



Survey
and Spatial
New Zealand
TĀTAI WHENUA



River Boundaries

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Boundaries

Cadastral boundaries

- Are about separating mine from yours
- What I can do where
- What is private, what is public
- Who makes decisions about land management

- How does that play out in our courts and on our rivers?

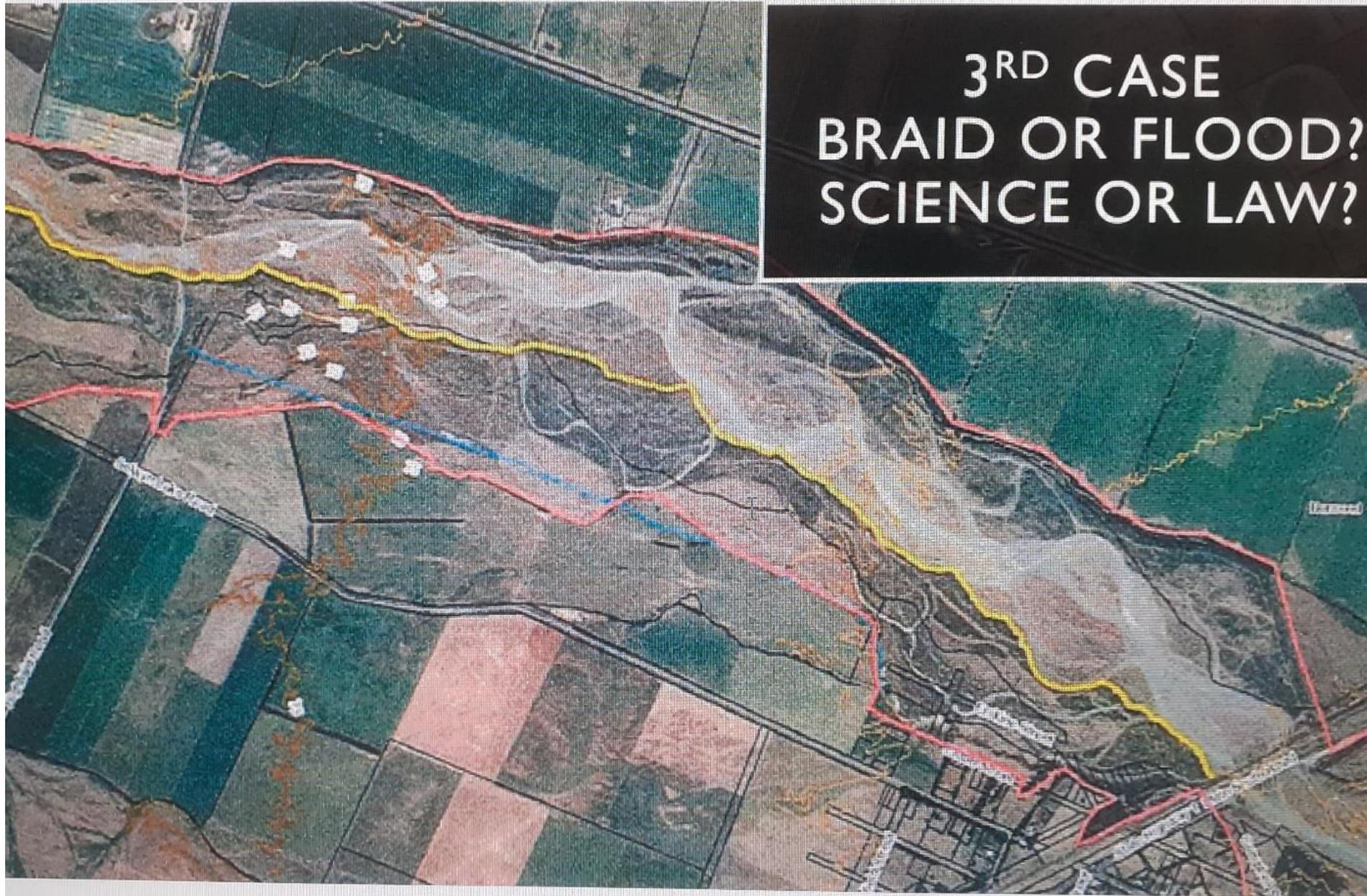
But what about
ecological boundaries?



