

Waterbirds in Western Port: trends & conservation

Richard H. Loyn, Eco Insights

45 years of community monitoring & climatic flux

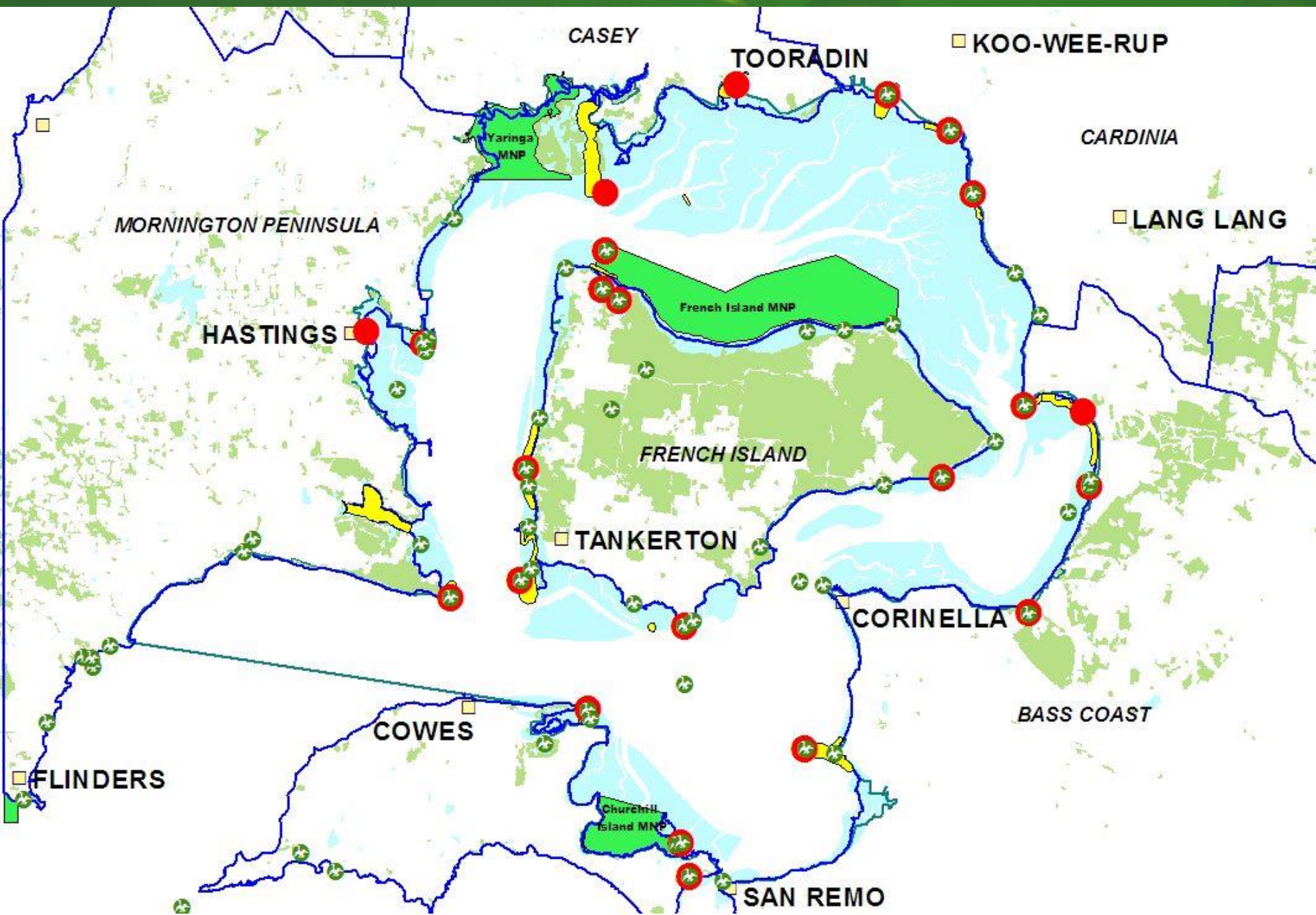
BirdLife Australia Western Port survey

This ppt modified from earlier ppt,
partly based on ppts by Birgita Hansen,
Peter Menkhorst, Peter Dann & RHL



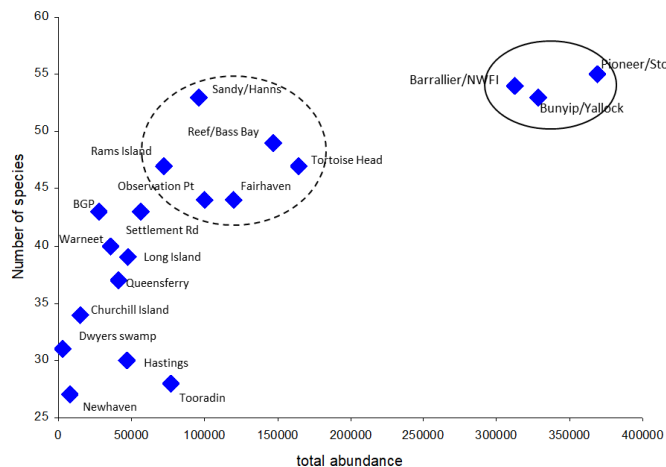
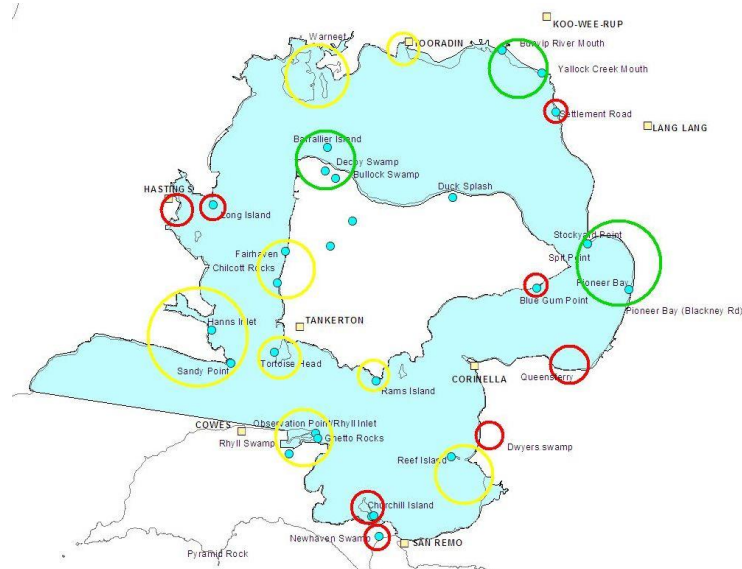


BLA count sites



Ranking importance of sites

Site	Ranking
Pioneer Bay / Stockyard Pt / GMH drain	1
Barrallier Island / NW French Island	2
Bunyip River / Yallock Creek	3
Reef Island / Bass Bay	4
Fairhaven	5
Tortoise Head	6
Observation Point	7
Sandy Point / Hanns Inlet	8
Warneet	9
Rams Island	10
Tooradin	11
Long Island	12
Settlement Rd	13
Blue Gum Pt (French Island)	14
Dwyers Rd swamp	15
Hastings	16
Churchill Island	17
Queensferry	18
Newhaven	19



Shorebirds

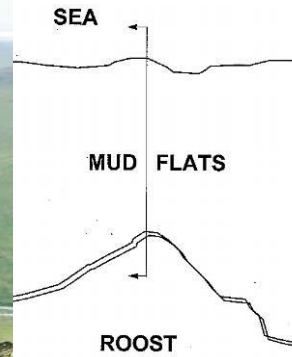
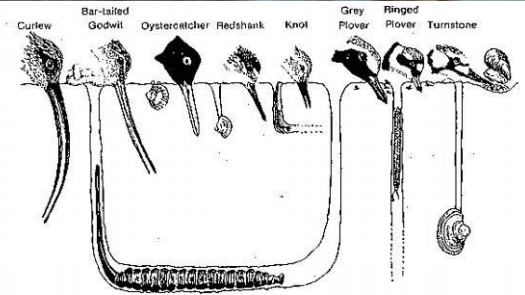


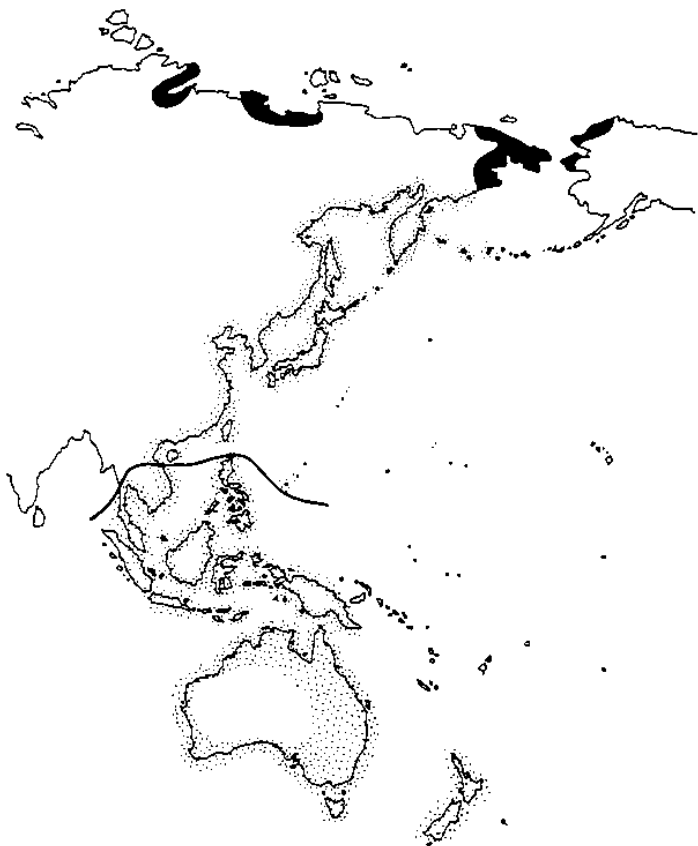
photo Danny Rogers



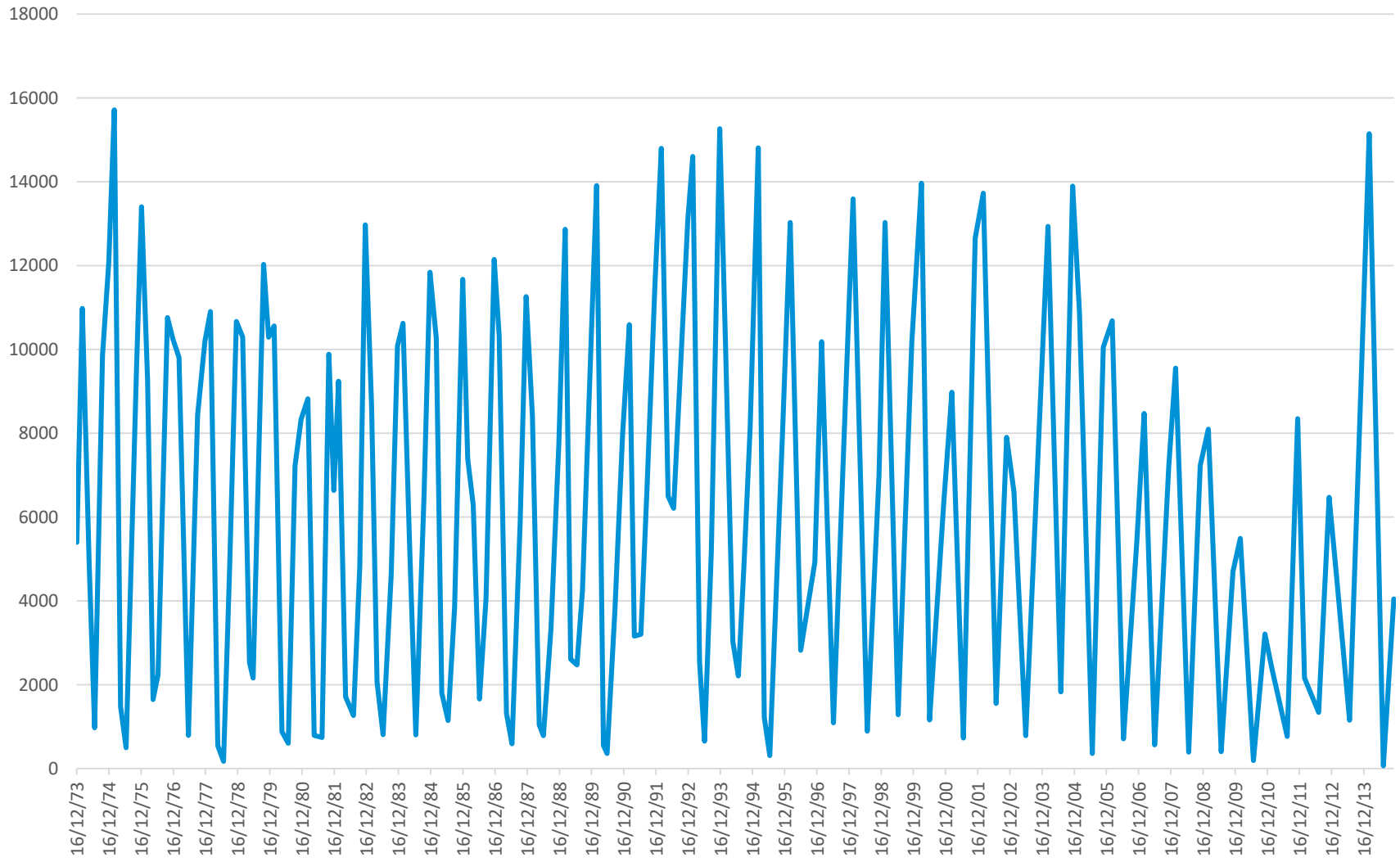
Bill sizes of various waders in relation to the depth of some common prey



