

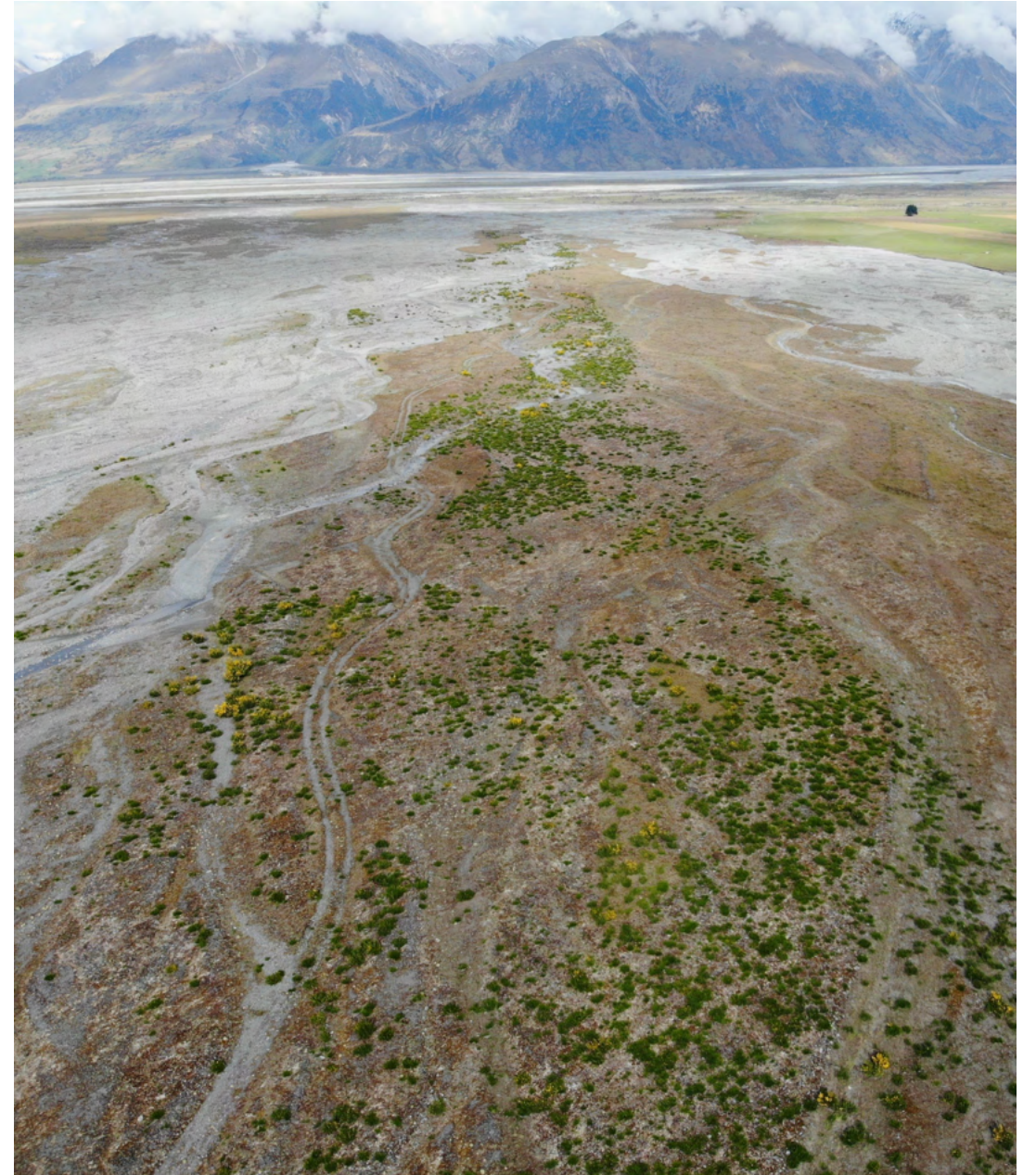
MULTI-AGENCY LANDSCAPE-SCALE WEED PROGRAMMES

Where have we come from and where are we going?

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An aerial photograph of a wide, braided river system flowing through a valley. The river consists of numerous interconnected channels and oxbow-like features, creating a complex, winding pattern across a dry, brownish-yellow landscape. In the background, a range of rugged mountains is visible, with significant snow cover on their peaks and upper slopes. The sky is clear and blue.

