

# Aerial Survey of Wetland Birds in Eastern Australia - October 2014 Annual Summary Report

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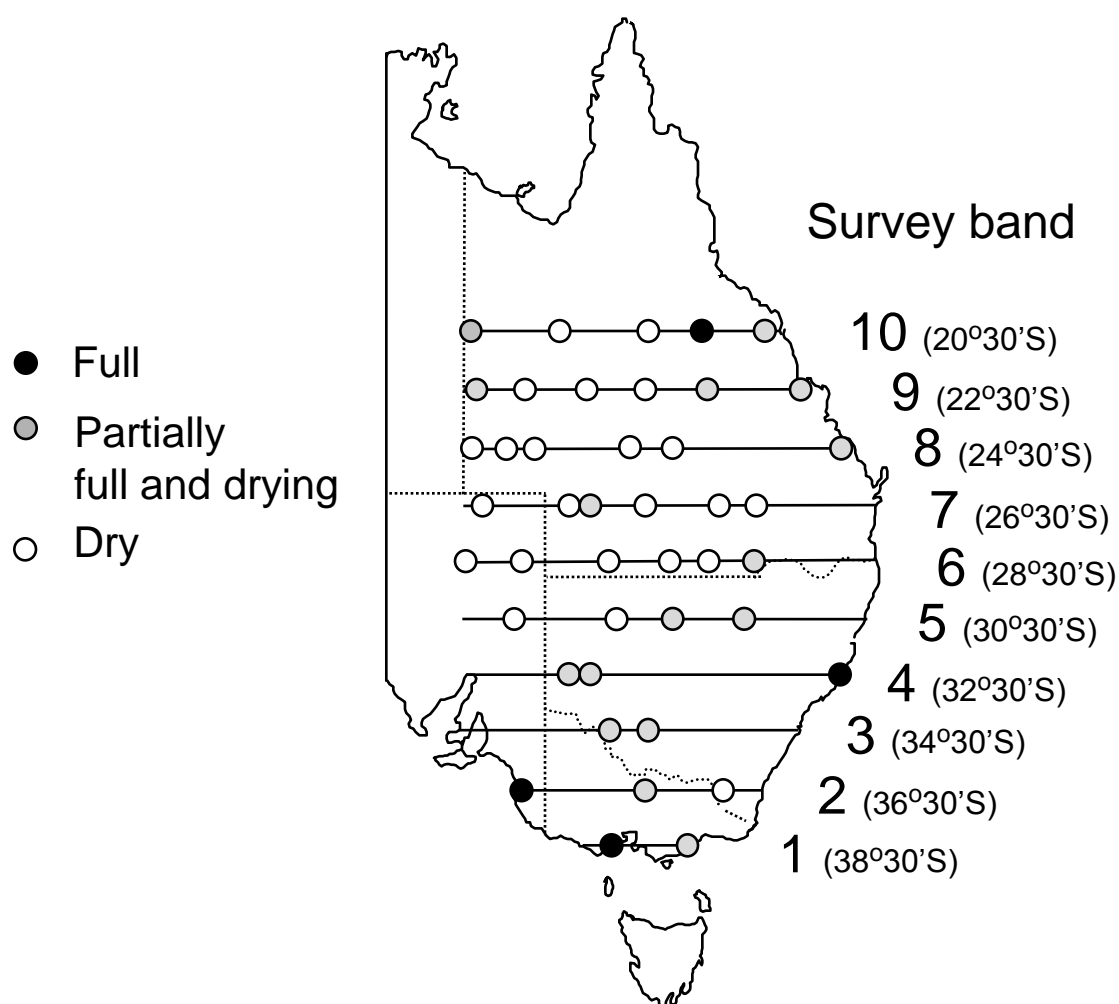
## Summary

1. Most of the northern survey area has experienced extremely dry conditions since 2012, with few large areas of wetland available. However, the southeast part of the survey region (Warrnambool, southern part of Coorong) had higher than average rainfall in 2013, flooding many wetland areas. Wetlands throughout Queensland, New South Wales and central and western Victoria were mostly dry at the time of survey (Fig. 1).
2. Trend analyses indicate continued long term (32 years) declines in total waterbird abundance, wetland area, and breeding species richness (Figs 2,3 & 6). These major indices (together with breeding abundance) declined considerably in 2014 compared to the previous year and all were well below long term averages.
3. The Macquarie Marshes and Lowbidgee wetlands were partially filled by environmental flows but these were relatively small areas compared to large flooding years. Most rivers in the Murray-Darling Basin were also relatively dry with little wetland habitat on their floodplains. Most of the large lakes of the Menindee Lakes system were dry (Fig. 1).
4. Lake Eyre and Cooper Creek wetlands were mostly dry except for Lake Hope, which was drying back and supported 1,896 waterbirds. Other important wetlands including Lakes Yamma Yamma, Torquinnie and Mumbleberry were also dry (Fig. 1).
5. Waterbirds were concentrated in relatively few important sites; only six wetland systems held more than 5,000 birds: Lake Cooper, Toolamba South channel (Goulburn River), Lake Mokoan, Reedy Creek, Lake Galilee and Burdekin River waterhole (Figs 1 & 4). Although few in number, these six wetlands held almost 60% of the survey total – with one wetland in band 9 (Lake Galilee) supporting almost one third of total survey abundance.
6. Total breeding index (all species combined) was the lowest on record and well below the long term average (Fig 5). Breeding was recorded only in a single location. Breeding species richness was also the lowest on record, comprising one non-game species (Figs 6 to 8).
7. Low numbers of waterbirds were observed on key wetland systems including Cooper Creek, Menindee Lakes, Paroo overflow, Cuttaburra channels, Macquarie Marshes and the Lowbidgee (Figs 1 & 4).
8. Games species abundances 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 University of NSW and funded by the NSW Office of Environment & Heritage, with additional funding provided by the South Australian Department of Environment and Heritage, the Queensland Department of Environment and Resource Management, the Victorian Department of Sustainability and Environment and the Department of Environment of the Australian Government.**

We thank Terry Korn, Peter Morris, Paul Wainwright and Mark Ziembicki for acting as expert observers during the survey, and Richard Byrne of NSW National Parks and Wildlife, NSW Office of Environment and Heritage for piloting aircraft. We also thank Justin McCann, Sharon Ryall and James Haggerty for assisting with data entry and quality assurance.

Figure 1. Wetland map 2014



### 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 Swamp
- 2 Coorong, Cooper + Mokoan Lakes, Cooma-Monaro
- 1 Curdies Inlet, Jack Smith Lake

Figure 2. Total wetland area

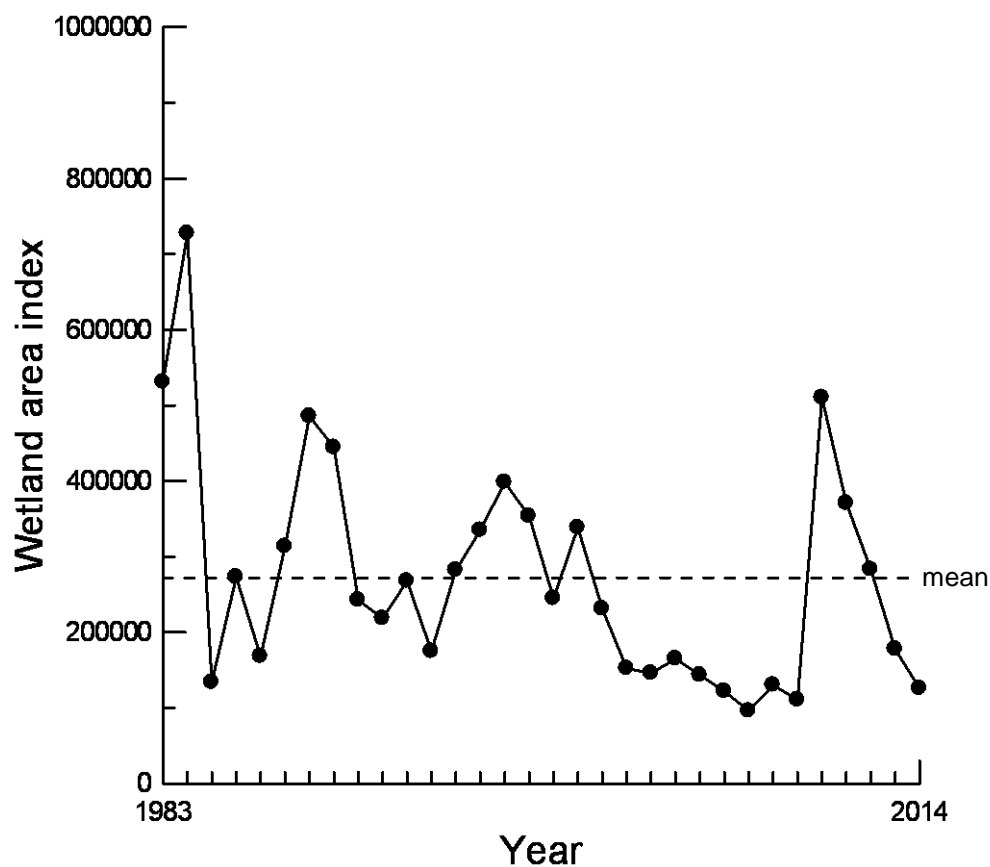


Figure 3. Total waterbirds

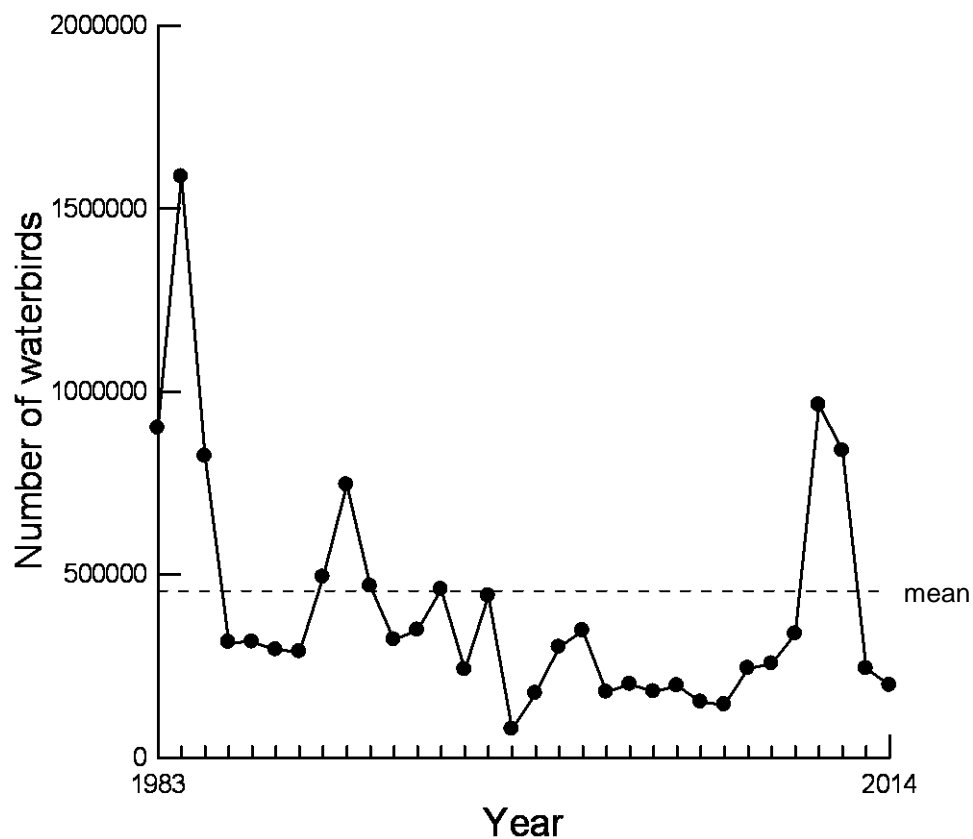
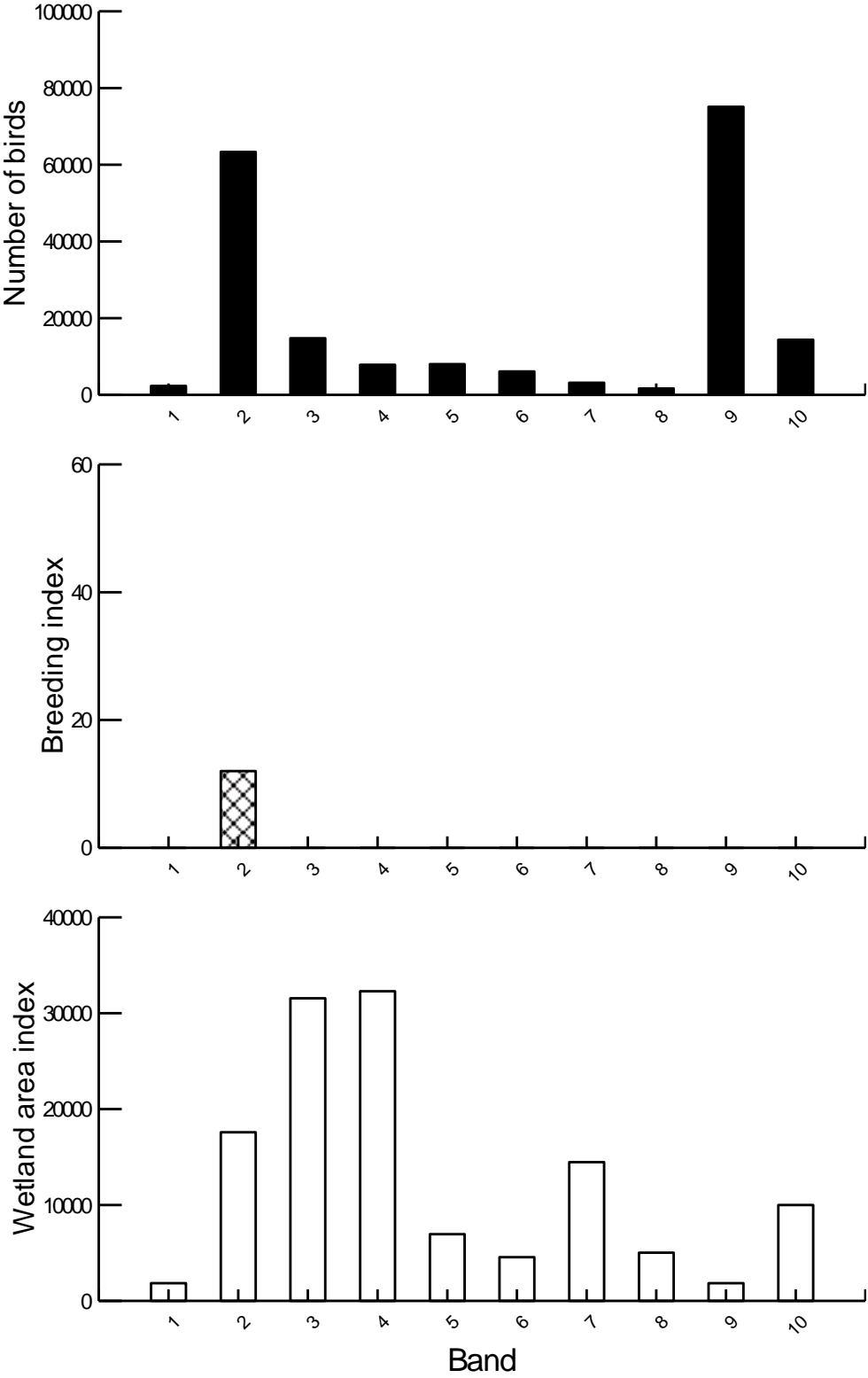


