How do we stop the decline of the world's most threatened gull?

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Analyse and monitor

- Half a century of South Island survey data will be analysed – possibly published later in the year
  - Is the gull Nationally Critical? What are the priorities for further monitoring? Can we identify factors influencing their decline?

- Key Canterbury rivers may have insufficient data for analysis of trends
  - Rakaia (no surveys of whole river, 3-4 counts of different sections in different years)
  - Waimakariri (no surveys of whole river, 2-4 counts of various sections)
  - Hurunui (annual counts of lower-mid sections started 2006)
  - Waiau (three counts 2008-2010 only)

- Monitoring is the backbone of any management programme
  - How do you obtain funding for something you cannot prove is happening?
  - How do you know if you are achieving the desired outcomes without it?

What are the known and possible threats that need to be managed?

- Predation – terrestrial and aerial (e.g. native black-backed gulls)
  - Evidence: breeding success on islands higher than on banks (Southland; 5,000 nests monitored, McClellan 2008; McClellan et al. submitted)
- Weed invasion on riverbeds
  - No evidence. Hypotheses: declines in bare gravel reduce area available for gulls; forces gulls to nest closer to the water line. Unlikely to be a limiting factor.
- Human disturbance
  - Evidence: shootings, vehicles through colonies, Southland, Canterbury, Marlborough
- Changes in river flows
  - Follows on from island versus bank theory
- Changes in food supplies (terrestrial and marine)
  - Terrestrial – anecdotal; Marine – see effects on red-billed gulls (Mills et al. 2008)
- Chemical ingestion – agricultural usage past and present
  - No evidence
- Extreme weather events
  - Some evidence from Southland, droughts and extreme snow events may have killed 1000s in Southland in 1970s and mid 1990.

Black-billed gulls may be easy to manage because…

- They nest in small numbers of colonies – terrestrial predator control can be very focused.
  - Only required for bank colonies or colonies with minimal water flow between bank and island?
  - Cats, ferrets and stoats (spotlighting, Timms traps, mustelid traps). Others? No proof.

As easy as…?

- Using decoys to attract gulls to islands
- Creating large island habitats for gulls
- Maintaining ‘artificial’ or existing island habitats for weeds (if necessary)

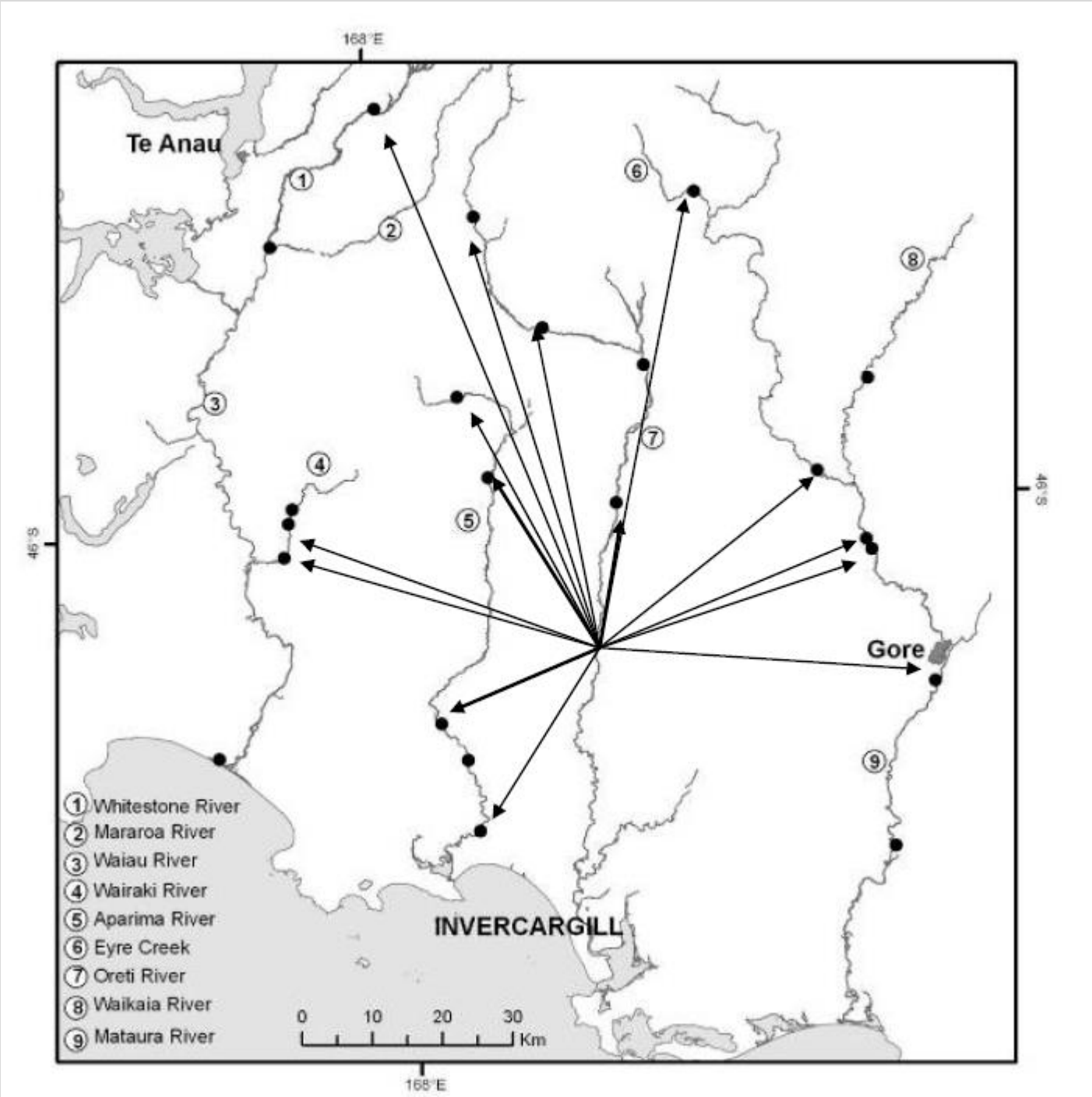
Photos: Caspian tern ‘decoys’. Bought from Mitre 10 Mega and given an authentic paint job! (Andrew Crossland, Christchurch City Council, from BirdingNZ.net)

