

Fig. 7.1. Routes for hydroacoustic surveys of fish and seabird censuses conducted in lower Cook Inlet during August, 1995. Triangles indicate location of seabird colonies.

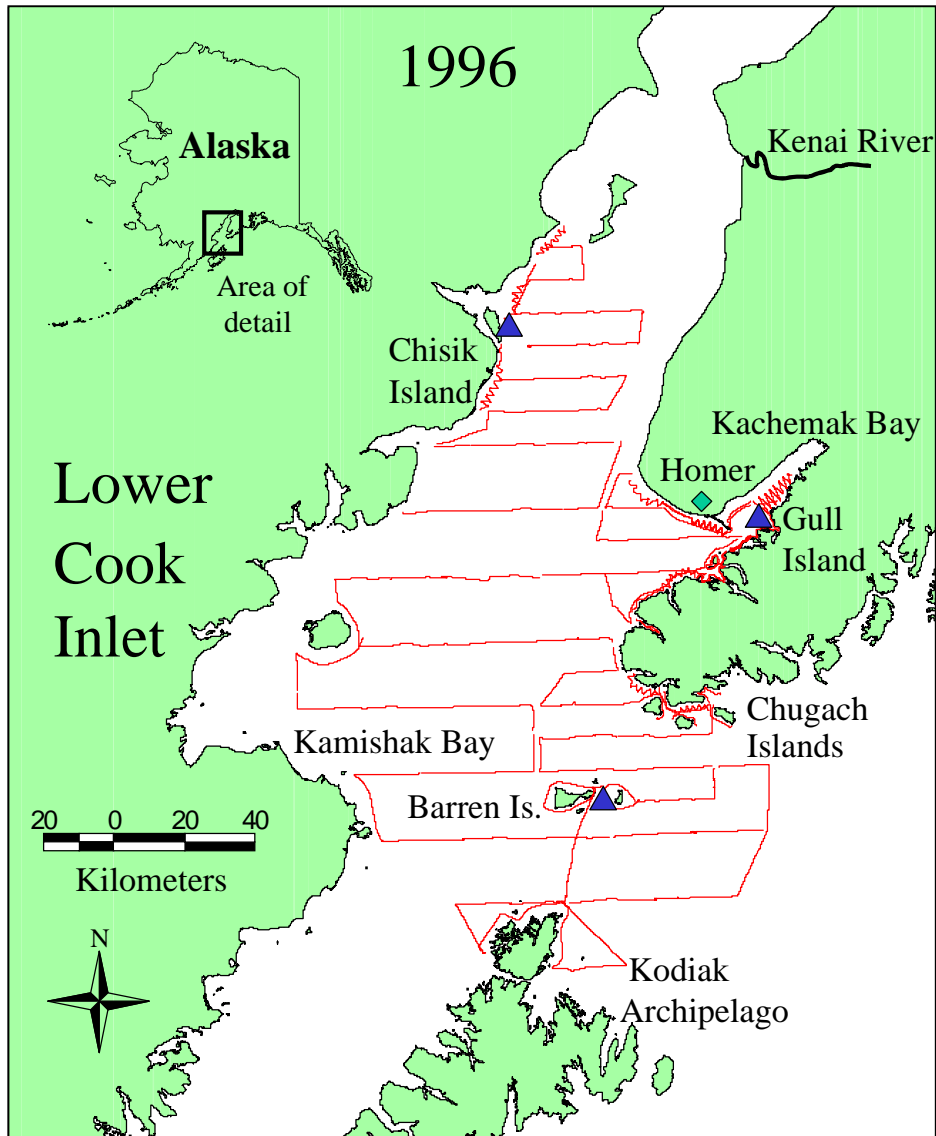


Fig. 7.2. Routes for hydroacoustic surveys of fish and seabird censuses conducted in lower Cook Inlet during late July, 1996. Triangles indicate location of seabird colonies. Zig-zag lines near shore are coastal transects added in 1996.

