

***Shorebirds and waterbirds in the
NSW Hunter Estuary: winners and
losers from local habitat changes***

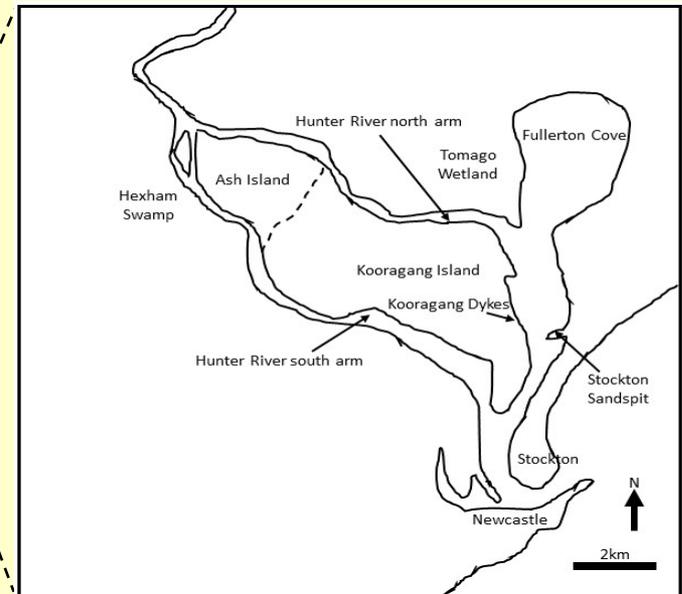
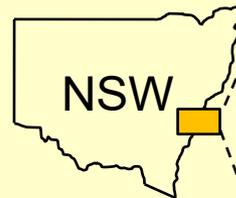
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Hunter Bird Observers Club

February 2022

Hunter estuary

- History of intermittent survey effort from 1960s to 1990s
- Monthly surveys by HBOC members since April 1999
- All shorebirds and waterbirds monitored
 - 98 species recorded in c 23 years
- Focussed on shorebird roost sites
 - Surveys done at high tide
 - Six teams simultaneously visit all of the tidally-influenced sites that are known to host shorebirds
- Insights into:
 - Seasonal variations
 - Longer-term trends
 - Effects of changes in habitat



Some historical ups and downs

Negatives

- Major losses of tidal wetland and shoreline habitat throughout the 20th Century
 - Dredging & amalgamation of islands (improved passage for shipping)
 - Industrial development (factories, coal-handling facilities)
 - Agriculture (esp. beef & dairy)
 - Floodgates (flood mitigation schemes, mosquito control)
- Multi-decade contamination of Fullerton Cove mudflats by firefighting chemicals from Williamstown Airport
- Closure of Stockton Sewage Works (a roost site)
- Oil spill in 2010 (impacts are uncertain)
- Key area of Ash Island is reserved for an infrastructure corridor

Aerial view of Newcastle harbour



Some historical ups and downs

Positive developments

- Creation of Stockton Sandspit (from dredge spoil for bridge)
- Creation of the Kooragang Dykes roost site
 - Original intention: to build factories behind it
- Restoration of tidal flushing regimes at Ash Island, Hexham Swamp and Tomago Wetland in 2000-2015 (→ 1500+ ha of tidal wetlands)
 - These had become freshwater wetlands and grasslands
- Conservation values formally recognised (Kooragang NR, since expanded as the Hunter Wetlands NP)
- Acceptance by NSW regulators of the value of targeted mangrove control measures



Stockton Sandspit

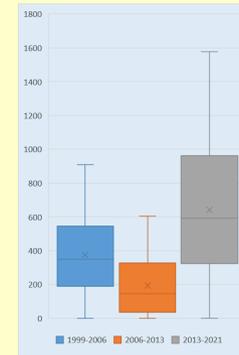
Shorebirds

Endemics

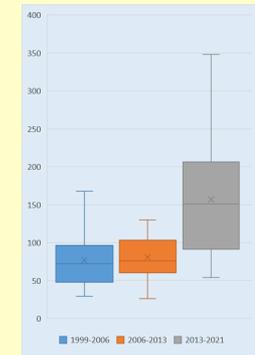
- Numbers generally stable or rising
- Up to 5% of Red-necked Avocet population are often present

Migratory shorebirds

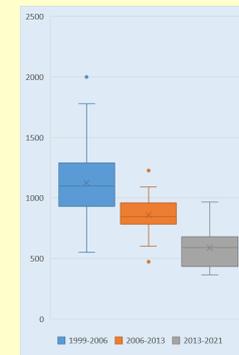
- Massive declines for most migratory shorebirds
 - Exceeding the national trend – the Hunter estuary has greatest decline of all Australian sites (Clemens *et al.* 2016)
 - Continuation of trends dating from the late 1980s
- Exceptions have been Sharp-tailed Sandpiper and Pacific Golden Plover
 - Recent years less encouraging for these
 - STSP counts 2013-2019 were 1,000+ birds each year (peak was c 8% of total population)



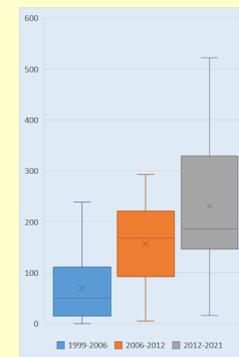
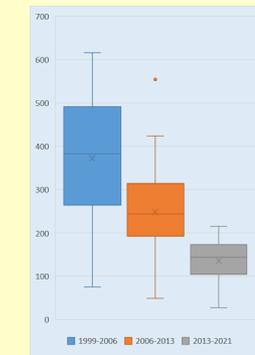
Pied Stilt