BUT black-billed gulls may be hard to manage because…

- Colonies change location almost every year (Southland)
  - Each season, need to find newly established colonies.

- Colonies leave behind layers of guano which can lead to explosive growth of weeds (an issue for managed islands)
  - Flooding probabilities – create islands that are low enough to clear gravel regularly but not so much that colonies are regularly wiped out.
  - **Watch this space**: research in Southland on habitat creation and management.

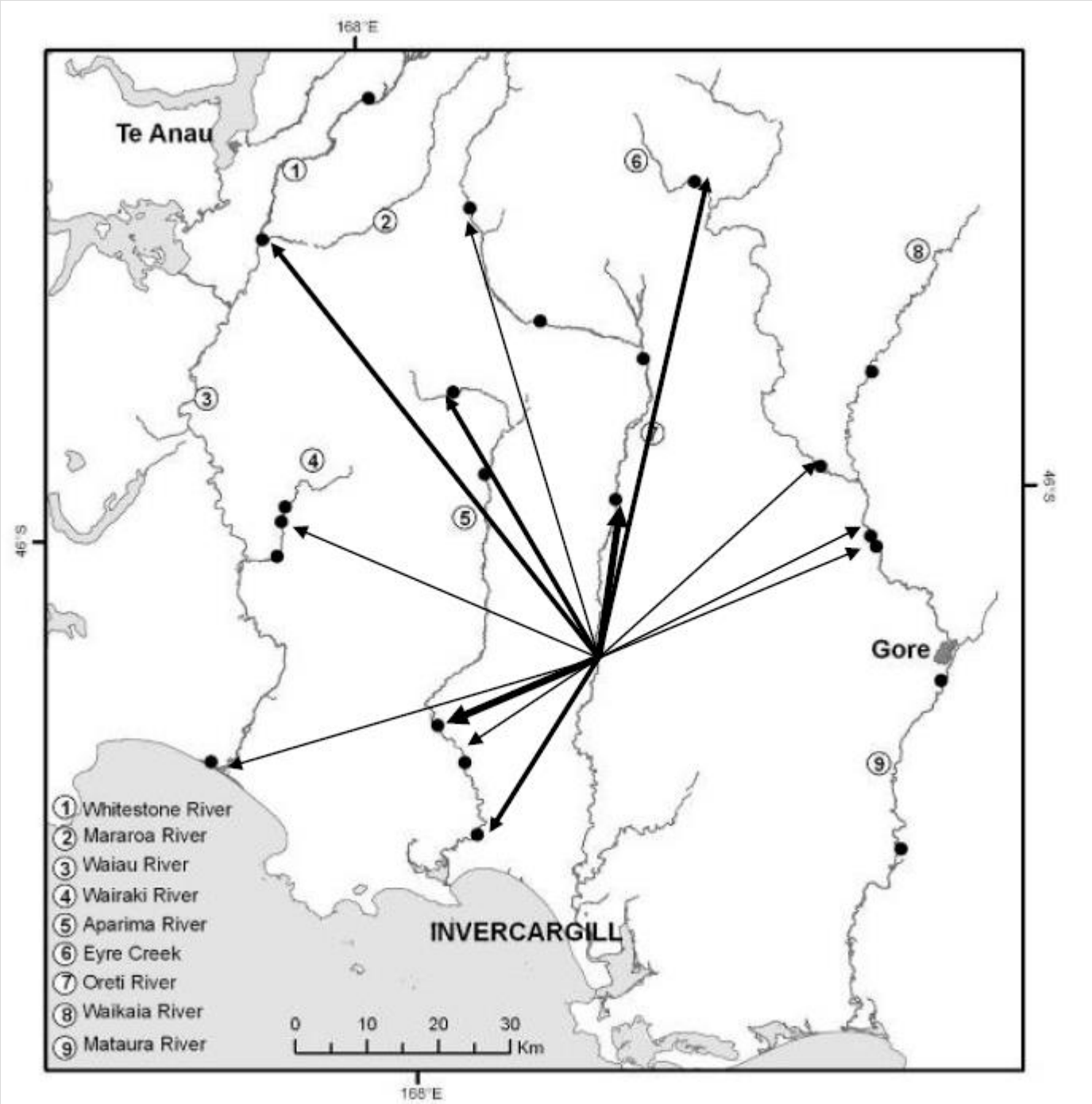
- Highly dispersive species – frustrating for those who want to see positive trends in numbers!
  - Management of colonies on a single river is unlikely to produce rapid, significant improvements on that river as gulls generally move between rivers every year (see following diagrams from McClellan 2008).