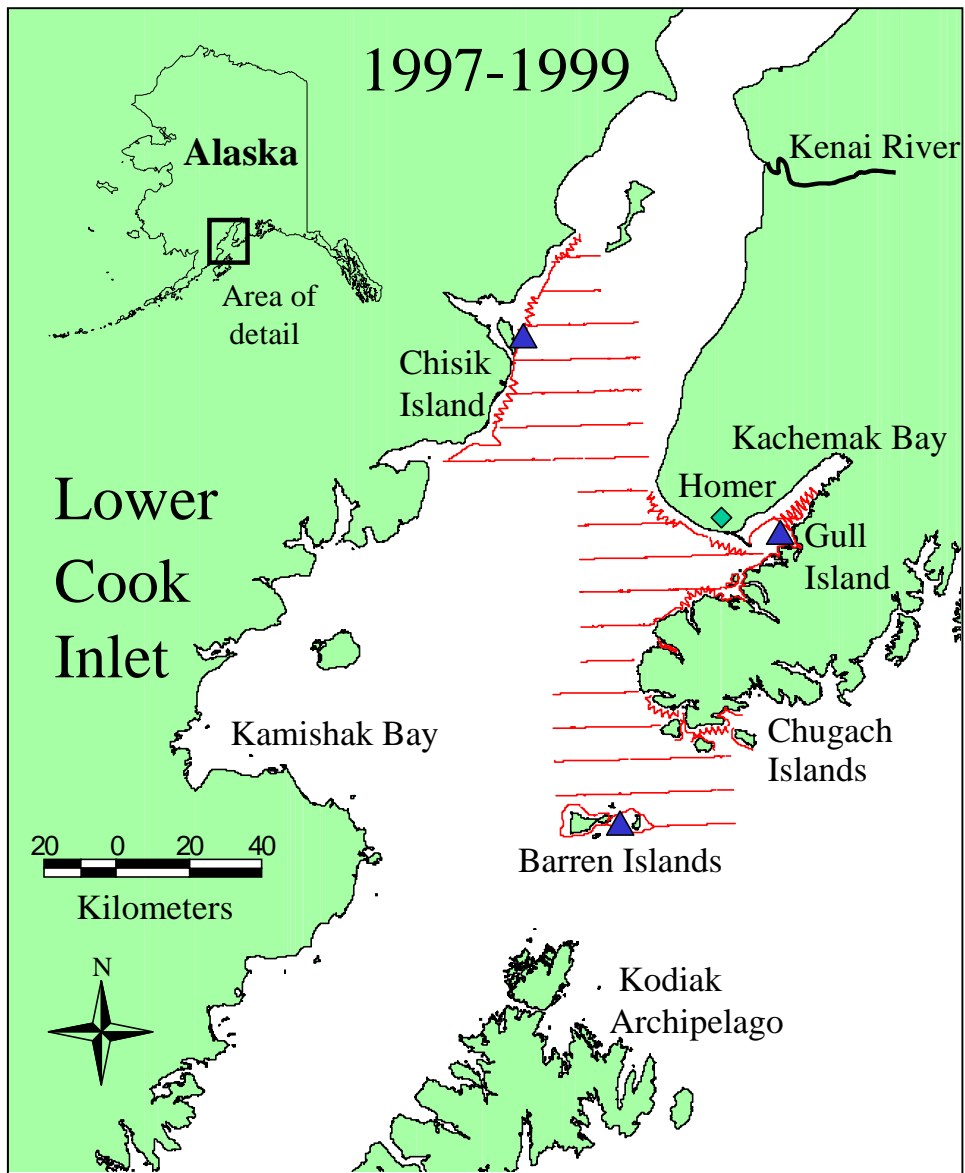


Fig. 7.3. Routes for hydroacoustic surveys of fish and seabird censuses conducted in lower Cook Inlet during July-August, 1997-1999. Triangles indicate location of seabird colonies. Zig-zag lines near shore are coastal transects added in 1996.

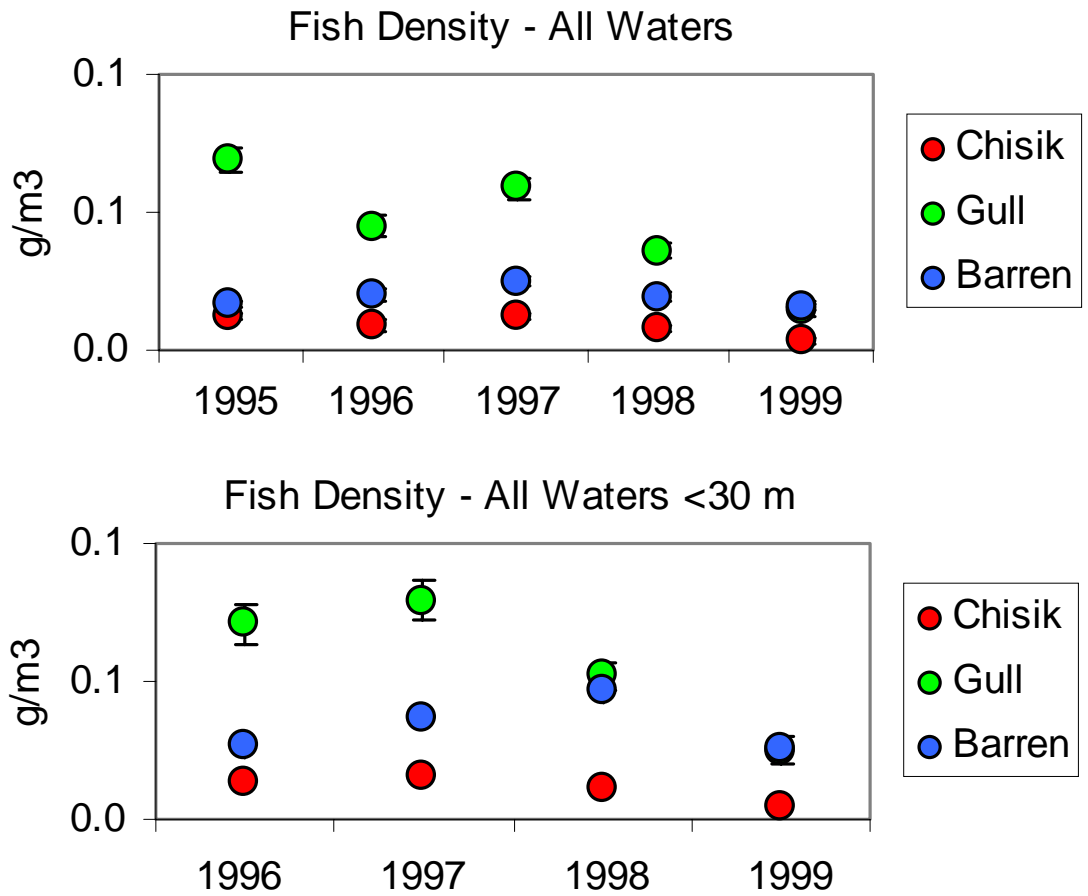


Fig. 7.4. Fish density in all waters and in waters <30 m deep near Chisik, Gull and Barren islands, 1995-1999.

