

Aerial Survey of Wetland Birds in Eastern Australia - October 2016 Annual Summary Report

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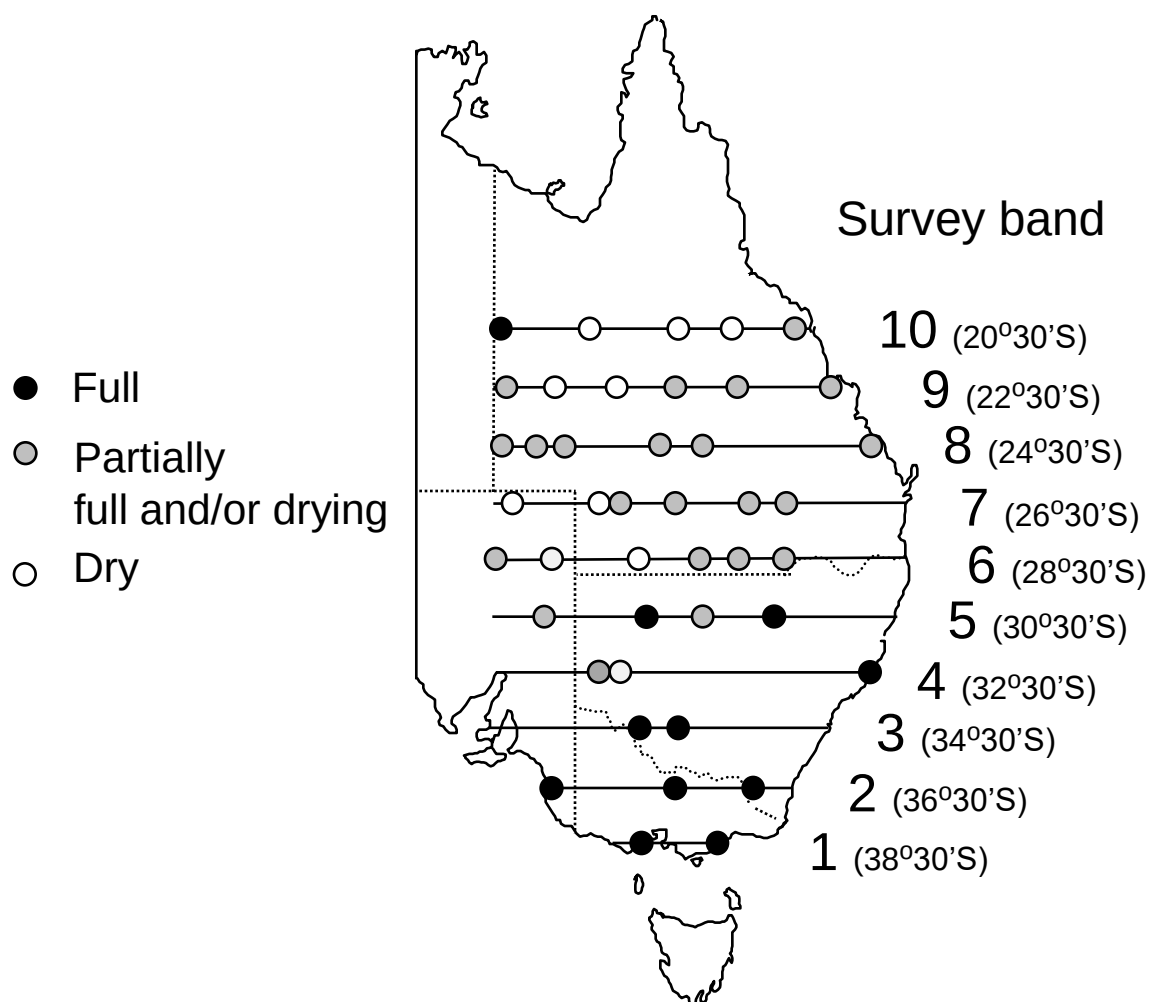
2016 Summary

1. May to September 2016 was the wettest on record across much of south eastern Australia, with September also being the wettest on record for NSW. It was the wettest September on record for the Northern Territory, while also ranking second-wettest for Victoria, third-wettest for Queensland and fourth-wettest for South Australia (BOM 2016).
2. Despite heavy rainfall in the south east, extended dry periods persist in the north, with much of Queensland remaining drought declared (Qld Dept of Agriculture & Fisheries 2016).
3. Total waterbird abundance was the lowest on record (34 years), with waterbirds widely dispersed over extensive areas of wetland habitat (Fig.1).
4. Breeding species richness, breeding abundance, and wetland area rose sharply compared to the previous year. Despite some short term increases, there are continued long term declines in total abundance, wetland area and breeding species richness (Figs 2,3 & 6).
5. Wetland area index was slightly below the long term average. Lake Eyre and Cooper Creek wetlands had small amounts of water that was drying rapidly. Other important wetlands in the Lake Eyre Basin including the Diamantina and Georgina rivers, supported low to moderate numbers of waterbirds. Lakes Galilee, Torquinnie and Mumbleberry were partially flooded and supported fewer than usual waterbirds.
6. The Macquarie Marshes and Lowbidgee wetlands were extensively flooded; large numbers of Straw-necked ibis were breeding in the Lowbidgee. Most rivers in the southern Murray-Darling Basin were flowing with partial filling of wetland habitat on their floodplains in the survey bands. Most the large lakes in the Menindee Lakes were partially filled or filling with relatively few birds; the Tallywalka lakes system was dry (Fig. 1).
7. Waterbirds were concentrated in relatively few important sites; only two wetlands held more than 5,000 birds, both within the Lowbidgee system (Figs 1 & 4). These two wetlands held a high proportion of the survey total (46%) but low species diversity. There was also water in the Cooma-Monaro Lakes, providing habitat for hundreds of waterbirds.
8. Total breeding index (all species combined) was the second highest on record and well above the long term average (Fig. 5). Breeding species richness was also high, 20 species recorded breeding (Figs 6 to 8).
9. Games species abundance were all well below long term averages, in many cases by an order of magnitude (Figs 9 to 29).

This survey is run by the Centre for Ecosystem Science at the University of NSW and funded by the NSW Office of Environment & Heritage, with additional funding provided by the South Australian Department of Environment, Water and Natural Resources, the Queensland Department of Environment and Heritage Protection, the Victorian Department of Environment, Land, Water & Planning, the Victorian Game Management Authority and the Department of Environment of the Australian Government.

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Figure 1. Wetland map 2016



Key to wetlands from W-E, by band

- 10 Lake Moondarra, Cloncurry River, Flinders River, Campaspe R, Burdekin R
- 9 Georgina R, Eyre Ck, Hamilton R, Diamantina R, Lake Galilee, Styx R
- 8 Mumbleberry-Torquinnie Lakes, Eyre Ck, Diamantina R, Thomson R, Barcoo R, various small coastal wetlands
- 7 Goyder Lagoon, Lake Yamma Yamma, Cooper Ck, Bulloo R, Paroo R, Warrego R
- 6 Lake Eyre, Lake Hope, Bulloo R, Paroo R, Warrego R, Balonne R,
- 5 Lake Frome, Paroo O'flow, Darling R, Macquarie Marshes
- 4 Menindee Lakes, Talywalka Lakes, Myall Lakes
- 3 Murray River Lakes, Lowbidgee wetlands
- 2 Coorong, Cooper + Mokoan Lakes, Cooma-Monaro
- 1 Curdies Inlet, Jack Smith Lake

Figure 2. Total wetland area

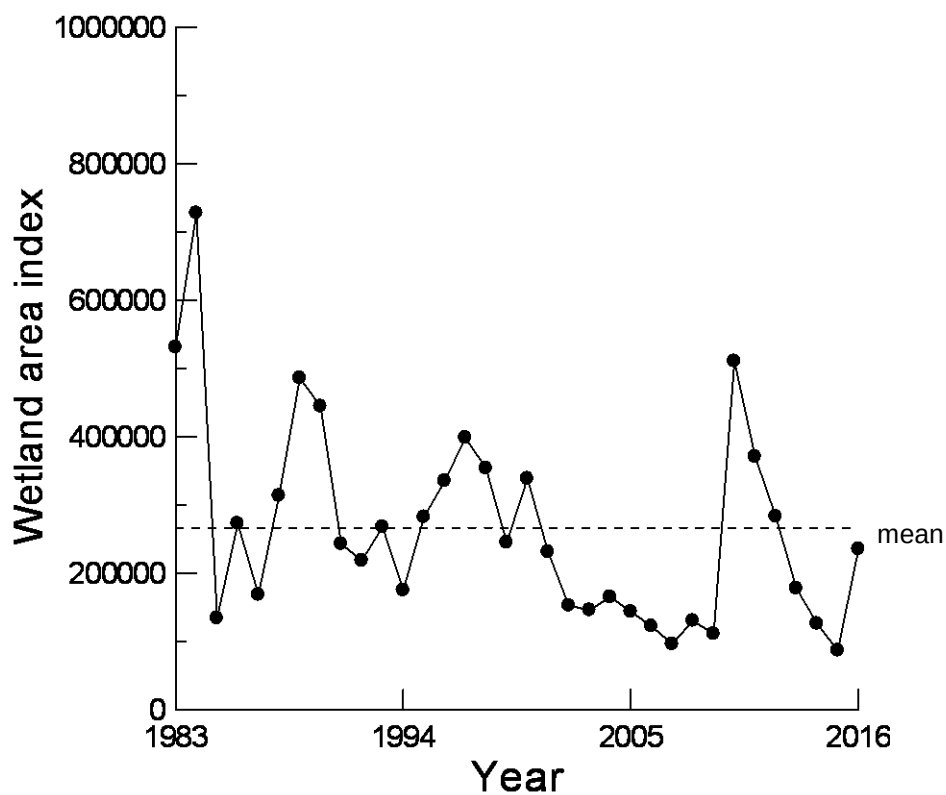


Figure 3. Total waterbirds

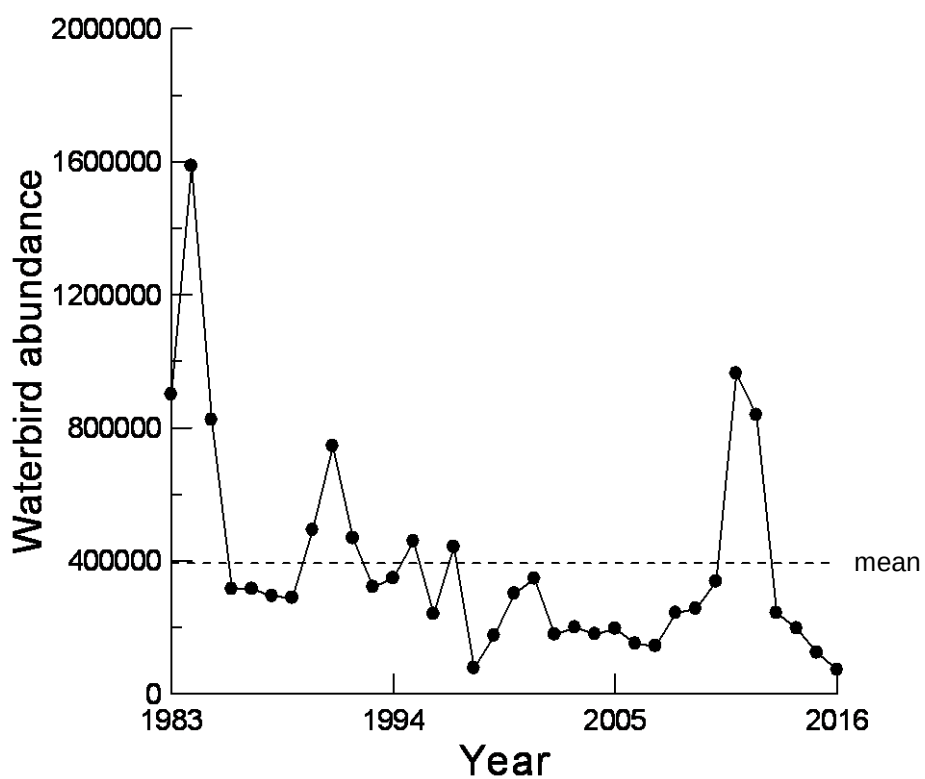
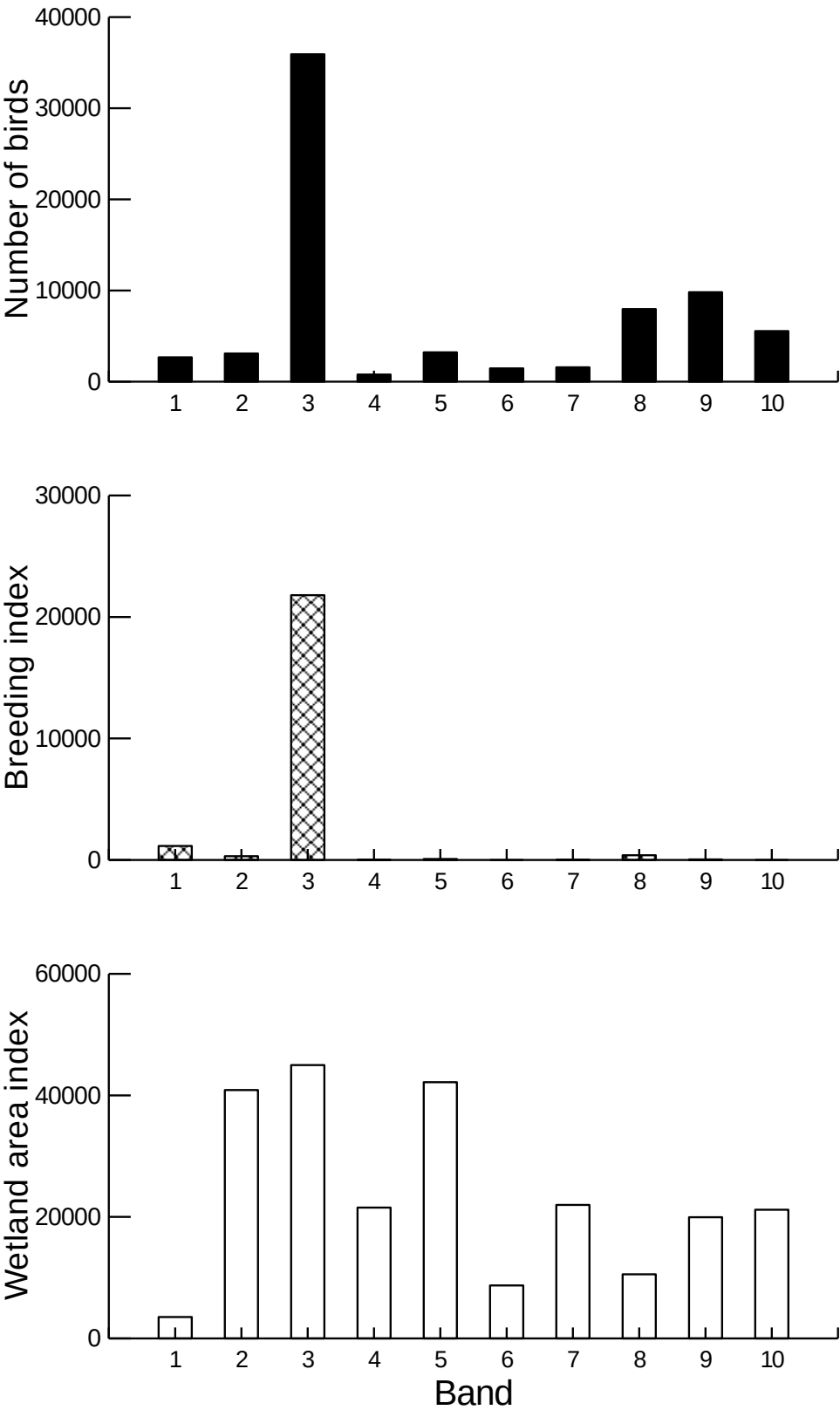