INTRODUCTION | BACKGROUND

CHANGE IN APPROACH

OVERVIEW OF CONTROL

RIVERBED WEED STRATEGIES

BENEFIT AREA CONCEPT

KEY LEARNINGS

FUTURE OUTLOOK

BACKGROUND

- Weed encroachment up to 75% in some rivers (Wilson 2001)
- Impacts river morphology, channels
- Loss of habitat and biodiversity
- Lower catchments – downstream of seed sources and are in highly modified landscapes, which results in an increased variety of weeds



BACKGROUND

- Upper catchments – often more intact natural character and biodiversity values
- The funding goes further (cost:benefit)





INTRODUCTION

Multi-agency landscape scale weed management

- Several programmes underway, will focus on the Upper Rakaia and Upper Rakitata | Rangitata Rivers
- These two sit alongside other biosecurity work (e.g., mammalian predator trapping, Southern black-backed gulls, rabbits, feral pigs, wallabies)

Weed control – Environment Canterbury biodiversity funding

- New biodiversity funding for braided rivers - CWMS implementation (2010/11)
- Implementation strategy developed (identified values, threats, gaps)
- Weed control identified as a high priority
- Joined the effort of other agencies and the landcare groups



CHANGE IN APPROACH

- Pooling of resources – Rakaia and Rakitata | Rangitata
- ECan funding pooled initially with DOC, now also with Toitū Te Whenua | LINZ
- A single programme manager to execute operations
 - Creates efficiencies
 - Working across land tenure

CHANGE IN APPROACH

- Ongoing stakeholder engagement
- Close collaboration of agencies
- Collaboration with the landcare groups