Figure 4. Band totals 2014



Scales vary on graph axes

Figure 5. Breeding index (all species)

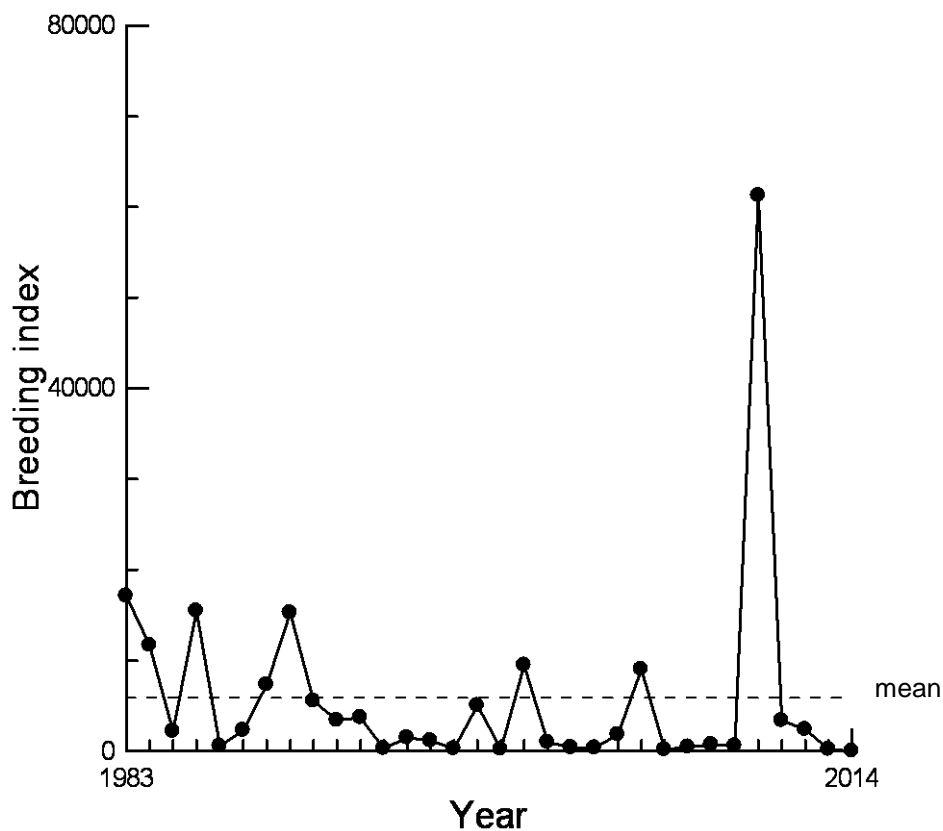
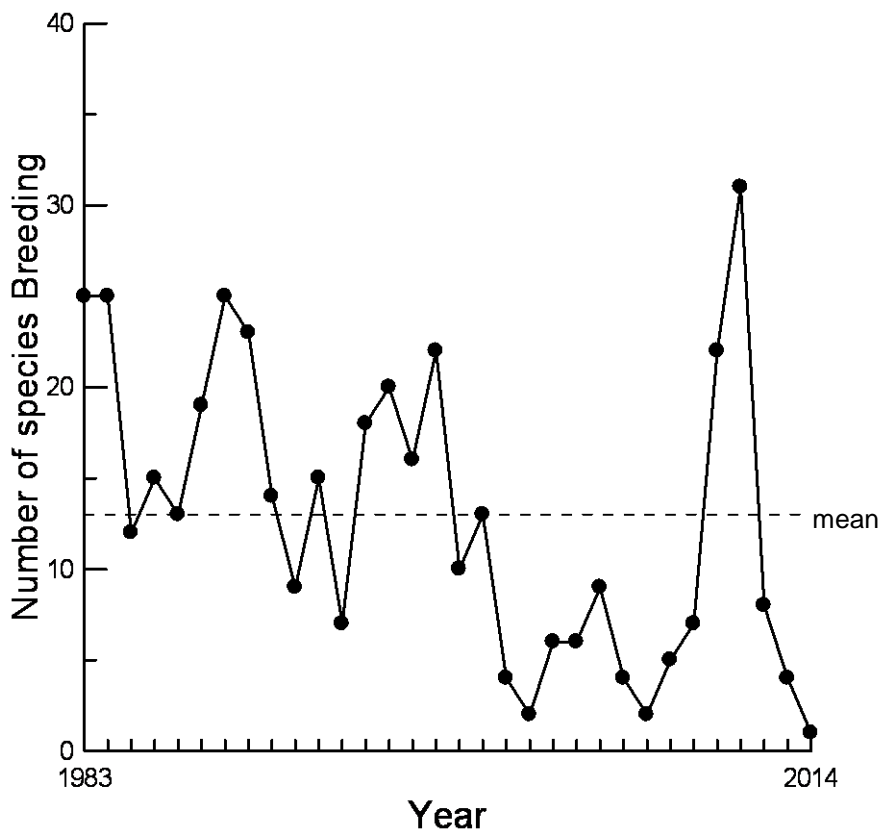
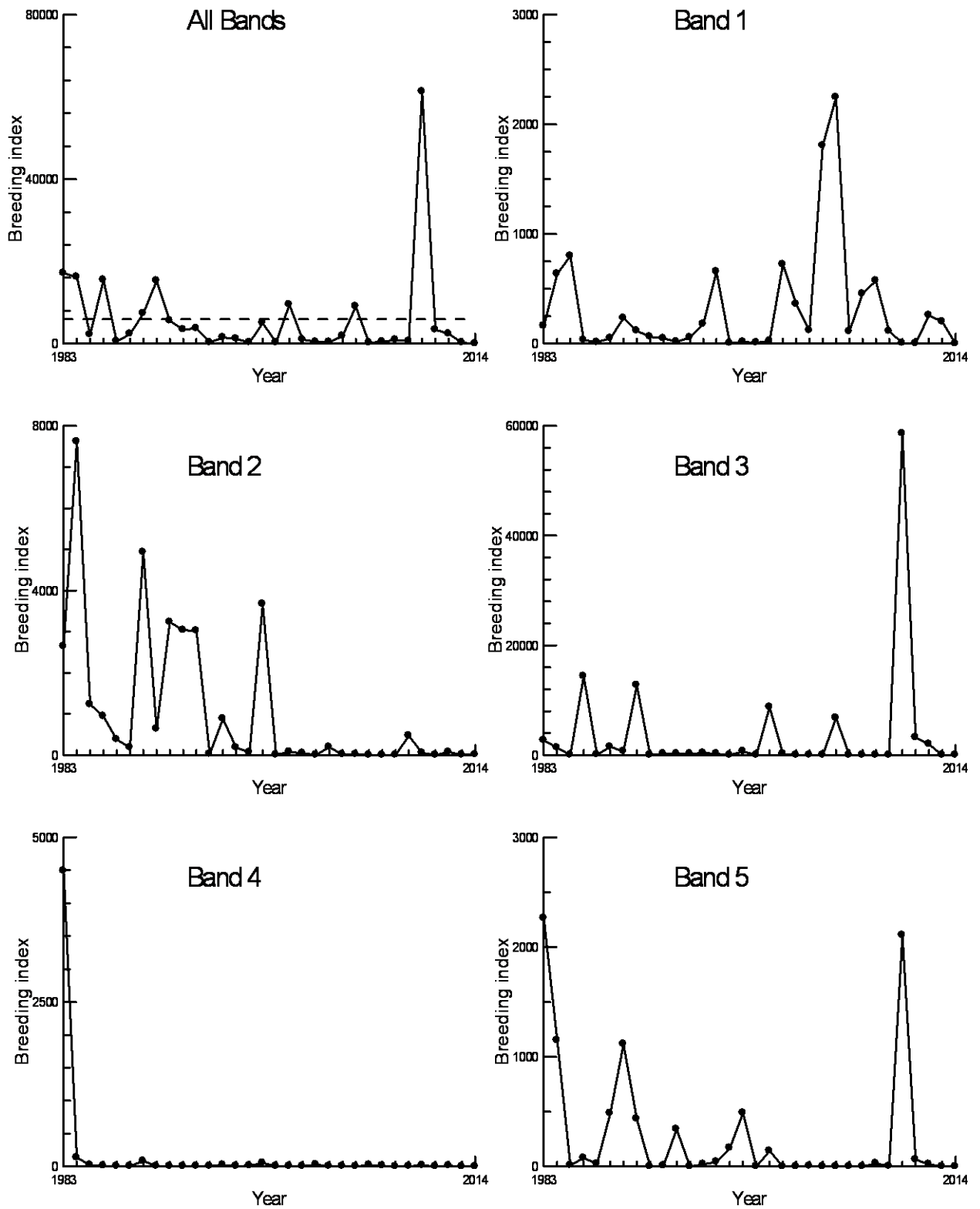