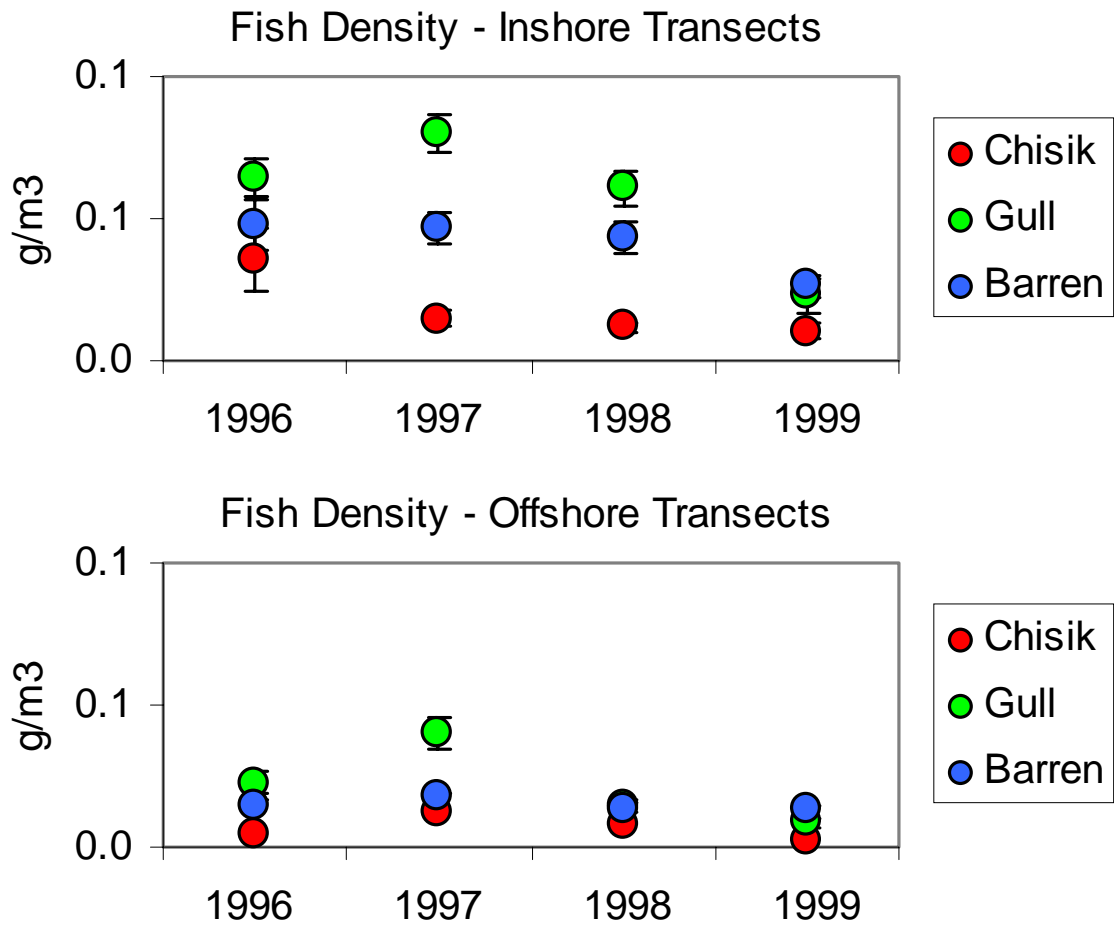


Fig. 7.5. Fish density in inshore and offshore waters near Chisik, Gull and Barren islands, 1995-1999.