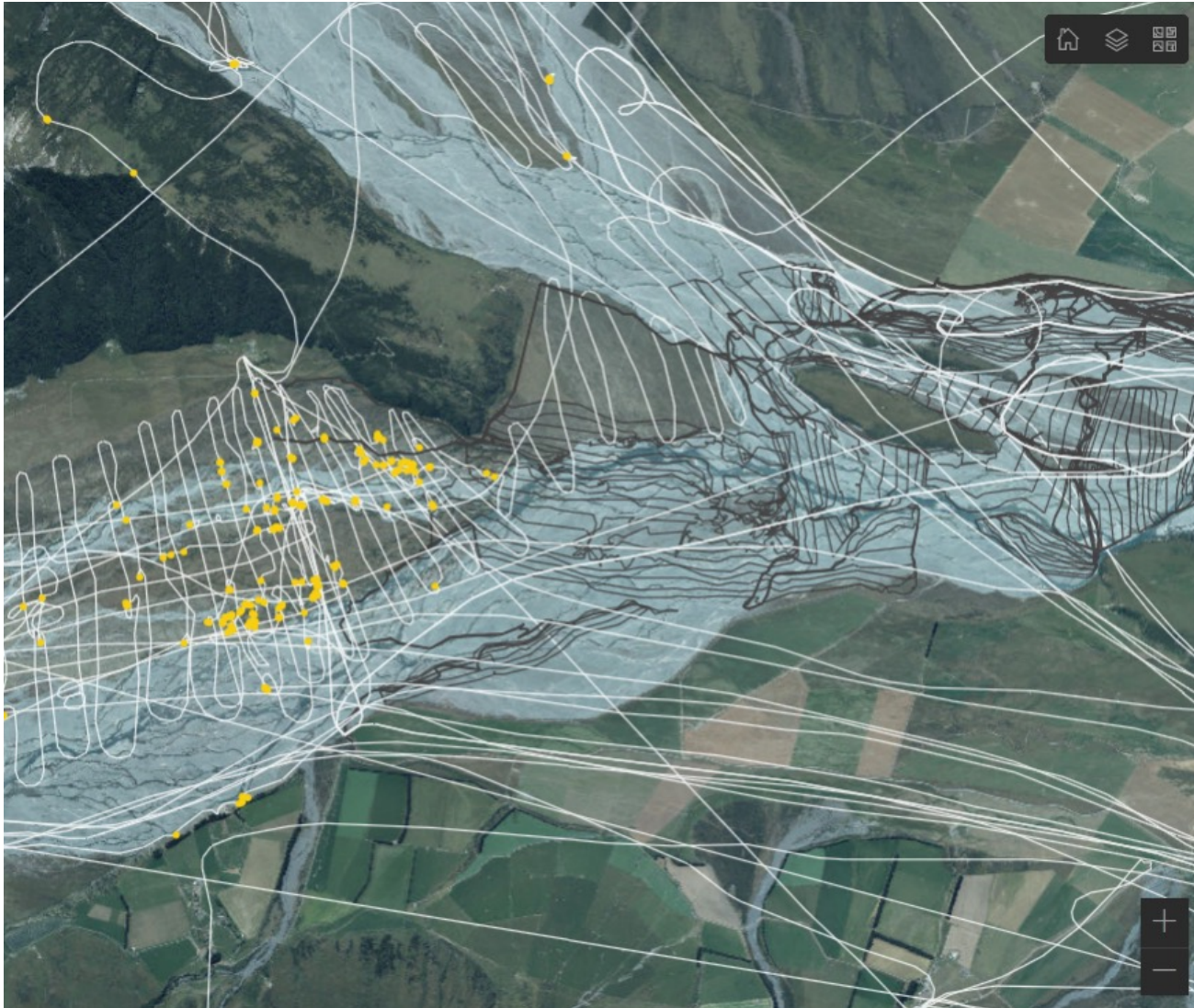


Photo: LINZ Biosecurity Annual Report Public Viewer

CHANGE IN APPROACH

- One source for all control work data
- Surveillance and control
- Alignment with Simon Upton's (PCE) Space Invaders report

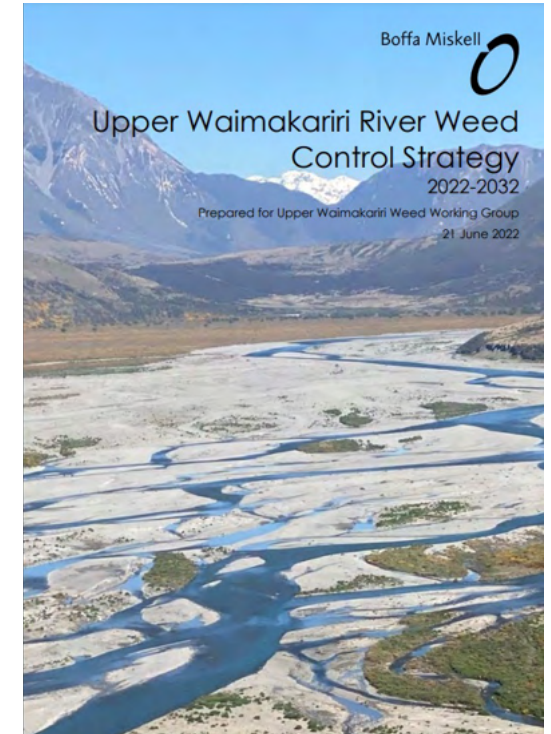
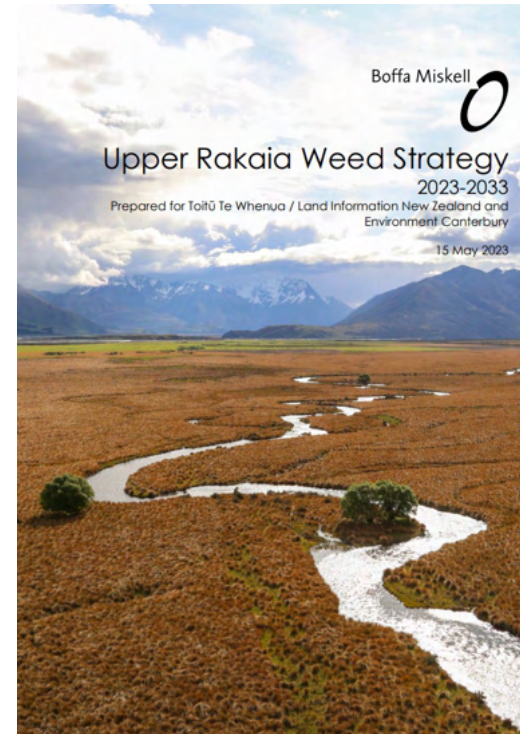
OVERVIEW OF CONTROL

- Target remote and isolated plants
- Priorities have changed over time
- RPMP slow process
- Guided by weed control strategies



RIVERBED WEED STRATEGIES

- Rakaia River (2013, 2018 and 2023), Rakitata | Rangitata River (2019), Waiau Toa | Clarence River (2019), Waimakariri River (2022)
- Across land tenures, beyond RPMP species
- Catchment-wide stock-take and control of remote weeds
- Priorities scalable to funding / enables funding applications