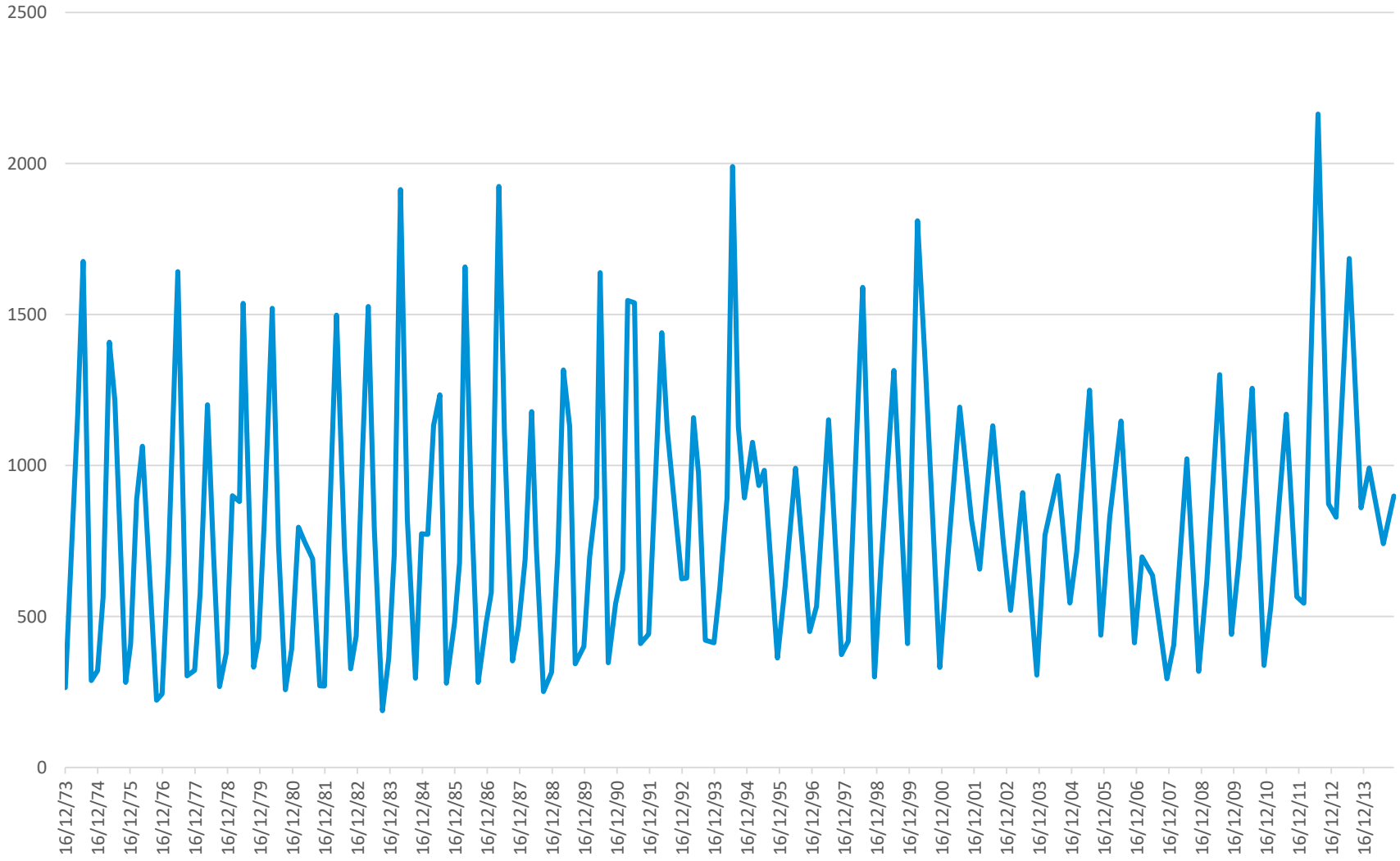
East Asian-Australasian Flyway



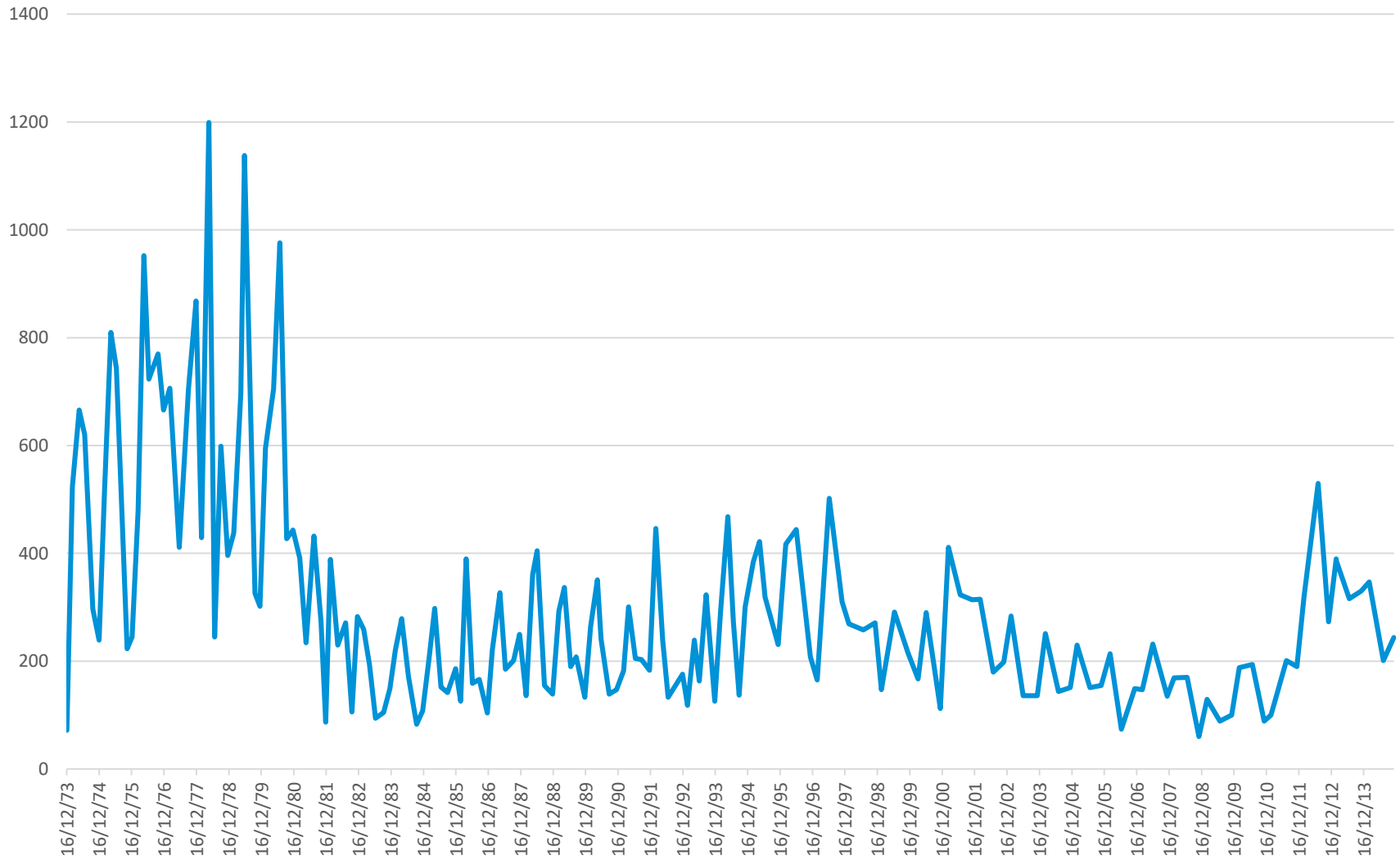
Transequatorial Migratory Shorebirds (all species)



Australasian Breeding Shorebirds (all species)



Cormorants (all species) & Pelican



Declining species in Western Port

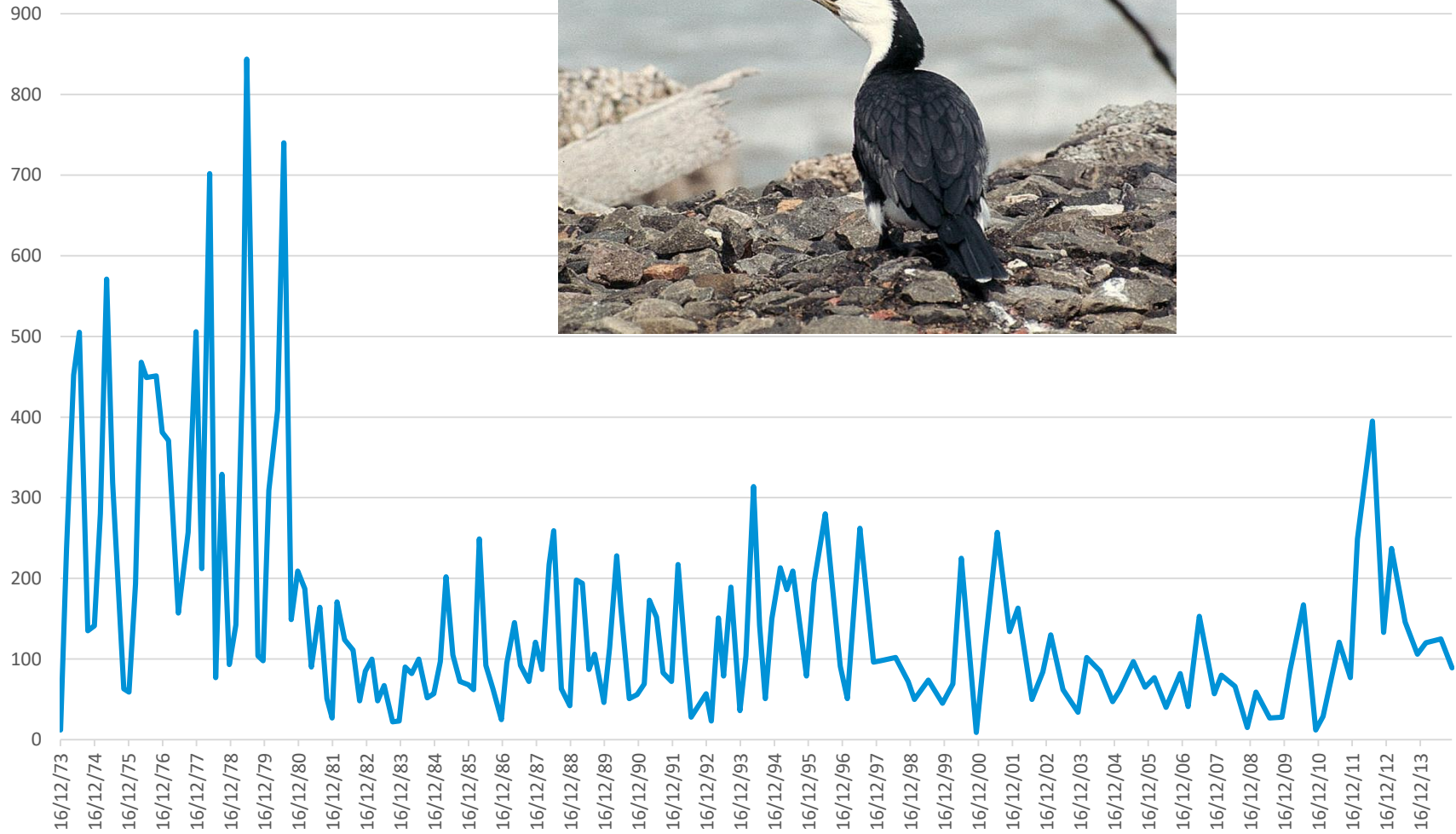
Many fish-eaters, e.g. Little Pied Cormorant, Great Cormorant, Australian Pelican, Crested Tern, Fairy Tern, White-faced Heron [but NOT Pied Cormorant]

Many transequatorial migratory shorebirds, e.g. Eastern Curlew, Grey-tailed Tattler, Curlew Sandpiper, Pacific Golden Plover [but NOT Red-necked Stint, the most common species]

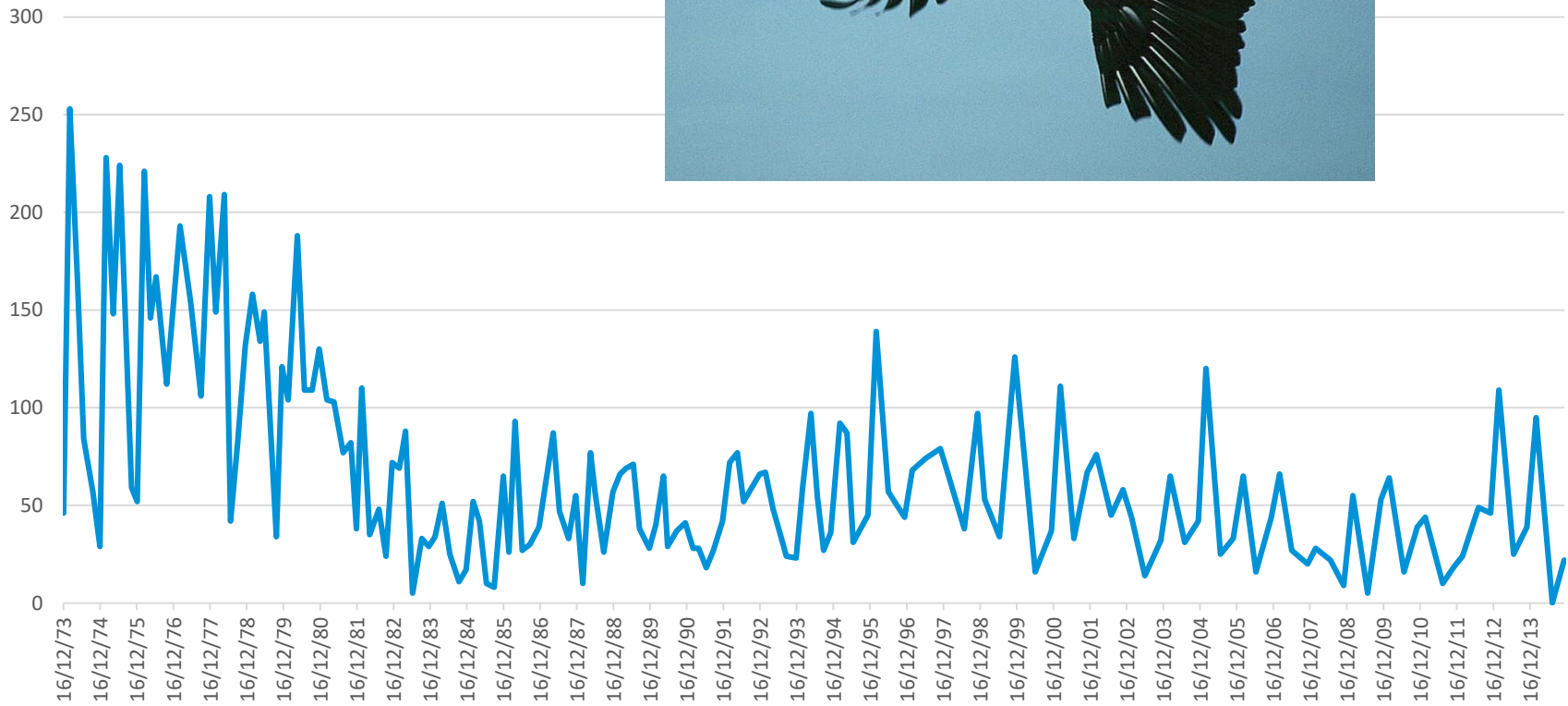
Some Australasian breeding shorebirds, gulls & ibis, e.g. Masked Lapwing, Silver Gull, Aus. White Ibis



