

**Results from 22 years of
Hunter Estuary surveys
by HBOC members: shorebirds**

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June 2021

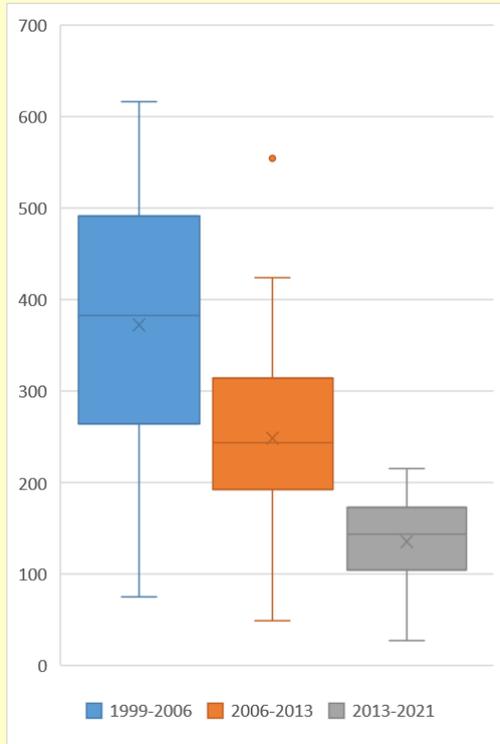
Overview

- Monthly surveys commenced April 1999
- 22 years recently completed = 263 surveys (no survey during the Pasha Bulka storms)
 - Occasionally some of the sites were unable to be surveyed (especially at the dykes)
- What began as two teams covering the main sites (*from a 1999 perspective*) has evolved into six teams covering all important sites for shorebirds at high tide
- Estimated ~200 participants during the 22 years
- 46 shorebird species recorded (33 migratory)
- 23 species regularly present (15 migratory)
- There are winners and losers

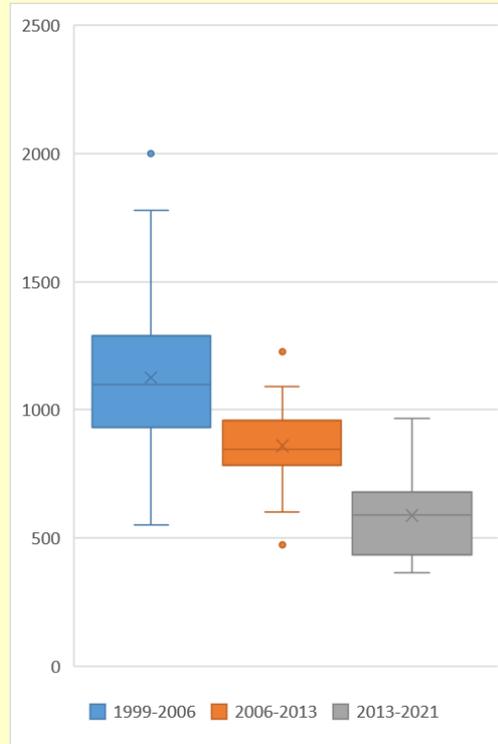
Status of the common shorebirds

Declining populations	Apparently stable	Increasing populations
Whimbrel Far Eastern Curlew Bar-tailed Godwit Black-tailed Godwit Red Knot Great Knot Curlew Sandpiper Red-necked Stint Terek Sandpiper Common Sandpiper Common Greenshank Marsh Sandpiper	Pied Oystercatcher Sooty Oystercatcher Red-necked Avocet Red-capped Plover	Pacific Golden Plover Sharp-tailed Sandpiper Grey-tailed Tattler Pied Stilt Black-fronted Dotterel Masked Lapwing Red-kneed Dotterel
12 species	4 species	7 species