Figure 4. Band totals 2016



Scales vary on graph axes

Figure 5. Breeding index (all species)

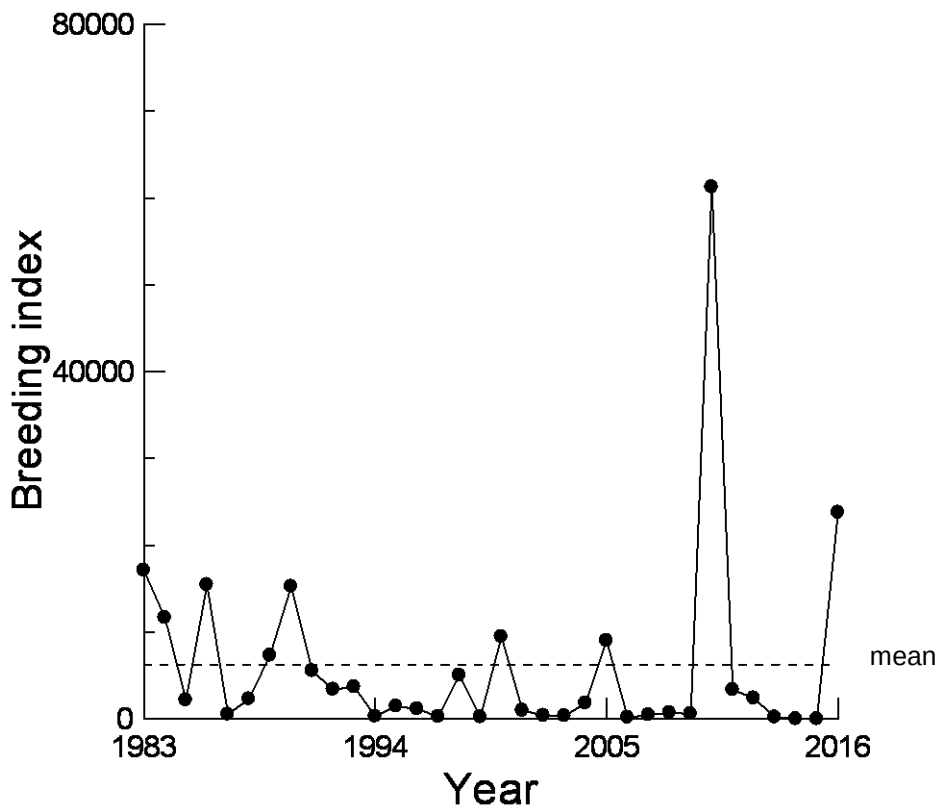
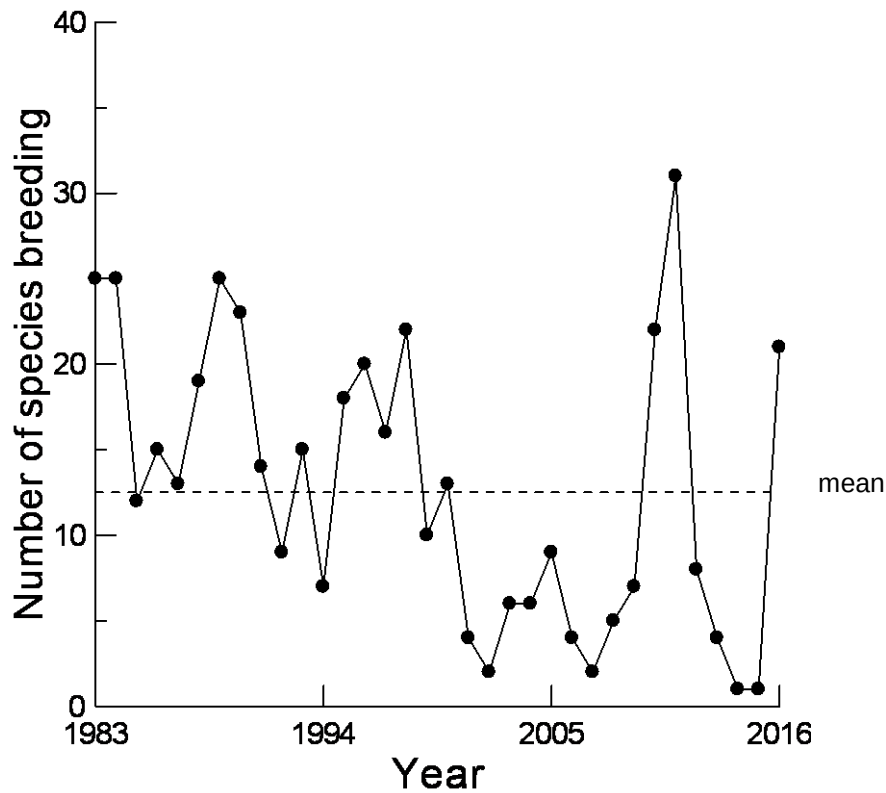
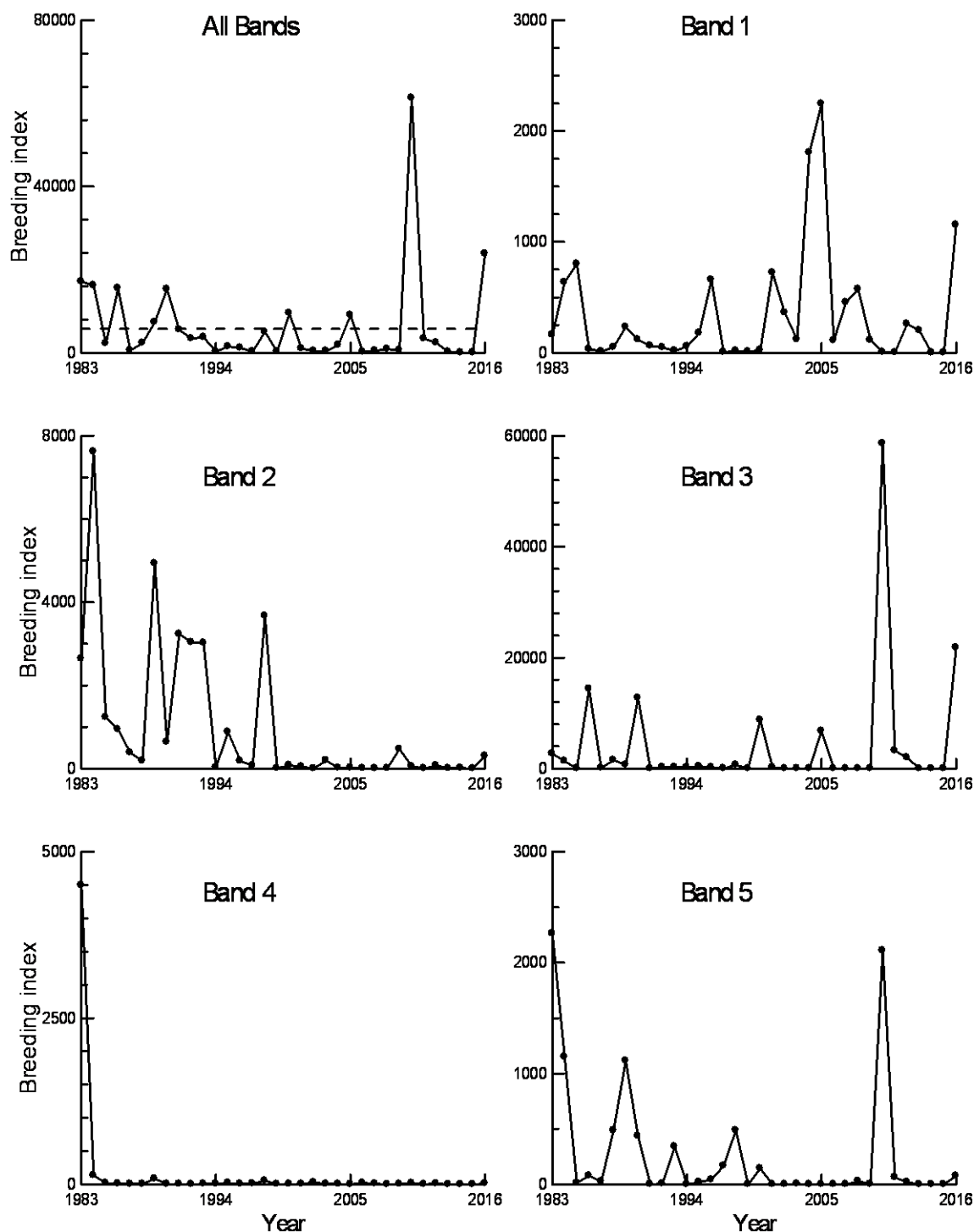