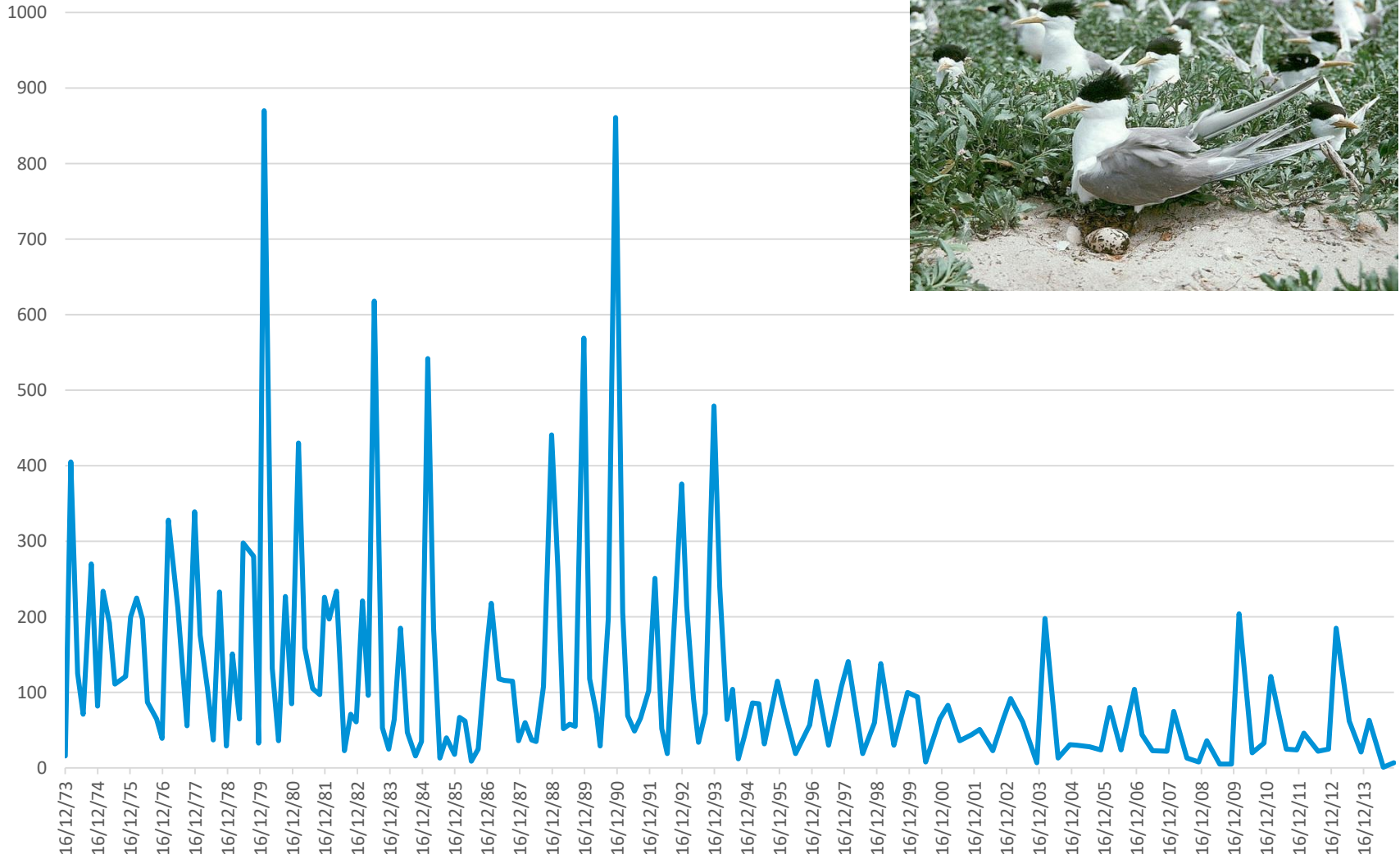
Little Pied Cormorant



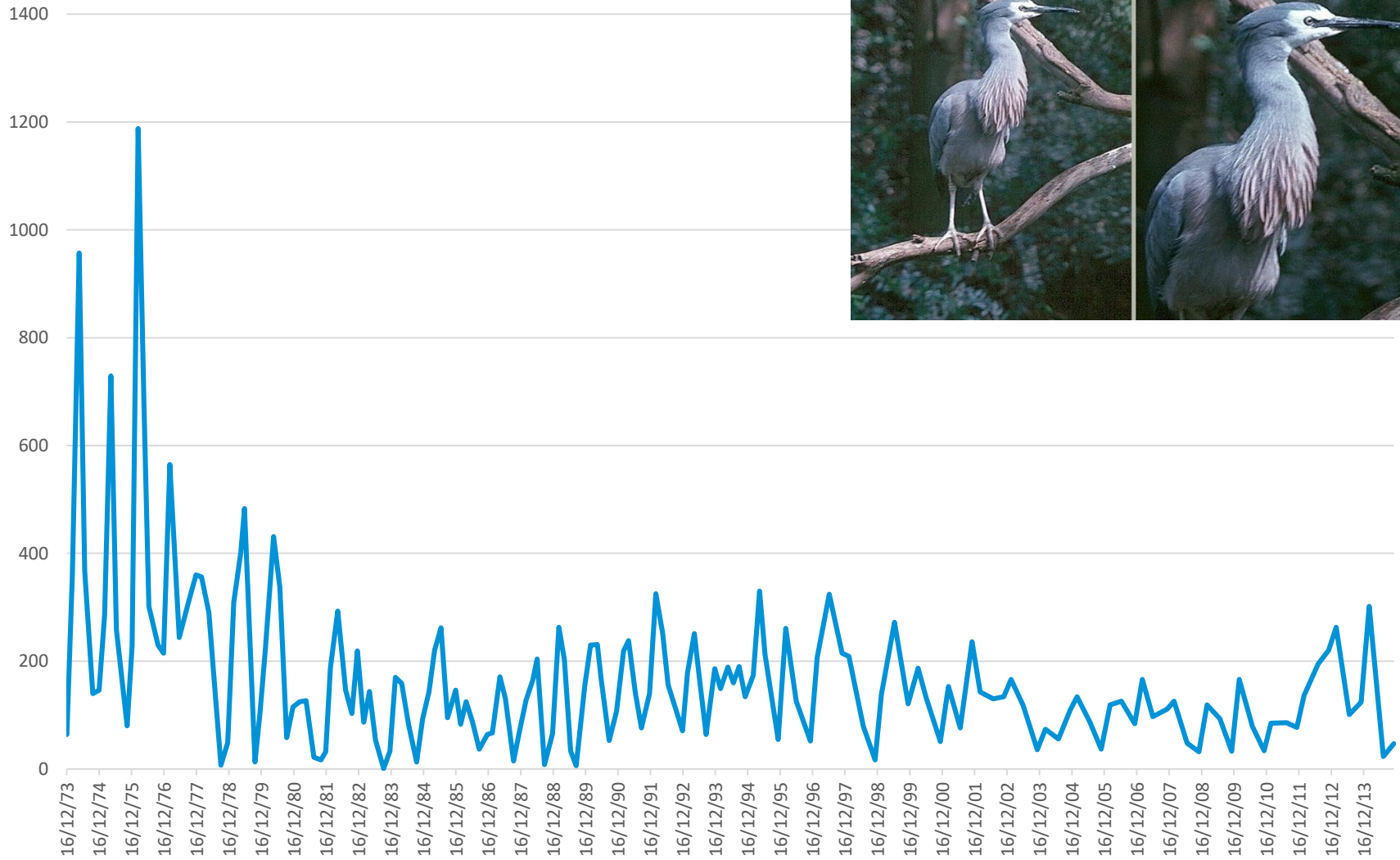
Australian Pelican



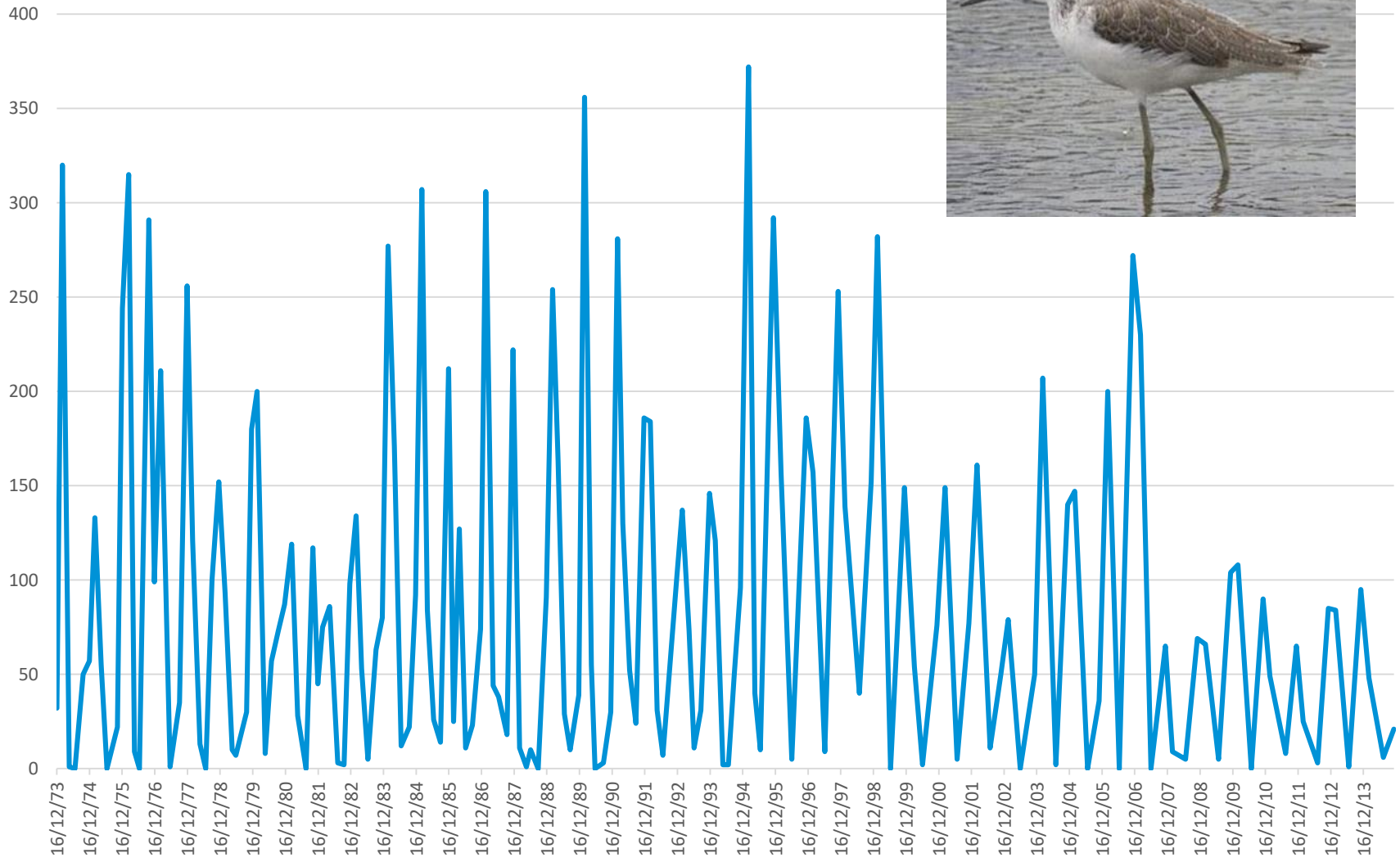
Crested Tern



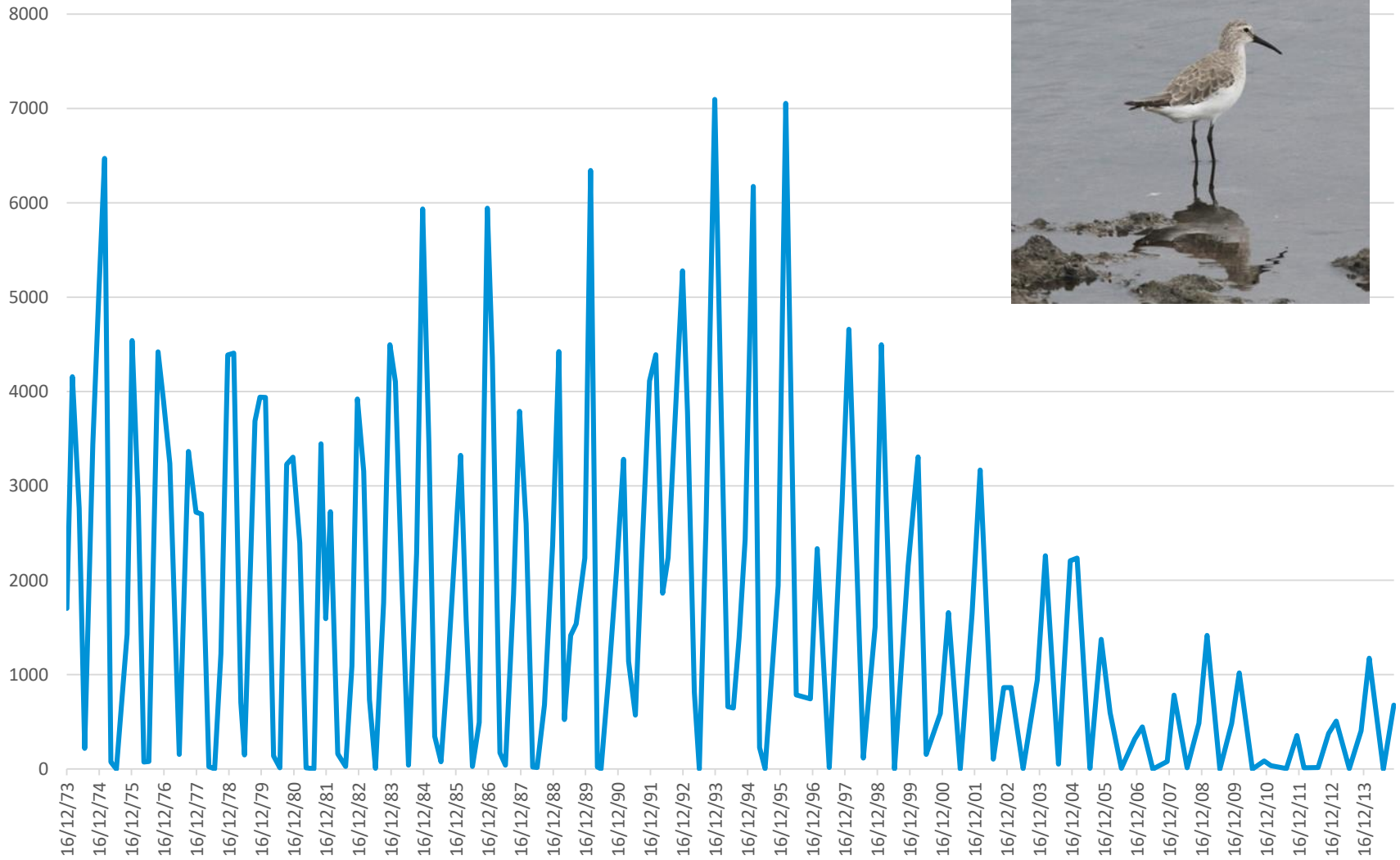
White-faced Heron



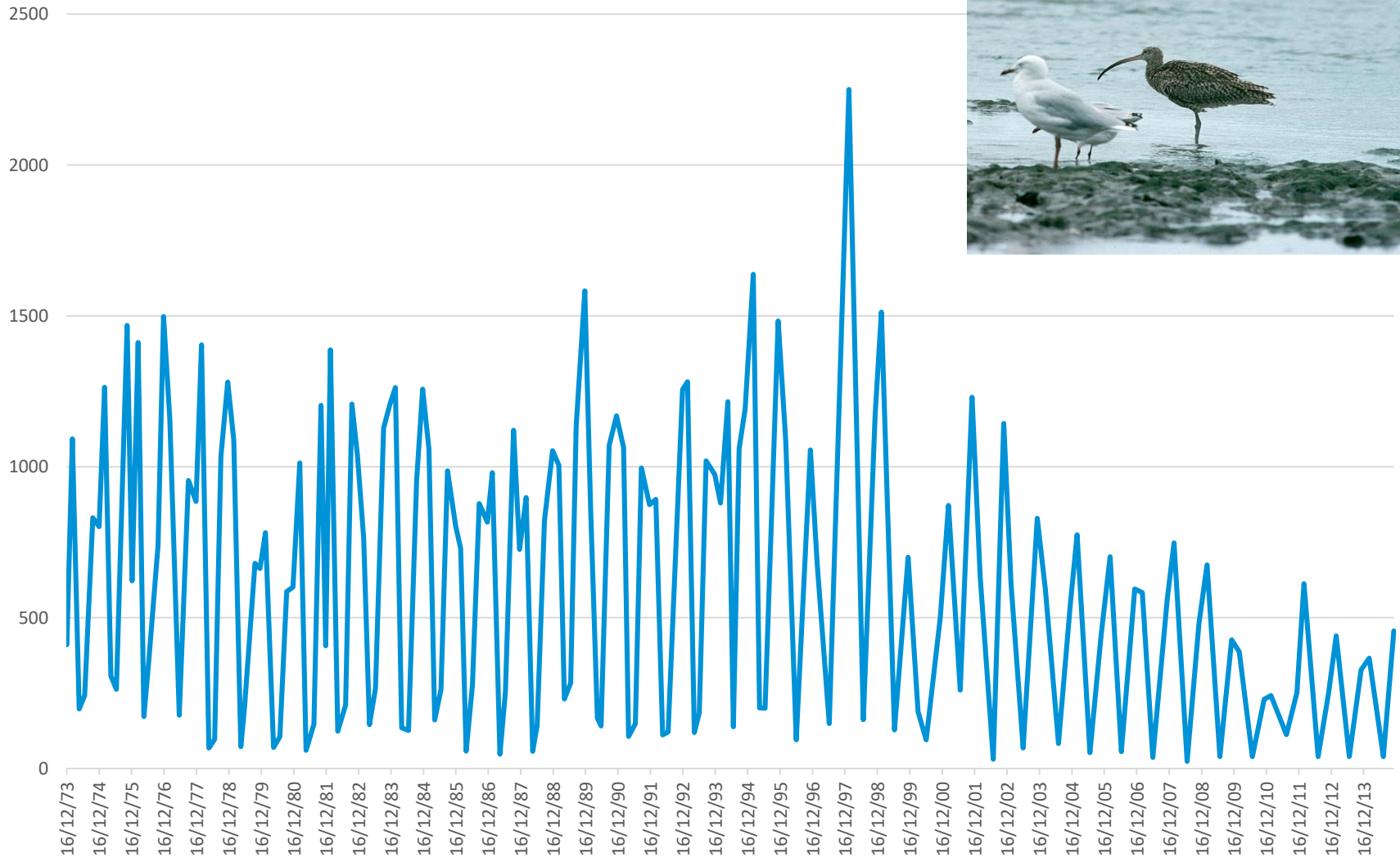
Common Greenshank