18 chicks banded in 2004 at Benmore colony, Oreti River, re-sighted in 2006 i.e. two-year old birds (only four in the Oreti).

Width of arrow represents numbers of birds (thinnest arrow = one bird).

Dots are colony locations in 2006.



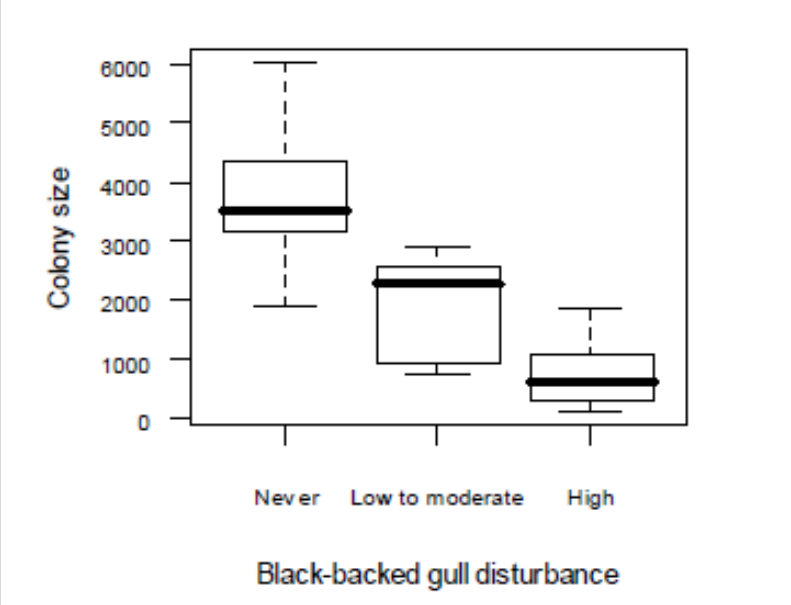
21 chicks banded in 2000 at Centre Bush colony, Oreti River, re-sighted in 2006 i.e. six year old birds (only four in the Oreti).

Width of arrow represents numbers of birds (thinnest arrow = one bird).

Dots are colony locations in 2006.

Black-billed gulls may also be hard to manage because…

- Southern black-backed gulls may be undoing the good work when you're not looking…



- Twenty-two Southland colonies
- Subjective classification of level of disturbance by black-backed gulls based on observations on every occasion that a colony first approached (i.e. several hundred occasions)
- SBBG never observed at colonies > 3,000 gulls
- Extreme cases of disturbance limited to colonies < 600 gulls.
- Possible that SBBG caused abandonment of 3-4 colonies out of 22 monitored.

Southern black-backed gulls on Southland and Canterbury Rivers

- Southland 2004-2006: Waiau, Aparima, Oreti, Mataura Rivers
    - Southern black-backed gulls = ~1,000 gulls in total (four colonies)
    - Black-billed gulls = tens of thousands

- Canterbury:
    - Hurunui River (mouth to Mandamus confluence; DOC data)

	2006	2007	2008	2009	2010
Black-billed gulls	140	30	3243	1176	248
Southern black-backed gulls	3364	2392	1861	3915	5119

    - Rangitata River

    BBG = 2,393 gulls; SSBG = 7,966 gulls (mean of five years – DOC data)

    - Waimakariri

    1980, BBG = 43 gulls, no count of SSBG ('tens of thousands') (Moore 1980)

- The tables are turned in Canterbury! Should we be concerned?

Highest priorities for black-billed gull conservation management

- Analyse existing data
    - What is the extent of the decline?
    - Are there variables that influence numbers (e.g. size of flow, vegetation cover, land use and type)?
- Establish more regular monitoring
    - Where? (See results of above analysis)
- Decoys on islands
- Predator control at bank colonies if population analysis indicates that it is warranted
- Research on southern black-backed gull impacts
- Education and advocacy.

- Further research priorities:
    - Diet: positive and negative relationships with agriculture
    - Diet: non-breeding season (marine)

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