Figure 6. Number of species breeding



Scales vary on graph axes

Figure 7. Breeding index (all species) Bands 1-5



Scales vary on graphs
7

Figure 8. Breeding index (all species) Bands 6-10

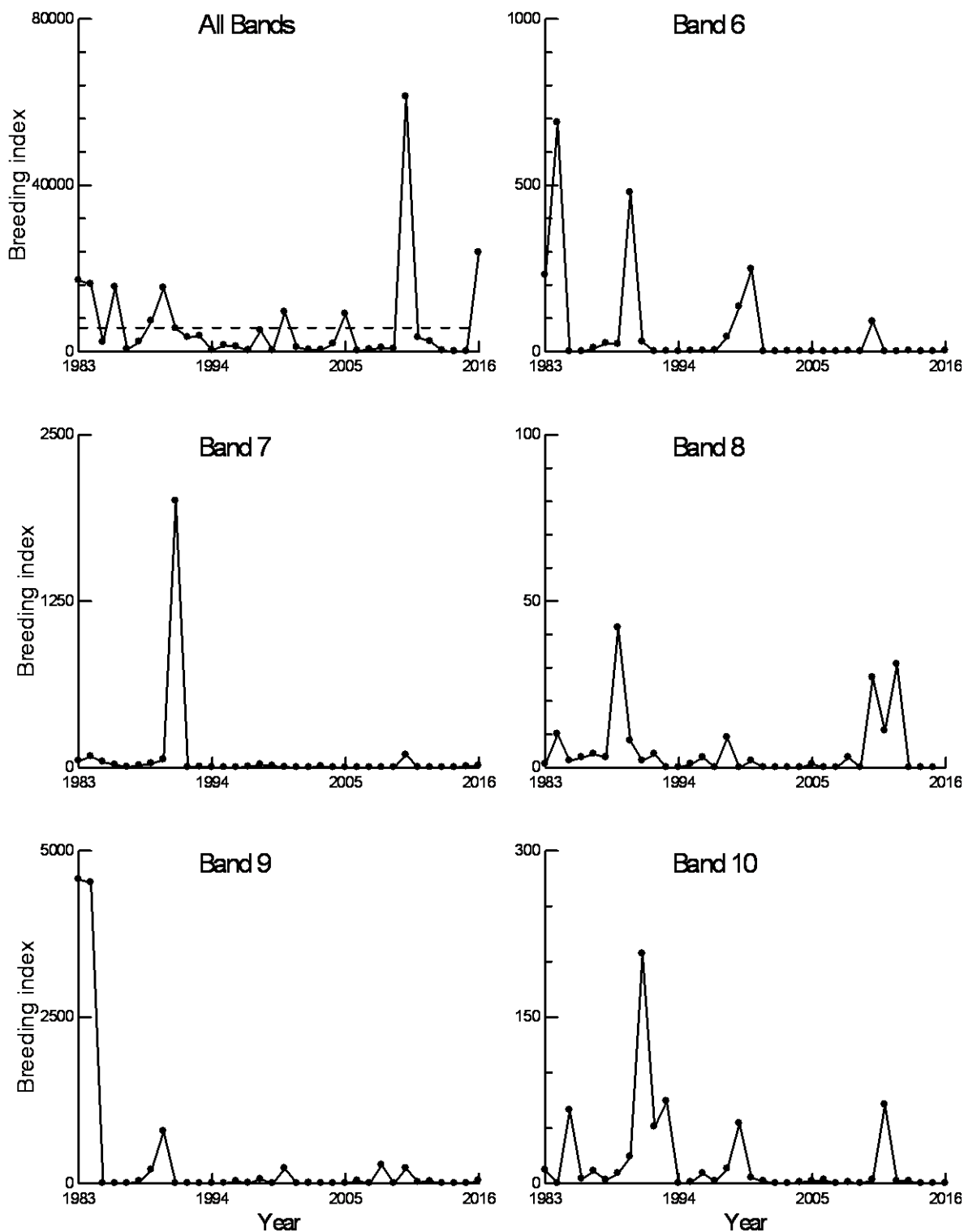


Figure 9. Pacific black duck Bands 1-5

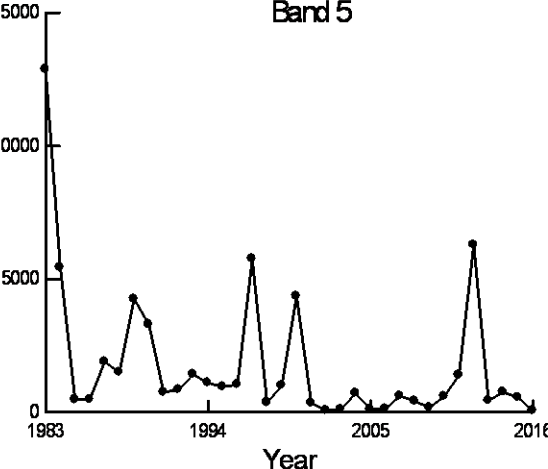
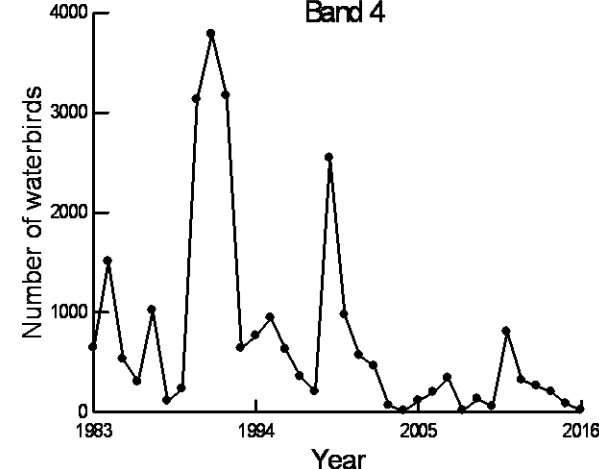
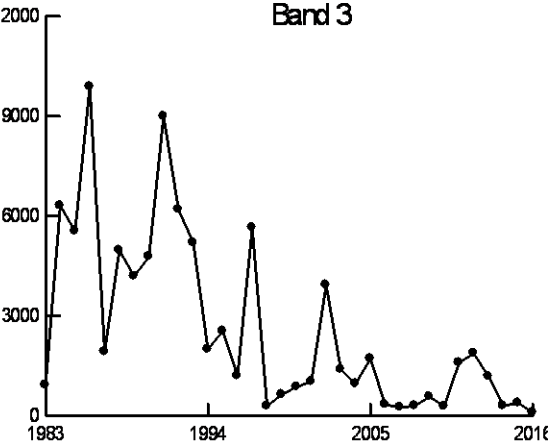
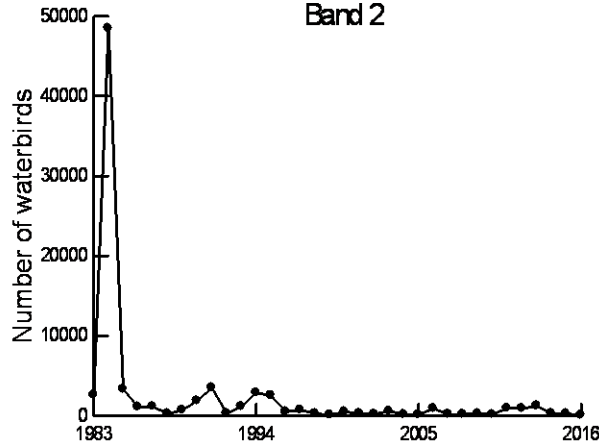
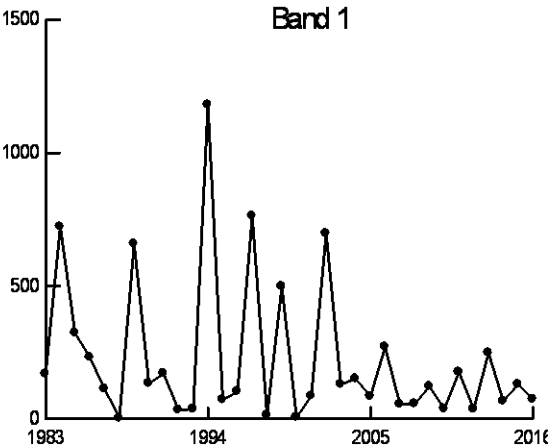
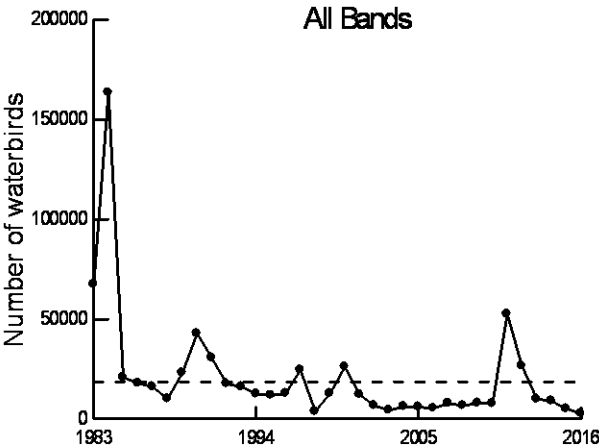
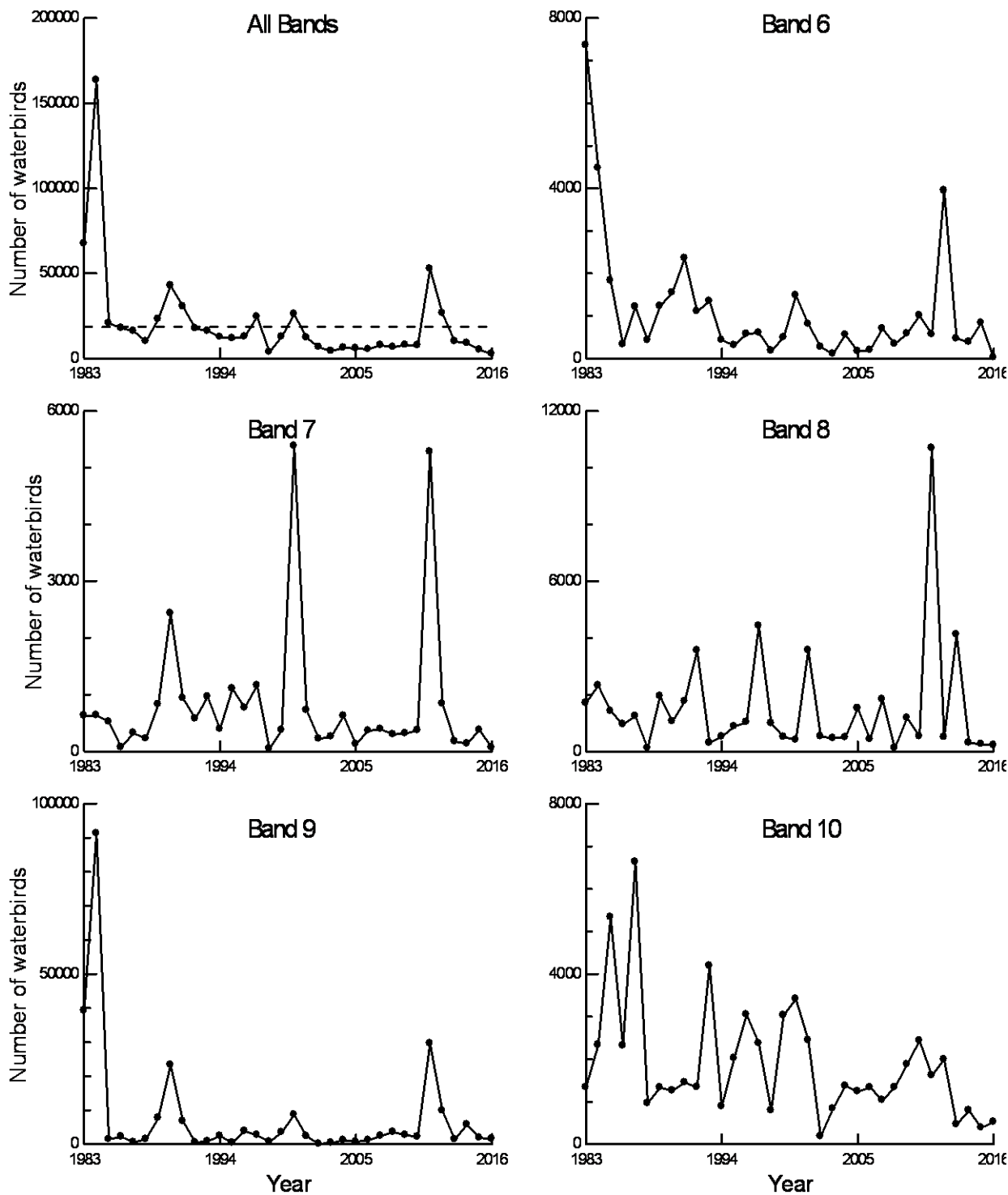
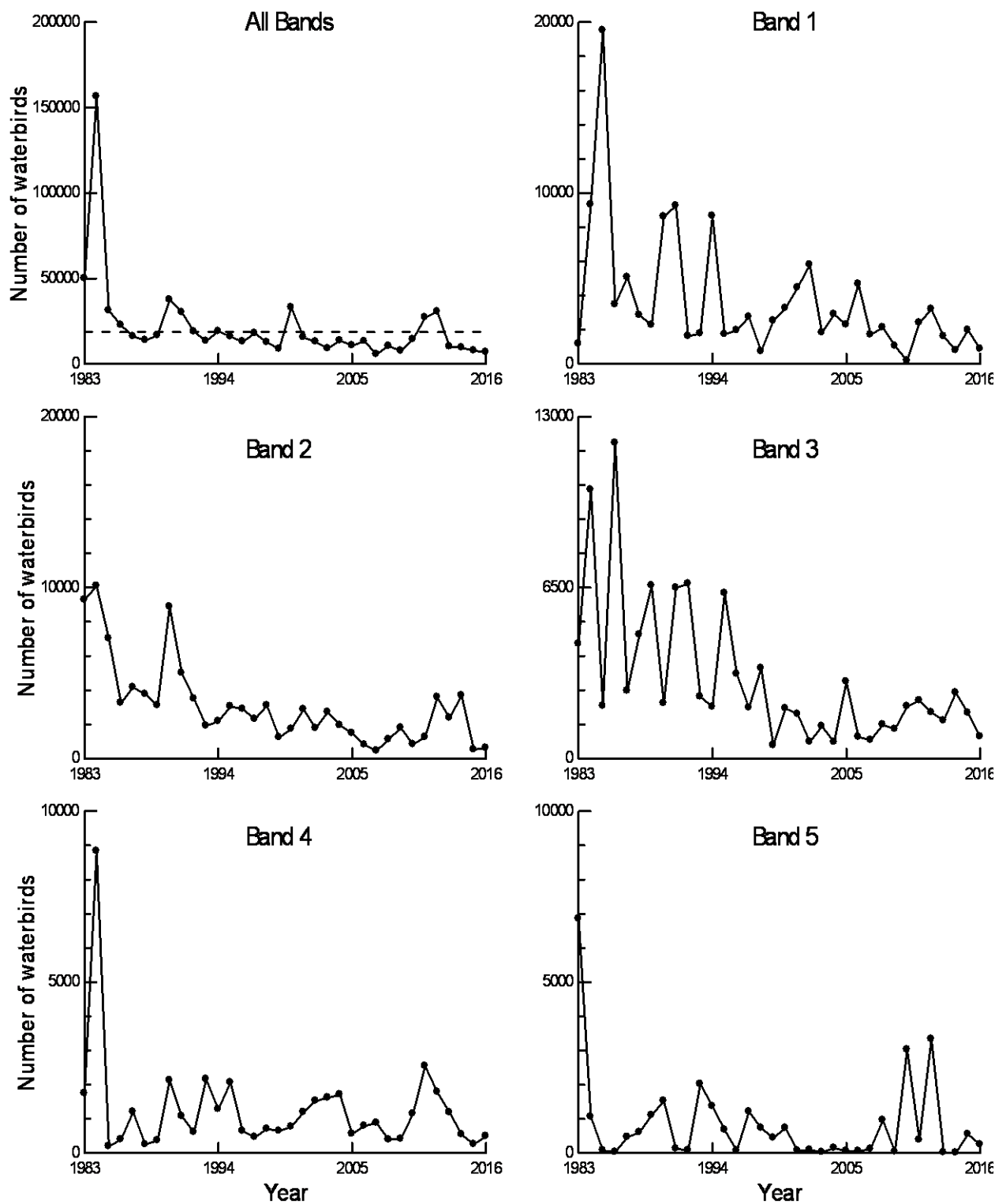