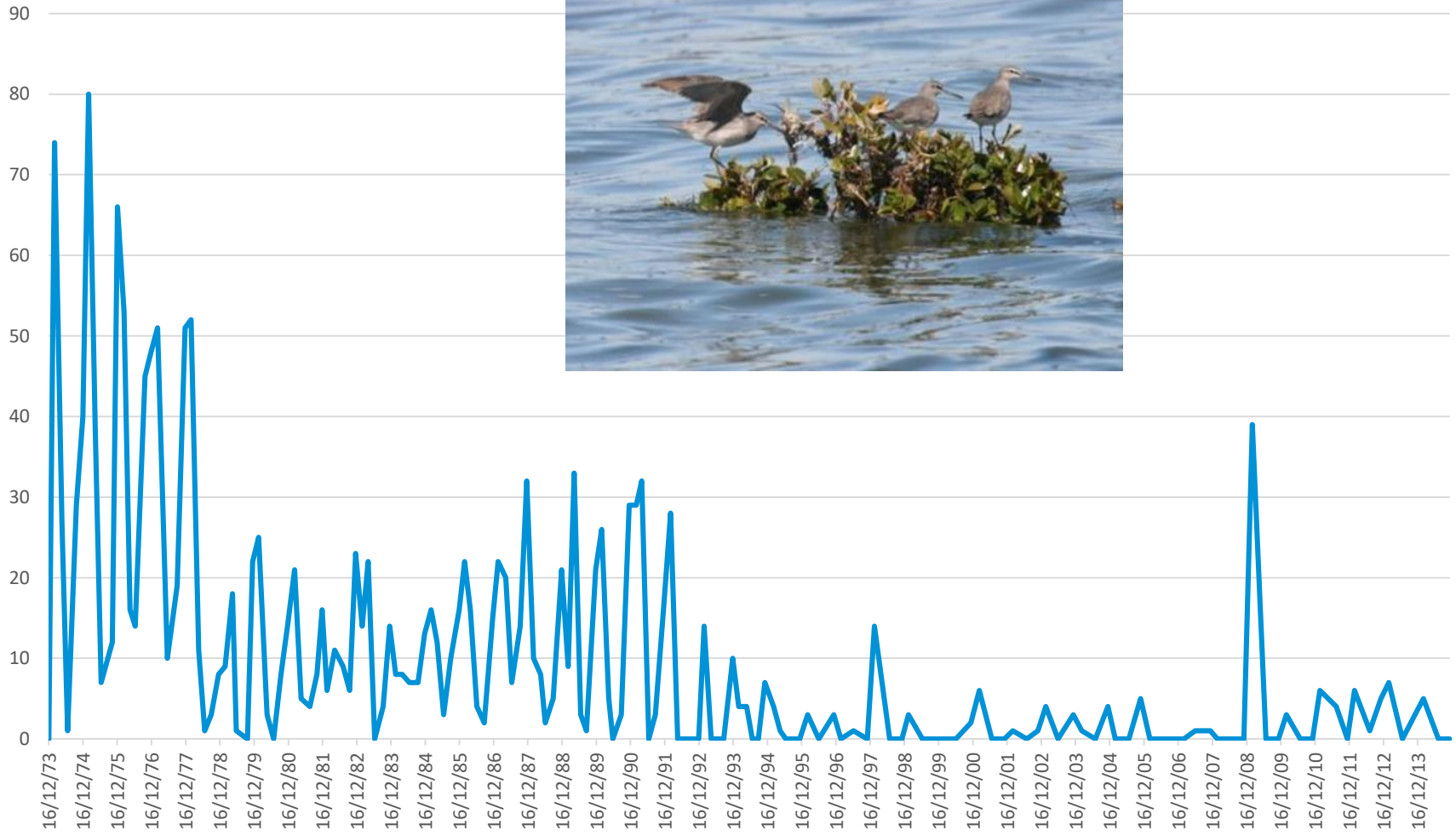
Curlew Sandpiper



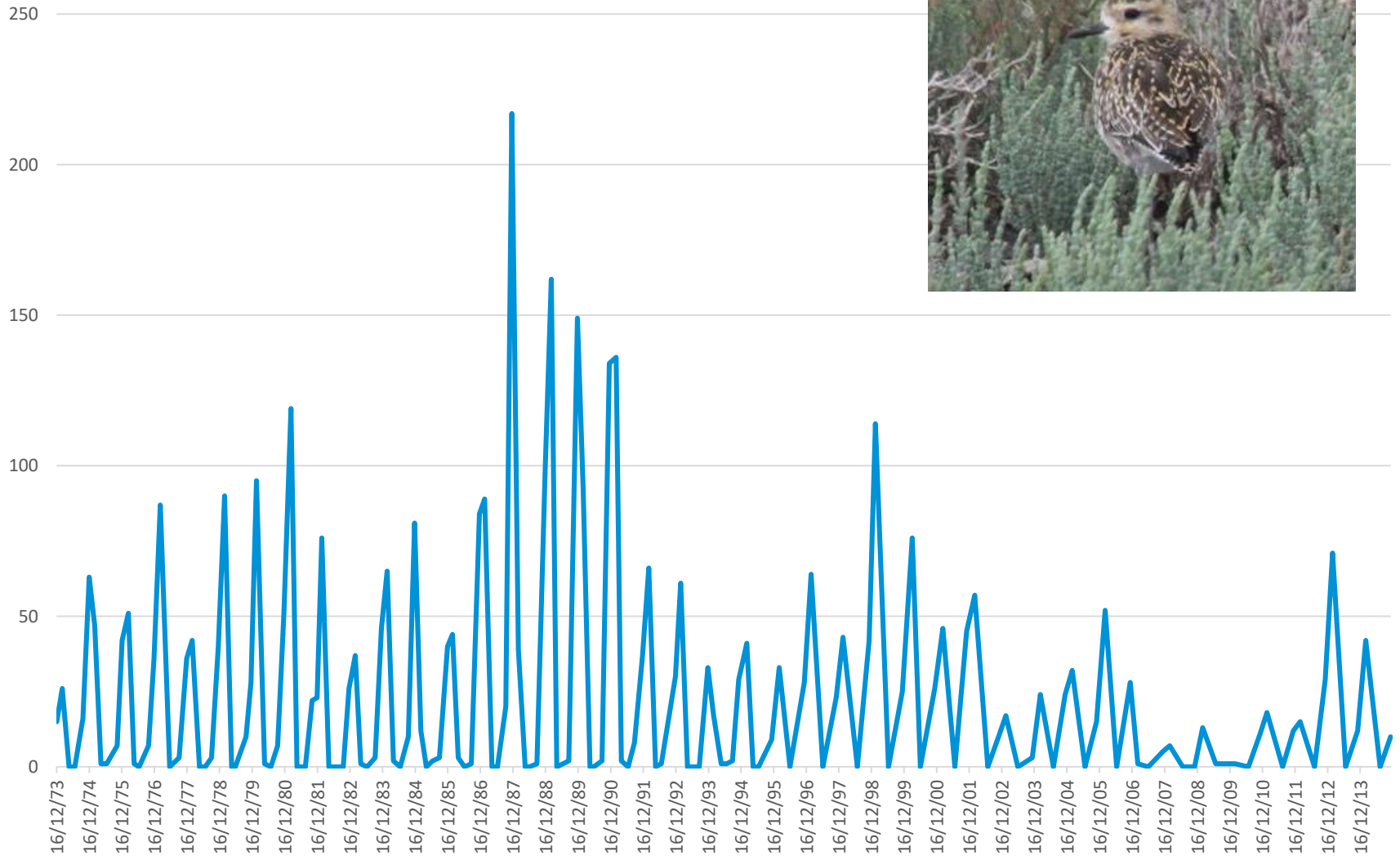
Eastern Curlew



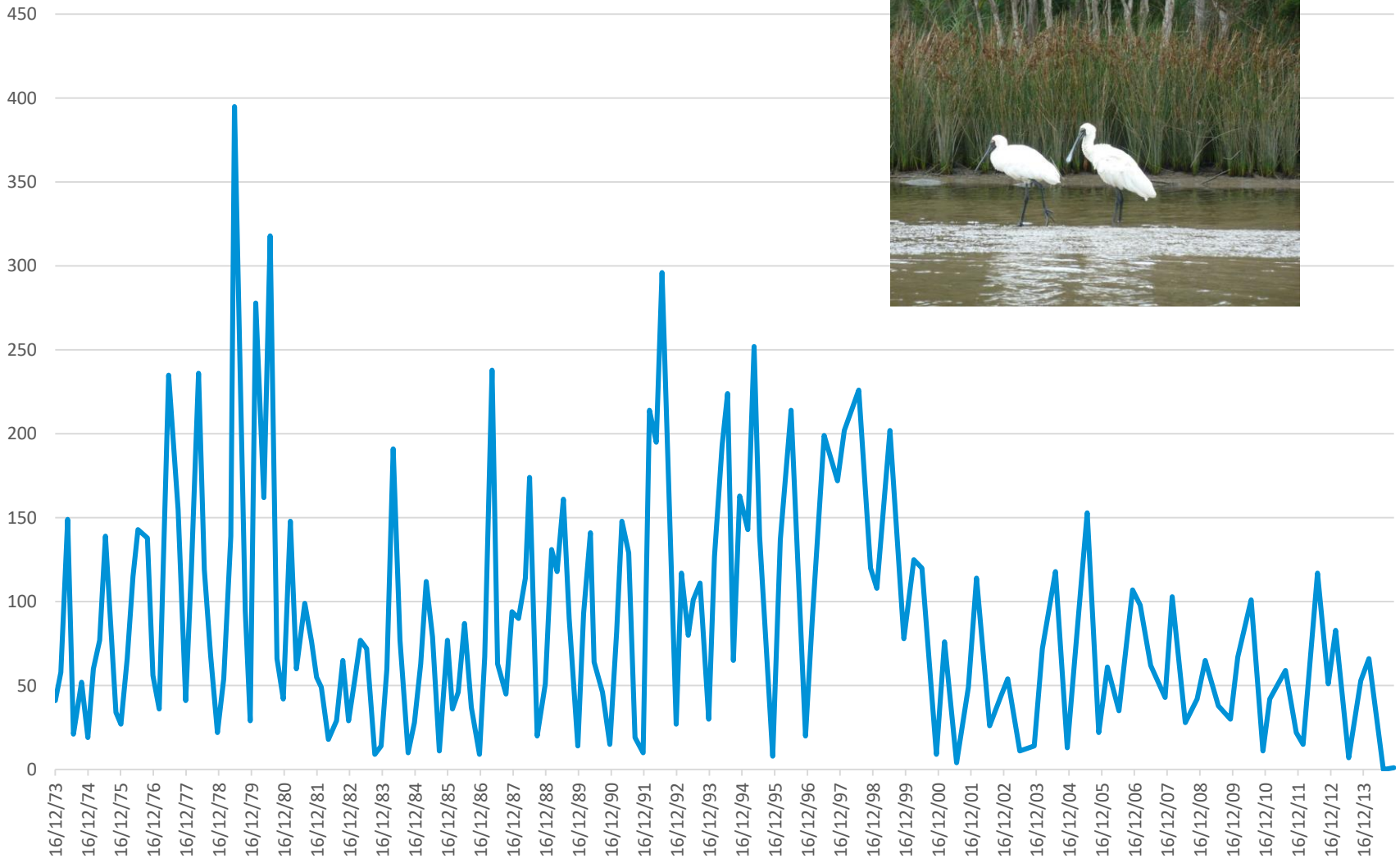
Grey-tailed Tattler



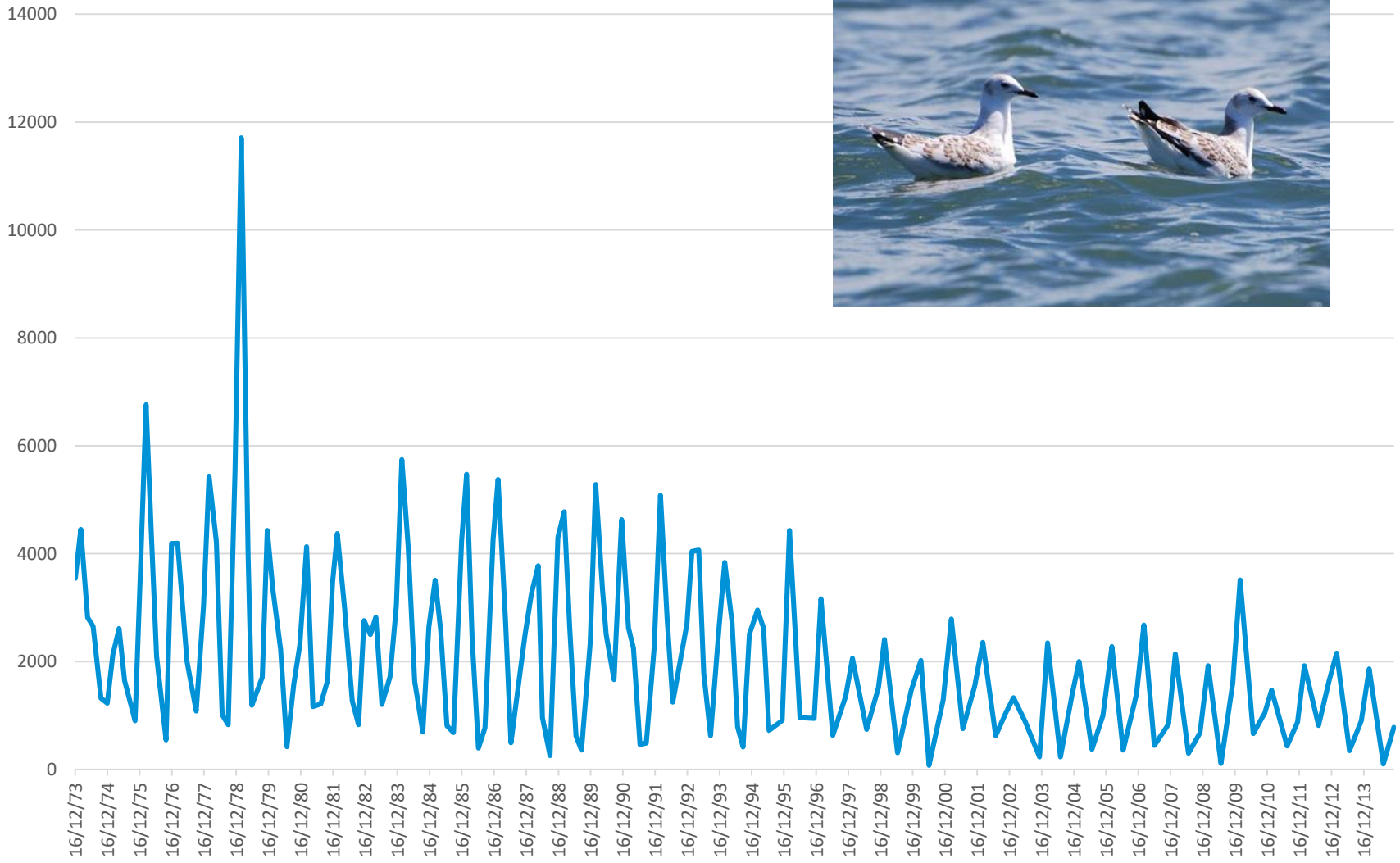
Pacific Golden Plover



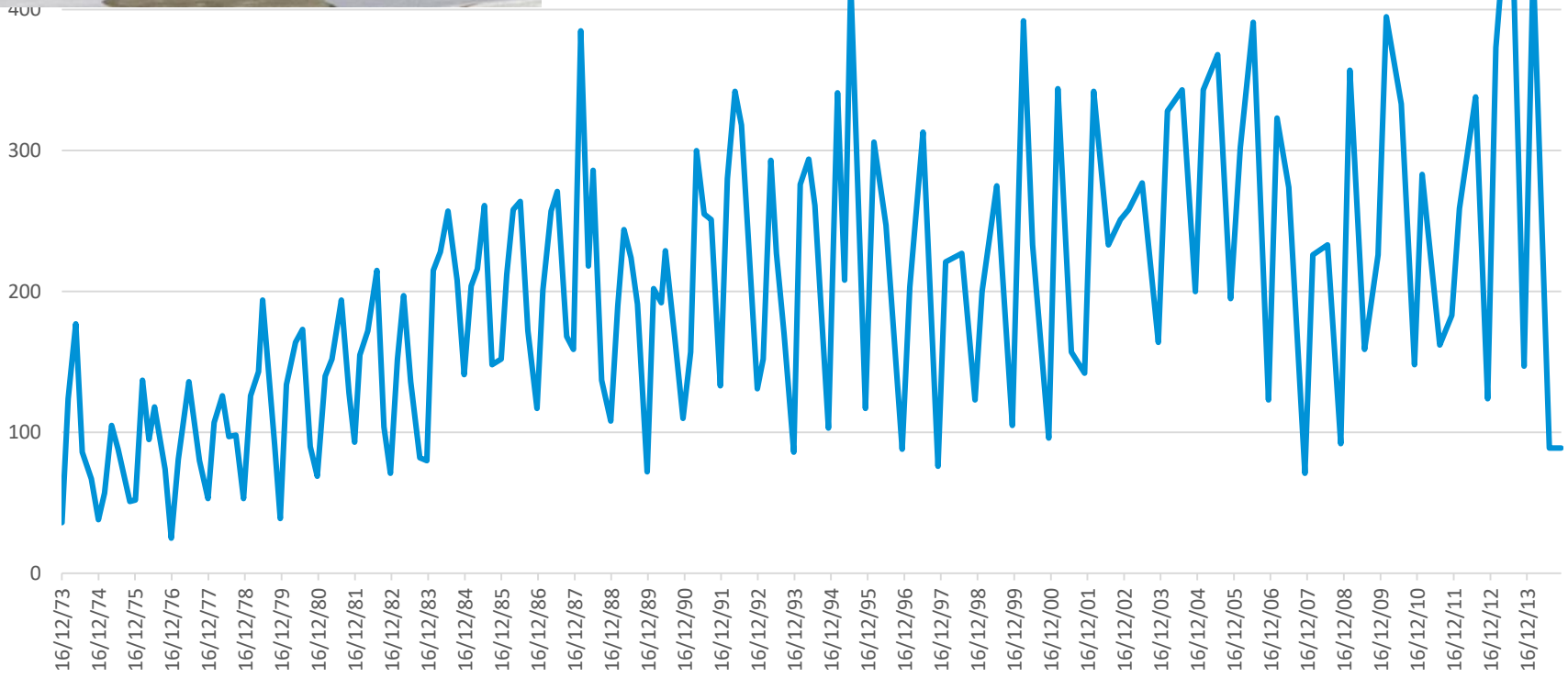
