

River openings and other manipulations



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Fish passage is important because of CONNECTIVENESS

Connections to and from the sea , or
Ki uta ki tai – “from the mountains to the sea”

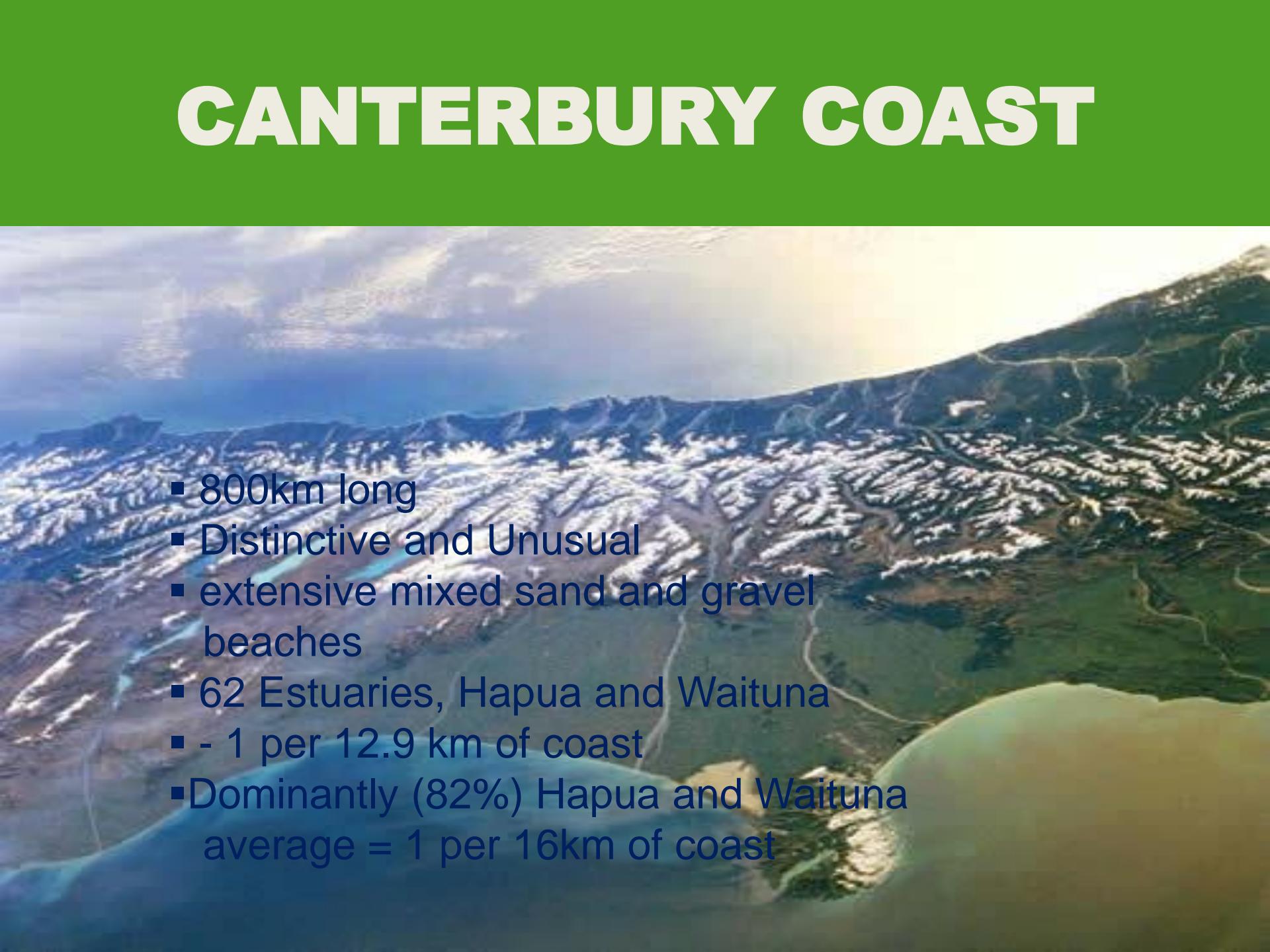
While it is important to raise awareness and find solutions to structural barriers as at this workshop

It is important to also keep in mind other fundamental barriers such as:

- Large dams and diversions – (that Matt Dale is suggesting as another workshop)
- Intermittant flows in reaches
- River mouth blockages

It is this latter issue that we have been trying to make provision for in Canterbury.