Figure 6. Number of species breeding



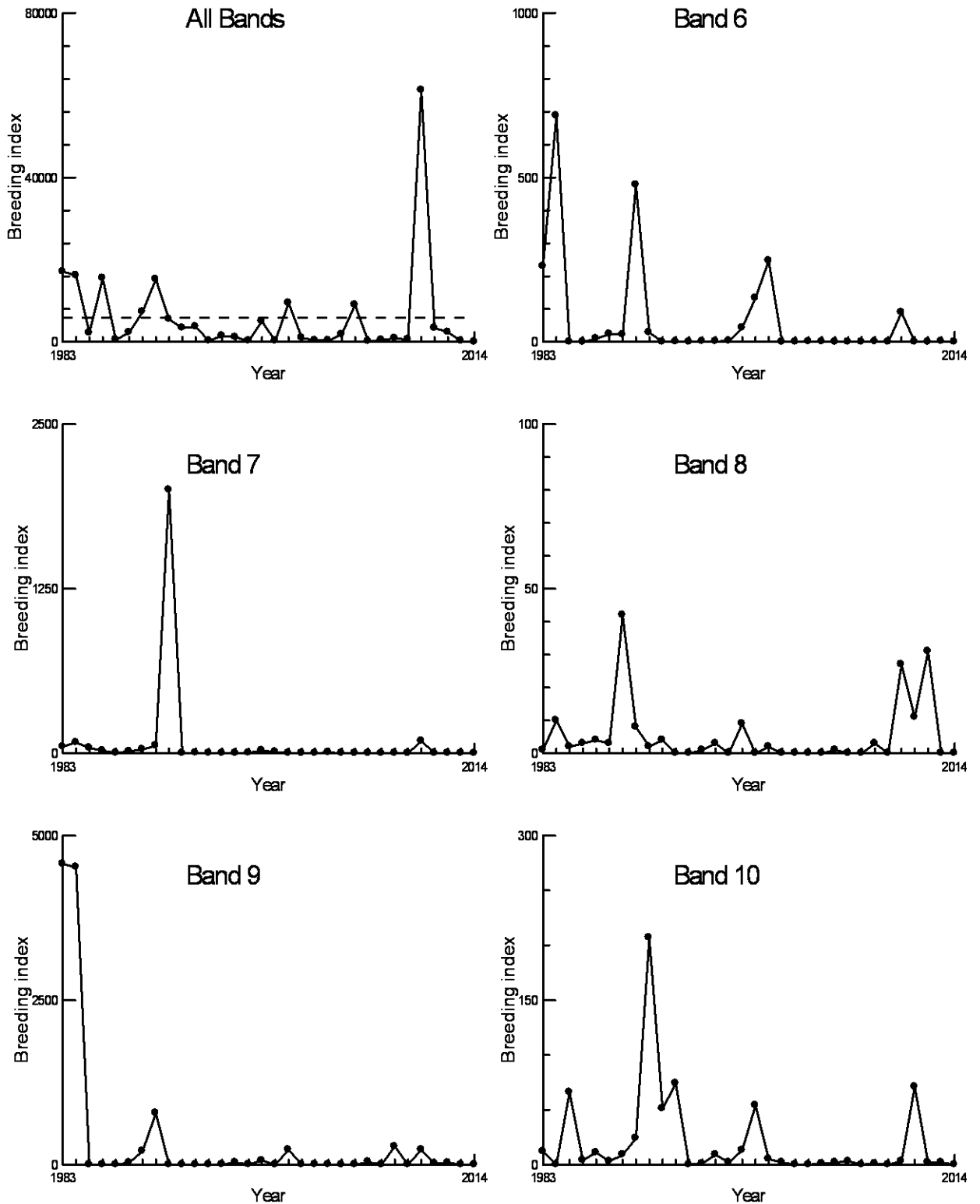
Scales vary on graph axes

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



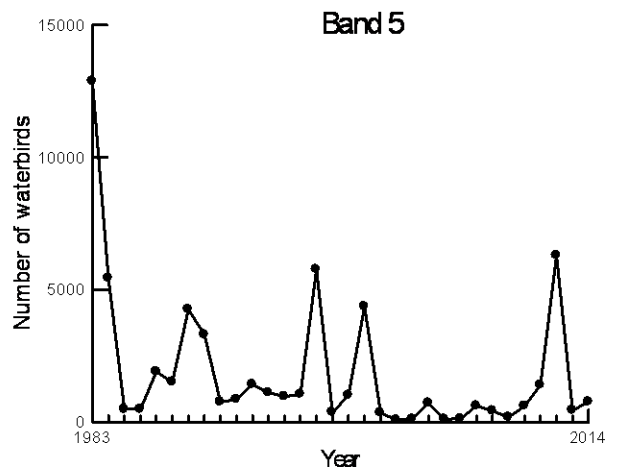
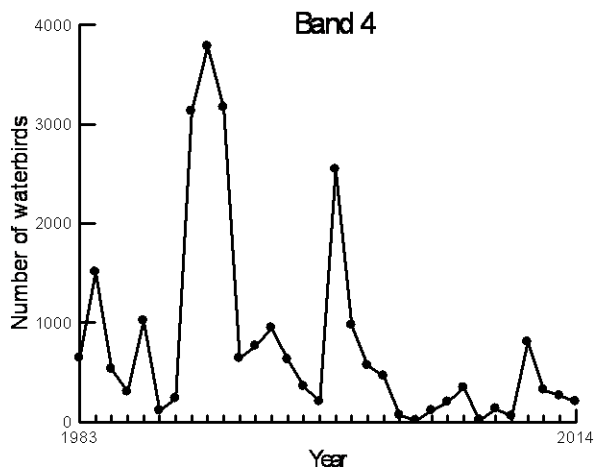
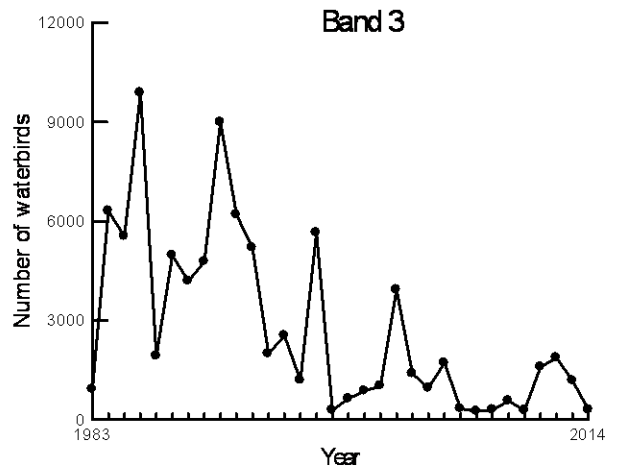
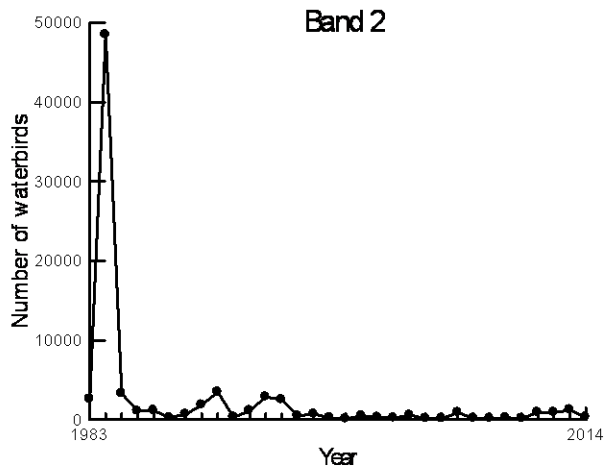
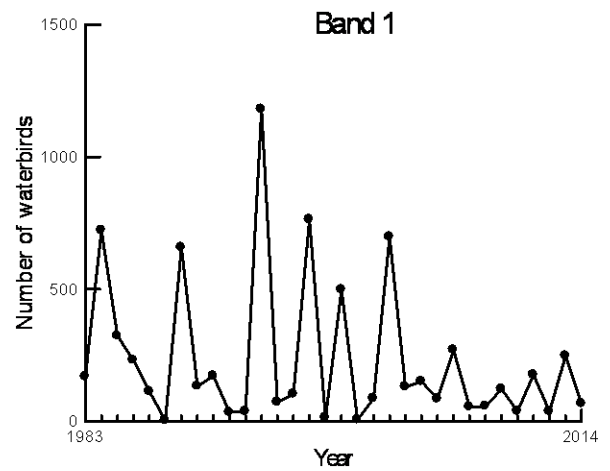
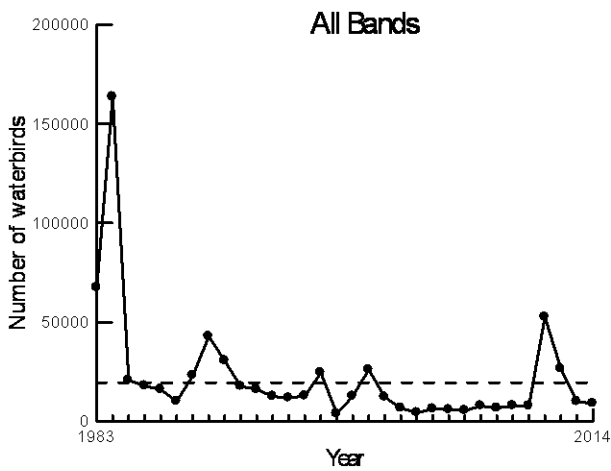
Scales vary on graphs

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



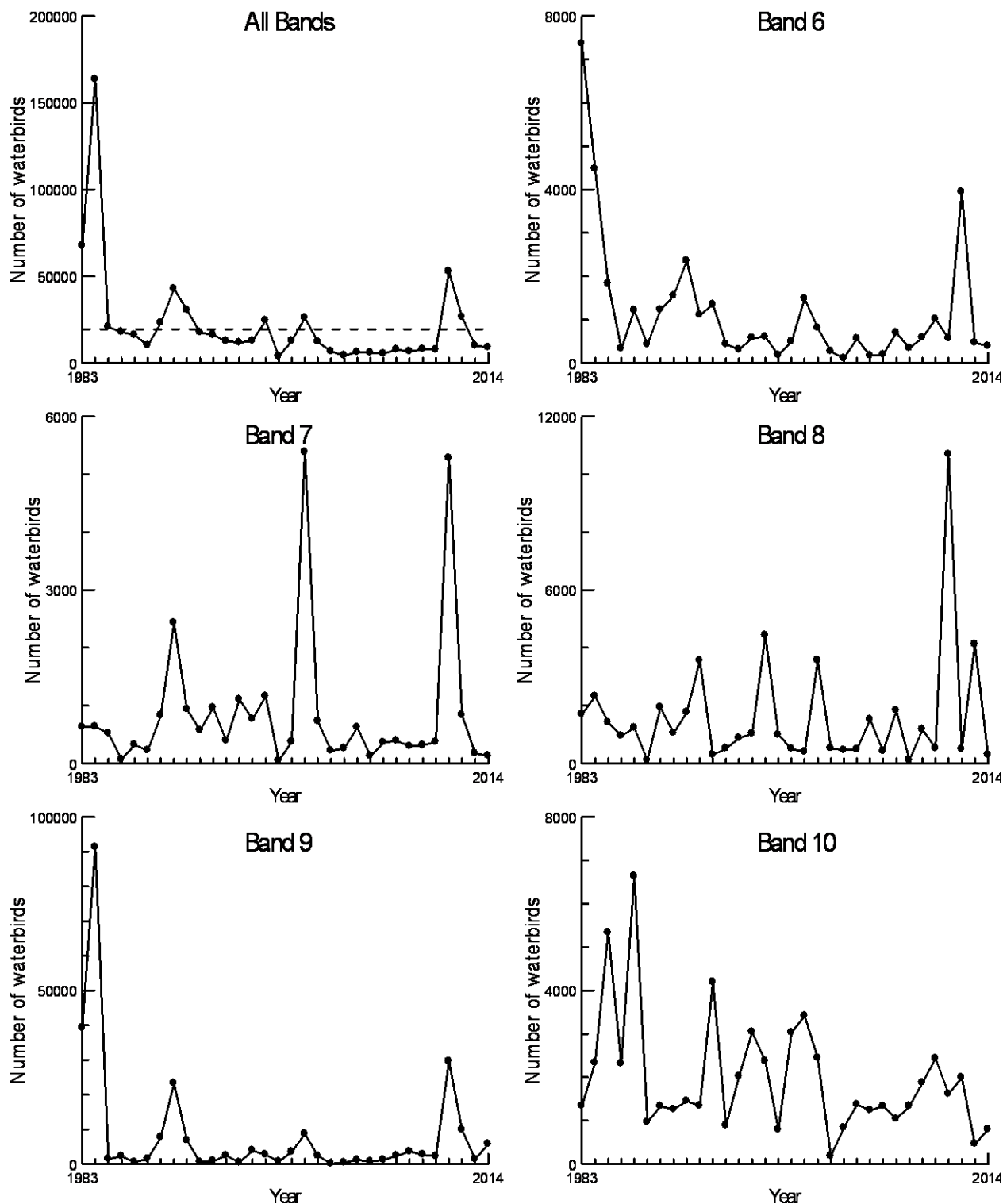


# Figure 9. Pacific black duck Bands 1-5



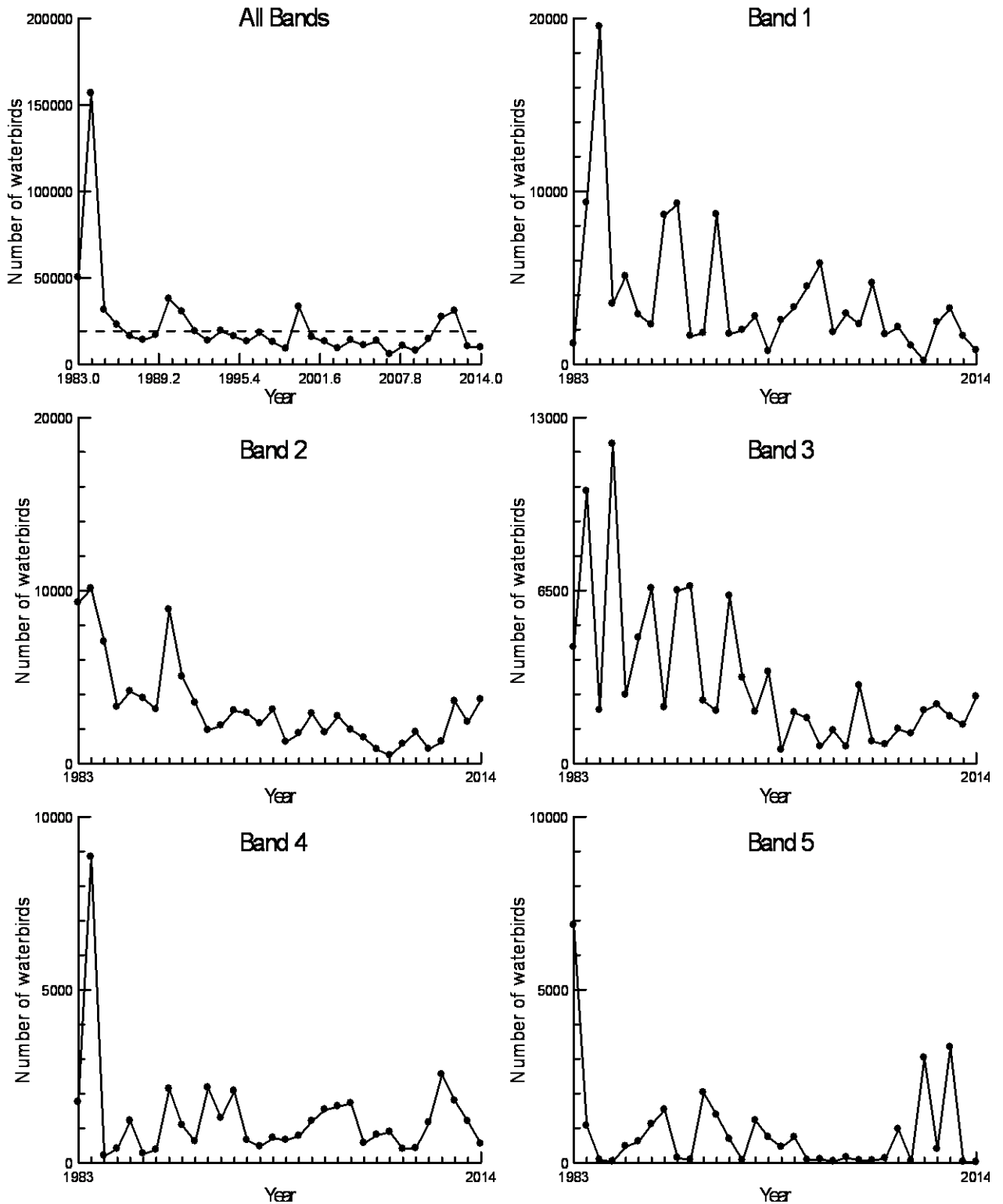
Scales vary on graphs – dashed line indicates long term average