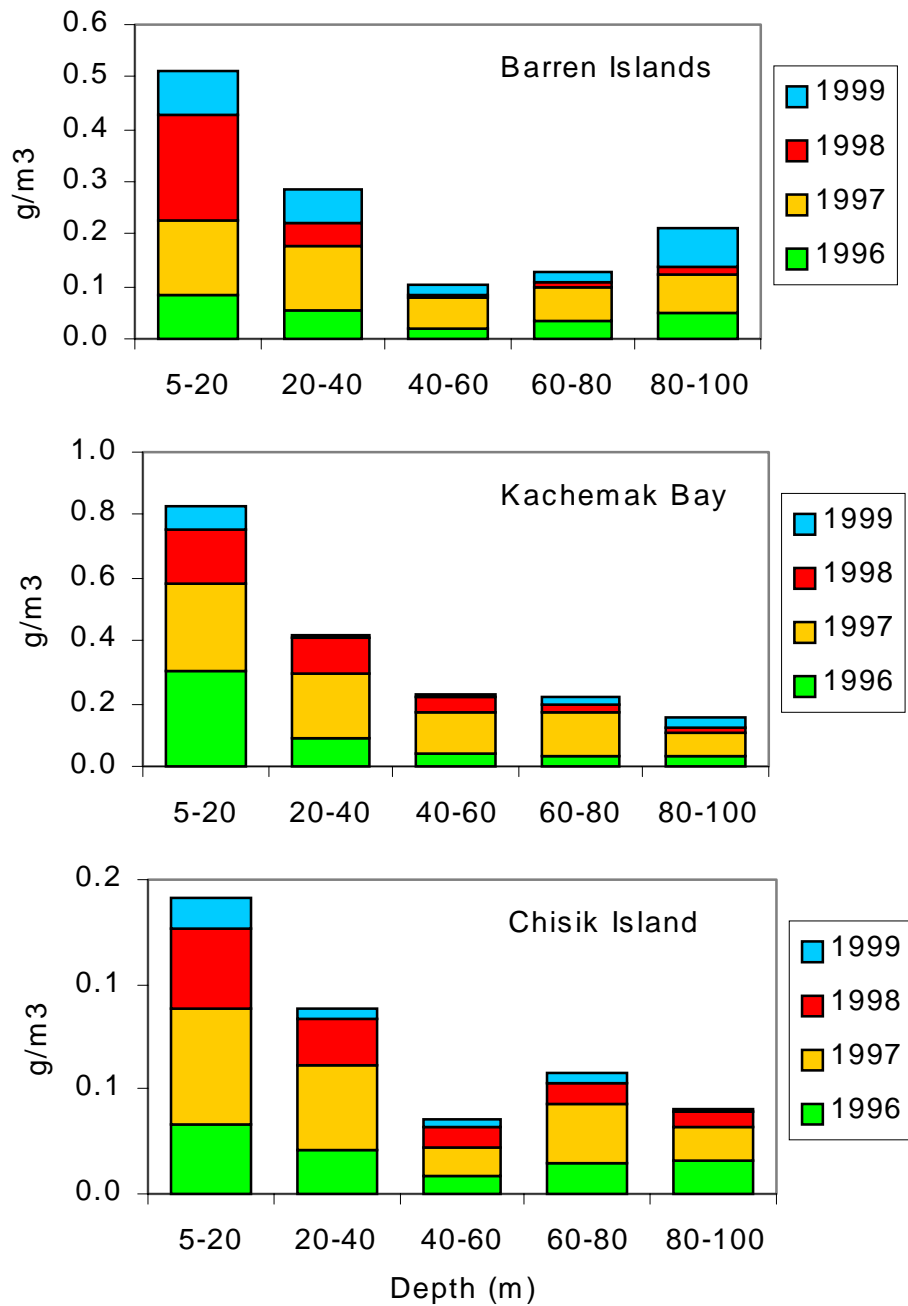


Fig. 7.6. Fish density by 20 m depth strata near Chisik, Gull and Barren islands, 1995-1999.