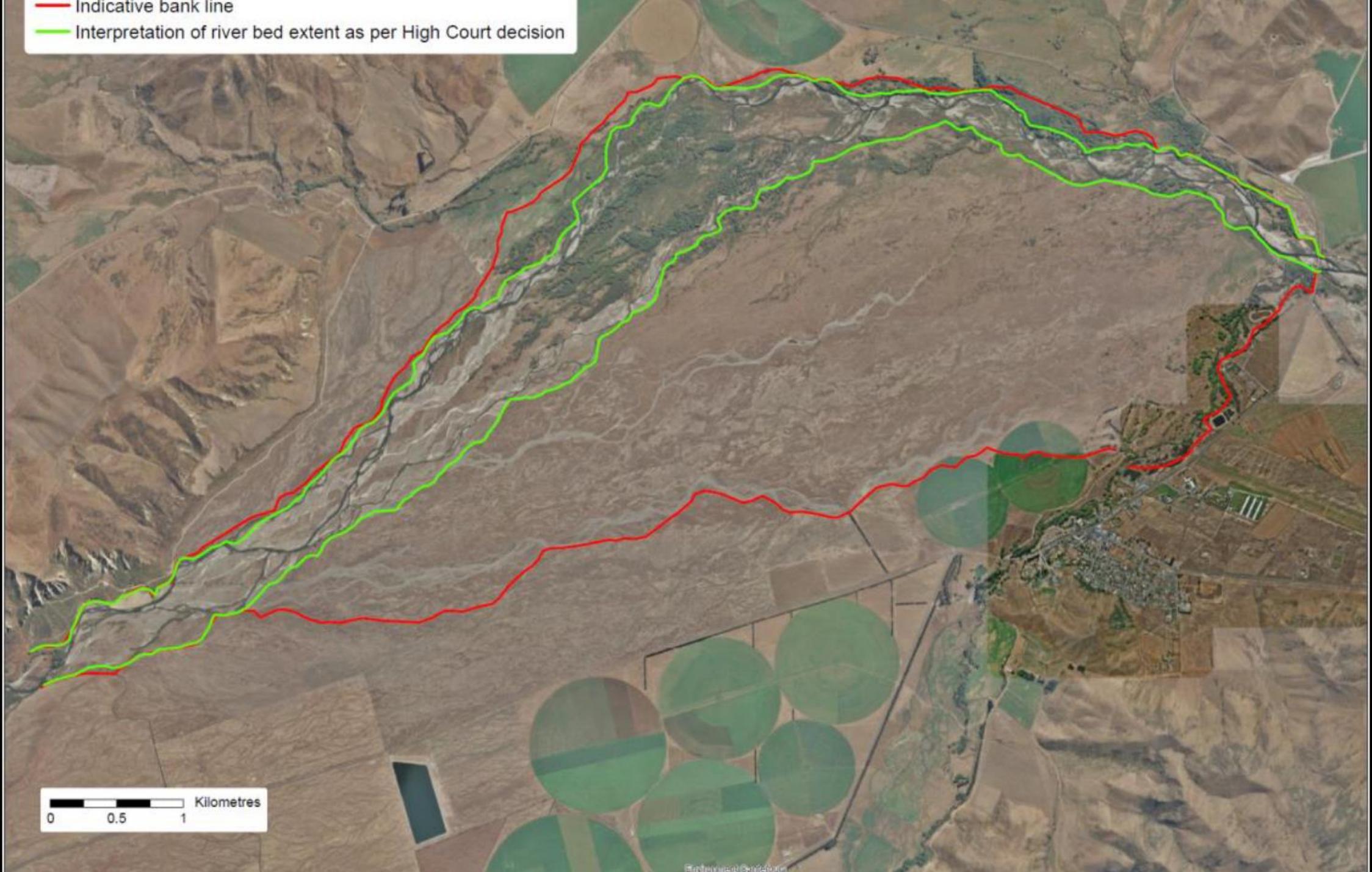
CRC v Dewhirst 2019 (Court of Appeal)