Figure 10. Pacific black duck Bands 6-10



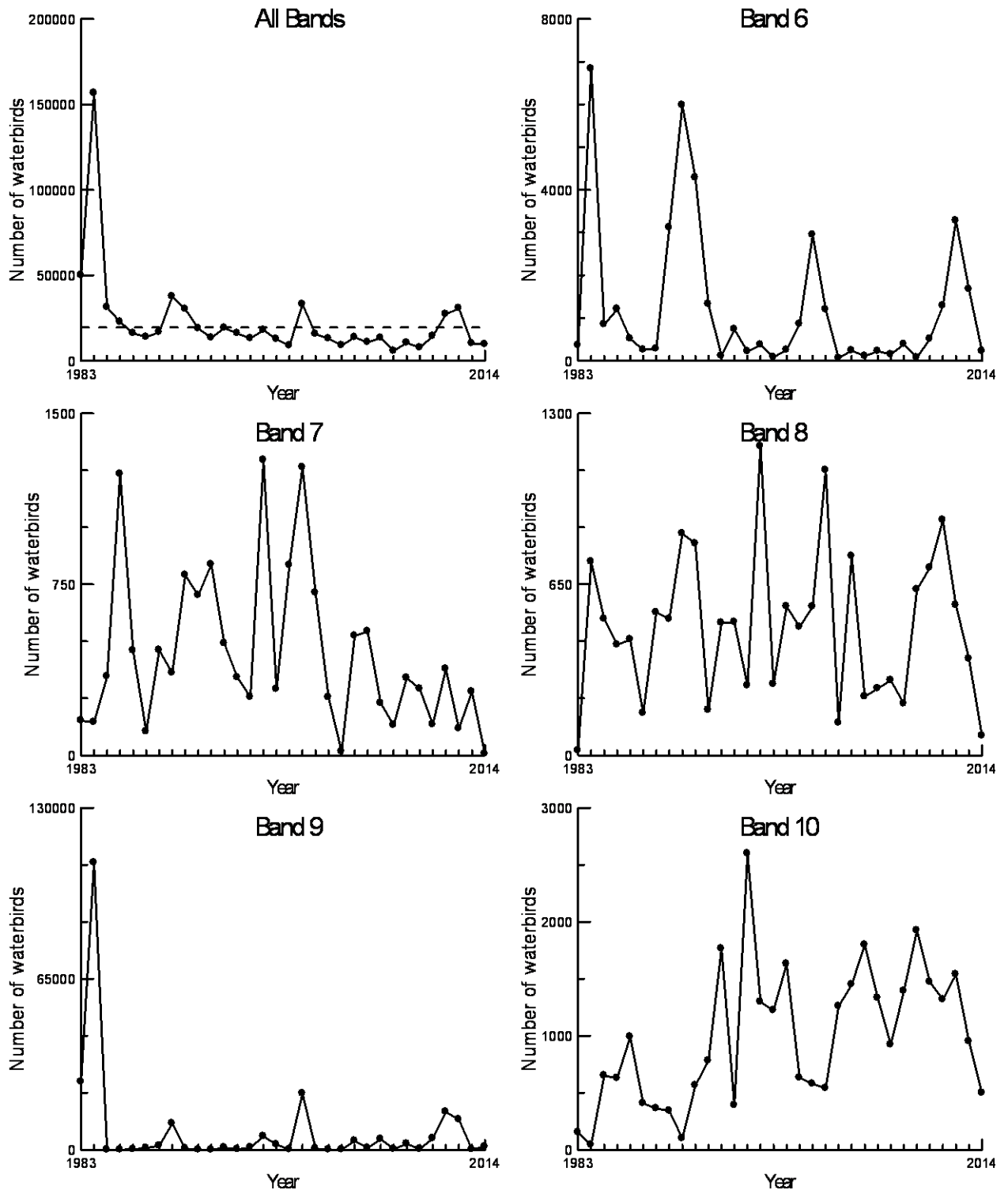
Scales vary on graphs – dashed line indicates long term average

Figure 11. Black swan Bands 1-5



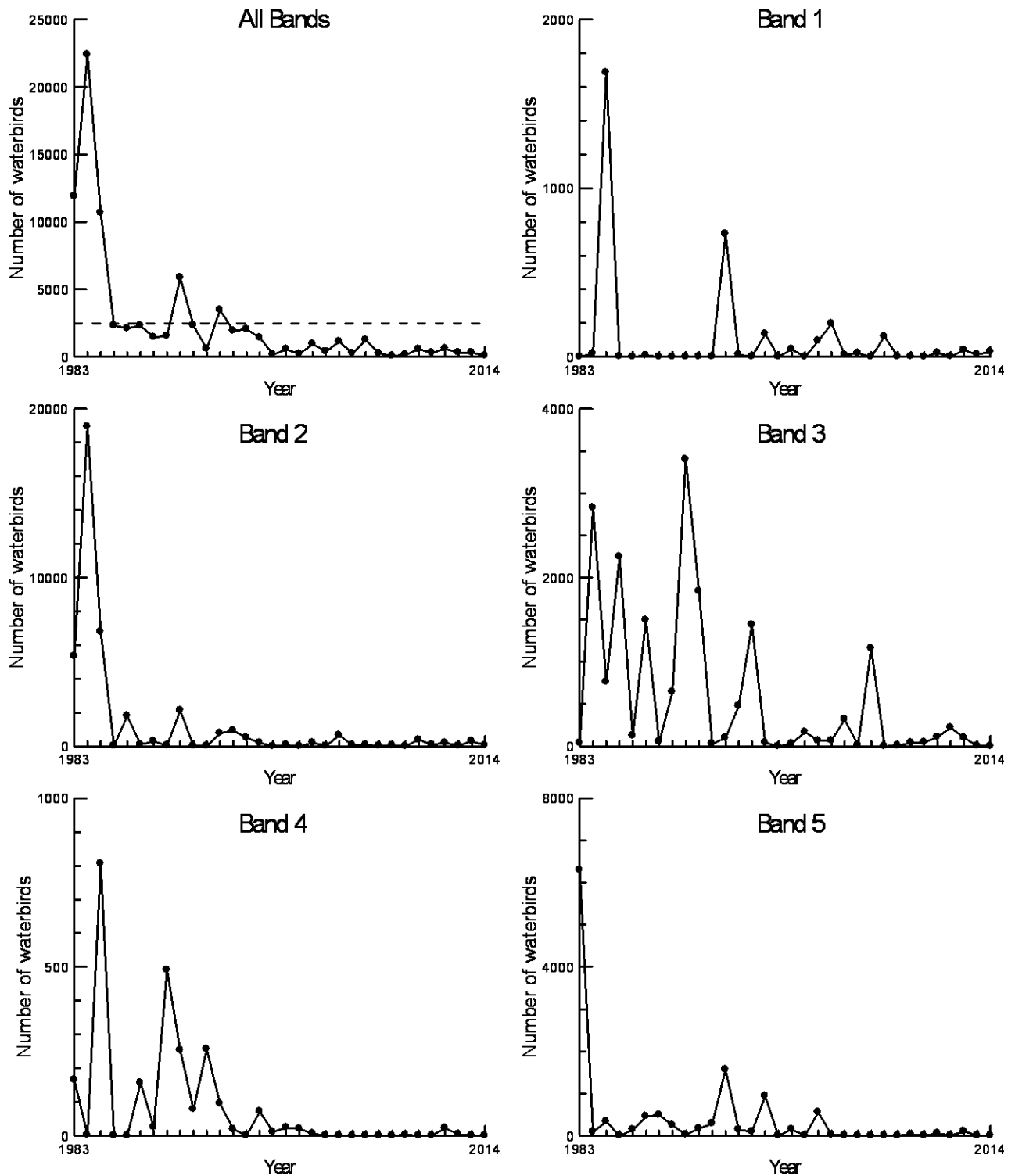
Scales vary on graphs – dashed line indicates long term average

Figure 12. Black swan Bands 6-10



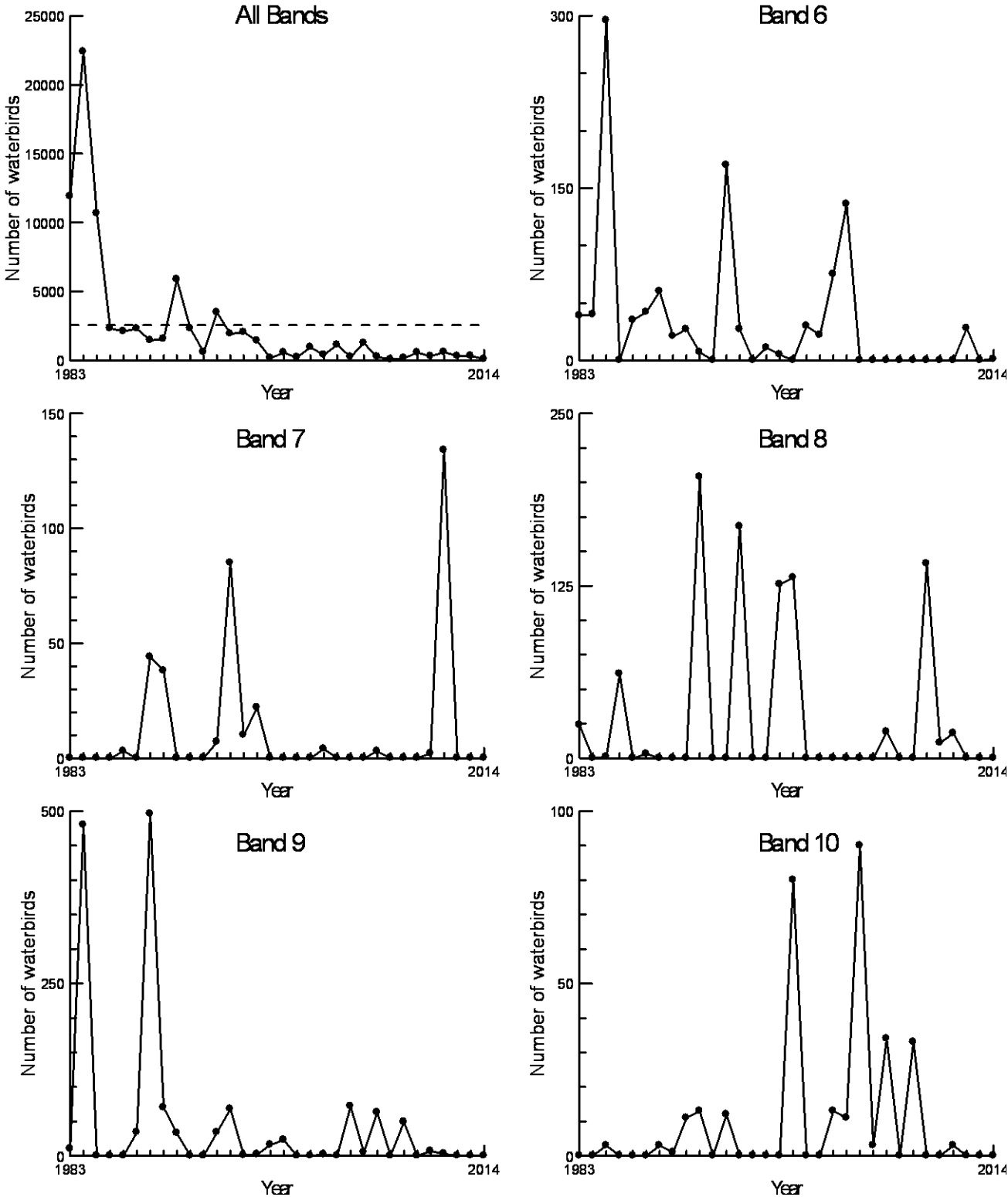
Scales vary on graphs – dashed line indicates long term average

# Figure 13. Australasian shoveler Bands 1-5



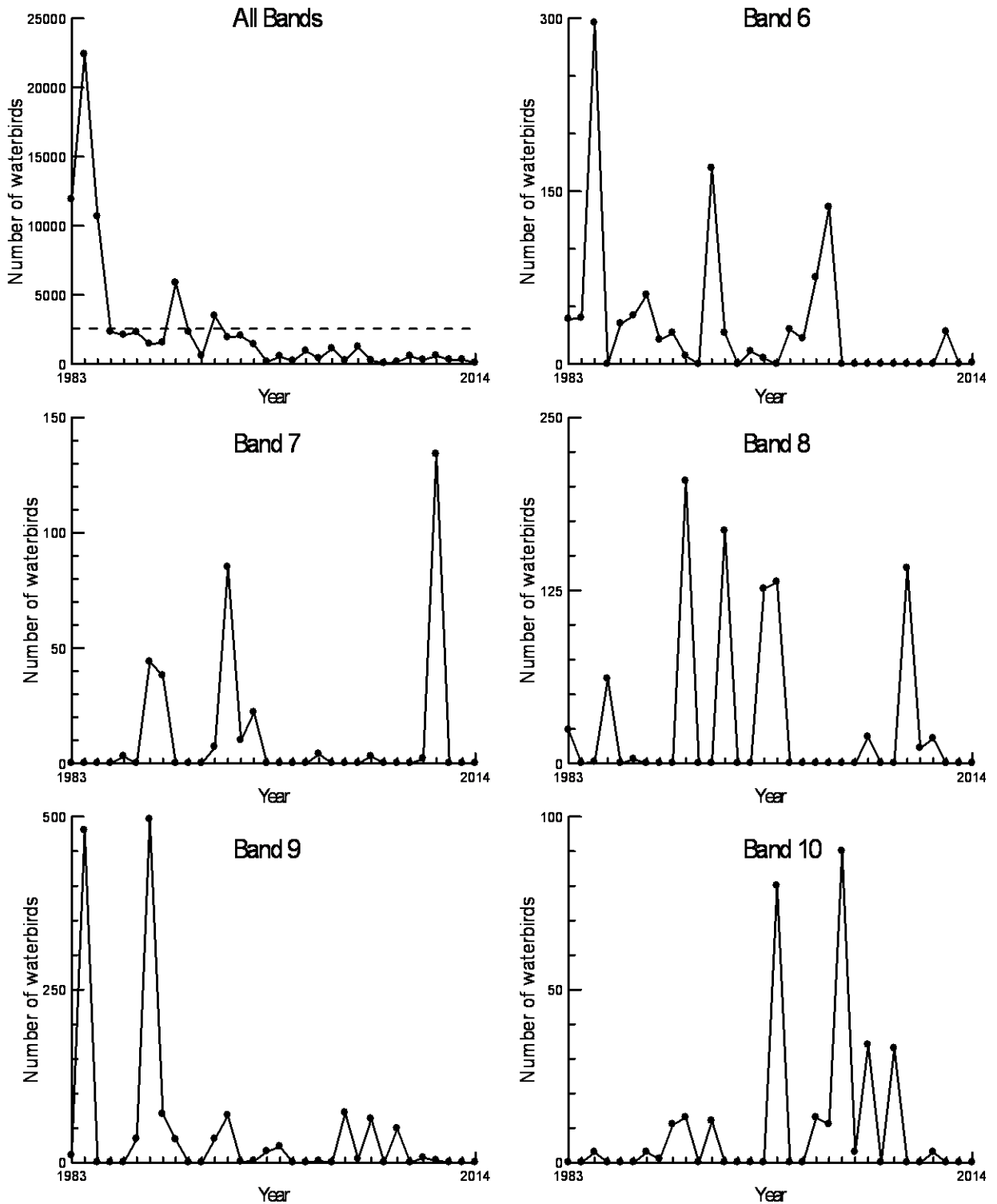
Scales vary on graphs – dashed line indicates long term average