Above: Riverbed weed control strategies for the Upper Rakaia River and Upper Waimakariri River

NOT JUST RIVERBED WEEDS

- Homesteads / settlements / transport corridors
- Identify future issues
- Example: spindle tree spreading beyond Lake Coleridge Village



Above: Diverse forest and shrubland weeds at Lake Coleridge Village

CLIMATE CHANGE AND WEEDS

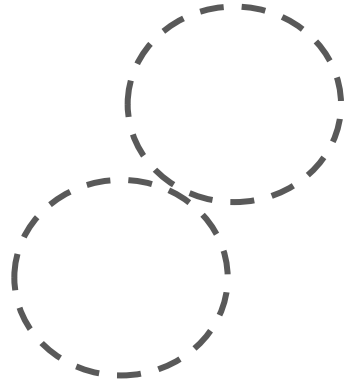
- Big floods re-set the river braidplains
- Short term 'cosmetic' weed reductions may be outweighed by long term trends
- Integrity of river margin habitats important seed sources for riverbed plant communities



Above: *Myosotis uniflora* (left) and sparse riverbed mat vegetation at right



Above: Classic mosaic of braided riverbed vegetation in the Avoca River, looking to Mt Fitzwilliam at left



BENEFIT AREA CONCEPT

- Area that benefits from the control work and is protected from invasion
- Cost/ha in surveillance area vs cost/ha in area protected
- Captures more fully the benefits of control over time (future invasion)