Royal Spoonbill



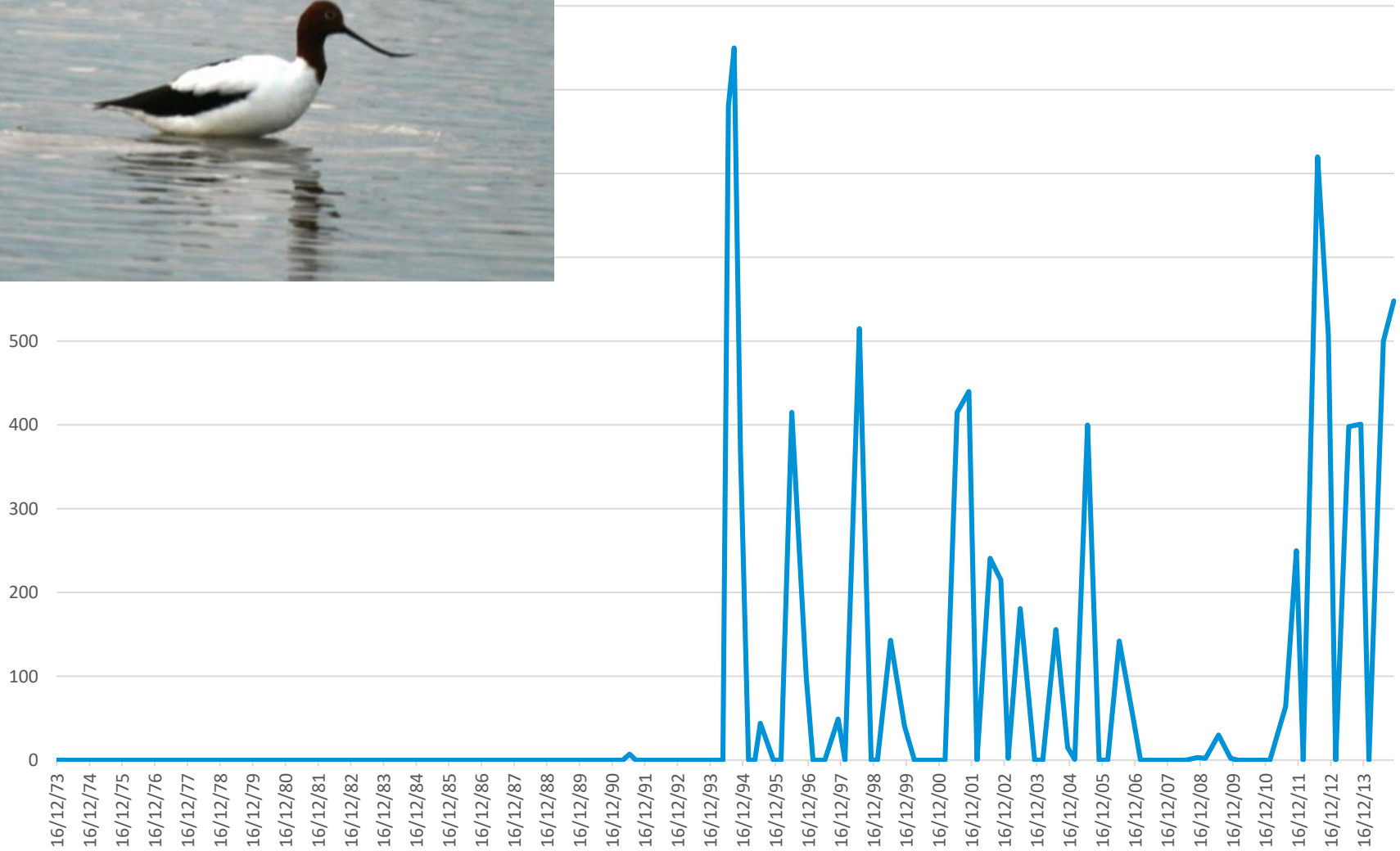
Silver Gull



Pied Oystercatcher



Red-necked Avocet





Species showing more stability

One fish-eating species: Pied Cormorant

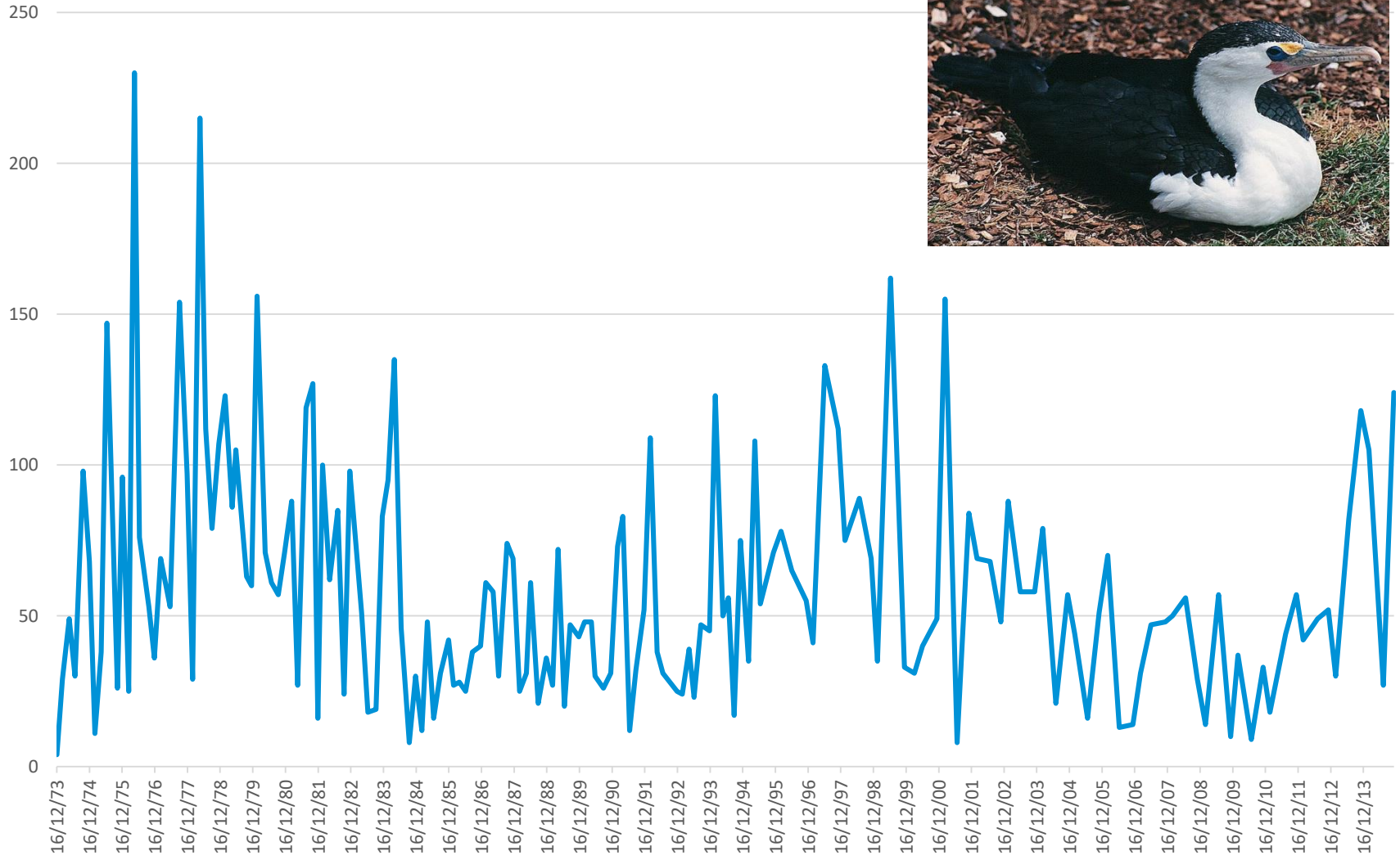
**The most common transequatorial migratory shorebird:
Red-necked Stint**