Figure 10. Pacific black duck Bands 6-10



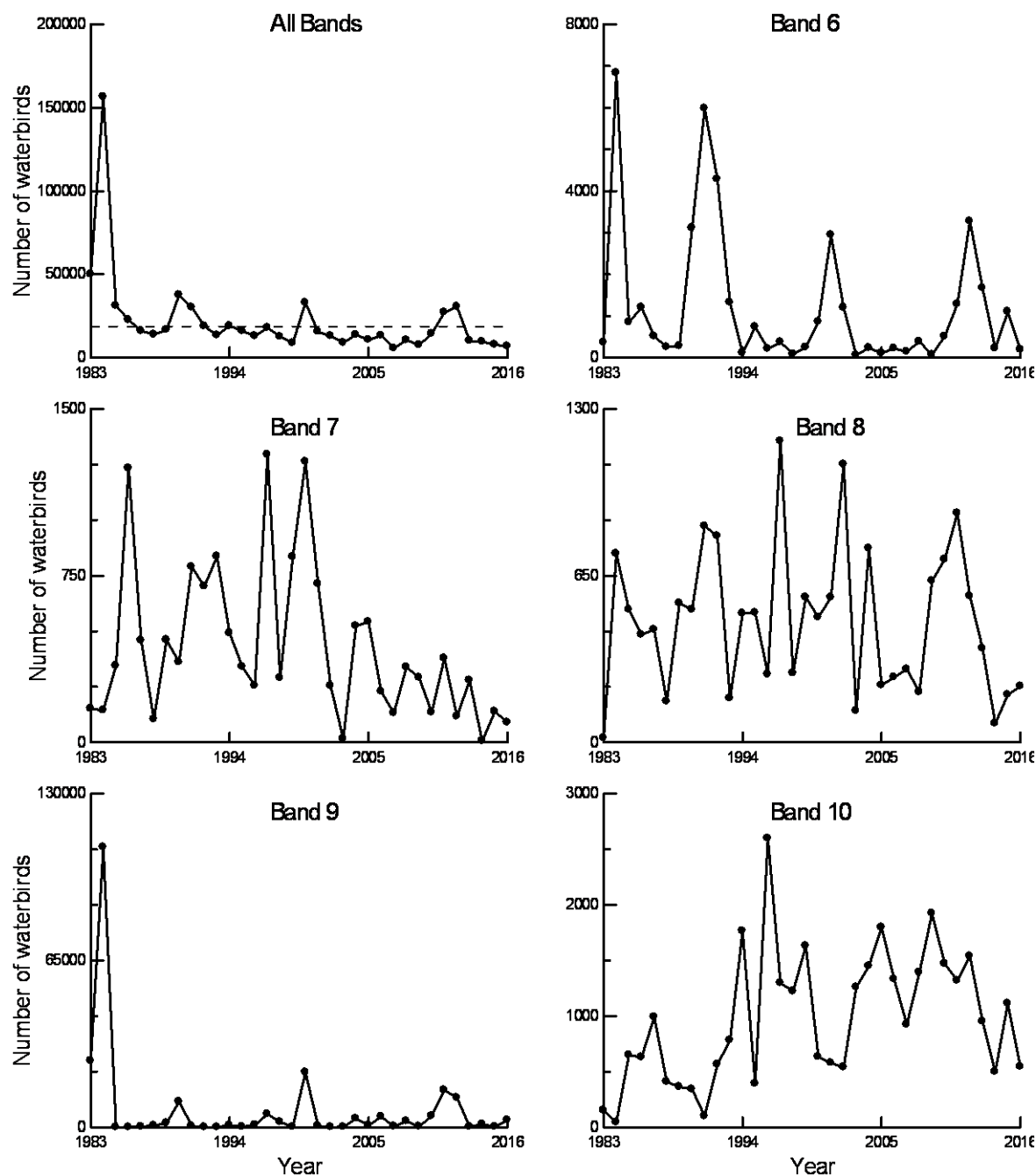
Scales vary on graphs – dashed line indicates long term average

Figure 11. Black swan Bands 1-5



Scales vary on graphs – dashed line indicates long term average

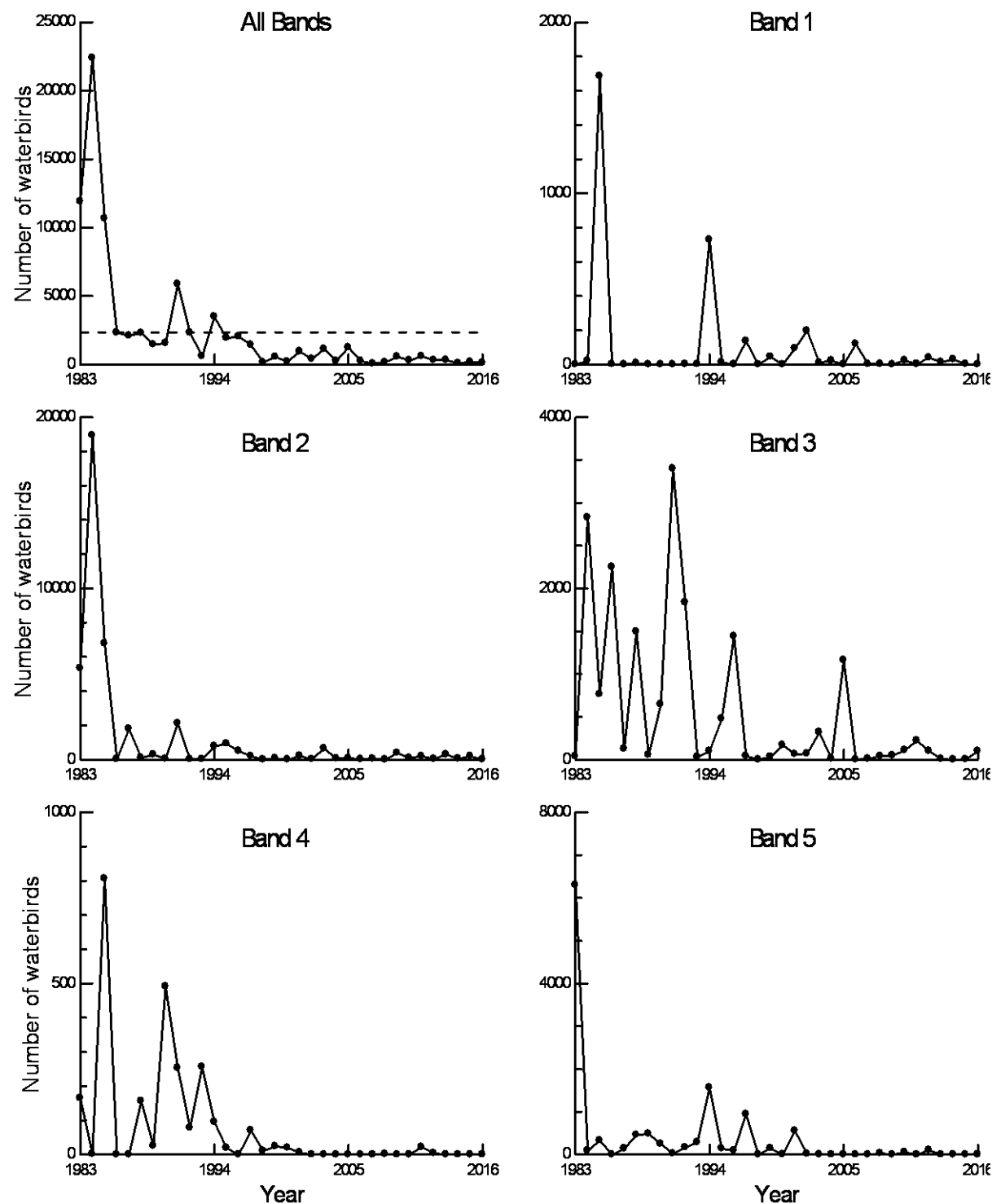
Figure 12. Black swan Bands 6-10



Scales vary on graphs – dashed line indicates long term average



Figure 13. Australasian shoveler Bands 1-5



Scales vary on graphs – dashed line indicates long term average

Figure 14. Australasian shoveler Bands 6-10

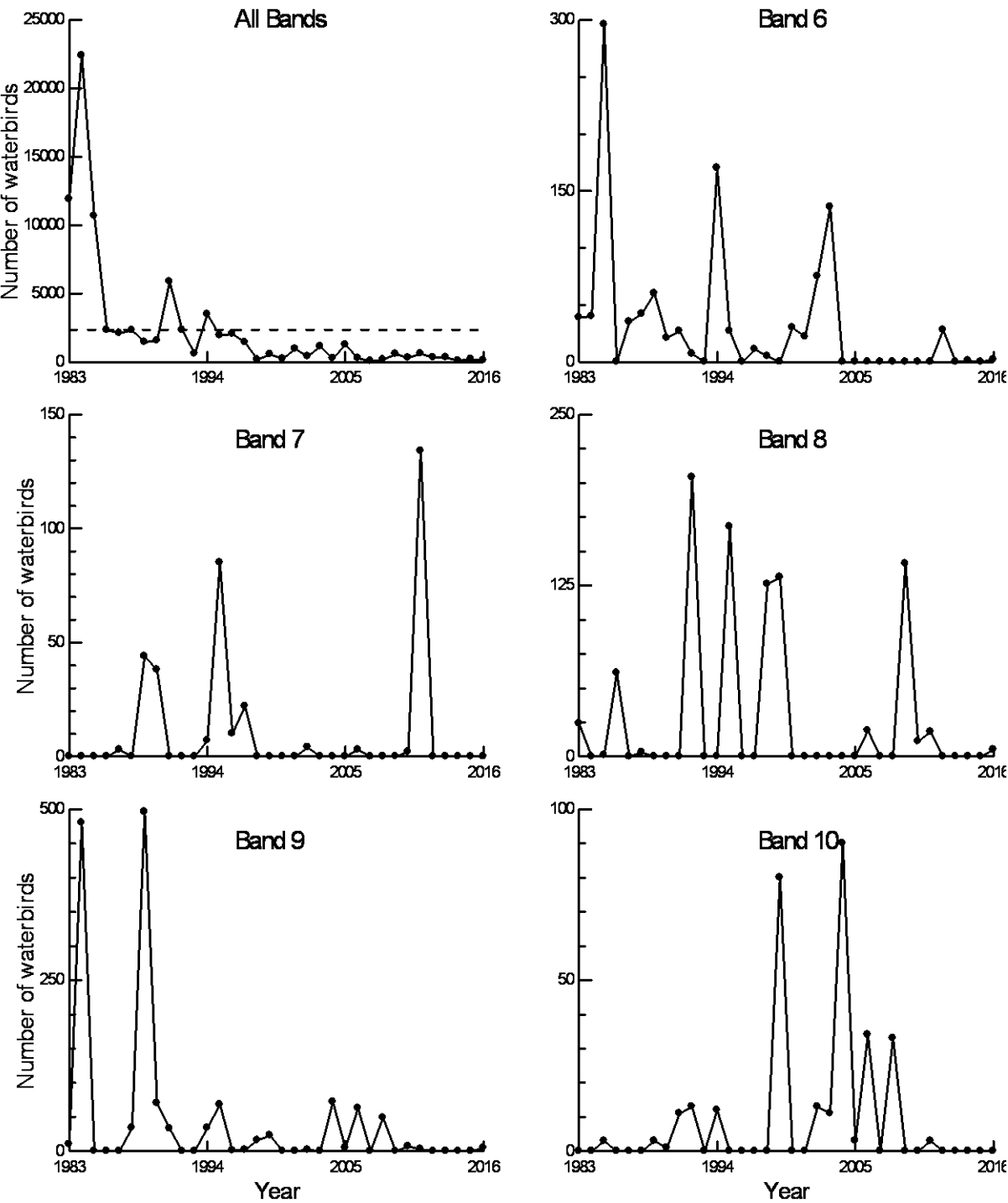
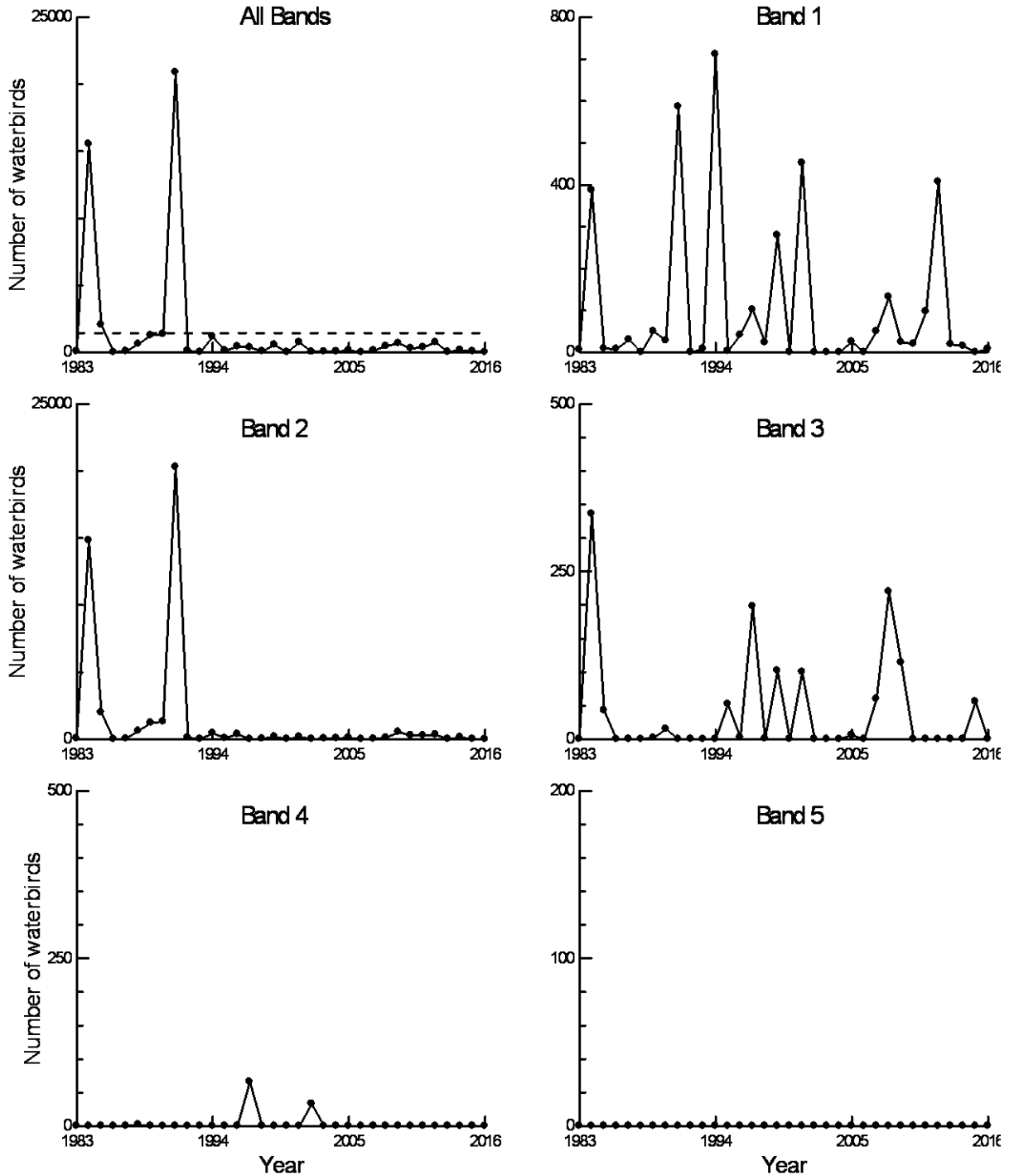
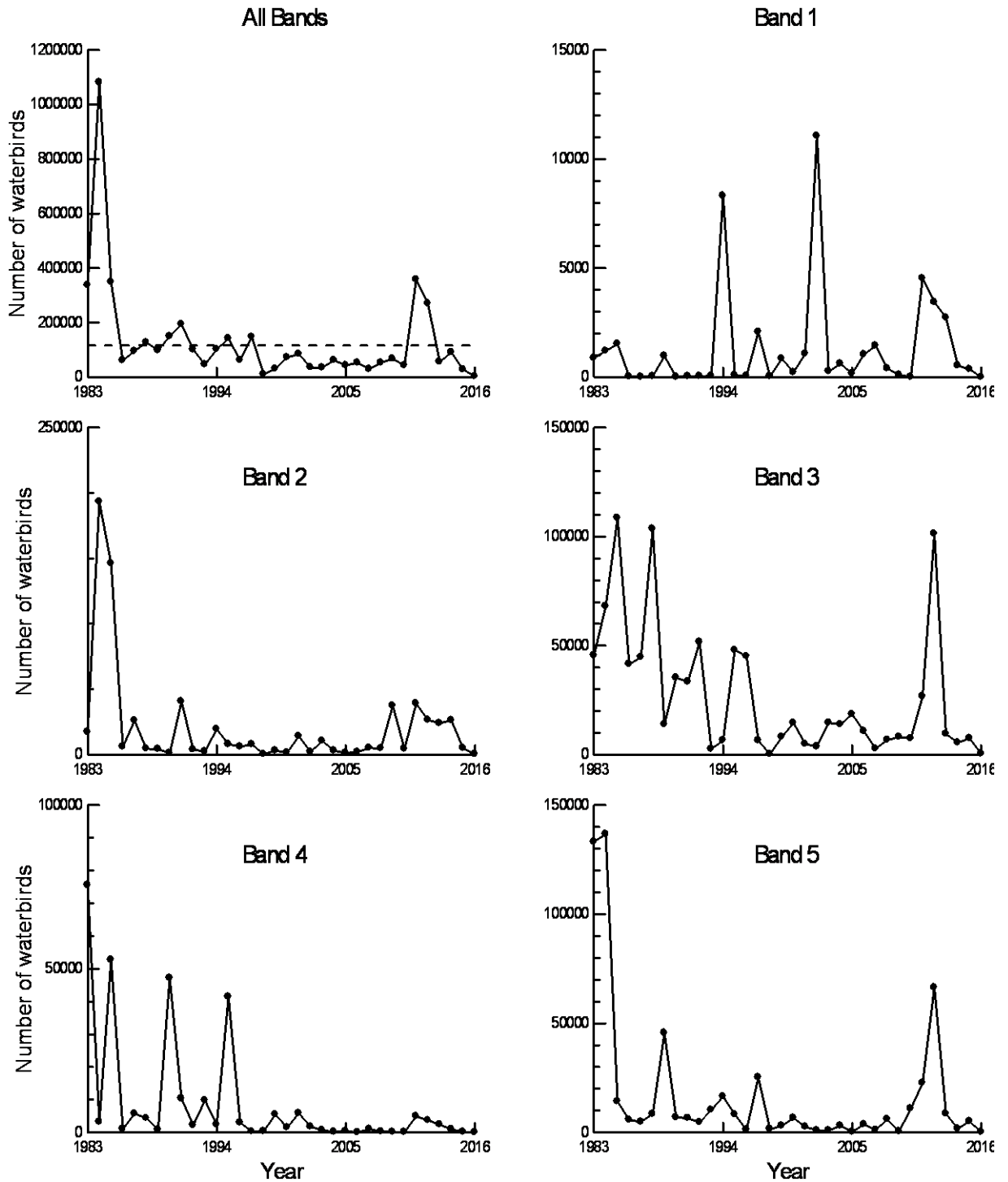