Figure 14. Australasian shoveler Bands 6-10



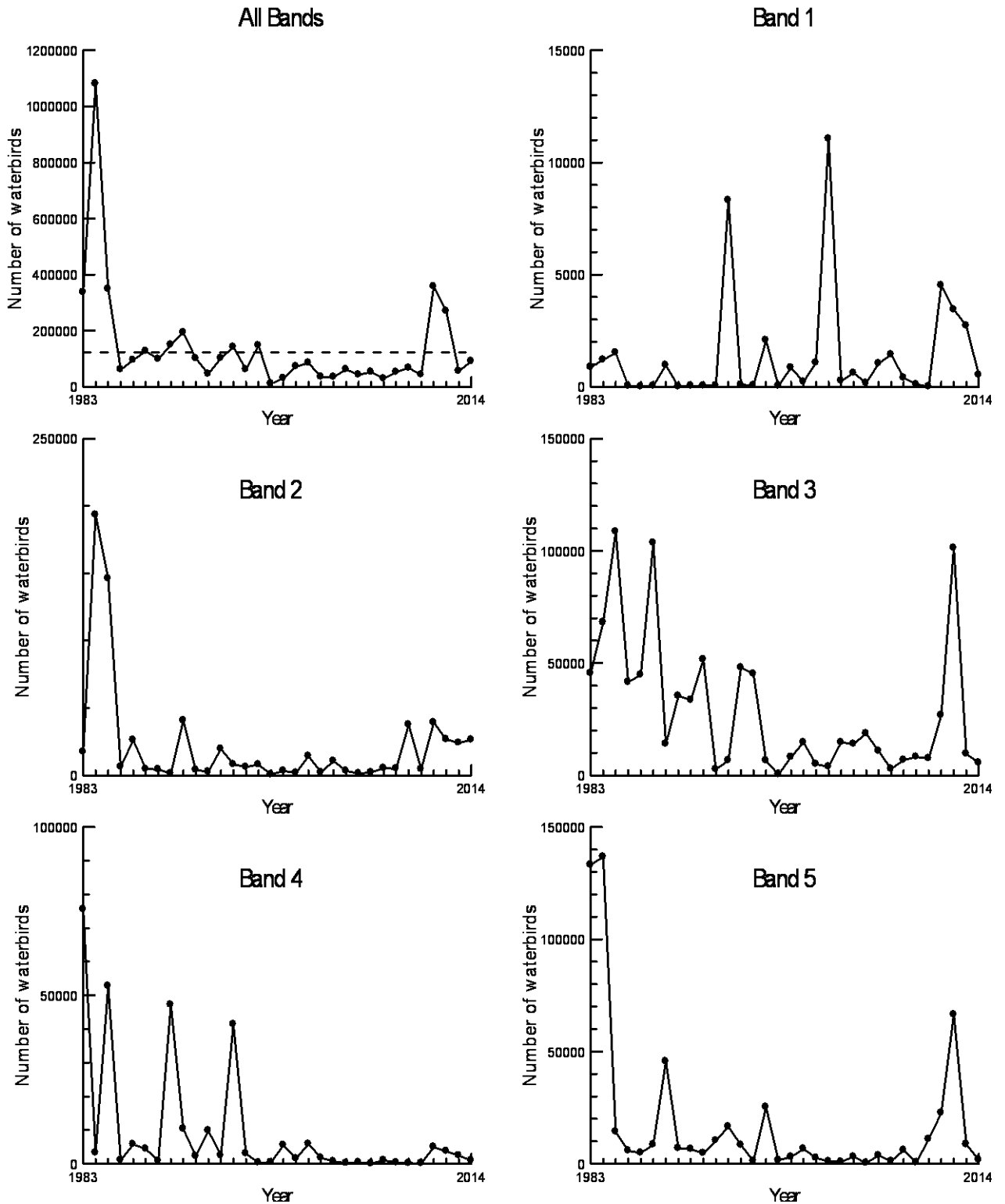
Scales vary on graphs – dashed line indicates long term average