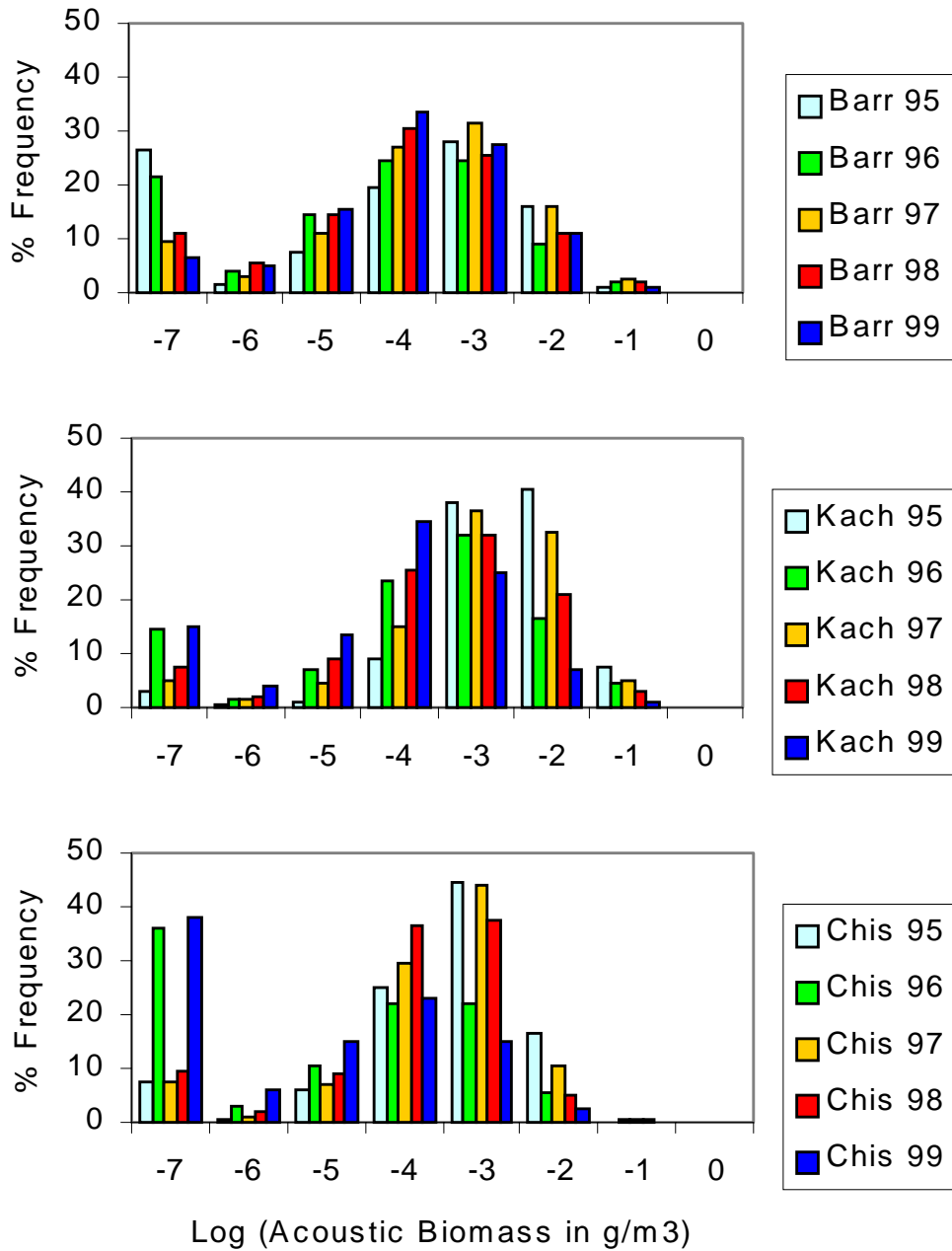


Fig. 7.7. Frequency of occurrence of different densities of fish in 10-min by 5 m blocks near Chisik, Gull and Barren islands, 1995-1999.

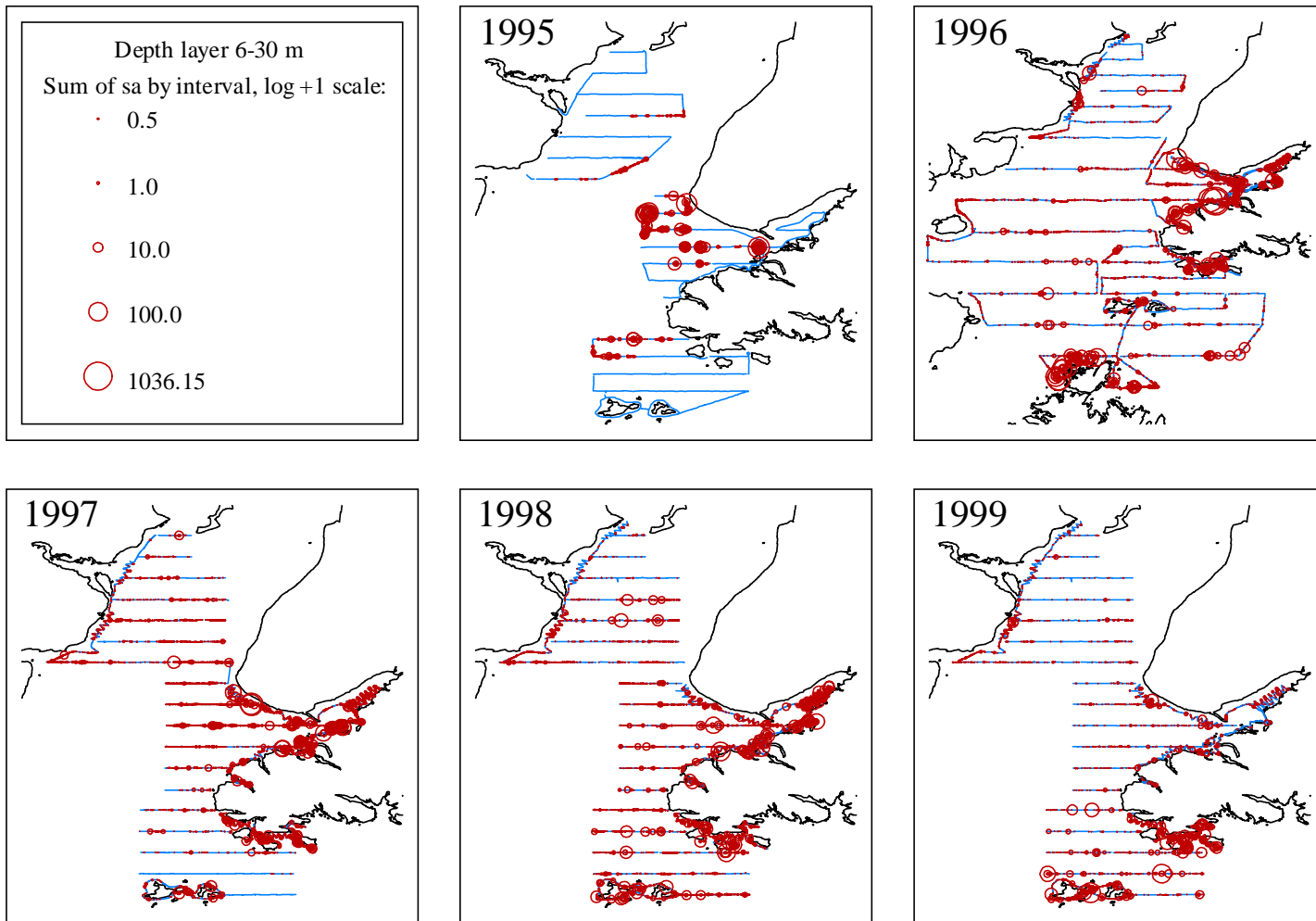


Fig. 7.8. Distribution of acoustic backscattering signals in lower Cook Inlet, 6-30 m strata.