Figure 15. Chestnut teal Bands 1-5



Scales vary on graphs – dashed line indicates long term average

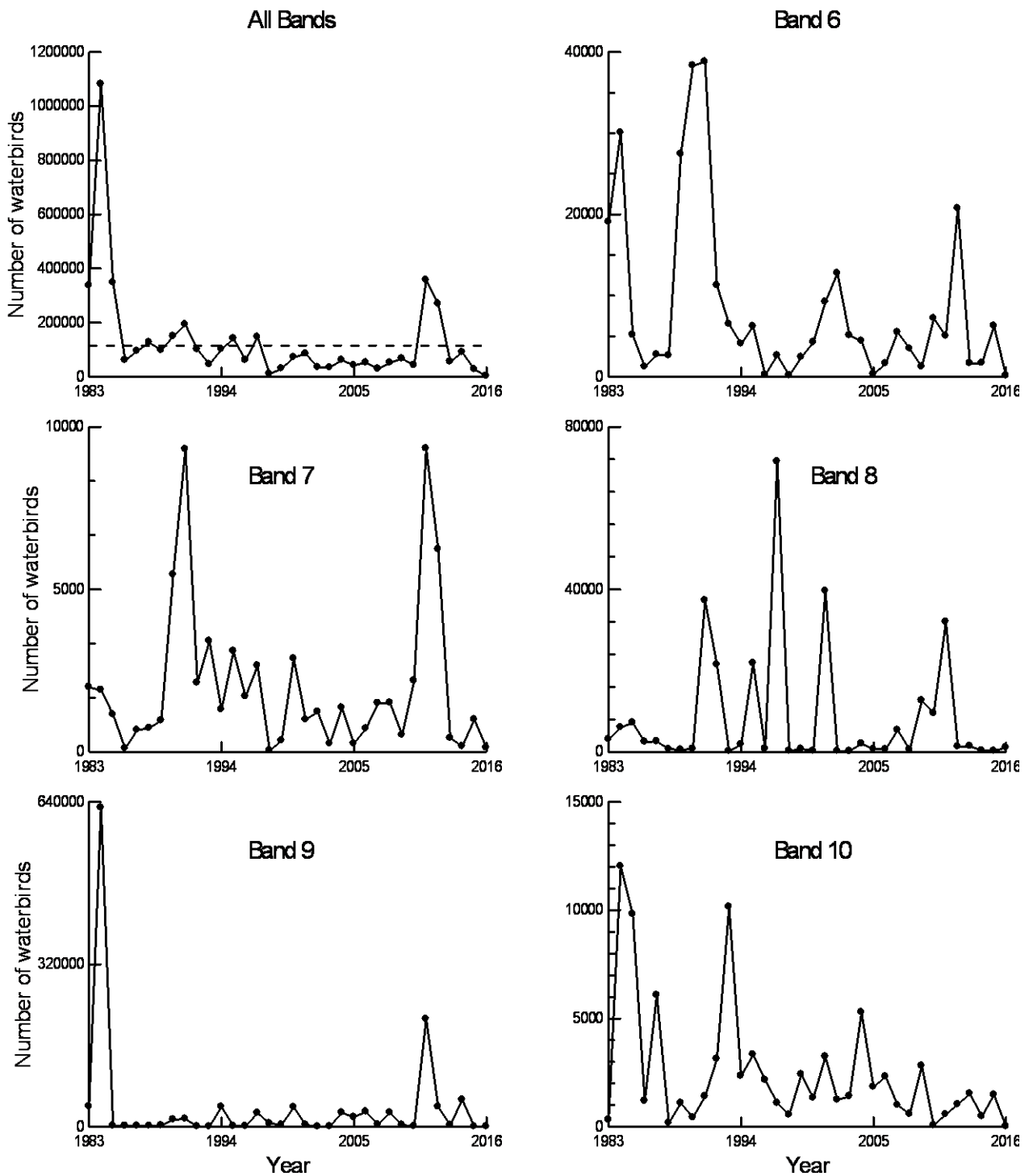
Figure 16. Grey teal Bands 1-5



Scales vary on graphs – dashed line indicates long term average

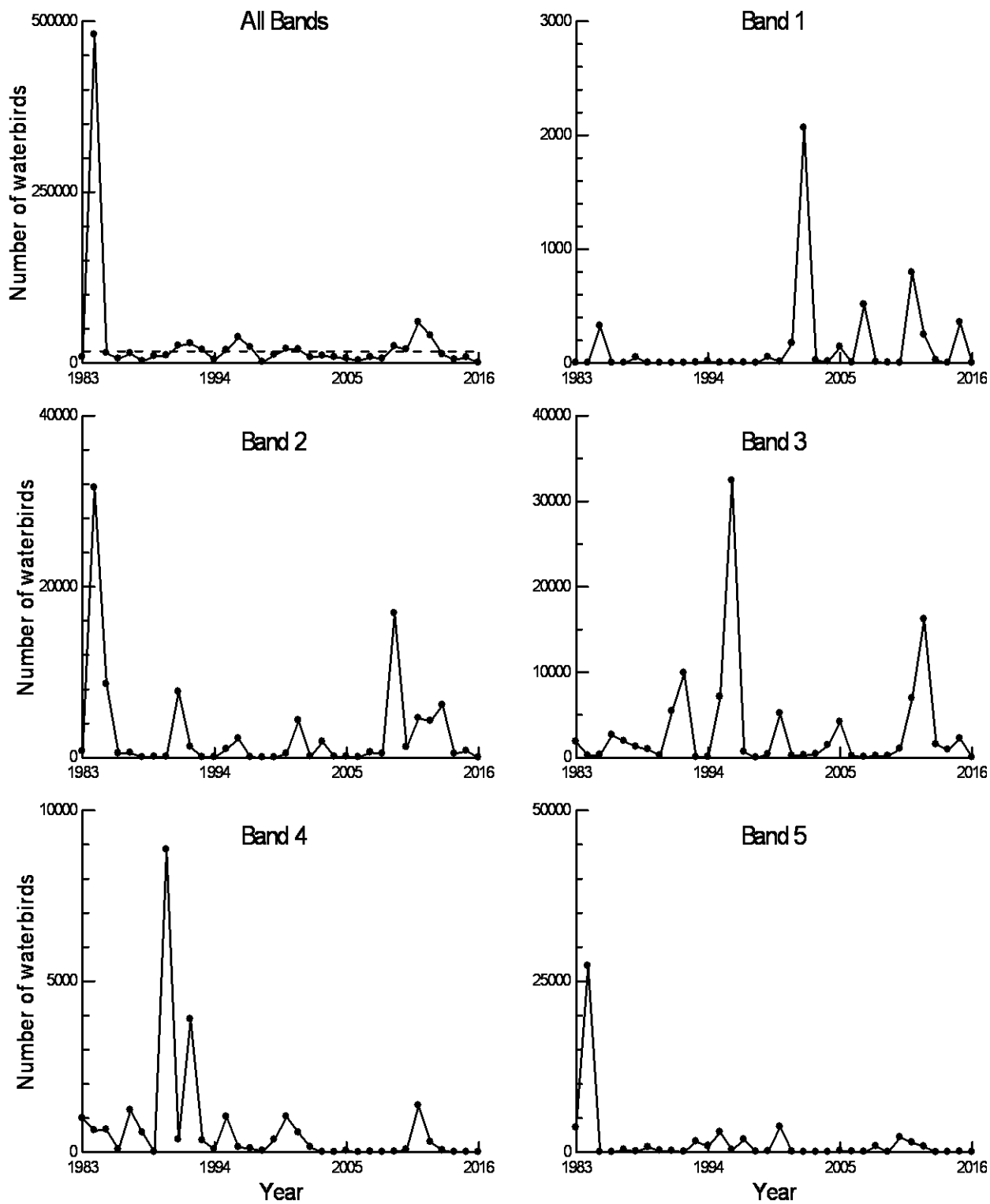


Figure 17. Grey teal Bands 6-10



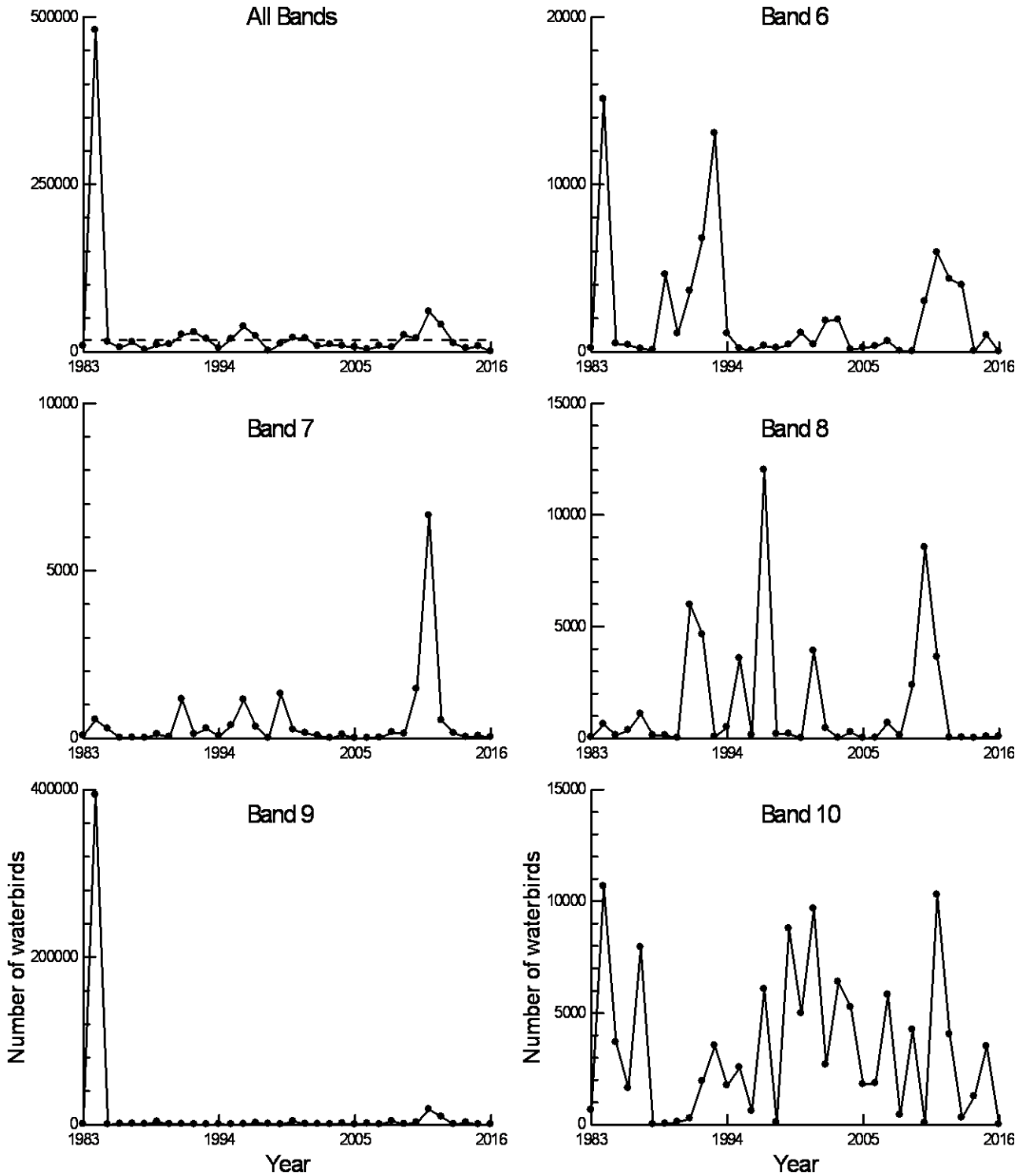
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Figure 18. Hardhead Bands 1-5