- Dewhirst had undertaken farm management works adjoining the Selwyn River (building bunds and clearing vegetation)
- ECan (Canterbury Regional Council) charged him with interfering with the riverbed without consent
- The dispute was about where the bank of the river was:
 - either based on hydrological records of high flows
 - or an observable bank distinguished by soil and vegetation cover
- River boundary definition is about observation not about measurements
- This was a good decision for surveyors – Surveyors define river boundaries, not hydrological engineers
 - The *Dewhirst* decision clarifies that river banks are defined by their observable features – primarily some elevated land with a change in soil and vegetation cover
 - “most weight should be given to those matters about which a person is least likely to be mistaken.” (Dale 1976)
 - “It should never be forgotten that, from a landowner’s point of view, the best boundary is still the boundary which speaks for itself and requires neither map nor survey to prove it.” (Simpson 1976)

3RD CASE
BRAID OR FLOOD?
SCIENCE OR LAW?



— Indicative bank line
— Interpretation of river bed extent as per High Court decision



0 0.5 1 Kilometres

Implications

- This decision appeared to be about property boundaries – the division between private and public
- Interestingly there was no discussion about ownership of the river bed – i.e. *ad medium filum*
 - It has regularly been observed that those common law applications should not apply to unique braided river systems
 - But by those principles, Dewhirst as the adjoining upland owner, also owns the river bed
- This case decision was about protecting private property rights, rather than protecting the natural character of rivers.

Alternative response

- The case could have acknowledged that river beds can be owned under private fee simple or common law title, but that they are still riverbeds, subject to Regional Council control (s13 RMA) – and therefore that development can only occur on private land that is also riverbed if allowed for by a NES, a rule in a plan, or a resource consent
- In other words s 13 RMA could apply over privately owned rivers

RMA s 13 Restriction on certain uses of beds of lakes and rivers

(1) No person may, in relation to the bed of any lake or river,—

(a) use, erect, reconstruct, place, alter, extend, remove, or demolish any structure or part of any structure in, on, under, or over the bed; or

(b) excavate, drill, tunnel, or otherwise disturb the bed; or

(c) introduce or plant any plant or any part of any plant (whether exotic or indigenous) in, on, or under the bed; or

(d) deposit any substance in, on, or under the bed; or

(e) reclaim or drain the bed—

unless expressly allowed by a national environmental standard, a rule in a regional plan as well as a rule in a proposed regional plan for the same region (if there is one), or a resource consent.

(2) No person may do an activity described in subsection (2A) in a manner that contravenes a national environmental standard or a regional rule unless the activity—

(a) is expressly allowed by a resource consent; or

(b) is an activity allowed by [section 20A](#).

(2A) The activities are—

(a) to enter onto or pass across the bed of a lake or river:

(b) to damage, destroy, disturb, or remove a plant or a part of a plant, whether exotic or indigenous, in, on, or under the bed of a lake or river:

(c) to damage, destroy, disturb, or remove the habitats of plants or parts of plants, whether exotic or indigenous, in, on, or under the bed of a lake or river:

(d) to damage, destroy, disturb, or remove the habitats of animals in, on, or under the bed of a lake or river.