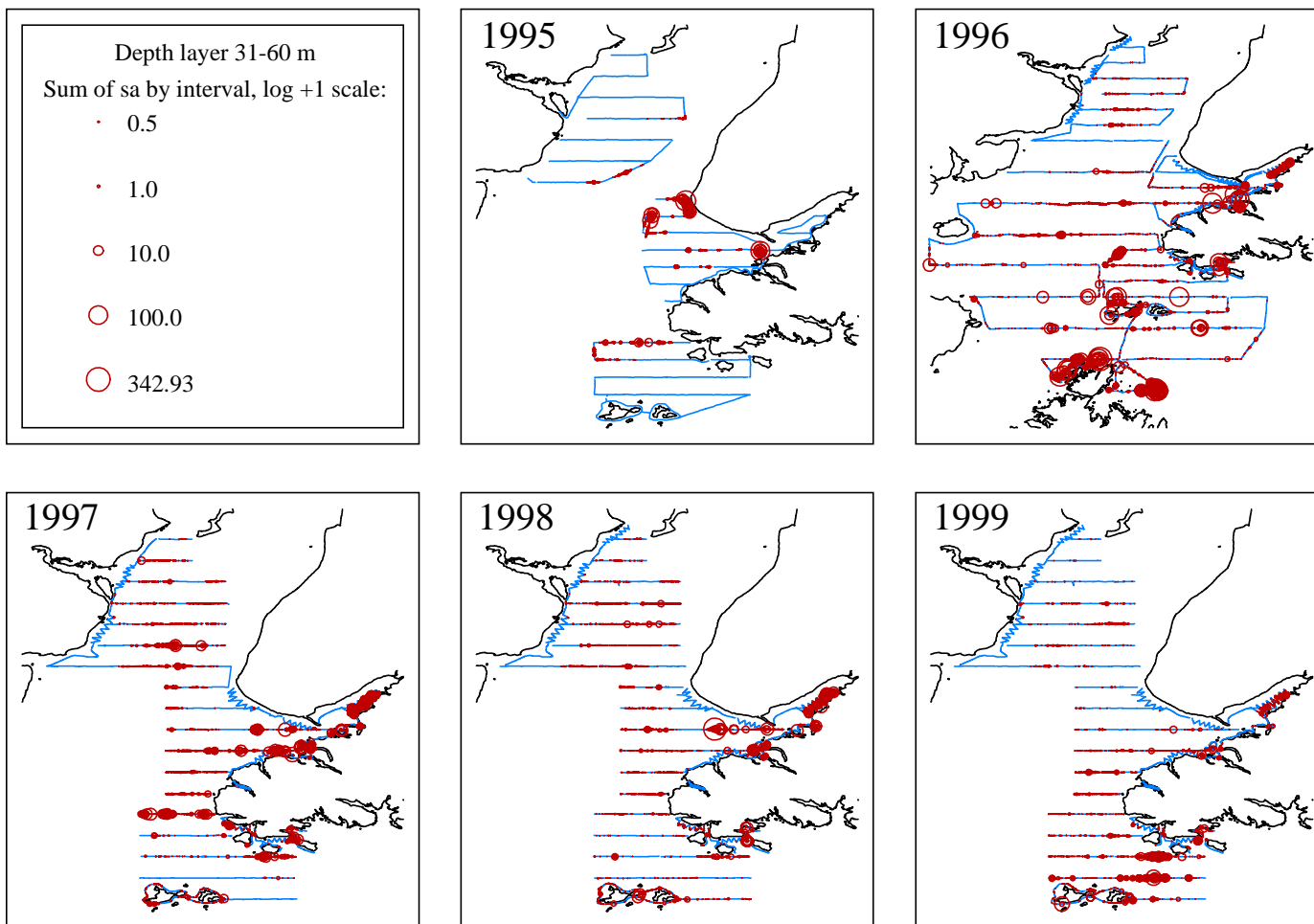


Fig. 7.9. Distribution of acoustic backscattering signals in lower Cook Inlet, 31-60 m strata.