Figure 15. Chestnut teal Bands 1-5



Scales vary on graphs – dashed line indicates long term average

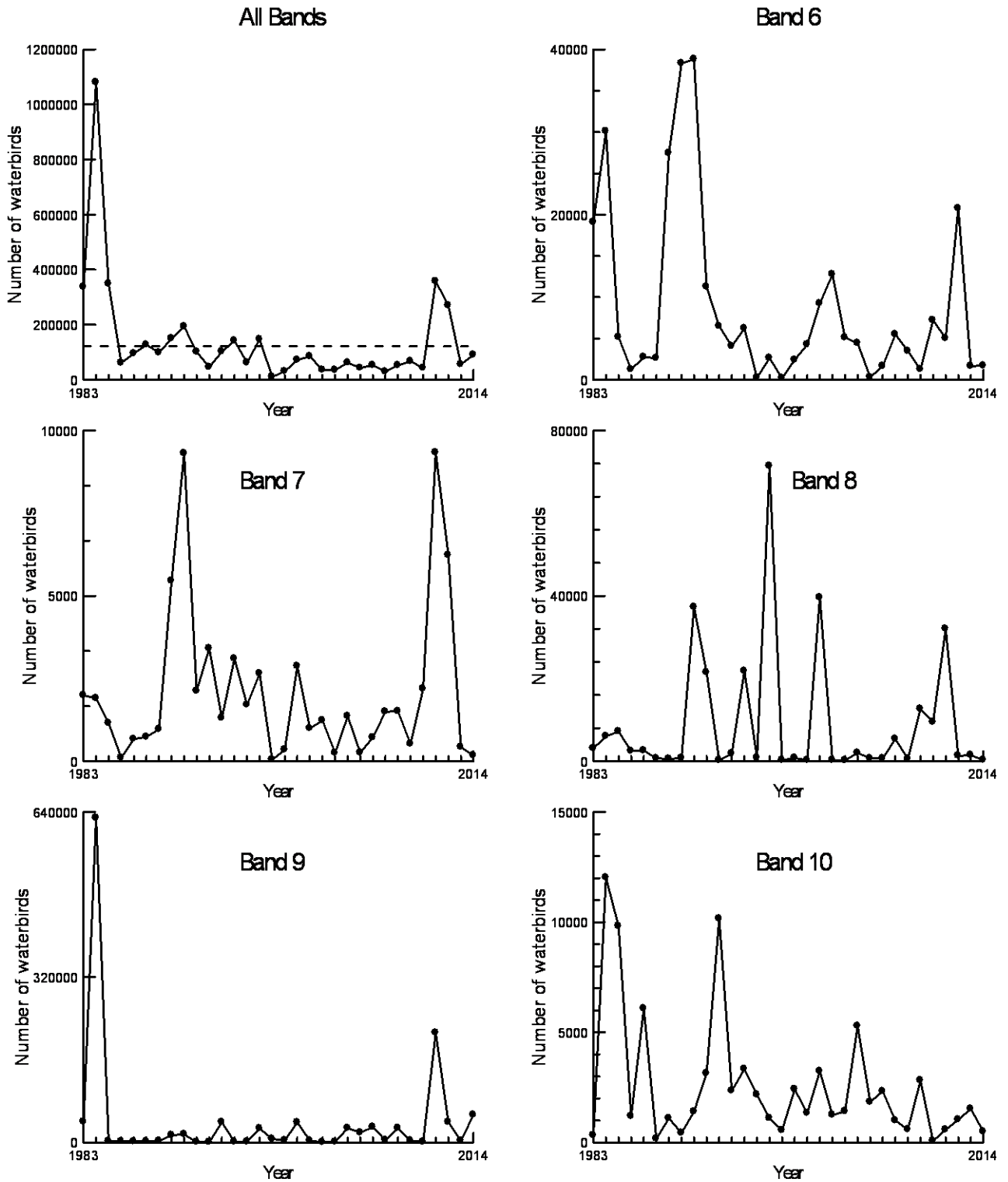
Figure 16. Grey teal Bands 1-5



Scales vary on graphs – dashed line indicates long term average

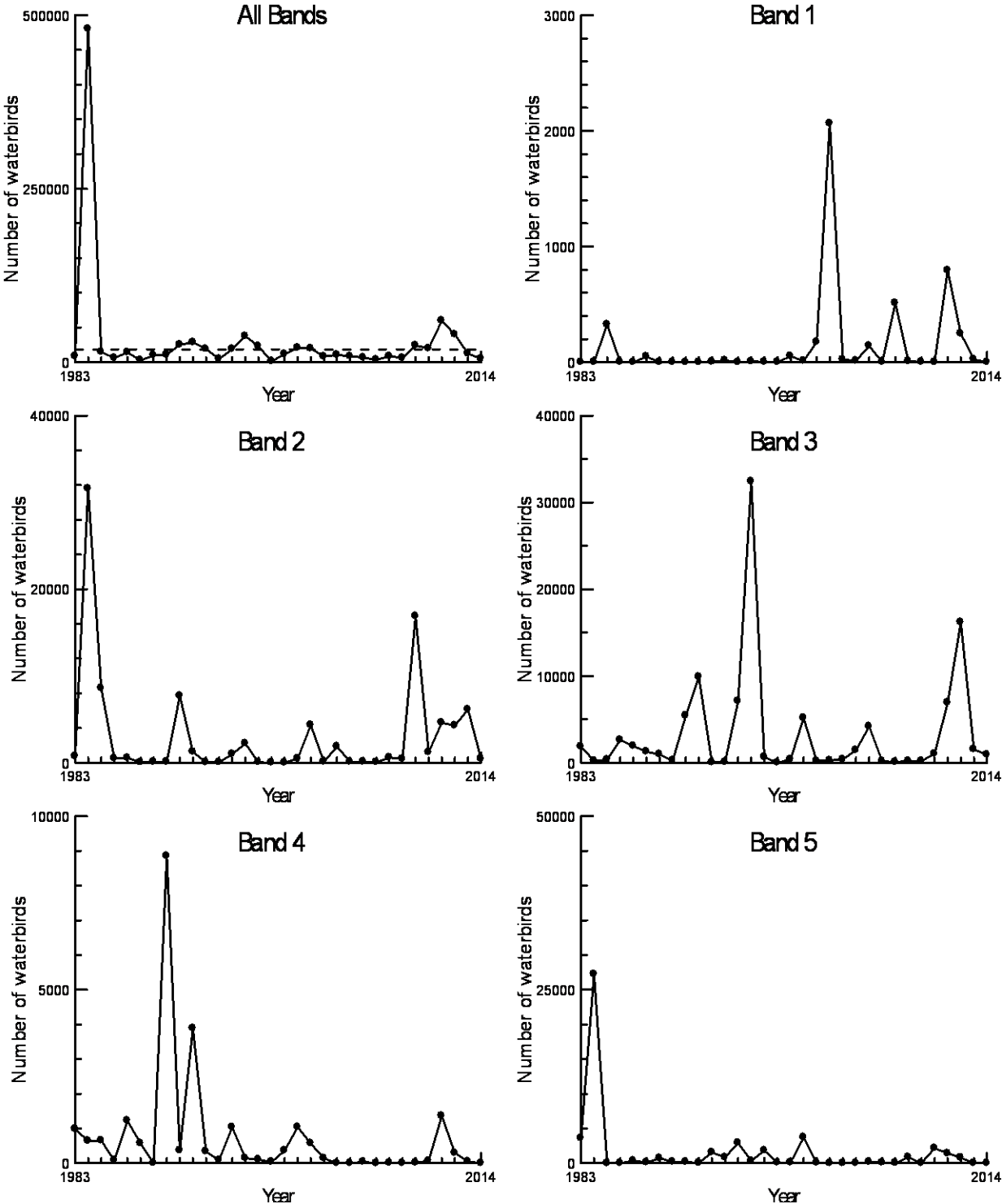


# Figure 17. Grey teal Bands 6-10



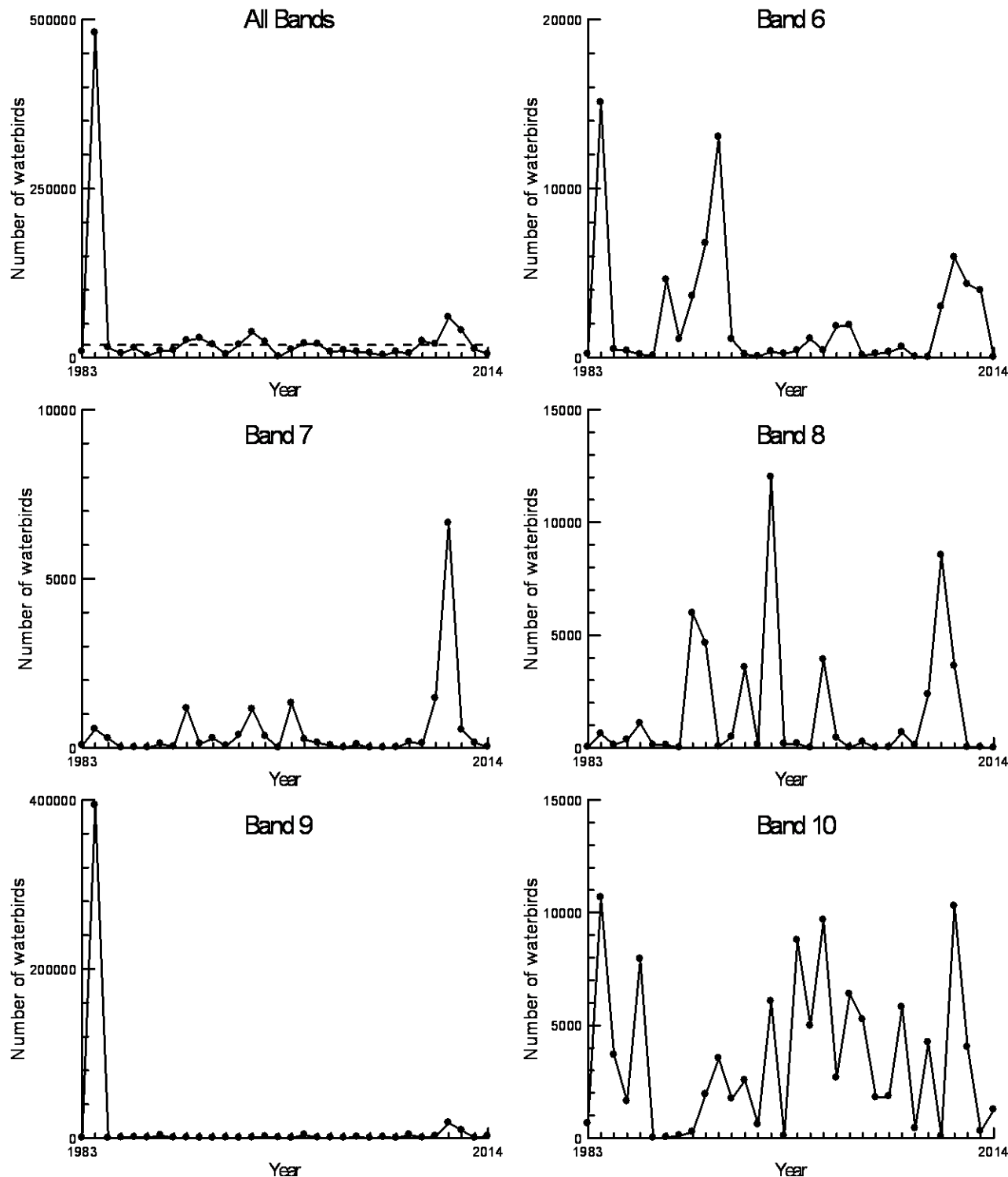
Scales vary on graph – dashed line indicates long term average s

Figure 18. Hardhead Bands 1-5



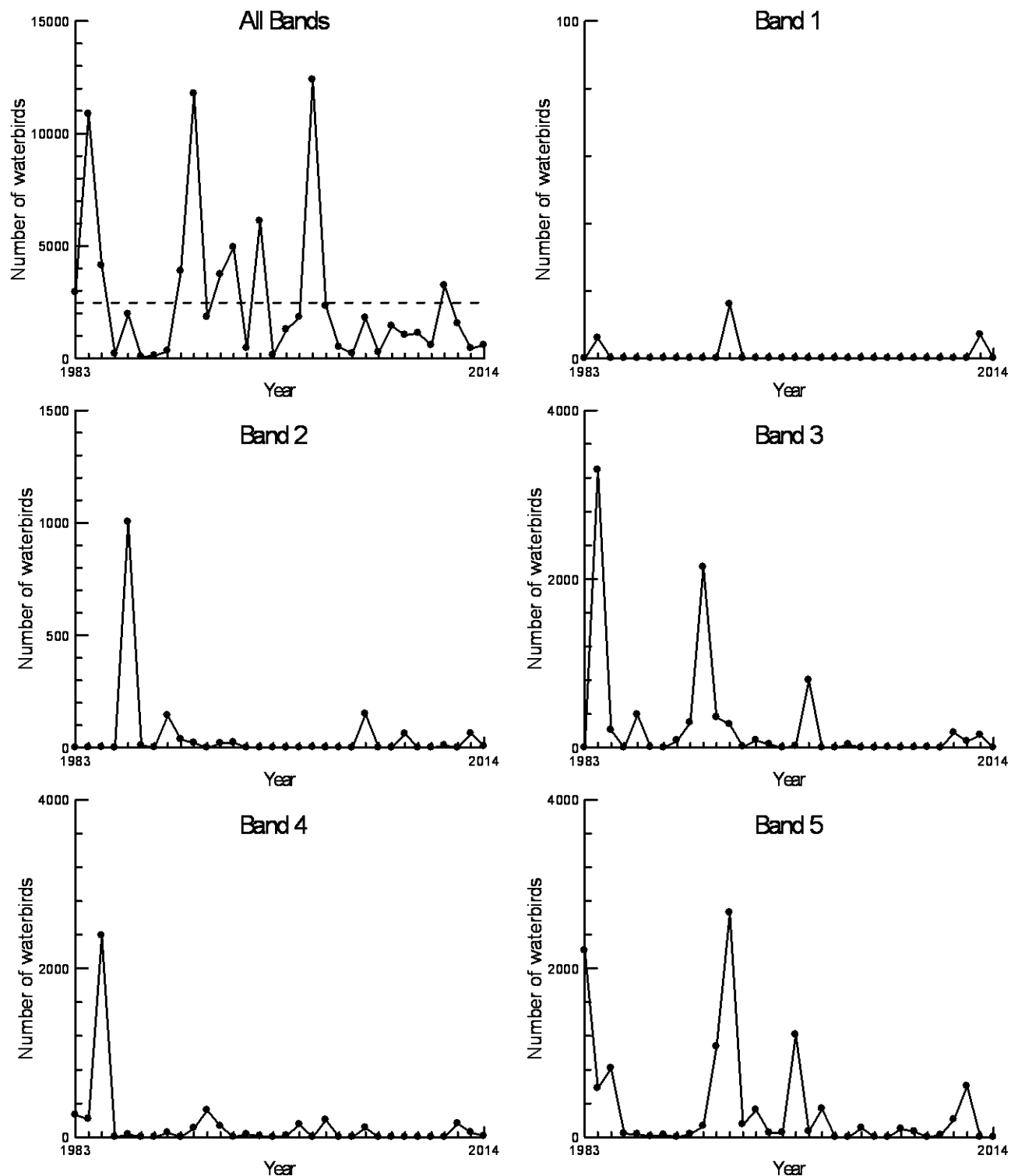
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Figure 19. Hardhead Bands 6-10



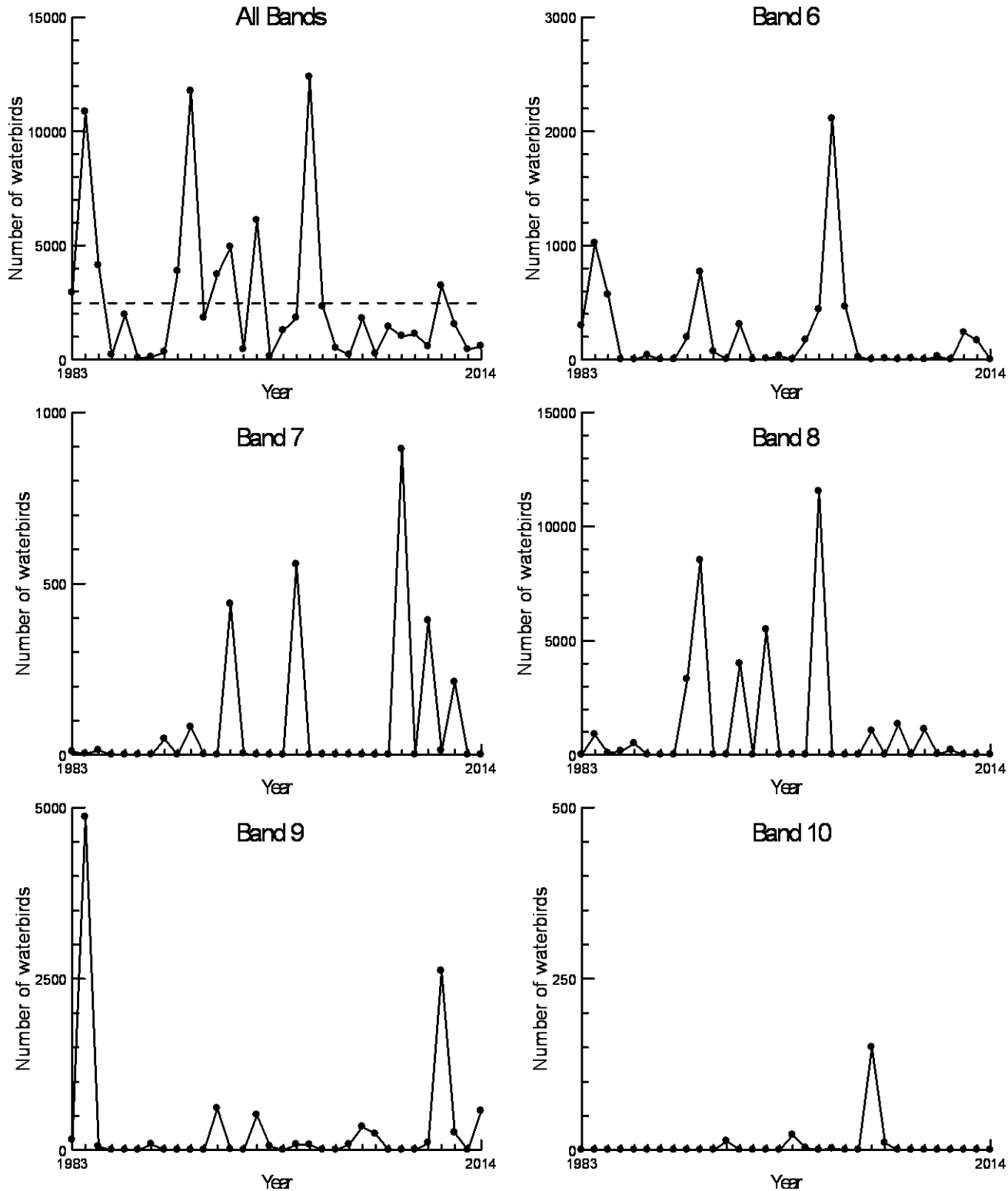
Scales vary on graphs – dashed line indicates long term average

Figure 20. Freckled duck Bands 1-5



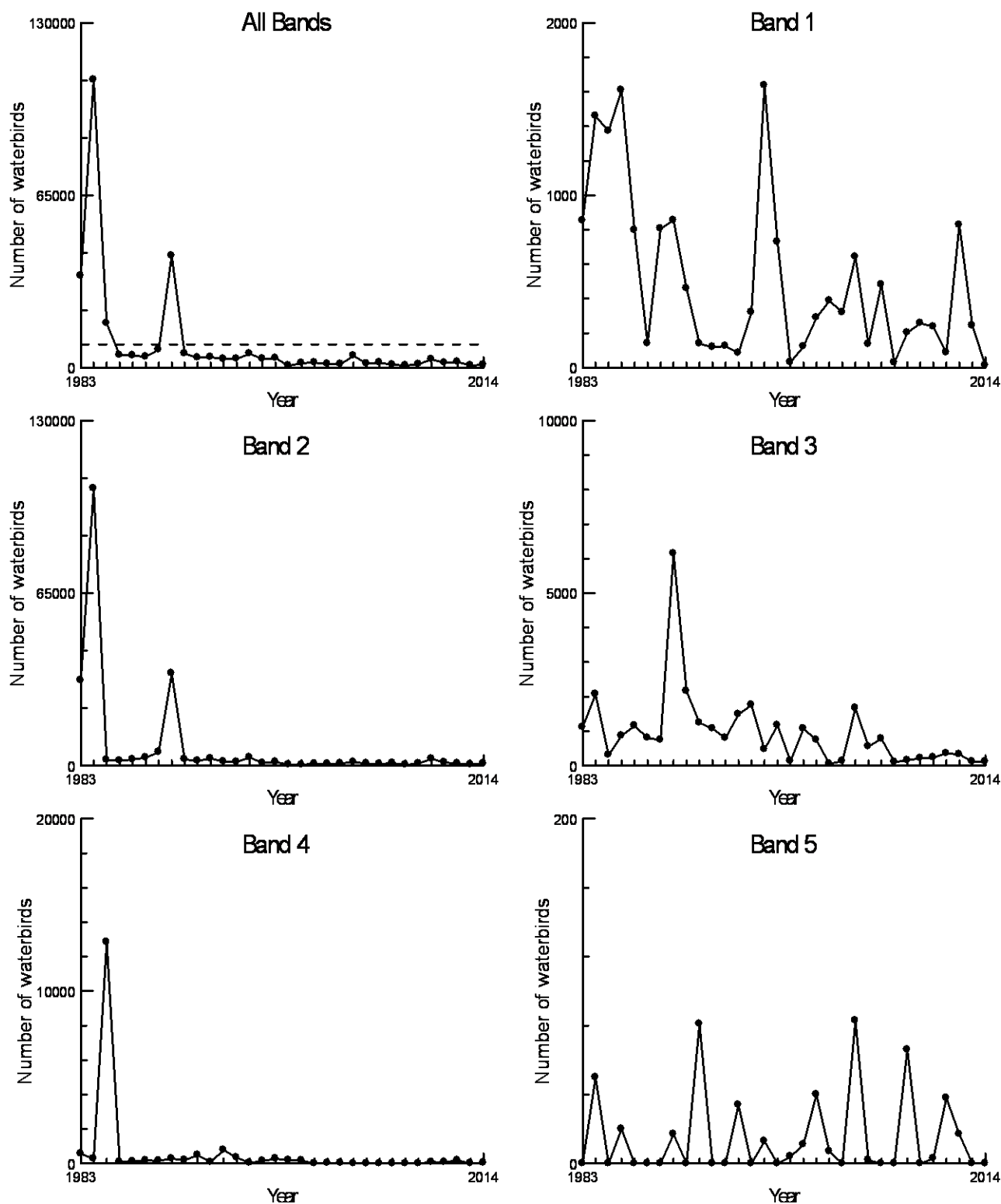
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Figure 21. Freckled duck Bands 6-10