- Regional Councils have the responsibility for river management / flood control
- They do not need to own the riverbeds to exercise their responsibility
- But the RMA processes are different and more difficult on private land (RMA s 9 is much less restrictive)



reflection

- I saw the Dewhirst decision as the logical interpretation of our understanding of boundary law
- But the result is a loss of river ecosystem by stealth
- Because these river beds revegetate so quickly (weed species), the observable 'bank' may actually be very recent evidence of occupation.
- Riparian proprietors are therefore enticed into developing braidplains productively.
- They think that their property rights should be prioritised ahead of environmental values

Affected farmers

- <https://www.stuff.co.nz/national/125732991/the-gravel-wars-farmers-vs-council-on-who-pays-for-flood-cleanup>
- Angry farmers want the prime minister to bring the cash to fix what they say is Environment Canterbury's (ECan's) mismanagement of the region's rivers. "The shingle came out of the river. Put it back and get the river off my property."
- "We need to get those rivers back in their river beds and the river protection rebuilt."
- "I just want to know who will bloody well pay for it,"
- "If ECan had maintained those rivers like they were supposed to there would have been ample room for the water inside those banks and it wouldn't have happened."
- "if ECan had kept the levels of gravel lower, flooding would not have been as bad. Keeping trees out of the river would also help, as would larger works like stopbanks, but that would be costly. Also keeping the river running as straight as possible would lessen the amount of damage."