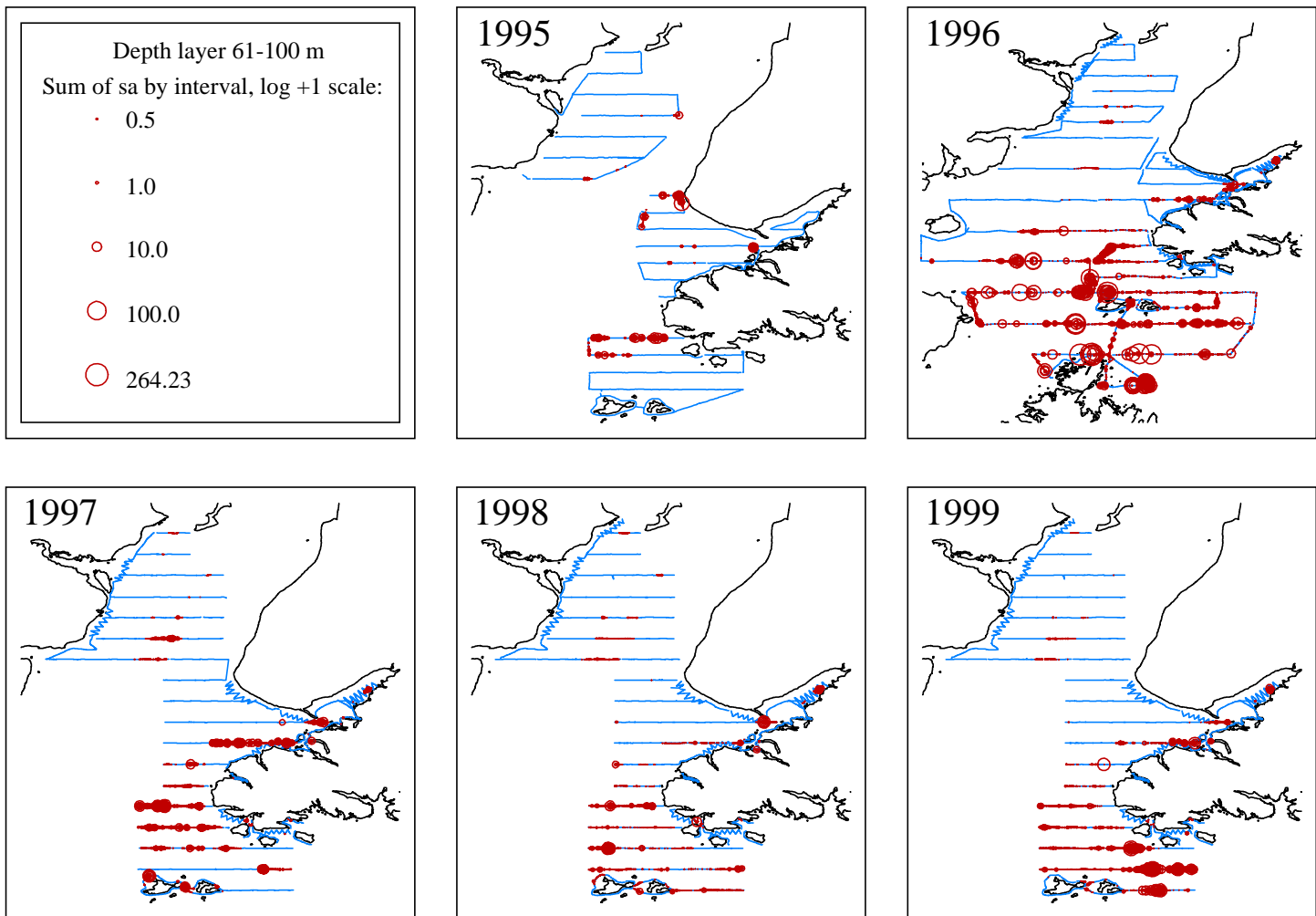


Fig. 7.10. Distribution of acoustic backscattering signals in lower Cook Inlet, 61-100 m strata.