**One migratory shorebird that breeds in New Zealand:
Double-banded Plover**

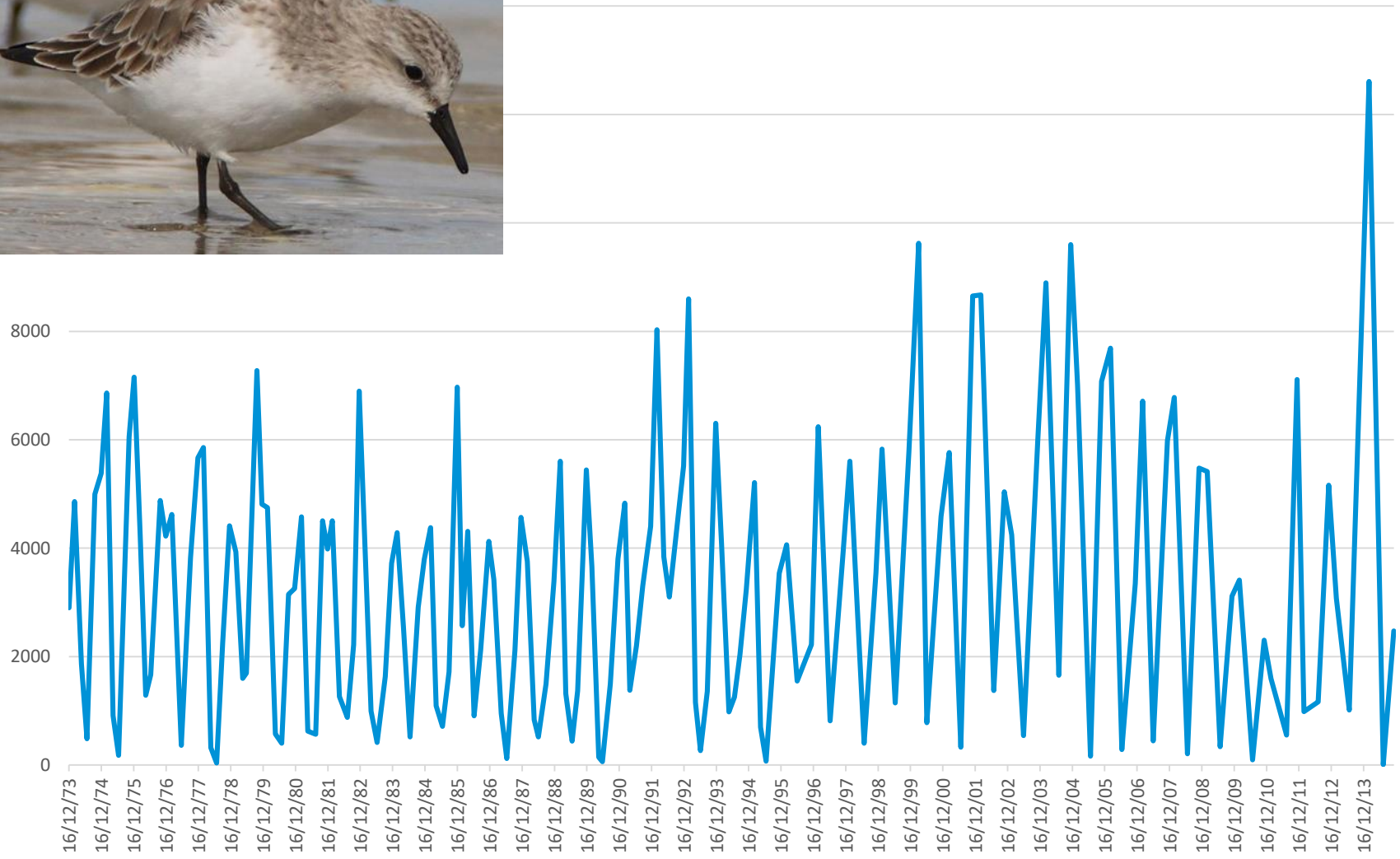
**One Australian-breeding shorebird:
Red-capped Plover**