CANTERBURY COAST

An aerial photograph of the Canterbury coastline in New Zealand. The image shows a wide expanse of sandy and gravelly beaches along the coast. In the background, there are several large, winding estuaries where rivers meet the sea. To the right, a range of green, forested hills rises from the coast. The sky is overcast with dramatic, layered clouds.

- 800km long
- Distinctive and Unusual
- extensive mixed sand and gravel beaches
- 62 Estuaries, Hapua and Waituna
- - 1 per 12.9 km of coast
- Dominantly (82%) Hapua and Waituna
average = 1 per 16km of coast

River mouth blockage can be a big issue particularly in east coast rivers with gravel beach features.

Engineered steps to open these rivers are largely initiated for management of flood hazard avoidance, or natural hazard threats to infrastructure. Funded by flood or drainage rating districts.

These activities are not fully consented and so regional applications are pending to confirm the basis of river mouth management.

This has generated an opportunity to acknowledge the additional ecological benefits of strategic river mouth management/openings.

So there is an opportunity to facilitate, or allow for easier approval of river mouth management for fish passage requirements.

- This doesn't presuppose we have a funding mechanism, just to ensure that regulatory/consenting processes are not an impediment to strategic opportunities to open or adjust river mouths for ecological (fish passage) purposes.
- To facilitate this we have been looking at ecological justifications for engineering interventions at river mouths.
- We have categorised objectives for openings:
 - Need for regular (annual) opening requirements
 - Need for ensuring intermittent passage opportunities exist – at least 2, 3, or 5 yearly
 - Or lowering of beach crests to make natural openings more likely to occur

We have been categorising the 60 or more rivers as a spreadsheet matrix, to justify a process or 'purpose' for ecological interventions, and to identify adverse and beneficial effects to be taken into consideration

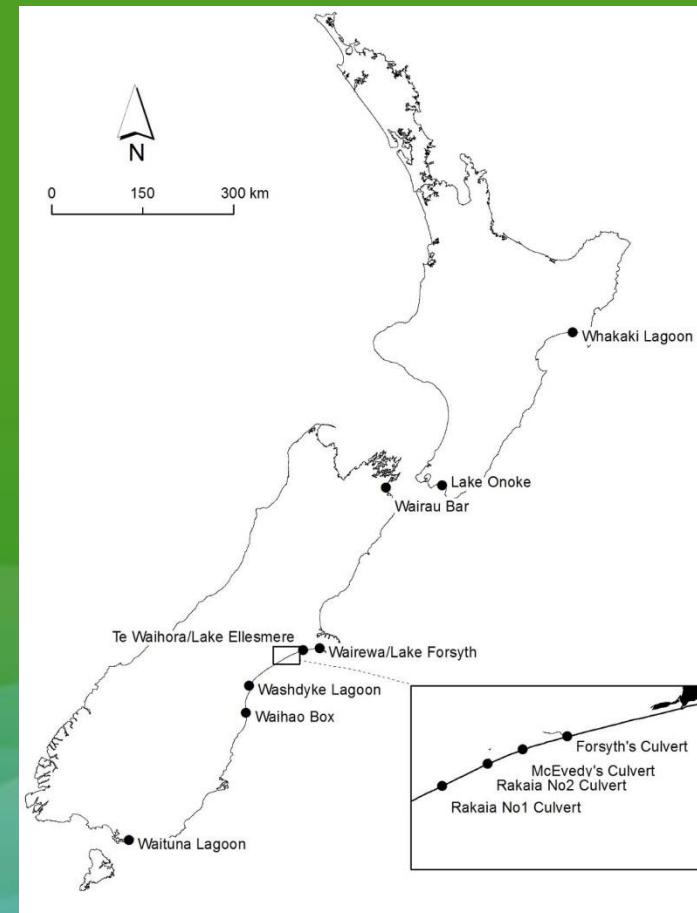
There have been concerns from our terrestrial and wetland ecologists that openings at base flow times can ‘dewater’ wetlands and hapua features

So, there are significant considerations, and often facilitating natural openings through lowering of beach crests may be more expedient for ecological purposes

Trying to allow for development of such opportunities



There are of course many hard engineered structures and options for river mouths, but these are very explicit proposals but these are also increasingly being considered for ecological (fish passage) requirements



In summary

For many of us, particularly in ‘East Coast’ regions, mouth closure can be a particular problem and be having increasing impacts on ecological/fish diversity issues

We should be considering opportunities to remove impediments, or to facilitate appropriate river mouth management to address these issues when and where they arise.