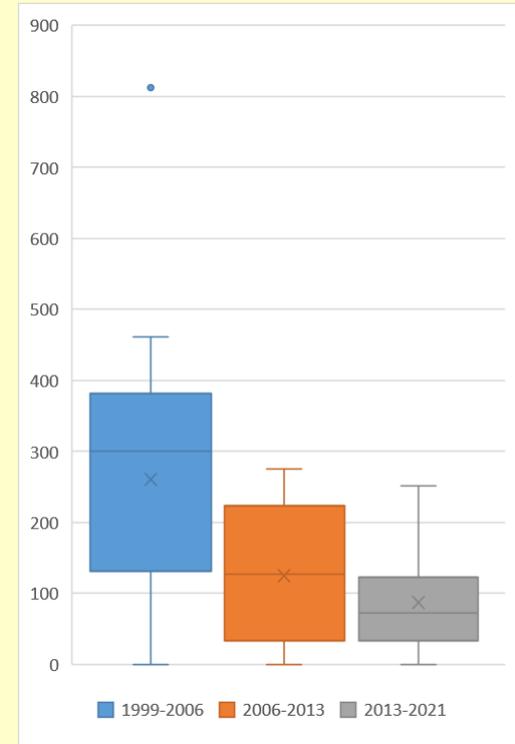
Examples of changes



Far Eastern Curlew



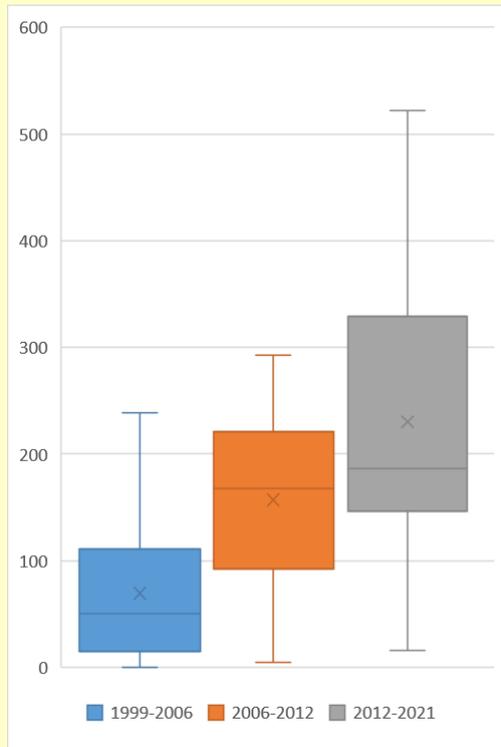
Bar-tailed Godwit



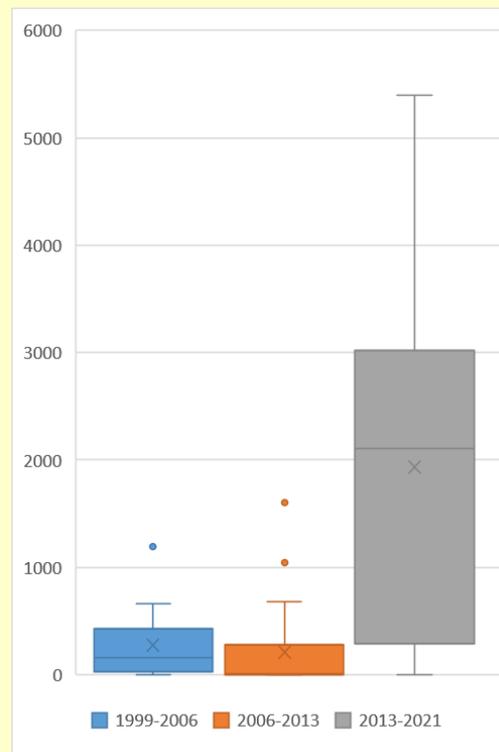
Curlew Sandpiper

November-March counts for three time periods

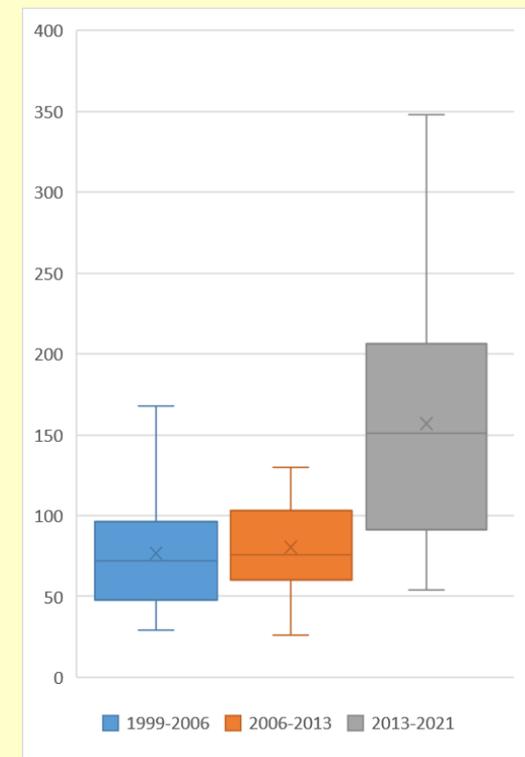
Examples of changes



Pacific Golden Plover



Sharp-tailed Sandpiper



Masked Lapwing

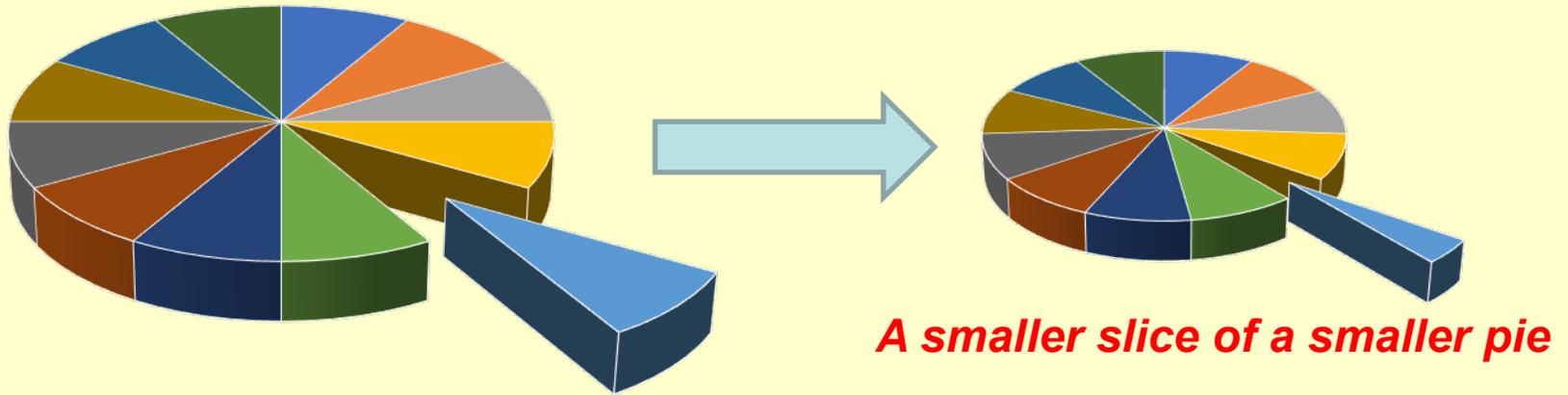
November-March counts for three time periods

Findings 1

- Rehabilitation programs at Ash Island, Hexham Swamp, Tomago Wetland have benefitted generalist species
 - Many of the endemic shorebirds
 - Also Pacific Golden Plover and Sharp-tailed Sandpiper
- Influence of inland weather conditions (droughts and rain), eg:
 - Sharp-tailed Sandpiper influx 2013-2019
 - Red-necked Avocet and Pied Stilt comings and goings
 - Black-fronted and Red-kneed Dotterel influxes

Findings 2

- Species in local decline are also in global decline
- However, the local declines are steeper and the estuary no longer supports internationally significant numbers of most migratory species.



- The 1999-2021 population decline trends are continuations of longer term trends dating from the late 1980s and early 1990s
- The species in decline have two factors in common ...

Species in decline

- Yellow Sea dependency
 - All have high dependency on Yellow Sea tidal mudflats or salt pans during their migration
 - 65% of Yellow Sea mudflats are gone, with 1% p.a. ongoing losses
 - All such species are experiencing large population decreases
- Fullerton Cove dependency
 - All are “coastal obligate” species
 - Forage exclusively (or nearly so) in Fullerton Cove
 - Black-tailed Godwits forage at Ash Island / Deep Pond in autumn
 - Has PFAS/PFOS contamination in Fullerton Cove affected the abundance and diversity of benthic organisms?
 - Concentrations are below those for acute toxicity
 - Chronic effects?

Ramsar criteria and the Limits of Acceptable Change

- ✓ Support 1% or more of population of a migratory species
 - Sharp-tailed Sandpiper
 - Not the Far Eastern Curlew or Red Knot for ~15 years
- X Support more than 5,000 migratory shorebirds in at least 4 years in any 5-year period
 - Usually <2,000 shorebirds except when large numbers of Sharp-tailed Sandpiper are present
- X Support more than 600 Far Eastern Curlew in at least one year in any 5-year period
 - Only two records since 1999 of 600+ FE Curlew
 - Both were in the 2001/02 season
 - The 2020/21 maximum count was 122 birds