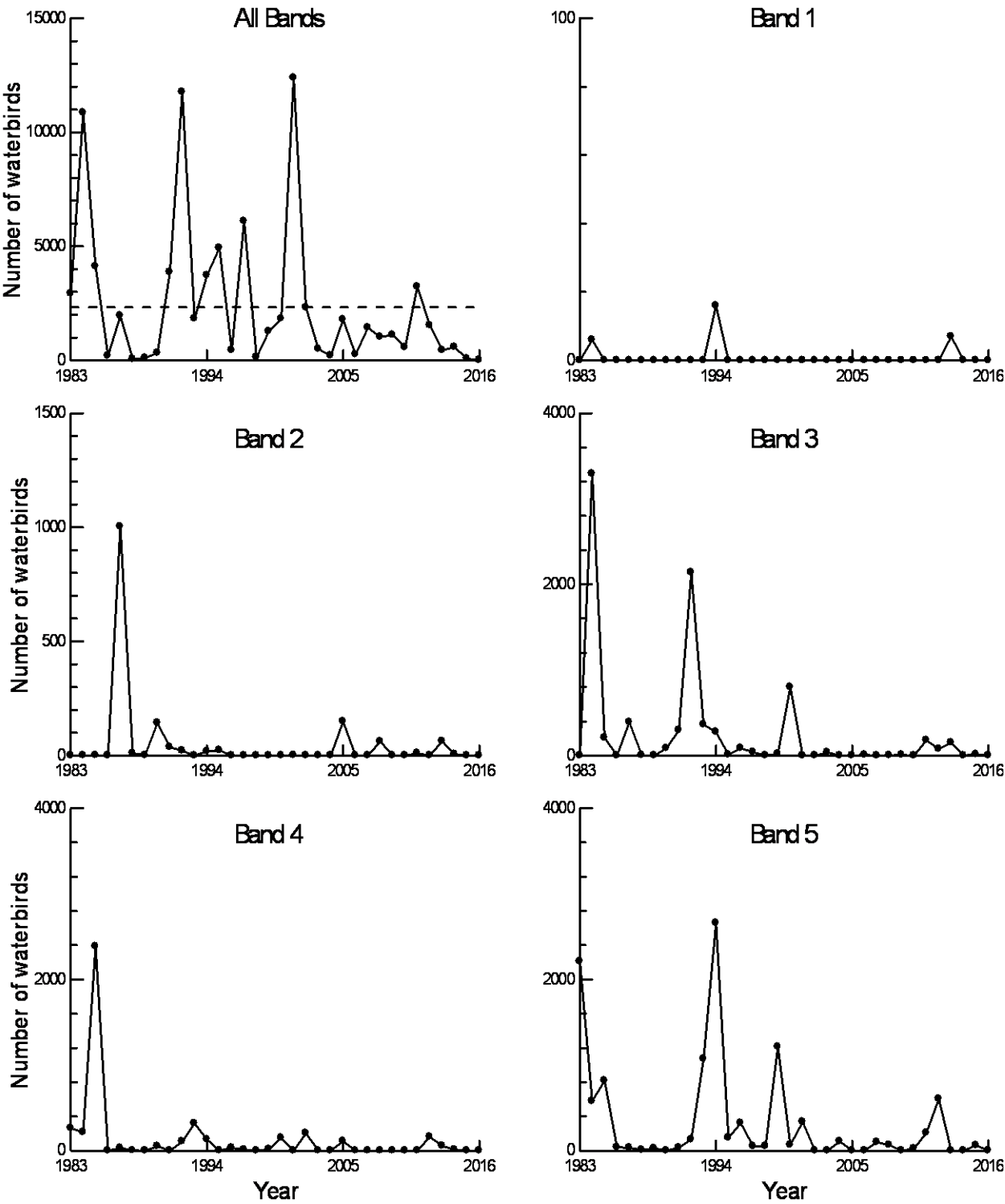
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Figure 19. Hardhead Bands 6-10



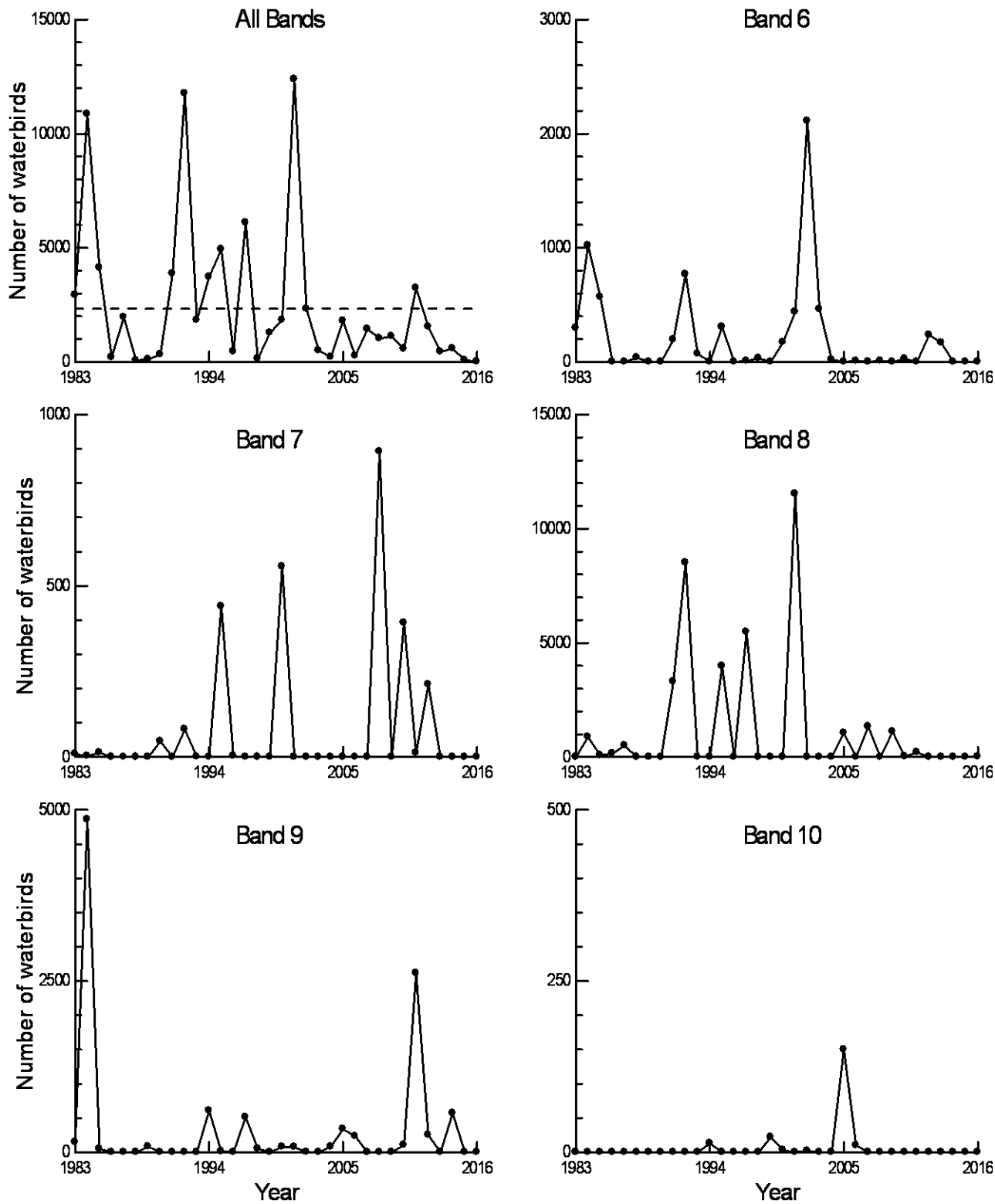
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Figure 20. Freckled duck Bands 1-5



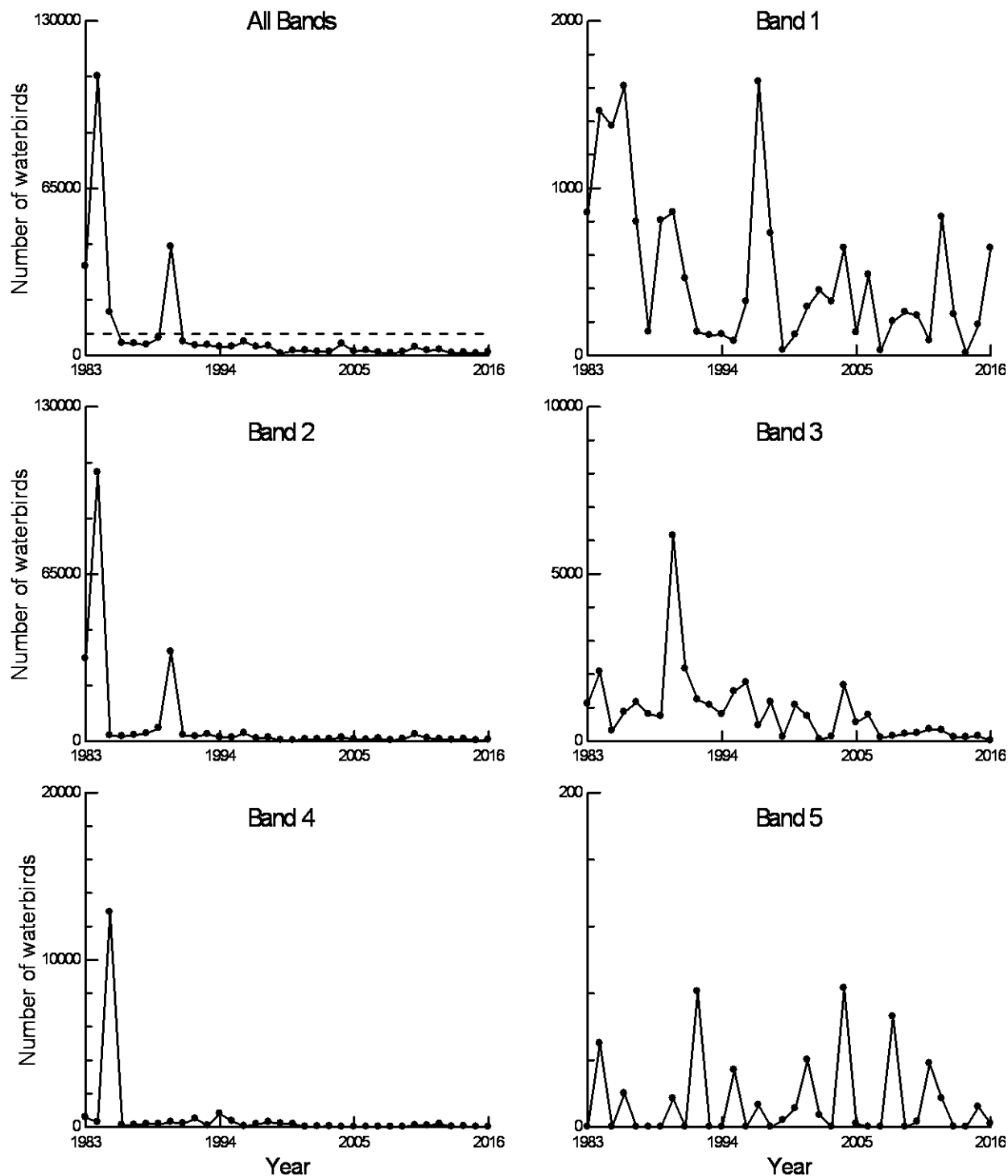
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Figure 21. Freckled duck Bands 6-10