**Two locally breeding waterfowl:
Black Swan & Pacific Black Duck**

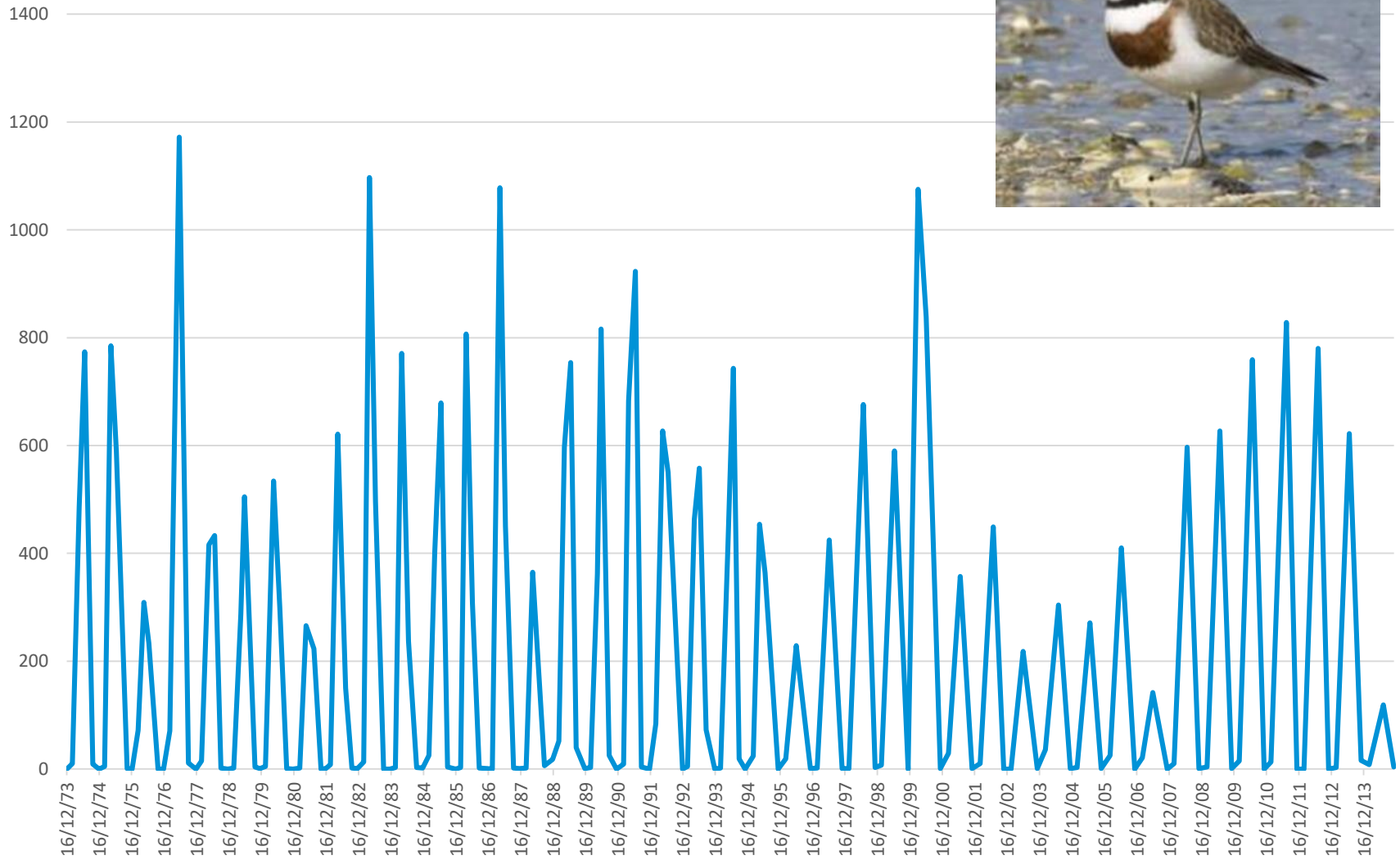
Pied Cormorant



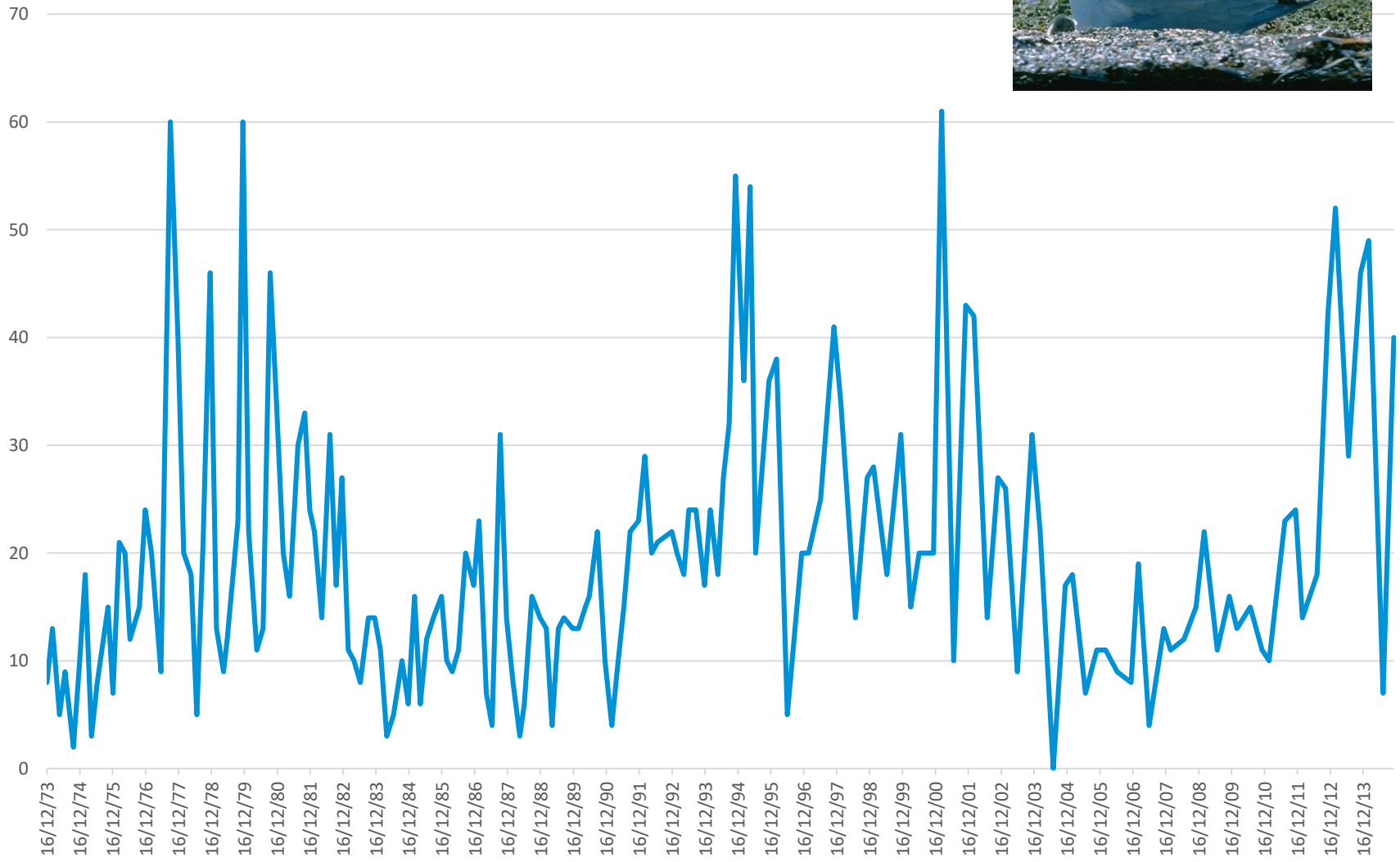
Red-necked Stint



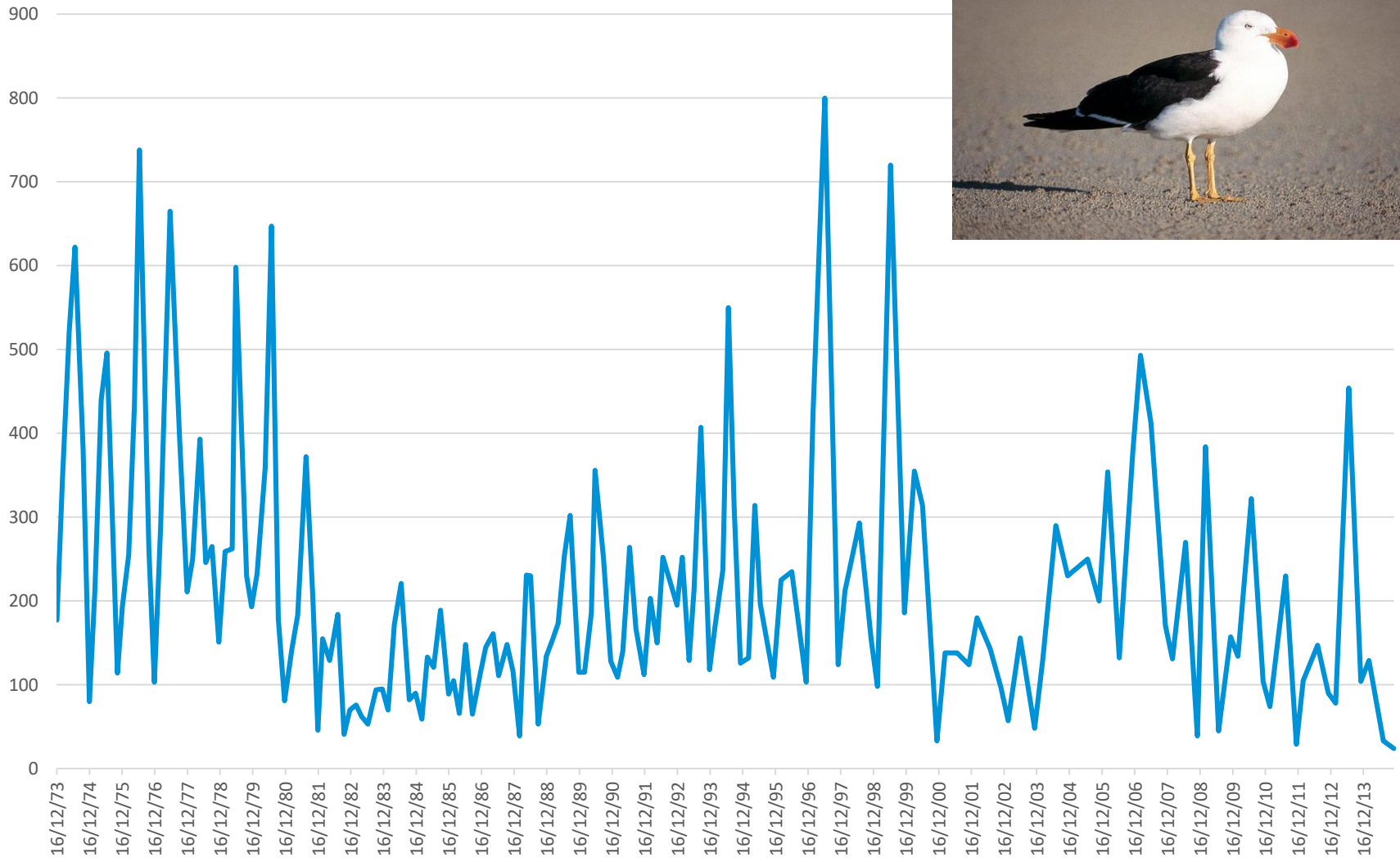
Double-banded Plover



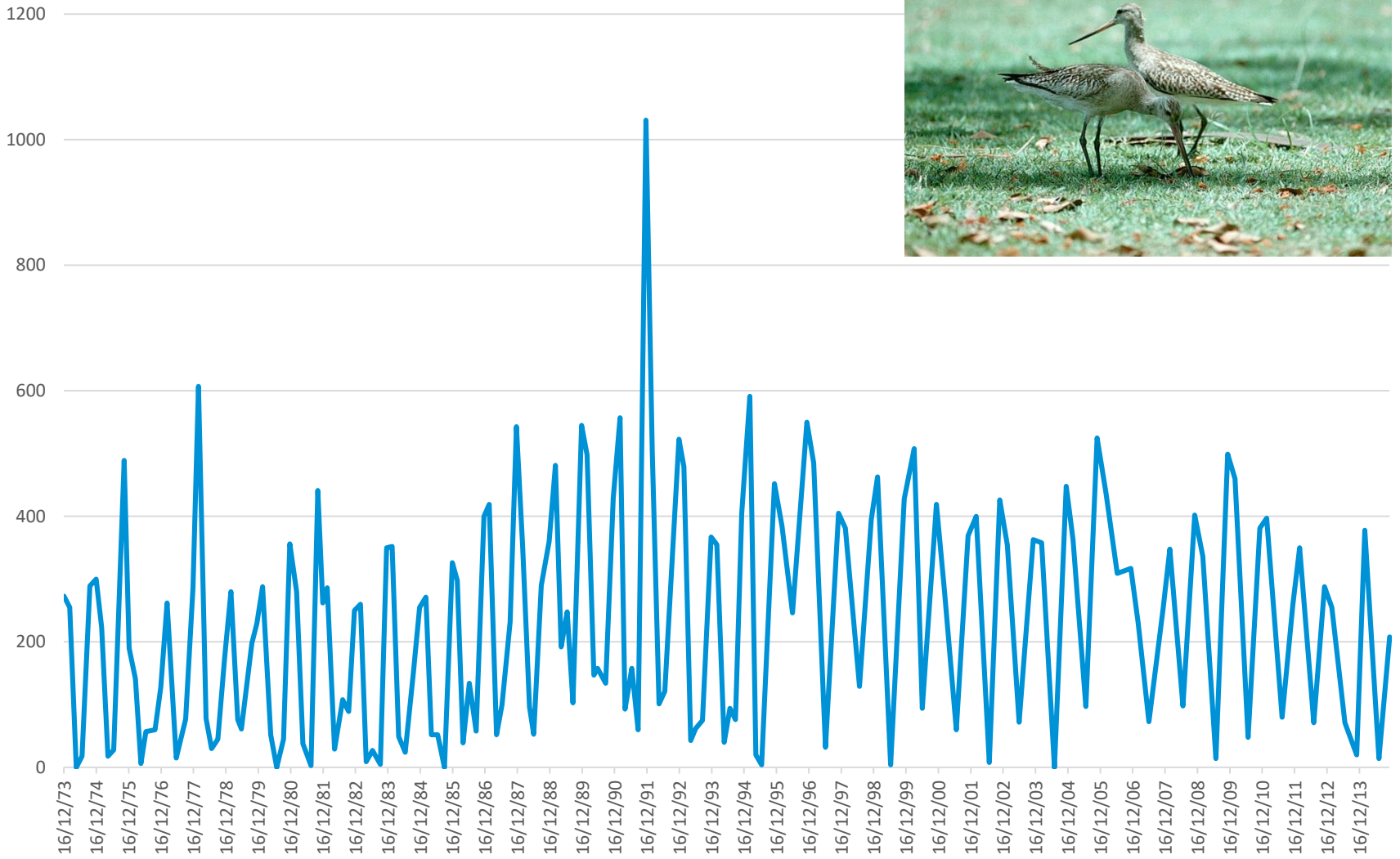
Caspian Tern



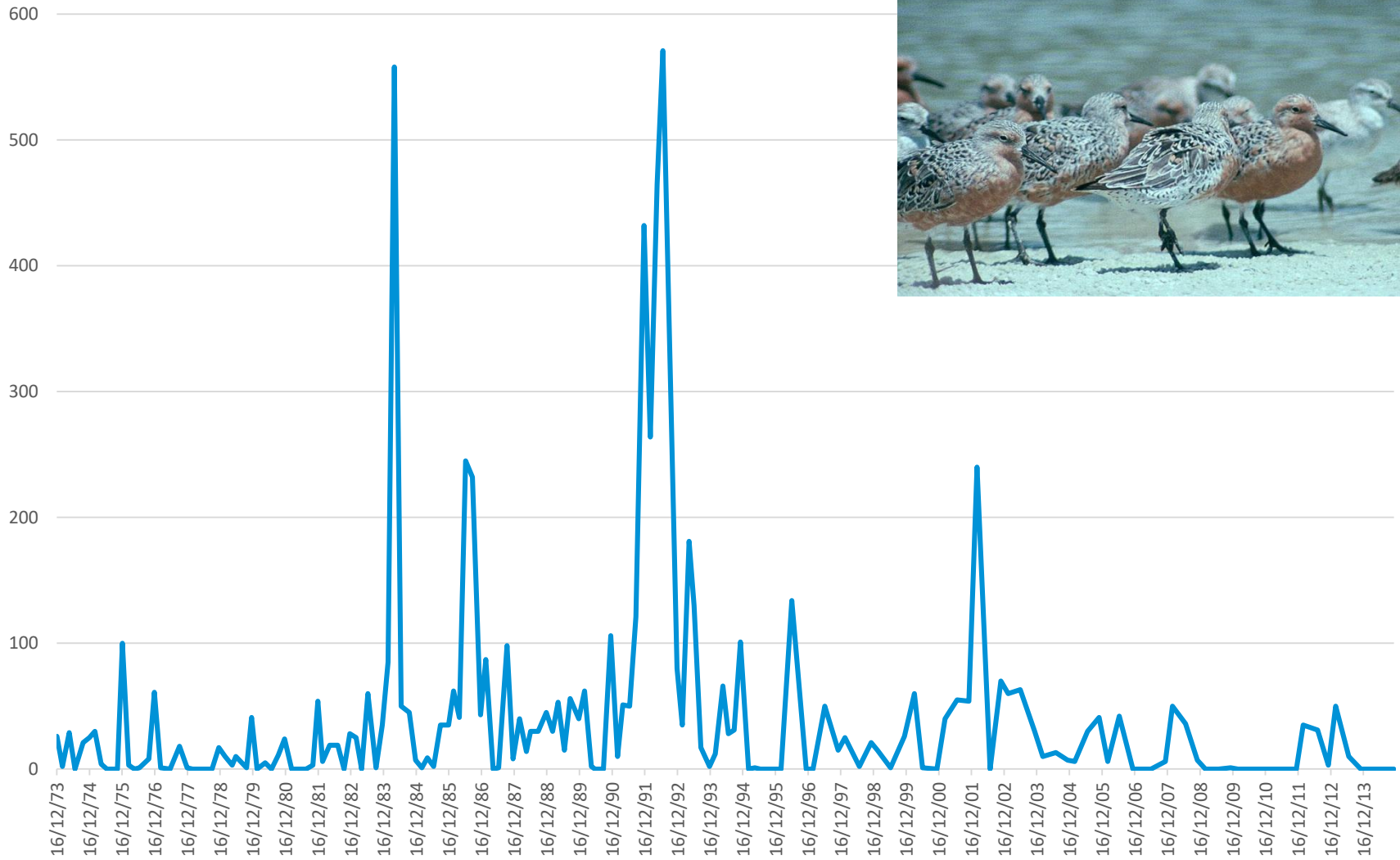
Pacific Gull



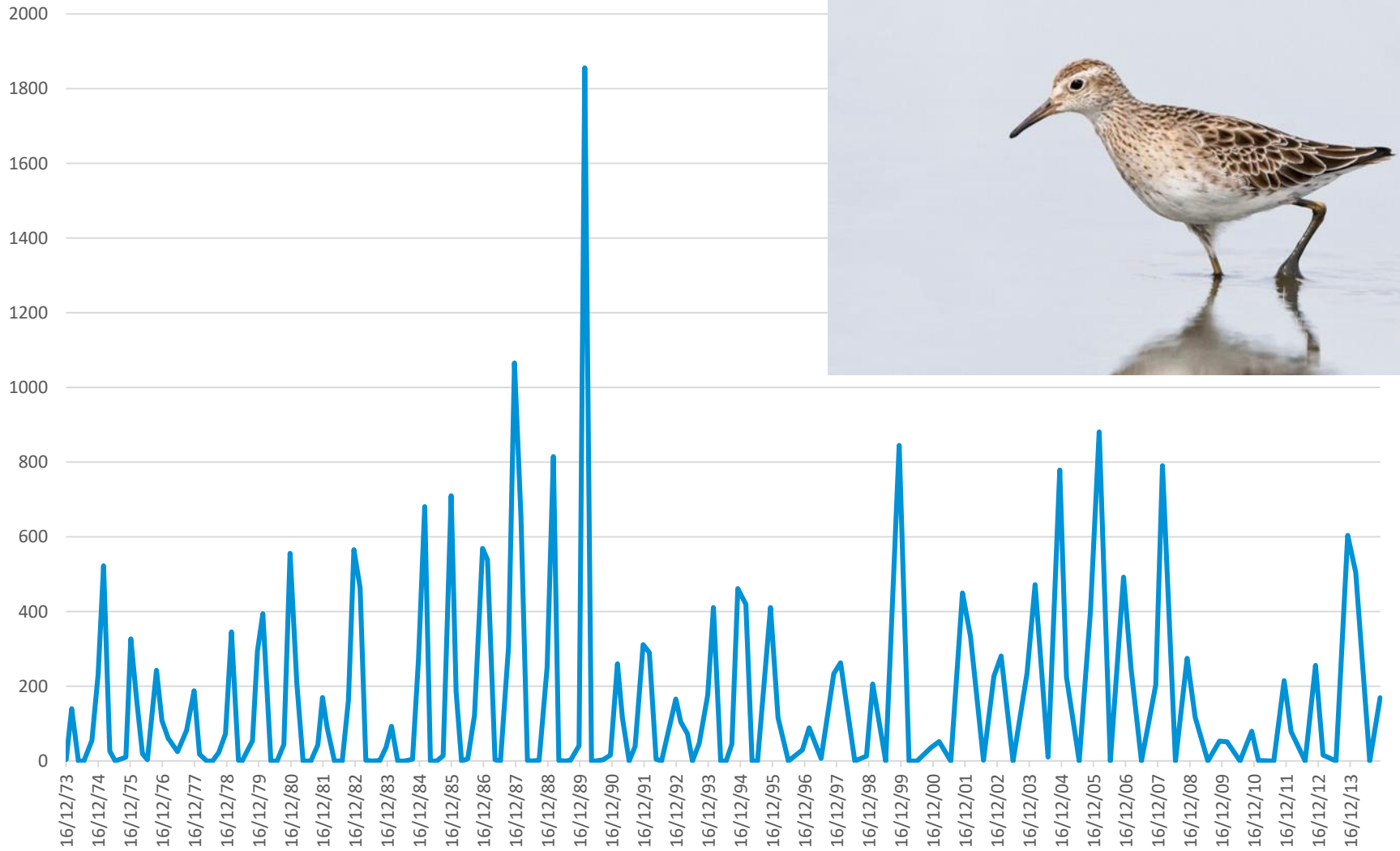
Bar-tailed Godwit



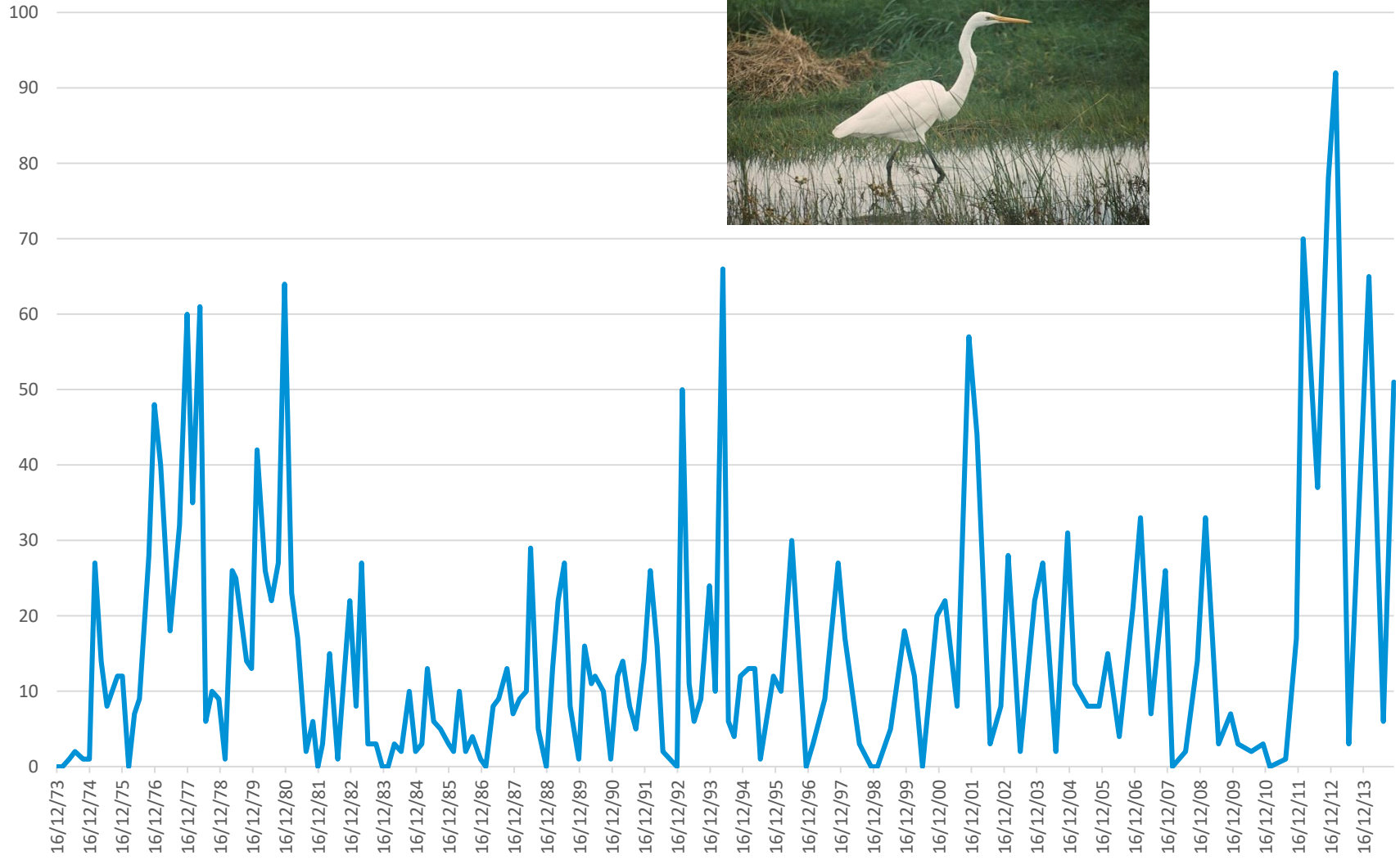
Red Knot



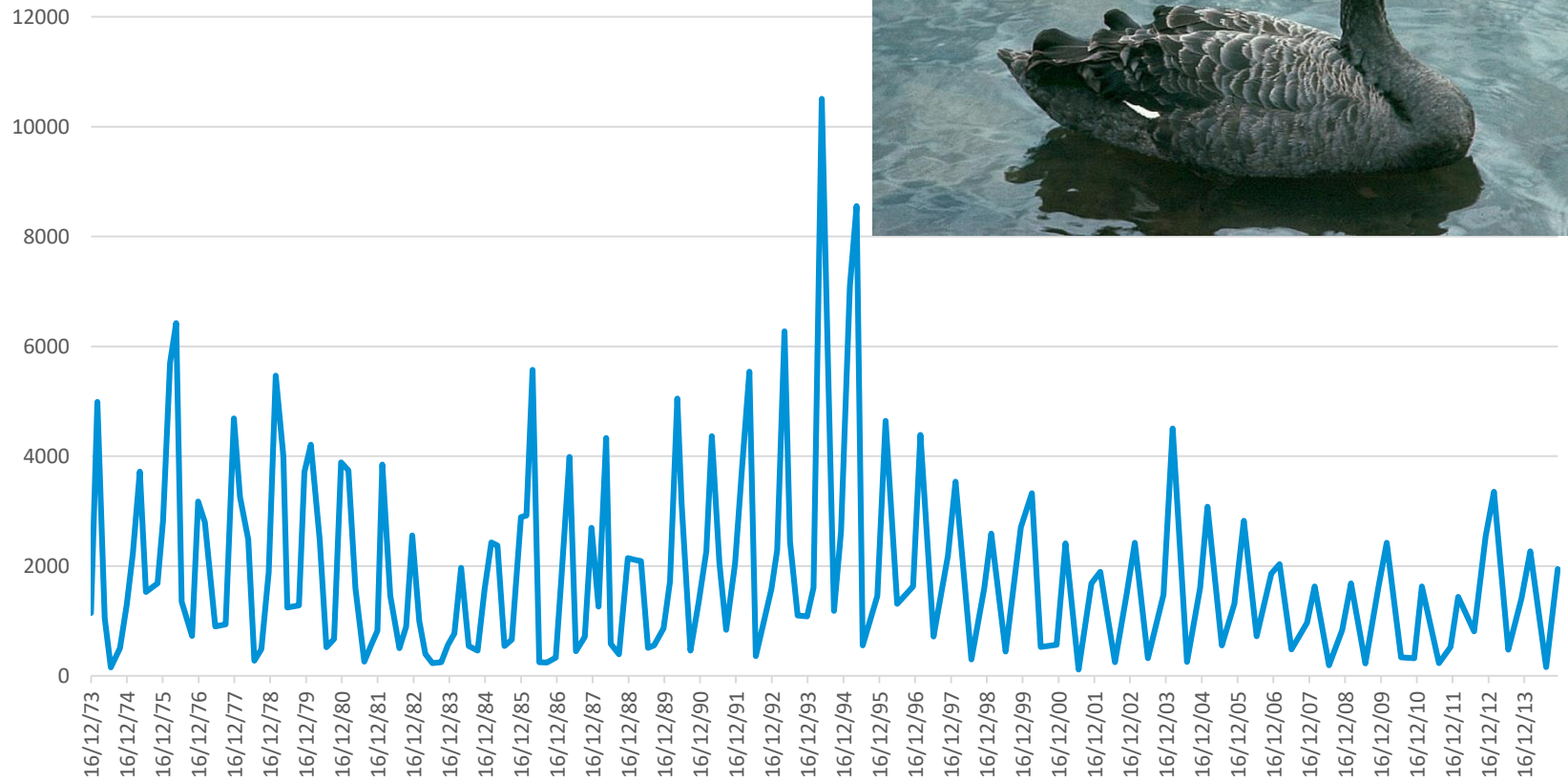
Sharp-tailed Sandpiper



Great Egret



Black Swan



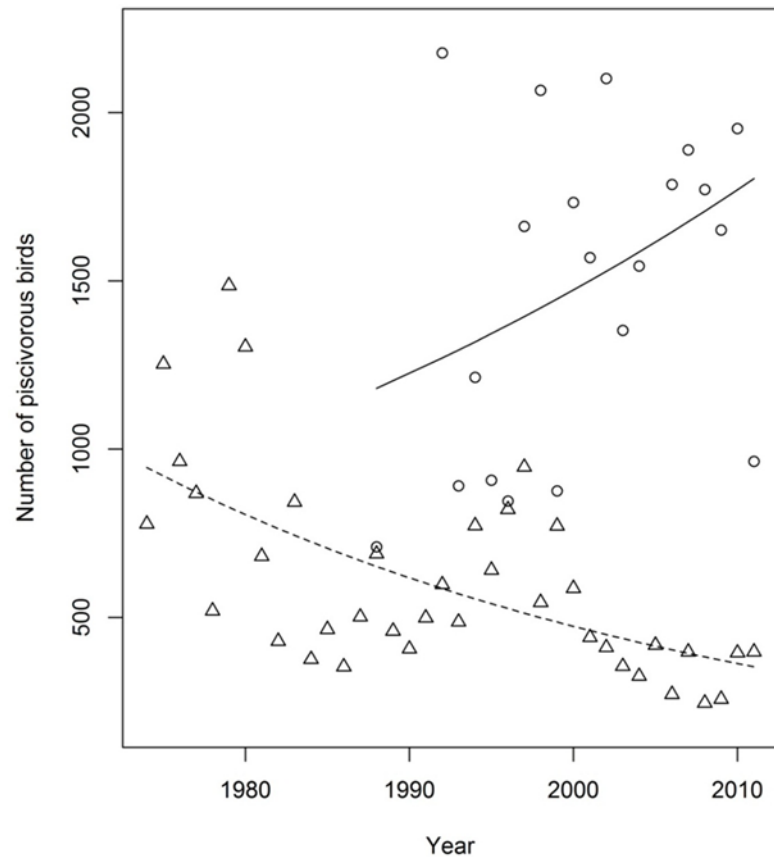
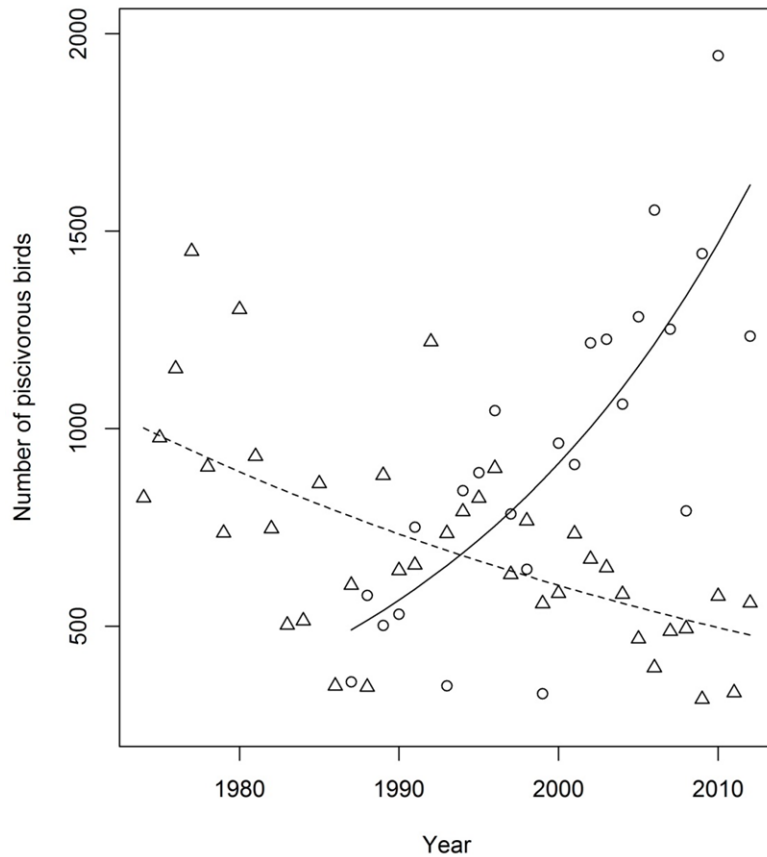
Biomass

SPECIES	Rank by biomass	Weight (g)	Mean biomass (kg)	Biomass as %
BLACK SWAN	1	5500	10857	69.1
AUSTRALIAN WHITE IBIS	2	1950	997	6.3
SILVER GULL	3	290	625	4.0
EASTERN CURLEW	4	900	555	3.5
AUSTRALIAN PELICAN	5	5400	361	2.3
CHESTNUT TEAL	6	650	301	1.9
PACIFIC GULL	7	1350	284	1.8
STRAW-NECKED IBIS	8	1300	207	1.3
AUSTRALIAN SHELDUCK	9	1450	178	1.1
ROYAL SPOONBILL	10	1650	146	0.9
PIED OYSTERCATCHER	11	700	136	0.9

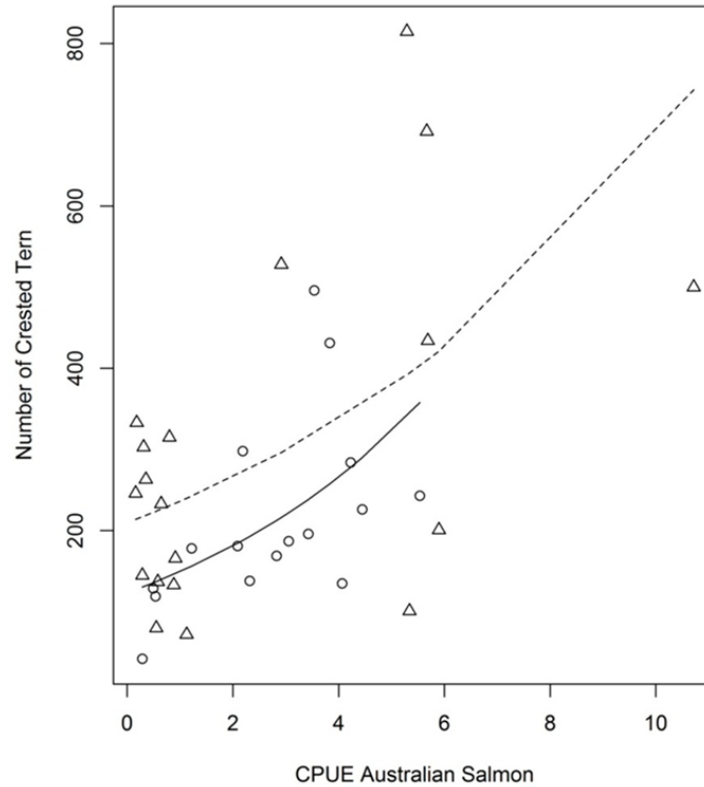
Fish-eating birds at Western Port & West Corner Inlet

summer

winter



Fish-eating birds vs Australian Salmon CPUE



Some key publications

- Loyn, R.H. 1978. A survey of birds in Westernport Bay, Victoria, 1973-74 *Emu* 78: 11-19.
- Loyn, R.H., Dann, P. and Bingham, P. 1994. Ten years of waterbird counts in Western Port, Victoria. 1. Waterfowl and large wading birds. *Australian Bird Watcher* 15: 333-350.
- Dann, P., Loyn, R.H. and Bingham, P. 1994. Ten years of waterbird counts in Western Port, Victoria. 2. Waders, gulls and terns. *Australian Bird Watcher* 15: 351-365.
- Loyn, R.H., Dann, P. and McCulloch, E. 2001. Important wader sites in the East Asian-Australasian flyway: 1. Western Port, Victoria, Australia. *The Stilt* 38: 39-53.
- Heislors, A. with Loyn, R. 2003. Wings over Western Port: three decades surveying wetland birds 1973-2003. Bird Observers Club of Australia, Melbourne.
