit - is problem too big?
- Define objective and outcome requirements.
- Review progress in Australia for selective koi virus.
- Research required - impacts on water quality in NZ setting (potential to set up studies in koi free catchments vs. koi present catchments).



Biosecurity Act 1993

Public Act 1993 No 95
Date of assent 26 August 1993
Commencement see section 1(2)



Fisheries Act 1996

Public Act 1996 No 88
Date of assent 13 August 1996
Commencement see section 1(2)–(3)

Challenges / Issues

- Engagement of people involved.
- No potential fishing contractors identified - limited by H&S requirements?
- Priority change over time e.g. KMP established to help remove fish but sentiment and focus has moved.
- The koi containment zone does not reflect the current distribution - causes confusion and conflict.
- Perception - Permitting leading to commercialisation of a pest species.
- Koi are difficult to catch - behaviours still unknown.
- Only eradicated from isolated, small ponds in NZ; no solution worldwide.
- Once fishing starts - need long term management to maintain control.

Opportunities

- Community and mana whenua stakeholders are engaged and seek opportunities to reduce impacts of koi.
- Target key waterways/lakes where ongoing control benefits taonga and high biodiversity value species.
- KMP only has 1 year remaining - focusing on infrastructure and advocacy options.
- Consider and incorporate challenges and opportunities into Future Pathways considerations.
- A change to legislation could enable controlled harvest, or cultural control actions to be undertaken within the koi containment zone.

Summary

- Koi are widespread throughout the upper North Island
- Wide scale management is currently not feasible
- Identification and subsequent protection of areas of high biodiversity value has helped to determine where to focus efforts for selective pest fish barriers.
- Koi are a difficult species to manage, however advocacy and education are important components for Freshwater Biosecurity.
- There is opportunity to align koi surveillance with wider freshwater pest programmes e.g. gold clam.



Thank you

Contact Details

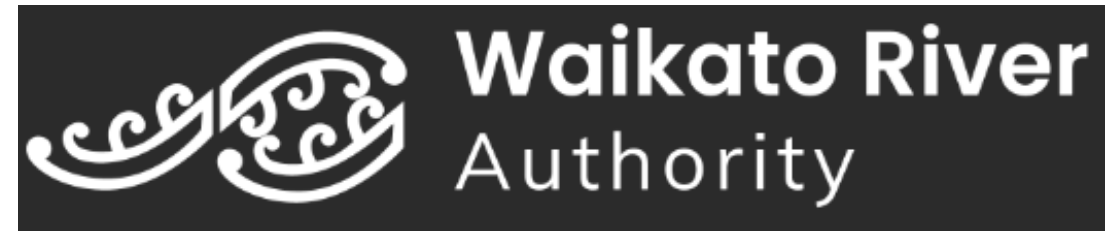
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