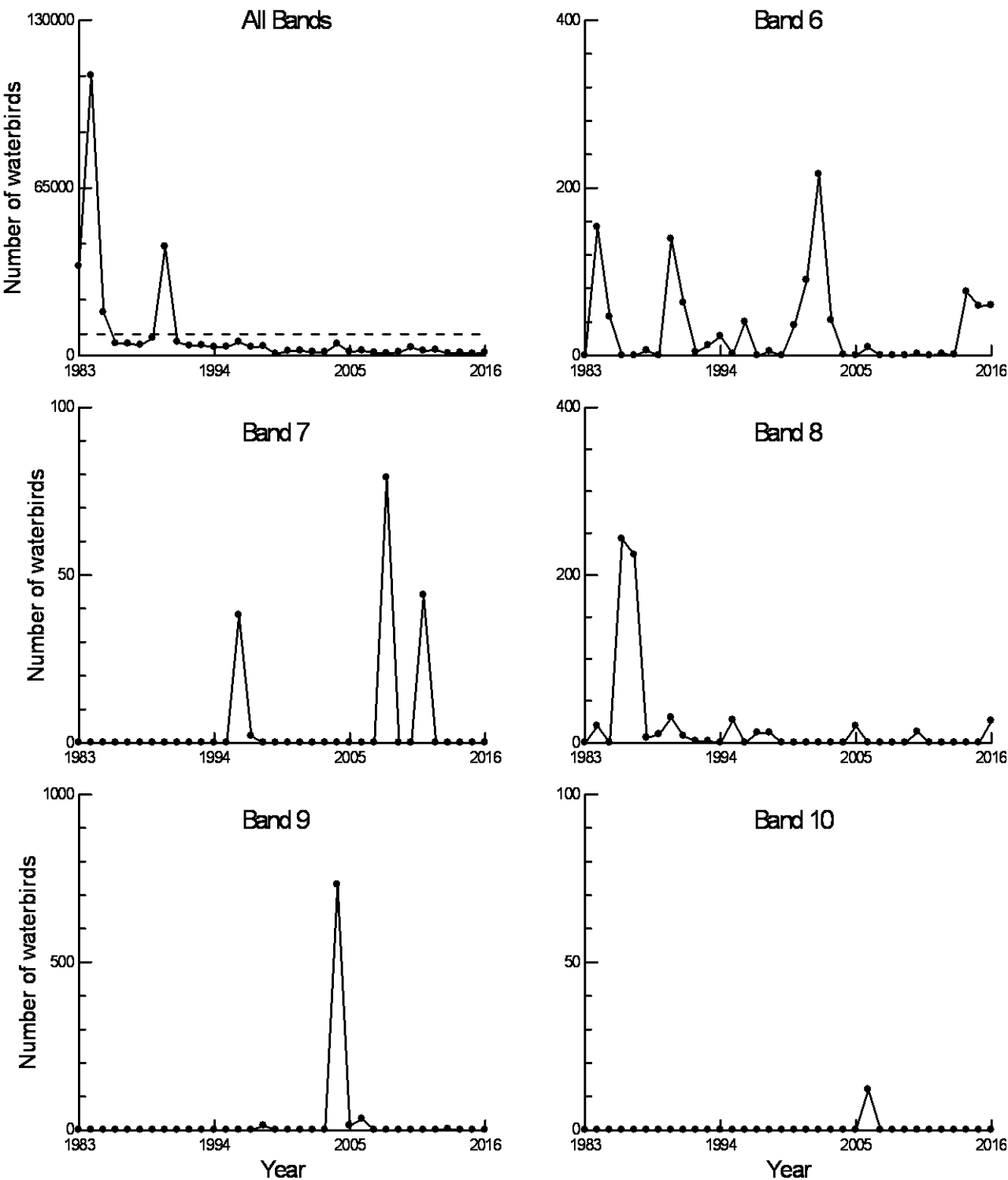
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Figure 22. Australian shelduck Bands 1-5



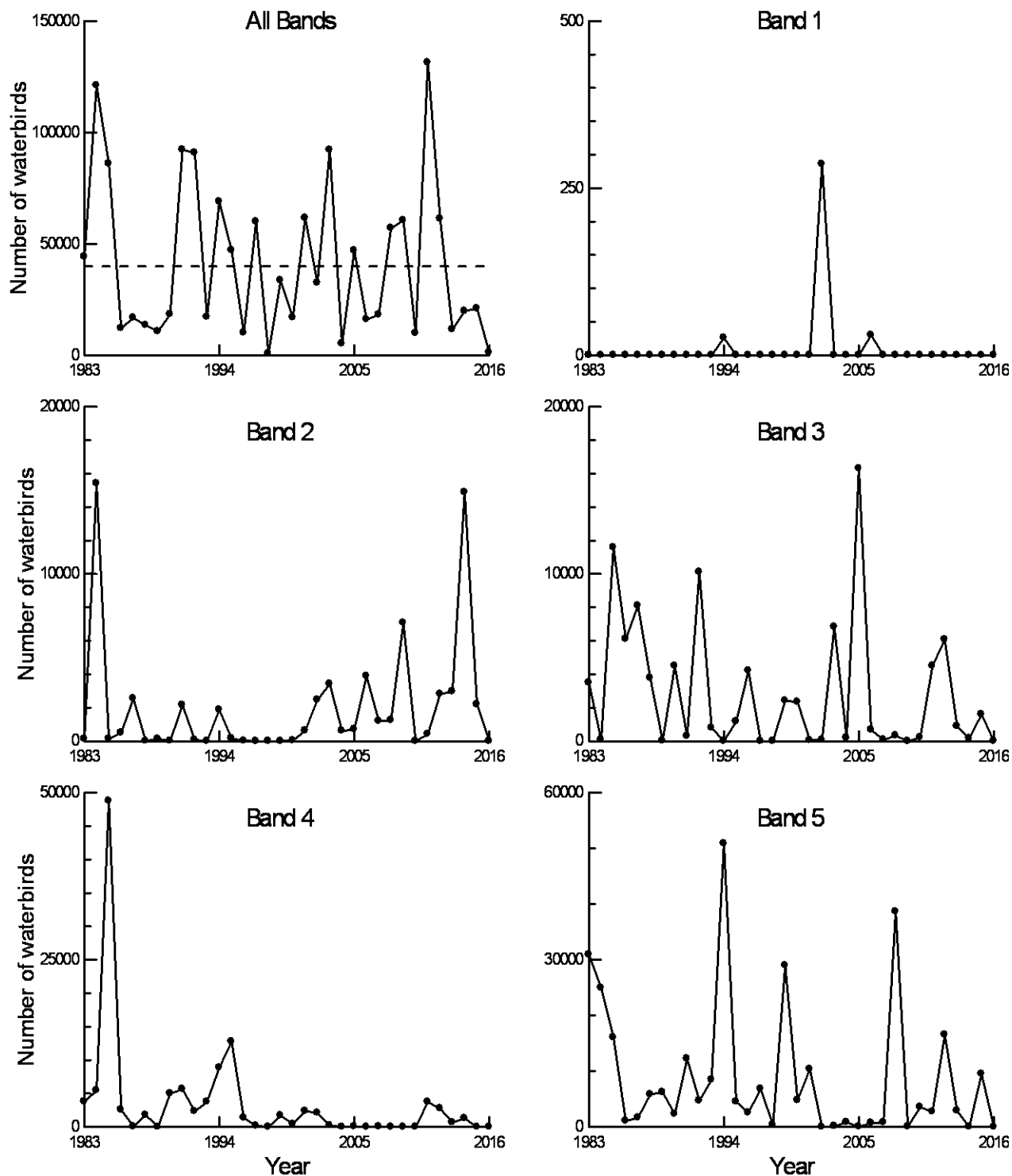
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Figure 23. Australian shelduck Bands 6-10



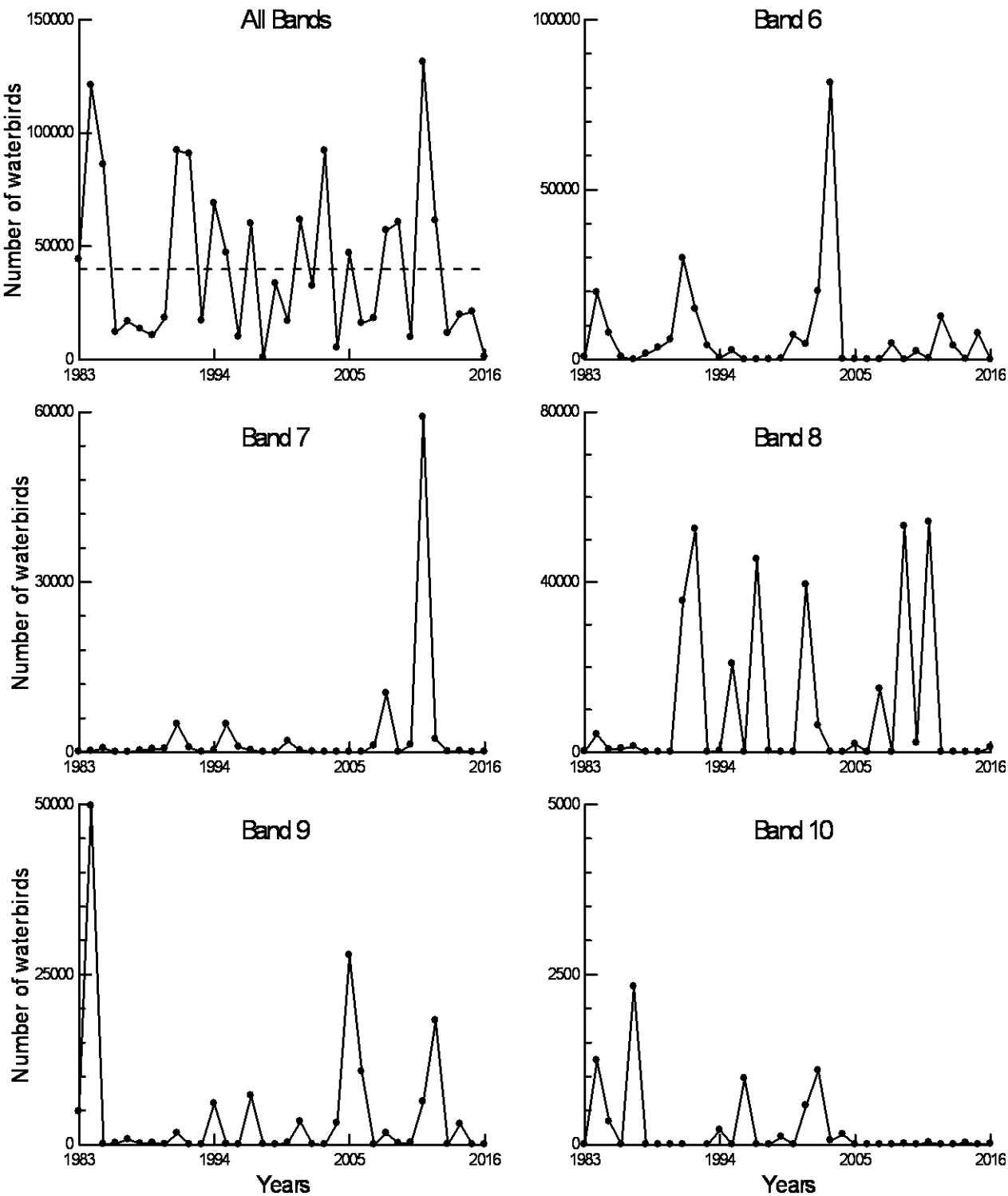
Scales vary on graphs – dashed line indicates long term average

Figure 24. Pink-eared duck Bands 1-5



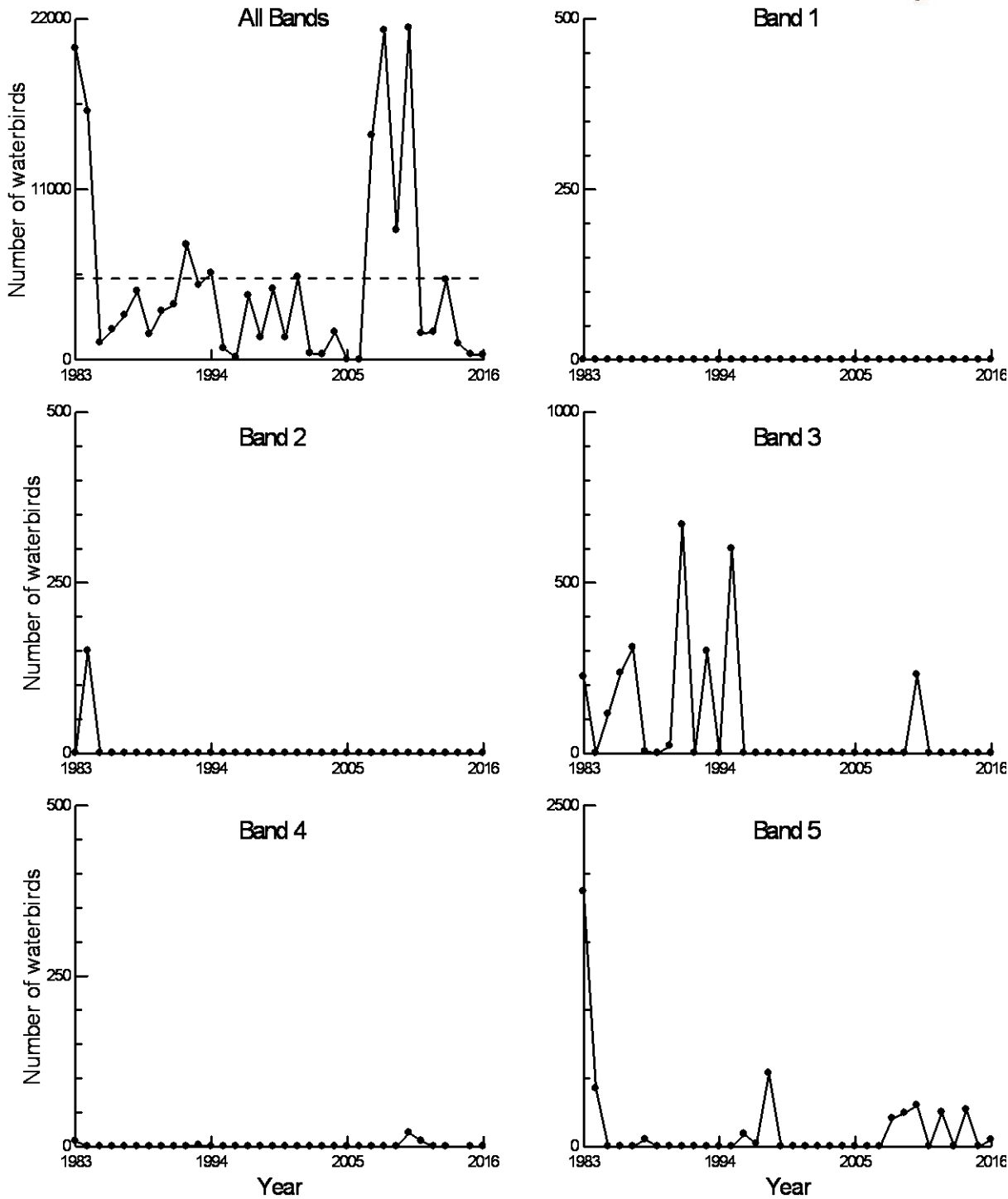
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Figure 25. Pink-eared duck Bands 6-10