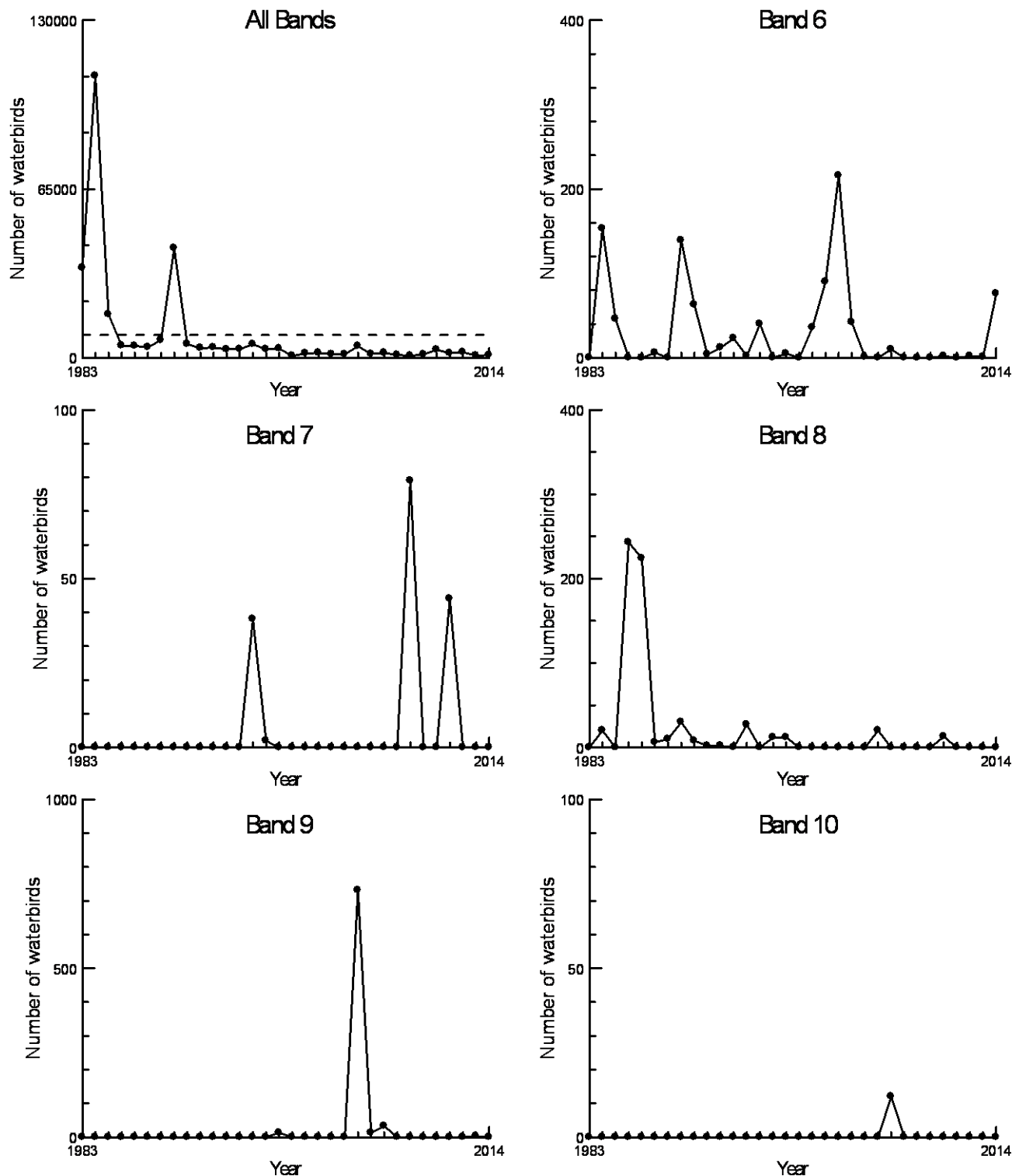
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Figure 22. Australian shelduck Bands 1-5



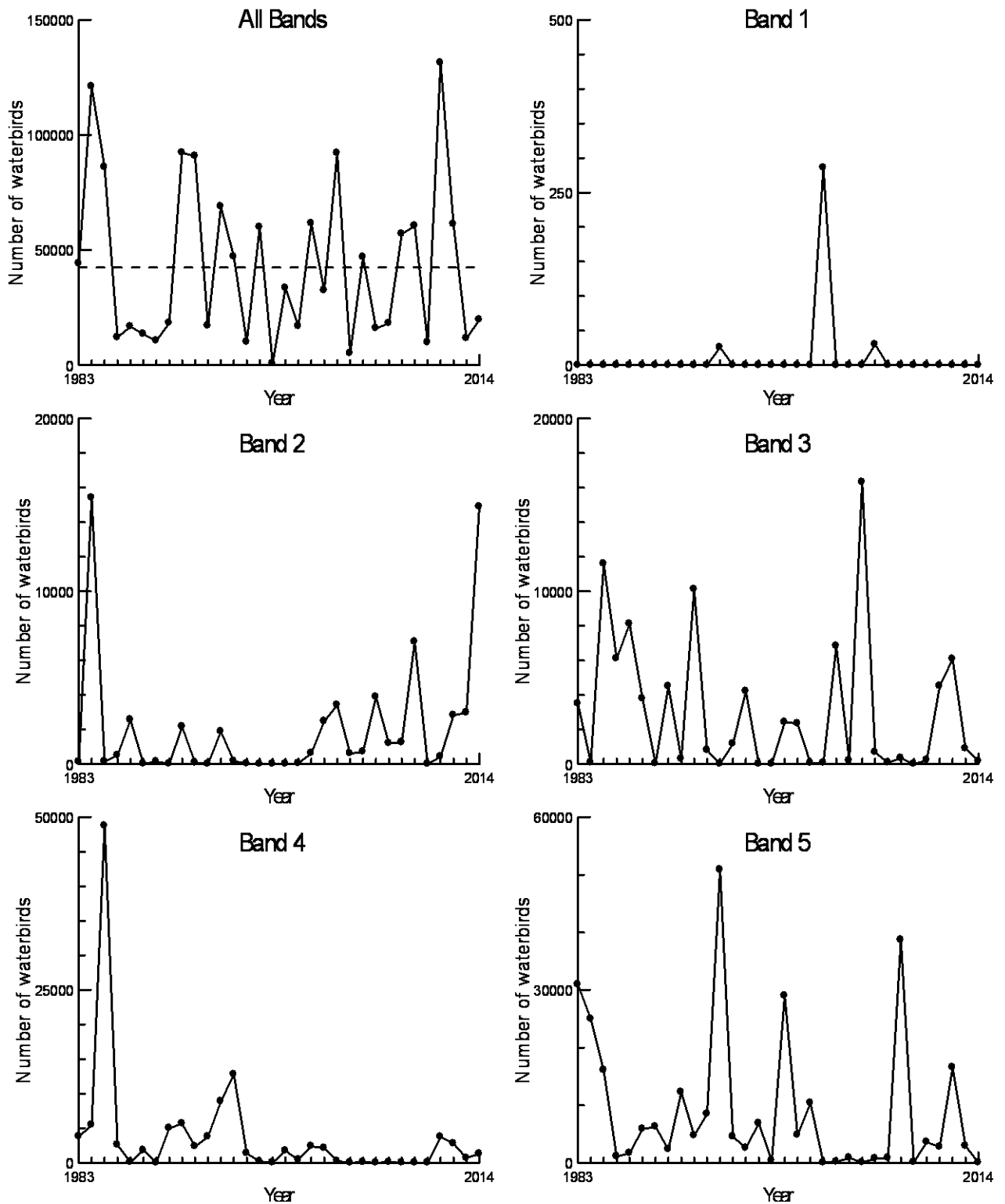
Scales vary on graphs – dashed line indicates long term average