- Chambers, L. and Loyn, R.H. 2006. The influence of climate on numbers of three waterbird species in Western Port, Victoria, 1973-2002. *Journal of International Biometeorology* 50: 292-304.
- Hansen B., Menkhorst P. & Loyn R. 2011. Western Port Welcomes Waterbirds: waterbird usage of Western Port. Arthur Rylah Institute for Environmental Research Technical Report Series No. 222. Department of Sustainability and Environment, Heidelberg, Victoria.
- Hansen, B., Menkhorst, P., Moloney, P. and Loyn, R. 2015. Long-term waterbird monitoring in Western Port, Victoria, reveals significant declines in multiple species. *Austral Ecology* 40: 513-527.
doi:10.1111/aec.12219
- Menkhorst, P.W., Loyn, R.H., Hansen, B, Liu, C., Mackay, M. and Dann, P. 2015. Trends in numbers of piscivorous birds in Western Port and Corner Inlet, Victoria, 1987-2012. ARI client report for Melbourne Water.
- Loyn, R.H. 2016. Black Swans and Seagrass in Western Port: what can each tell us about the other? Client report to Melbourne Water by Eco Insights.

Acknowledgments

- BirdLife Australia & BOCA for 45 years support
- Over 1000 survey participants; 10 convenors, currently Andrew Silcocks (BirdLife Australia); data curation by Laurie Living et al
- Funds and support from Victorian Government, Westernport Environmental Study, Central Coastal Board (Annette Hatten), Melbourne Water (Rhys Coleman), Arthur Rylah Institute (Kim Lowe), Parks Victoria and others; local government; local industry; Port of Hastings; Commonwealth Government (Caring for Country) et al
- Victorian and Australasian Wader Study Groups (Clive Minton et al)
- Specific initiatives, eg Wings over Western Port (Arnis Heislars, BOCA); Western Port Welcomes Waterbirds (Birgita Hansen & Peter Menkhorst, ARI); recent project on fish-eating birds (Peter Menkhorst & Peter Dann, Phillip Island Nature Park); these forums (Rachael Bathgate & Rhys Coleman)
- Many other people over the years, all highly valued contributions
- Photos from Danny Rogers, Peter Menkhorst, Birgita Hansen et al