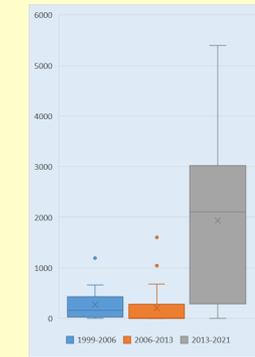
Masked Lapwing



Bar-tailed Godwit Far Eastern Curlew

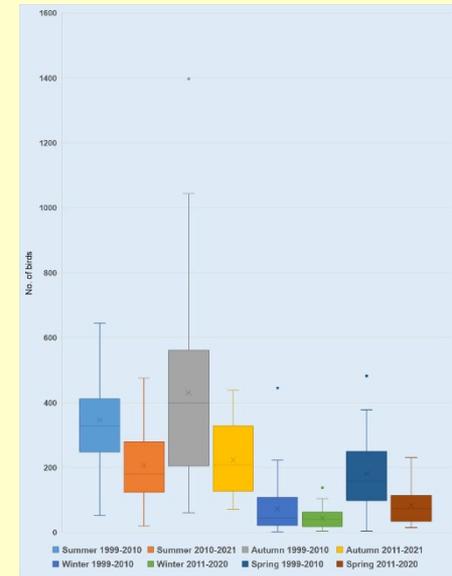


Pacific Golden Plover Sharp-tailed Sandpiper



Gulls and terns

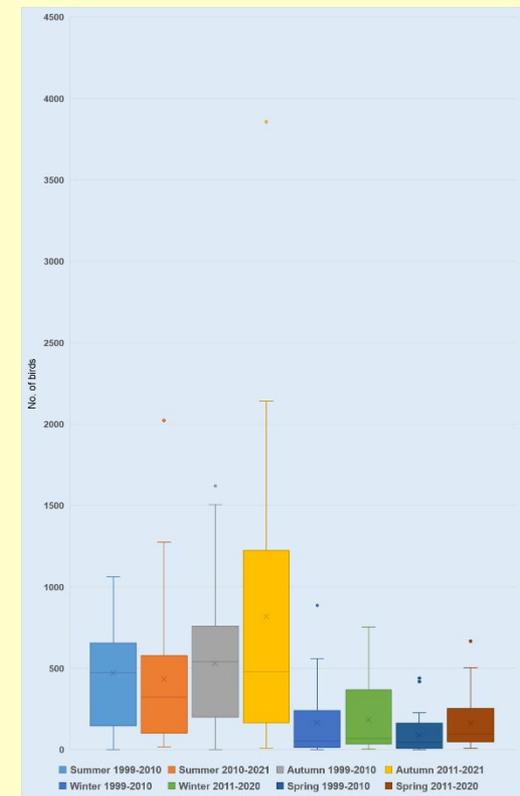
- Silver Gull
 - Numbers are highest in summer & autumn
 - Statistically highly significant declines post-2010
 - Linked to changed practices at the local waste management centre
- Terns with increasing populations
 - Aust. Gull-billed Tern, Caspian Tern, Whiskered Tern
- Terns with decreasing populations
 - White-winged Black Tern, Common Tern
- Terns with stable populations
 - Greater Crested Tern, Little Tern (longer-term declines currently are arrested)
- Decreases probably stem from Flyway changes
- Increases appear to stem from local wetland rehabilitation projects
- Little Terns probably have benefitted from improved conservation practices on Newcastle Bight (Worimi Conservation Lands)



Silver Gull

Ducks and other small waterbirds

- Increasing populations (statistically significant changes)
 - Black Swan, Australian Wood Duck, Pacific Black Duck, Grey Teal, Chestnut Teal, Australasian Grebe, Purple Swamphen, Eurasian Coot
 - For some of the above species, the population changes have had strong seasonal aspects
 - Chestnut Teal: >1% of total population has often been present (the peak count in March 2017 was 3.8%)
 - Highest numbers are in Autumn
- Decreasing populations – nil
 - However, some species have had fluctuating populations eg Pink-eared Duck, Australasian Shoveler, Hoary-headed Grebe
- Intermittent records of crakes
 - Baillon's, Spotless, Australian Spotted
 - Linked with conditions inland



Chestnut Teal

Larger waterbirds

- Black-necked Stork
 - Sightings were rare until late 2013
 - There now are two breeding pairs and the RR is 39% post-2013
- Increasing populations (statistically significant changes)
 - Australian White Ibis, White-faced Heron, Great Egret, Australian Pelican, Little Black Cormorant, Great Pied Cormorant
 - For some of the above species, the population changes have had strong seasonal aspects
- Decreasing populations (nil with statistically significant results)
 - Australasian Bittern?
 - Potentially there has been loss of habitat but there are insufficient records
 - Egrets?
 - Our surveys suggest stability. Numbers have been fluctuating at the local breeding colony but the trends there seem to be downwards.



Black-necked Stork chick about to fledge at Tomago Wetland

In conclusion

- Restoration of tidal flushing has benefitted many species
- The Hunter estuary is important for many shorebird/waterbird species in times of inland drought
- Is the contamination of Fullerton Cove affecting shorebirds?
 - Loss of benthic food sources
 - Chronic toxicity studies are urgently needed, and a clean-up plan
- It has been a team effort – c 200 people have helped with the surveys (and with many long-termers)
- Cooperation (“partnership”) with land owners/managers has been essential to success
 - NPWS, Hunter Local Land Services
- Local interpretations of data complement a national database



Wader ID training session at Stockton Sandspit