Figure 23. Australian shelduck Bands 6-10



Scales vary on graphs – dashed line indicates long term average

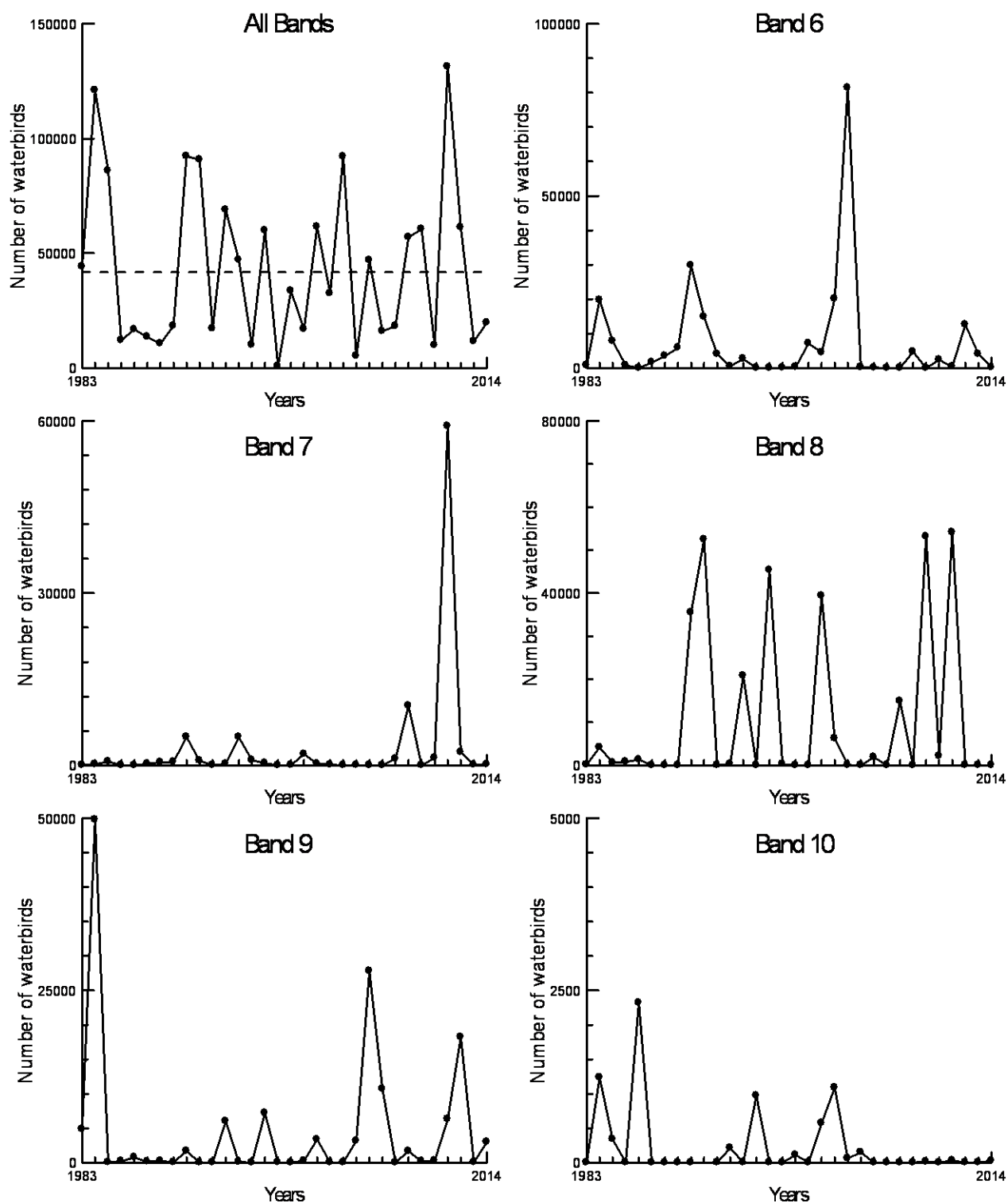
Figure 24. Pink-eared duck Bands 1-5



Scales vary on graphs – dashed line indicates long term average

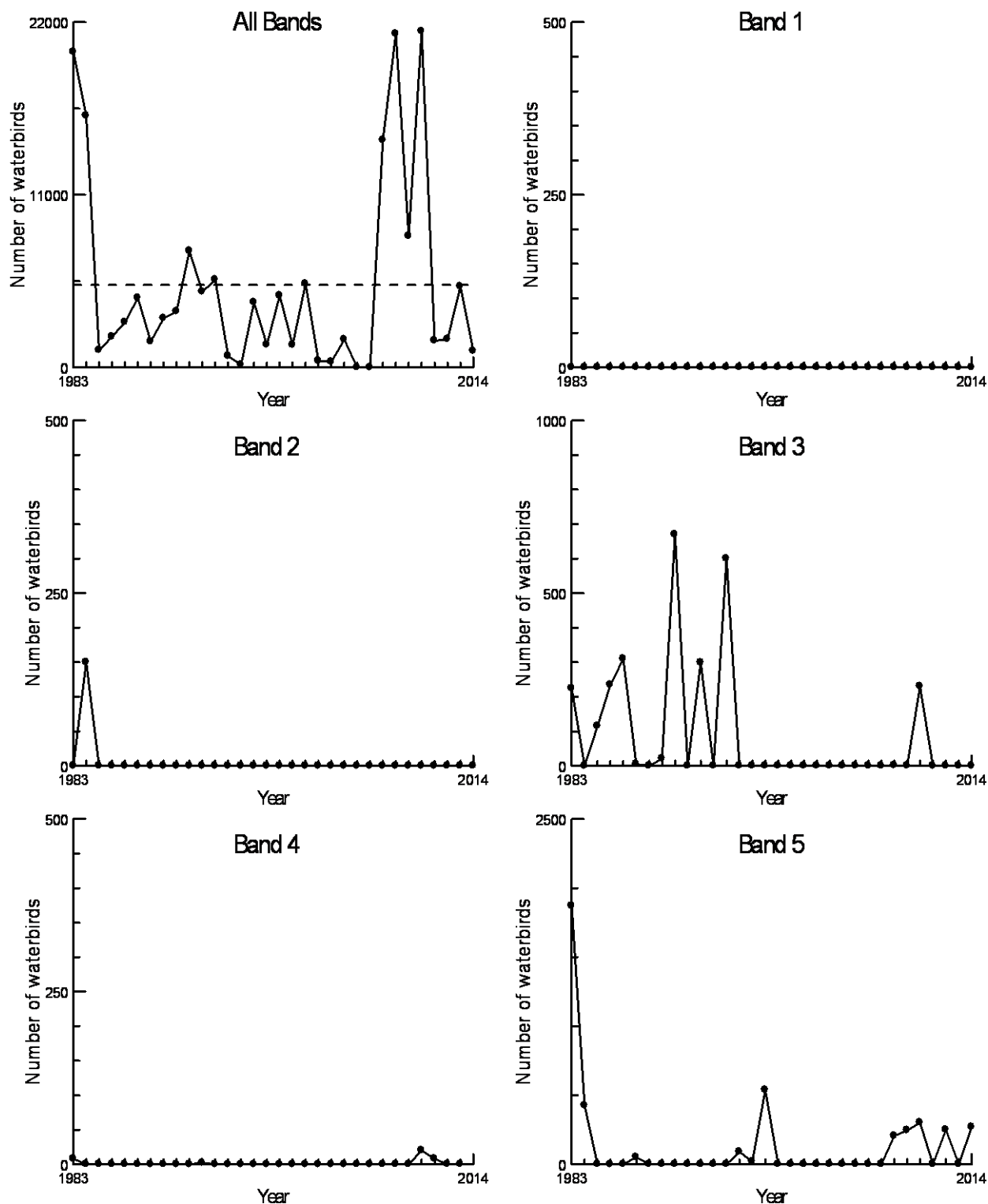


Figure 25. Pink-eared duck Bands 6-10



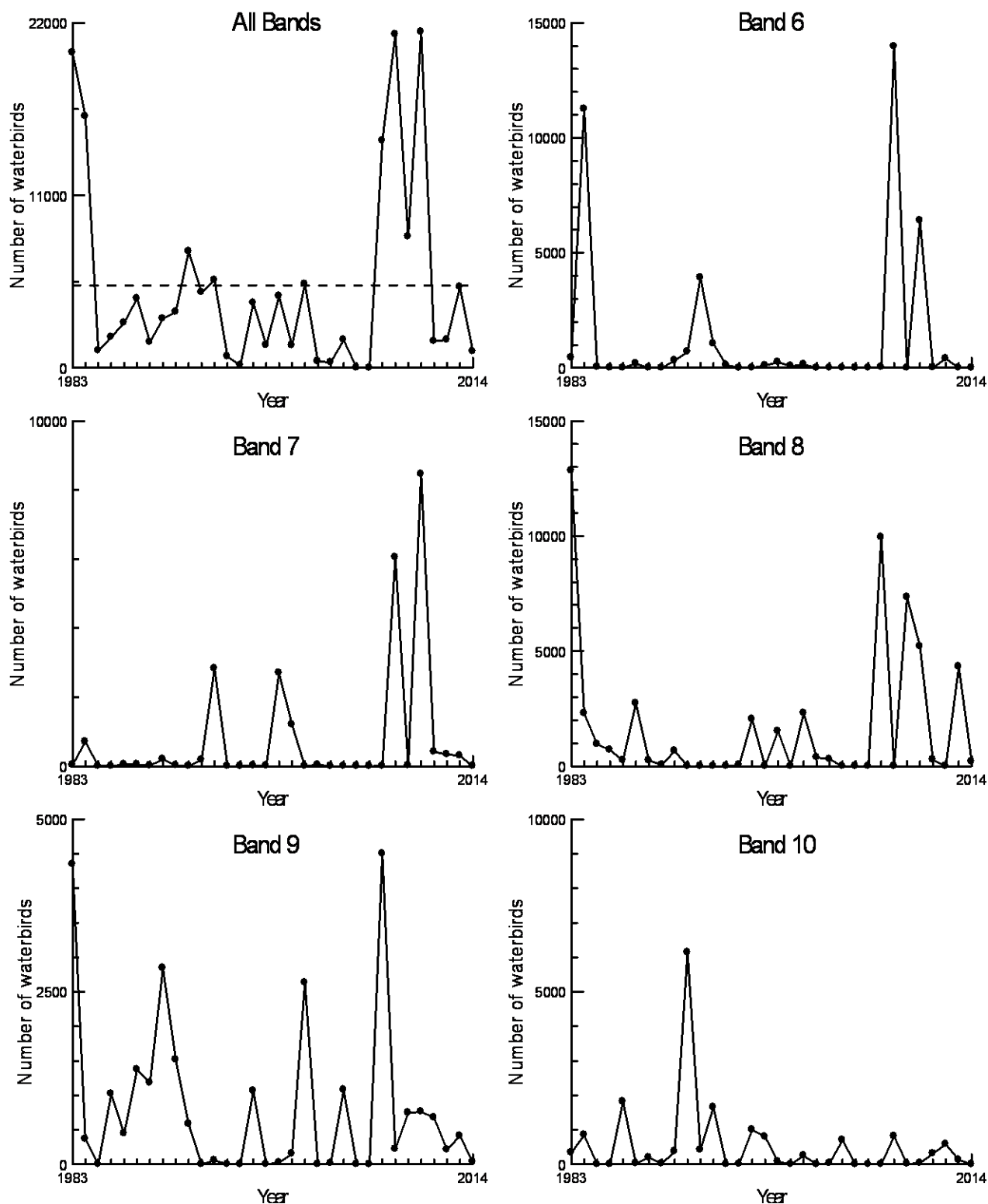
Scales vary on graphs – dashed line indicates long term average

Figure 26. Plumed whistling-duck Bands 1-5



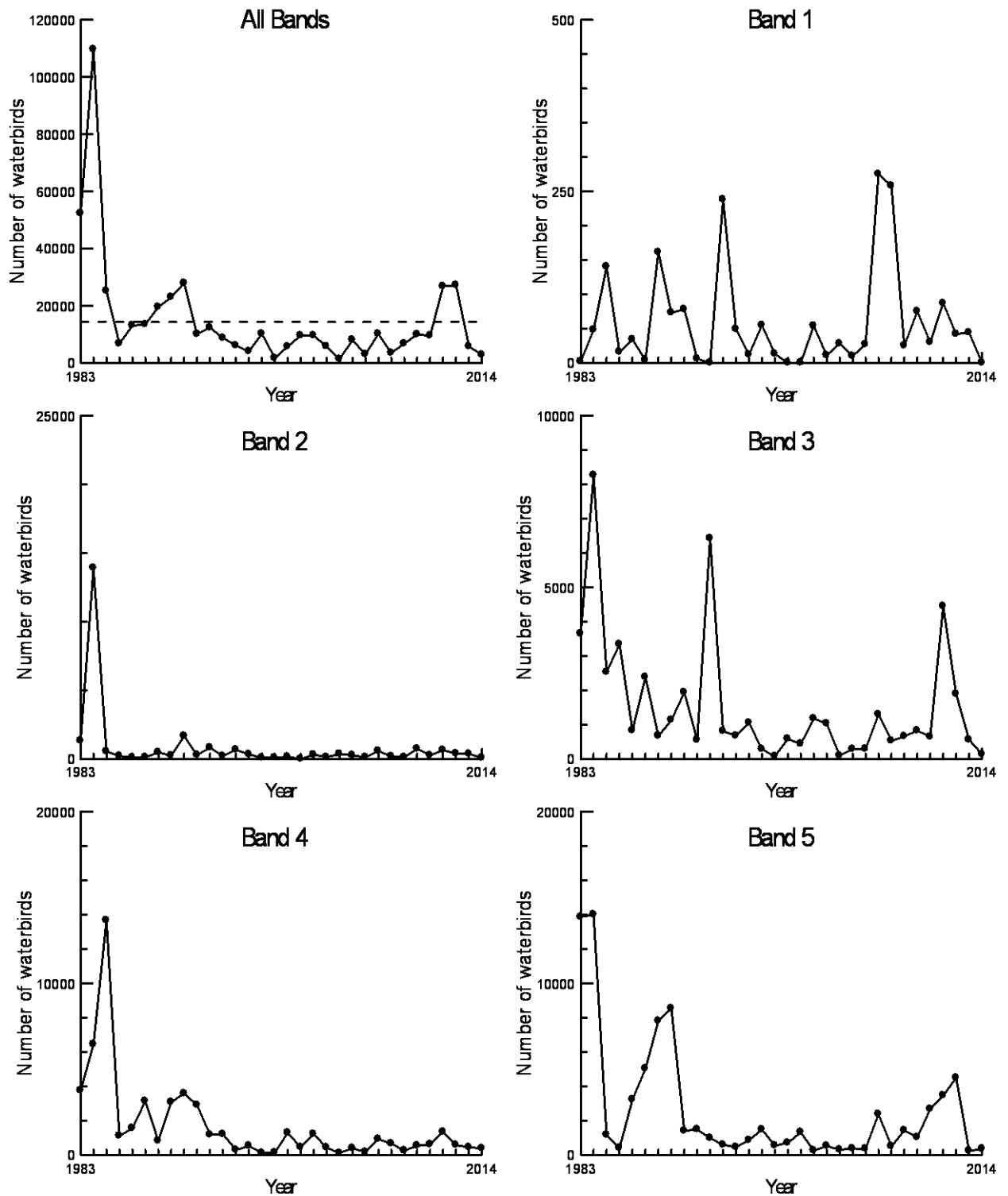
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Figure 27. Plumed whistling-duck Bands 6-10



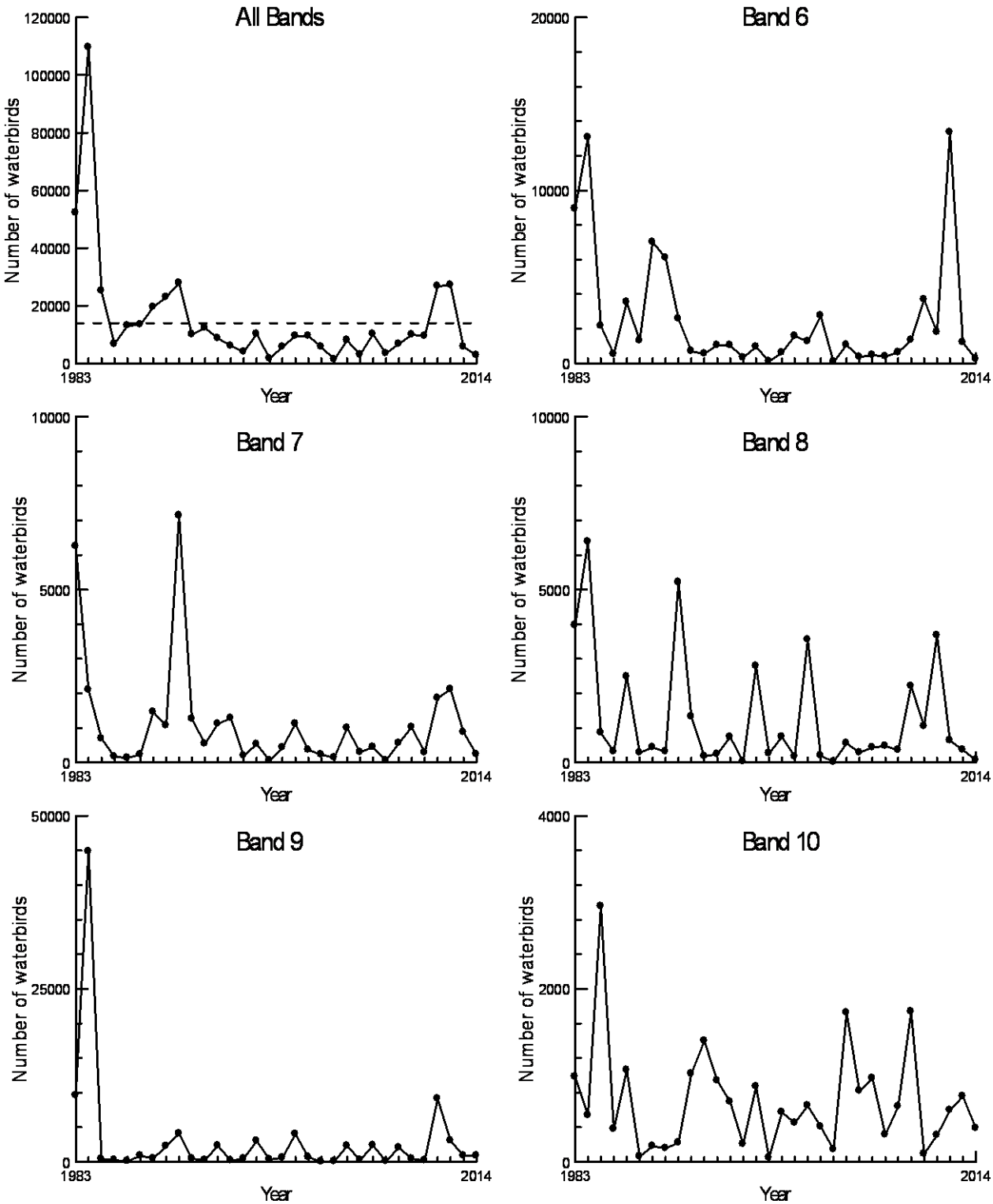
Scales vary on graphs – dashed line indicates long term average

# 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