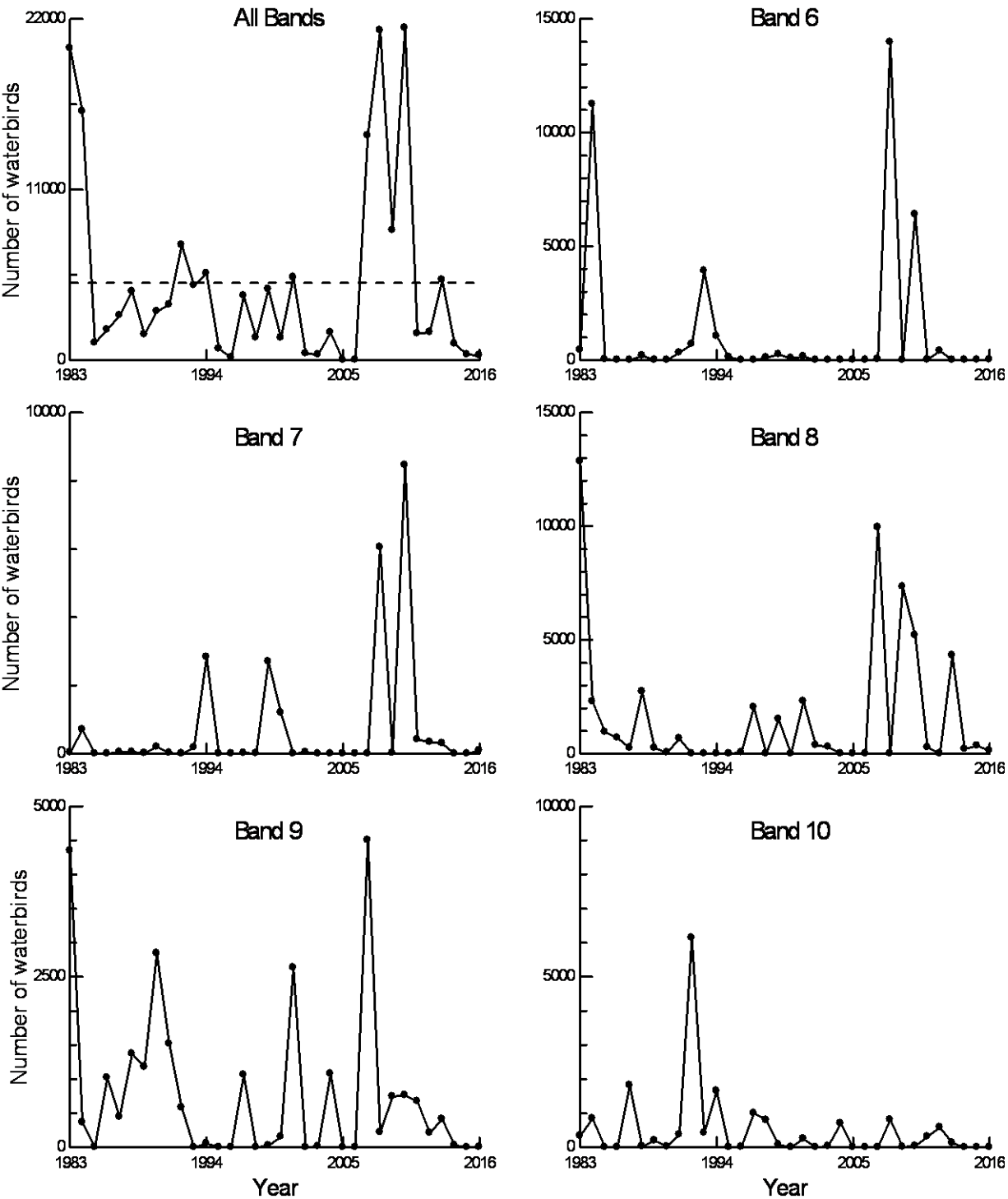
Scales vary on graphs – dashed line indicates long term average

Figure 26. Plumed whistling-duck Bands 1-5



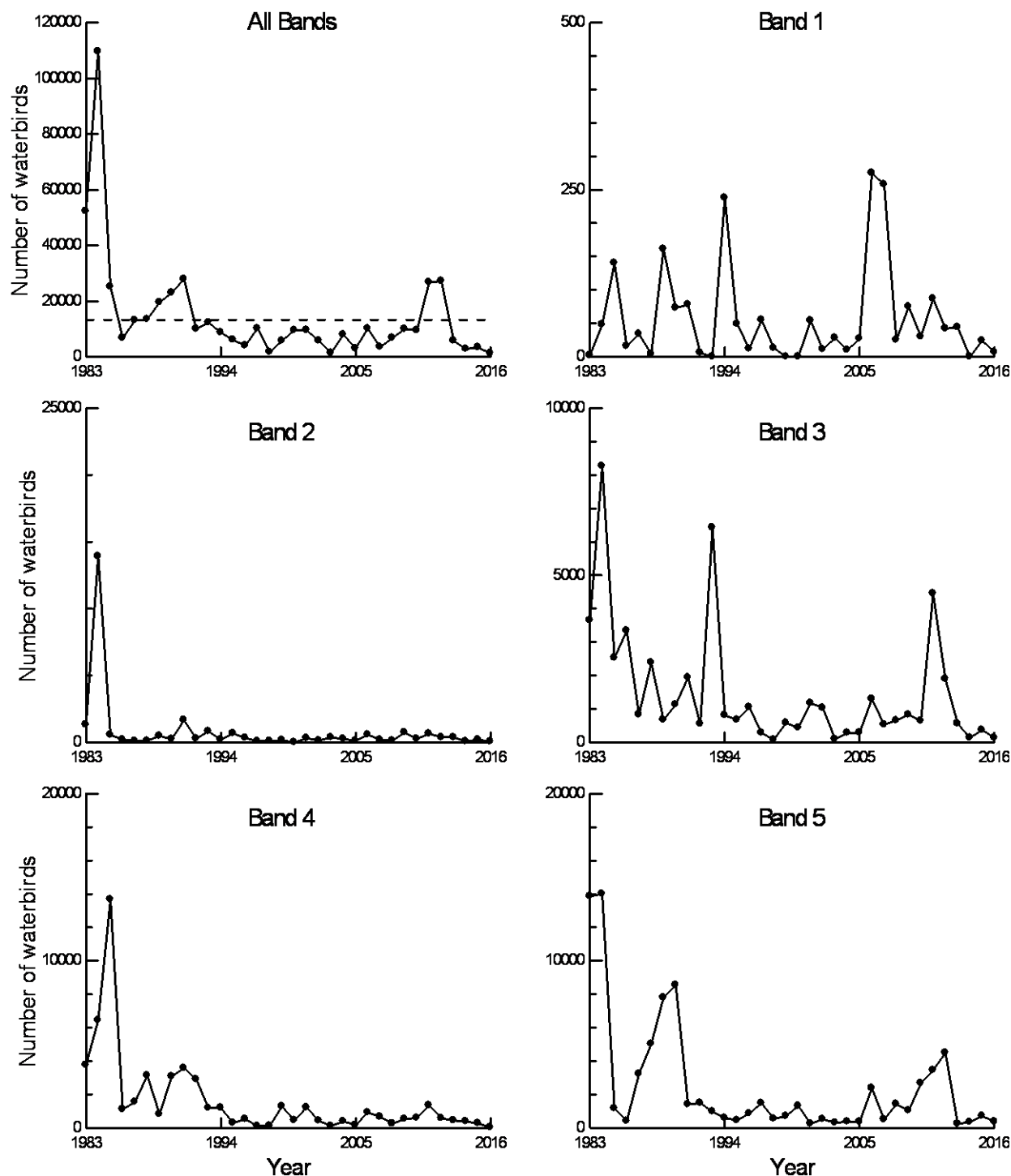
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Figure 27. Plumed whistling-duck Bands 6-10



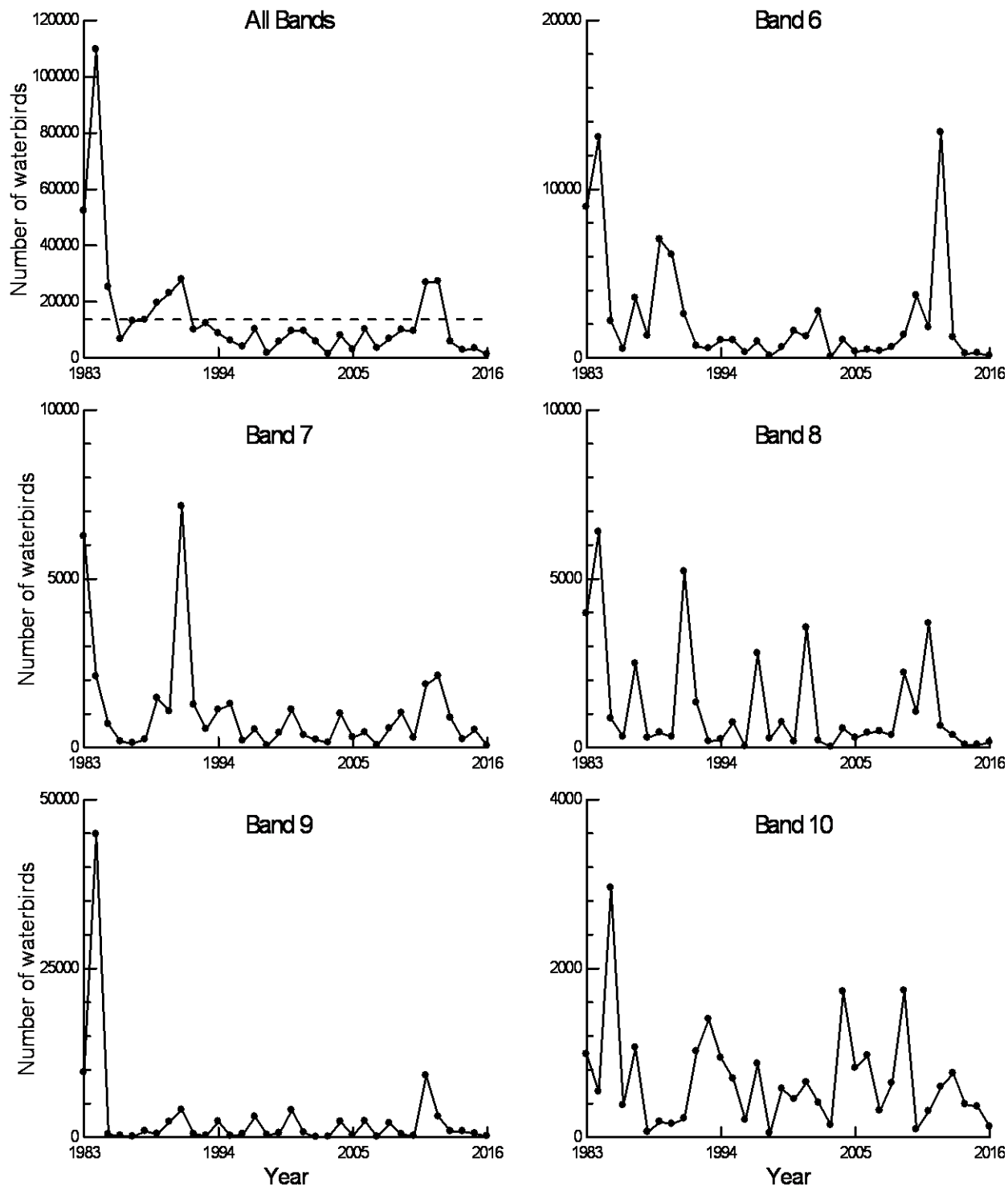
Scales vary on graphs – dashed line indicates long term average

Figure 28. Australian wood duck Bands 1-5



Scales vary on graphs – dashed line indicates long term average

Figure 29. Australian wood duck Bands 6-10



Scales vary on graphs – dashed line indicates long term average

References

1. Bureau of Meteorology (BOM) 2016 Monthly Weather review. Australian Government. Accessed 28/11/2016 <<http://www.bom.gov.au/climate/mwr/>>
2. Queensland Government 2016 Drought declarations (Department of Agriculture and Fisheries). Accessed 28/11/2016 <<https://www.longpaddock.qld.gov.au/queenslanddroughtmonitor/queenslanddroughtreport/>>