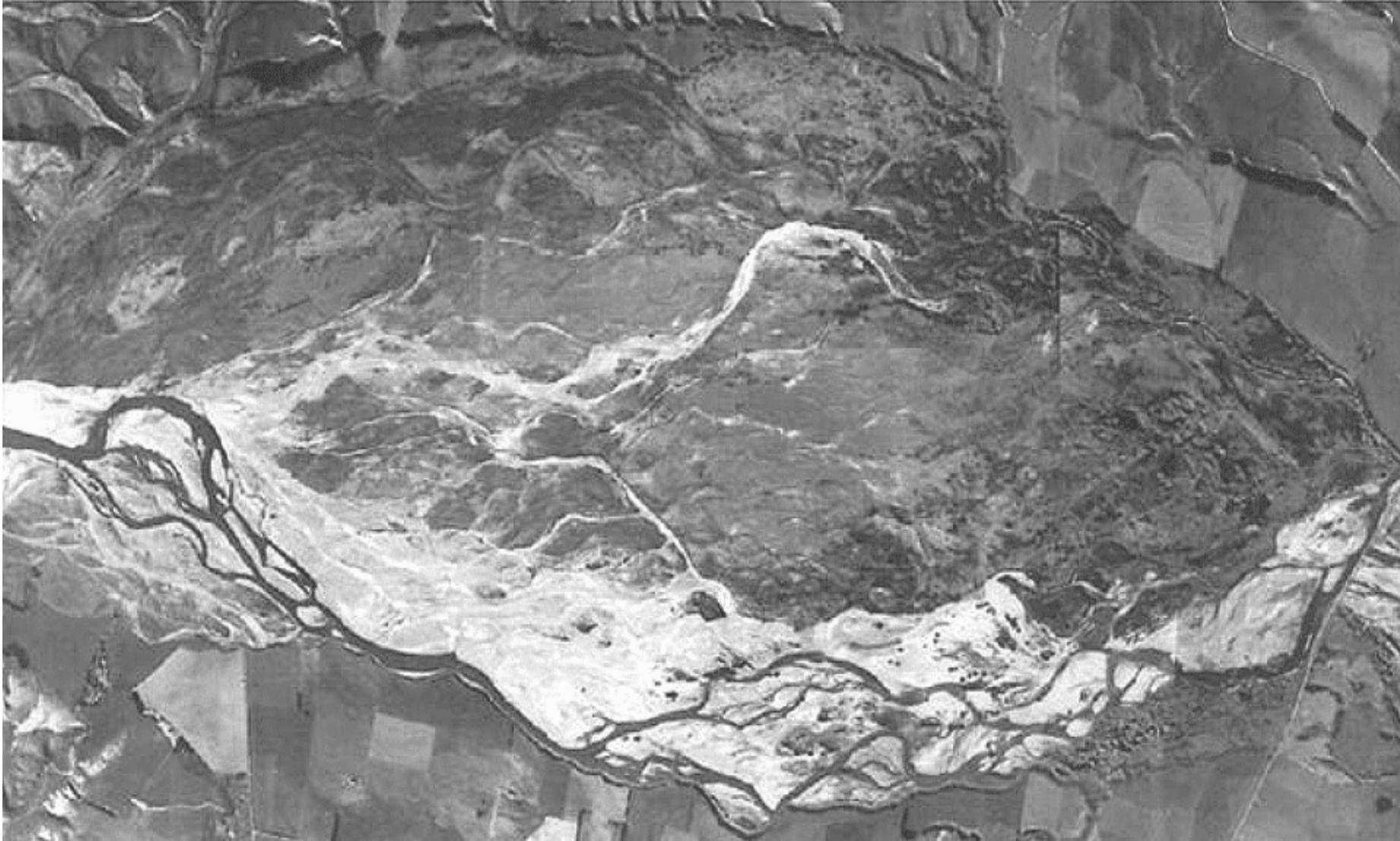
Braided Rivers – see BRaid.org

- New Zealand's braided rivers are networks of ever-changing channels weaving between islands of gravels. They are home to an extraordinary diversity of birds, fish, invertebrates and plants that have adapted to live in this challenging and dynamic environment.
- Globally, braided rivers are rare. They occur only where a very specific combination of climate and geology allows rivers to form ever-changing and highly dynamic 'braided' channels across a wide gravelly riverbed.
- New Zealand is a braided river hot-spot. Almost 64% of our braided rivers are in Canterbury, with a catchment of over 164,170ha. The entire Canterbury Plains was formed by sediment and gravel carried from the Southern Alps by braided rivers as they flowed to the coast.

Braided Rivers

- Most of our rivers are controlled one way or another:
 - hydro dams,
 - water races and pumps extracting water
 - stop banks restricting flow
 - increased weed growth because no regular floods
 - significant gravel accumulation
 - willows and poplars planted to protect land and increase accretion
- So rivers are losing space to perform their natural functions

Wairau River and Braidplain 1966



Wairau River and Braidplain 2019



20th Century management

- Braidplains were wastelands waiting to be developed for production
- Flood Control – building stop banks
- Gravel extraction to deepen channels and speed water flow
- Tree planting to stabilise banks (and reclaim land)
- Uncontrolled expansion of weeds (lower/fewer floods to clear braidplains)
- Dams for hydro storage (interrupts sediment quantity and quality)
- Water abstractions
- The effects – and even the explicit goal – reduce bed width, straighten channel, increase flow speed - getting water out of the way quickly
- For adjoining property – protect property, expanding productive area, provide security from flood risk

21st Century management

- Making room for rivers (allowing rivers to flow across their braidplains)
 - Restoring habitats
 - Restoring natural character
 - Protecting vulnerable species
 - Limiting infrastructure damage
 - May require property purchases for ecosystem services
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- As for our coastline, with climate change we cannot provide absolute protection of property.
 - We need to adapt
 - legal boundaries don't help
 - ecological boundaries would help

So when is a riverbed not a riverbed?



1999



2019

When it is braided!

Further reflections

- I expected this decision and think it is the right one if you ask the question:
 - **Where is Dewhirst's cadastral boundary?***
- But maybe the wrong question was being asked:
- What if we asked:
 - **Can the Regional Council require Dewhirst to get a land use consent for works on his own land which is a braid plain?‡**
 - I would answer: **of course**

• ***the property law question.**

‡the planning law question

References

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- See <https://braidedrivers.org/>
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- *Canterbury Regional Council v Dewhirst Land Company Ltd* [2019] NZCA 486