Table: Planned cost of control area vs benefit area 2022/23

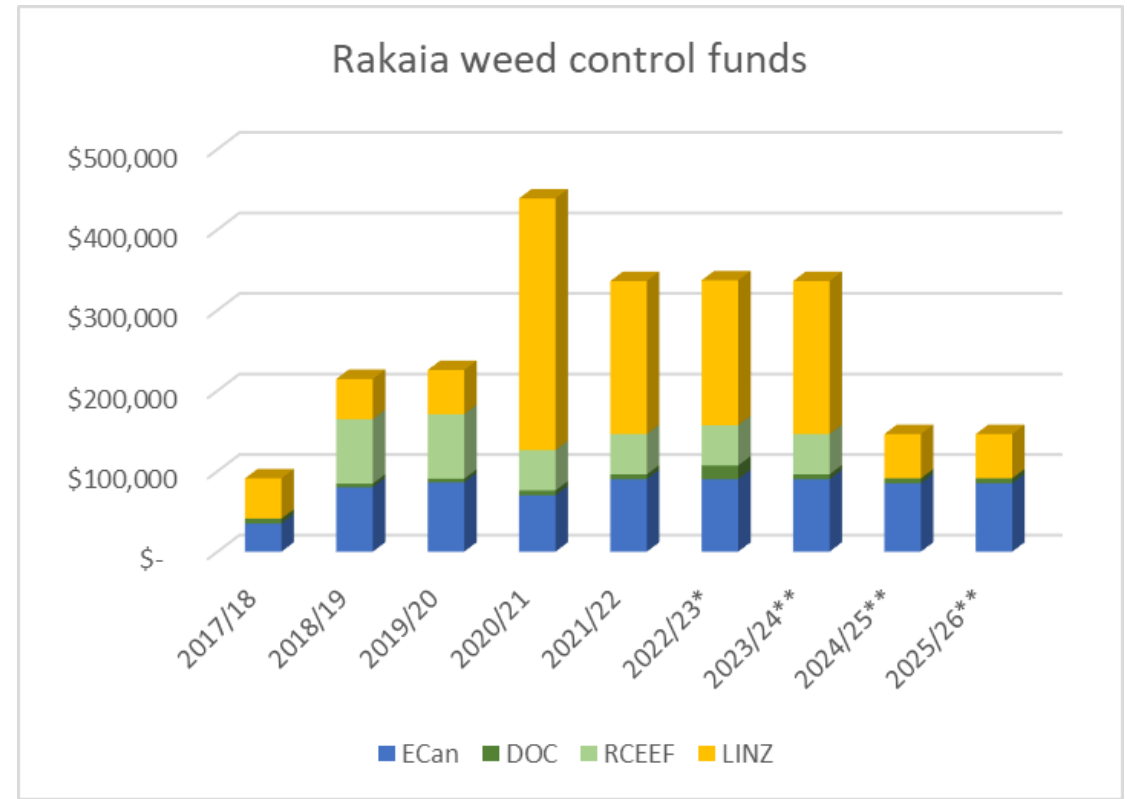
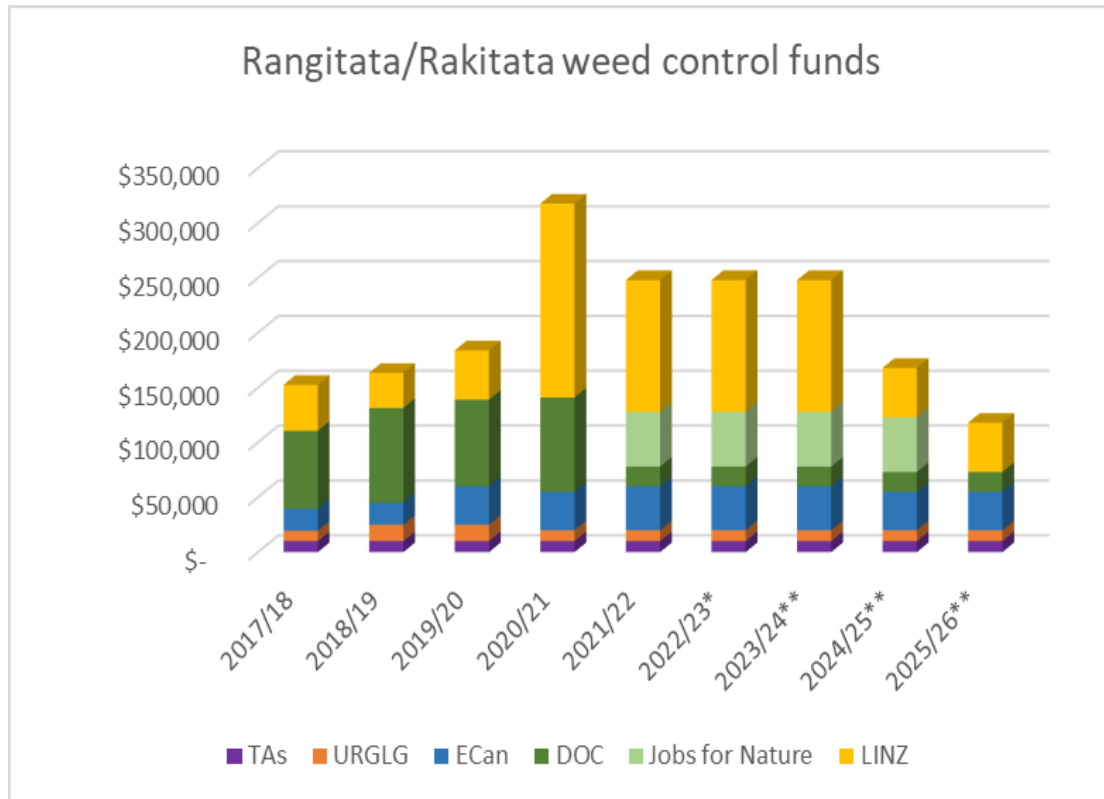
Catchment	Budget	Control area	\$/ha control	Benefit area	\$/ha benefit
Rakaia	\$336,000	17,806 ha	\$18.87	165,000 ha	\$2.04
Rangitata	\$168,000	12,671 ha	\$19.57	120,000 ha	\$2.07
Total	\$504,000	30,478 ha	\$19.16	285,000 ha	\$2.05



KEY LEARNINGS

- Very dynamic systems (ecosystems, weather but also agencies, funding, unplanned events like Covid)
- Core, long-term funding can create a base to build on
- Landscape-scale approach is very effective, but makes prioritising difficult, especially in a climate of reduced funding
- Essential to work closely with land occupiers for mutual benefit
- Importance of landcare groups for continuity and insights

FUTURE OUTLOOK – ONE SCENARIO



* To be confirmed (estimate only)

** One guestimate if LINZ returns to pre-covid levels and DOC funding stays the same

HALF FUNDING SCENARIO OPTIONS (LINZ)

- Same sites retained
- Cover less area within each site
- Cover same area less comprehensively (wider spacing)
- Fewer weed species
- Less frequently (every 2nd year)
- Reduce half the sites to allow for full coverage at others



SUMMARY

- Multi-agency collaboration is a successful approach to landscape-scale weed management
- Increase in weed species controlled and land tenure to address wider values
- Heading into a climate of reduced funding - how do we prioritise?





QUESTIONS