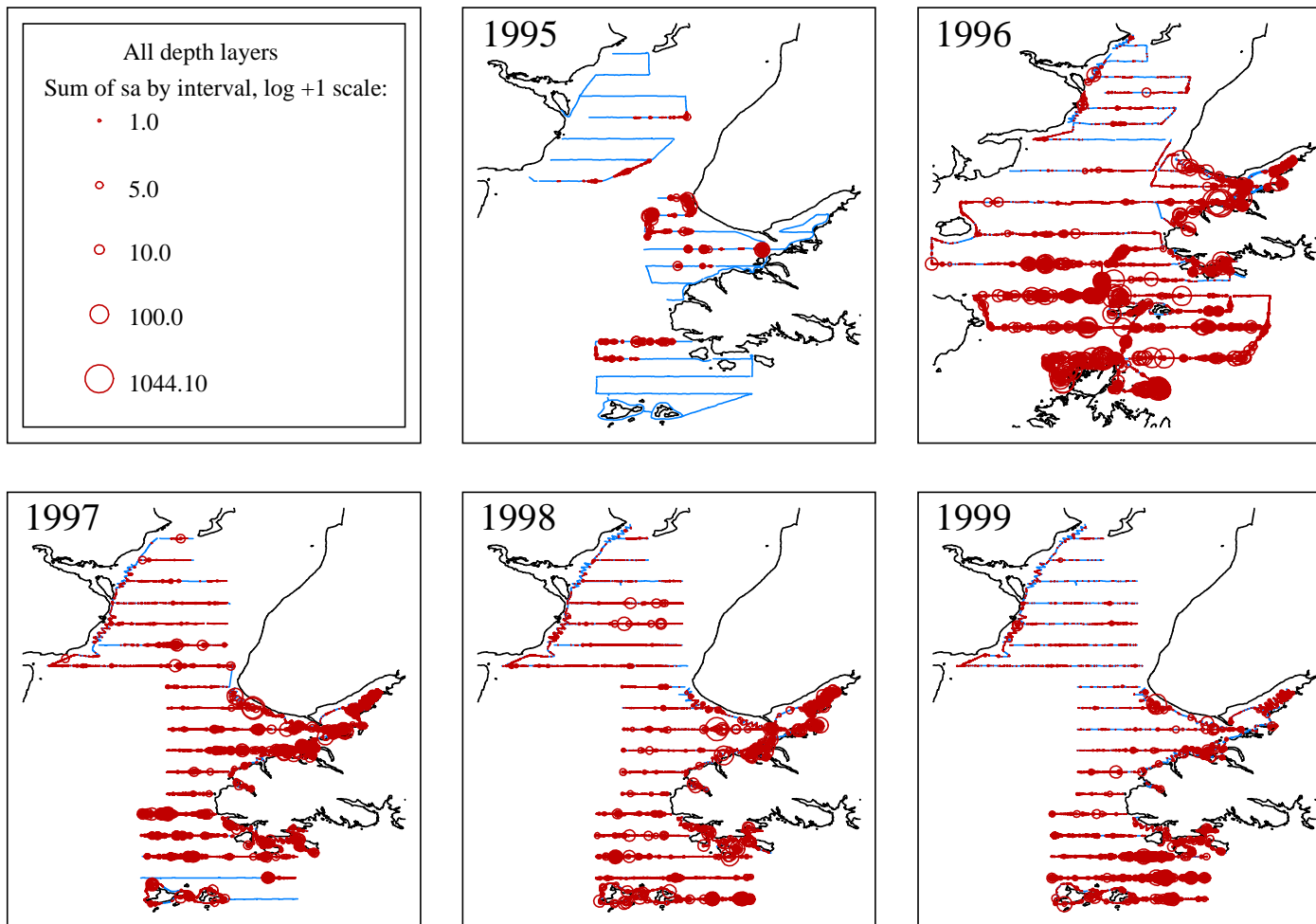


Fig. 7.11. Distribution of acoustic backscattering signals in lower Cook Inlet, all strata.

All Murres

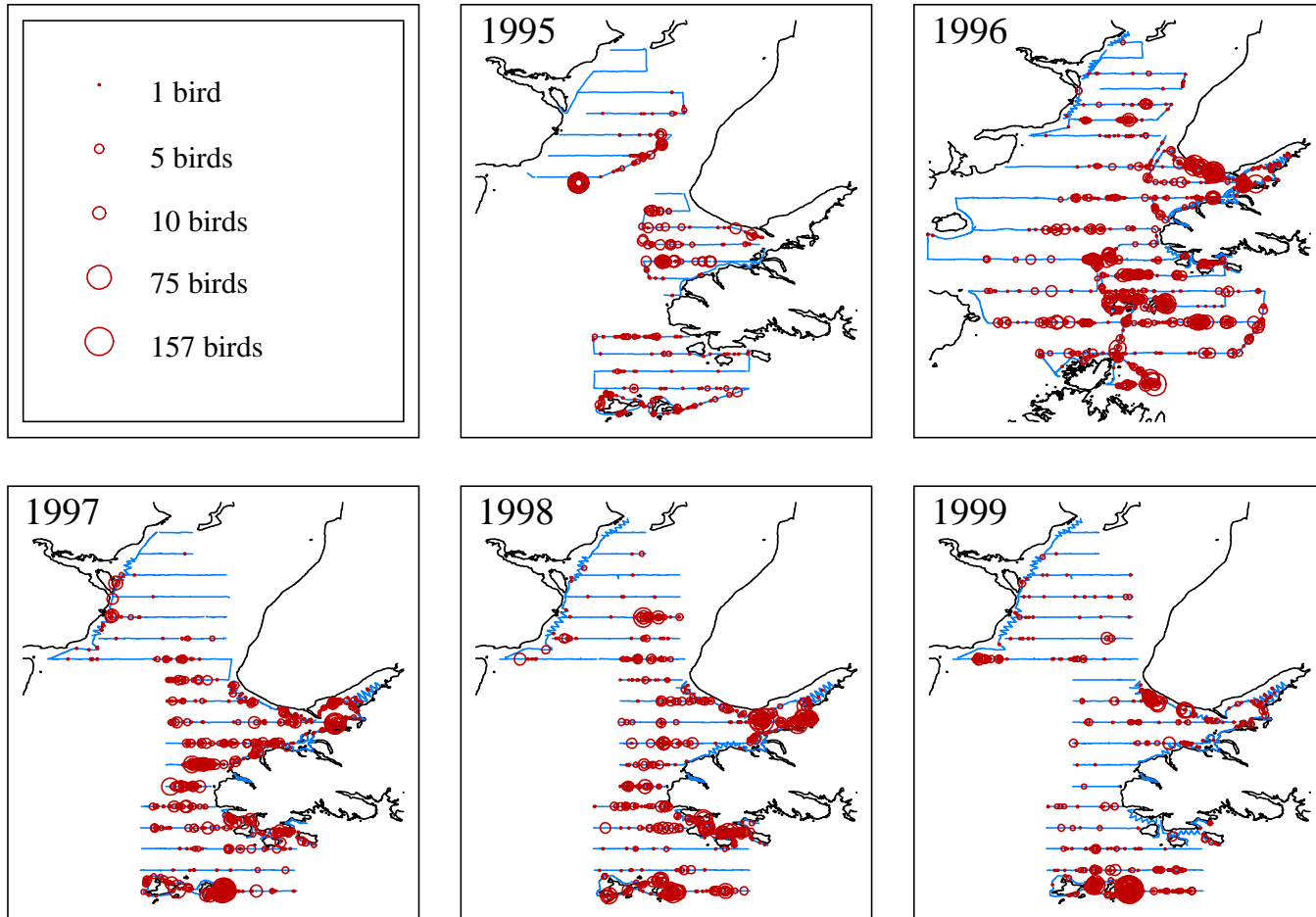


Figure 8.1. Distribution and abundance of Common Murres in lower Cook Inlet, 1995-1999.

Black-legged Kittiwakes

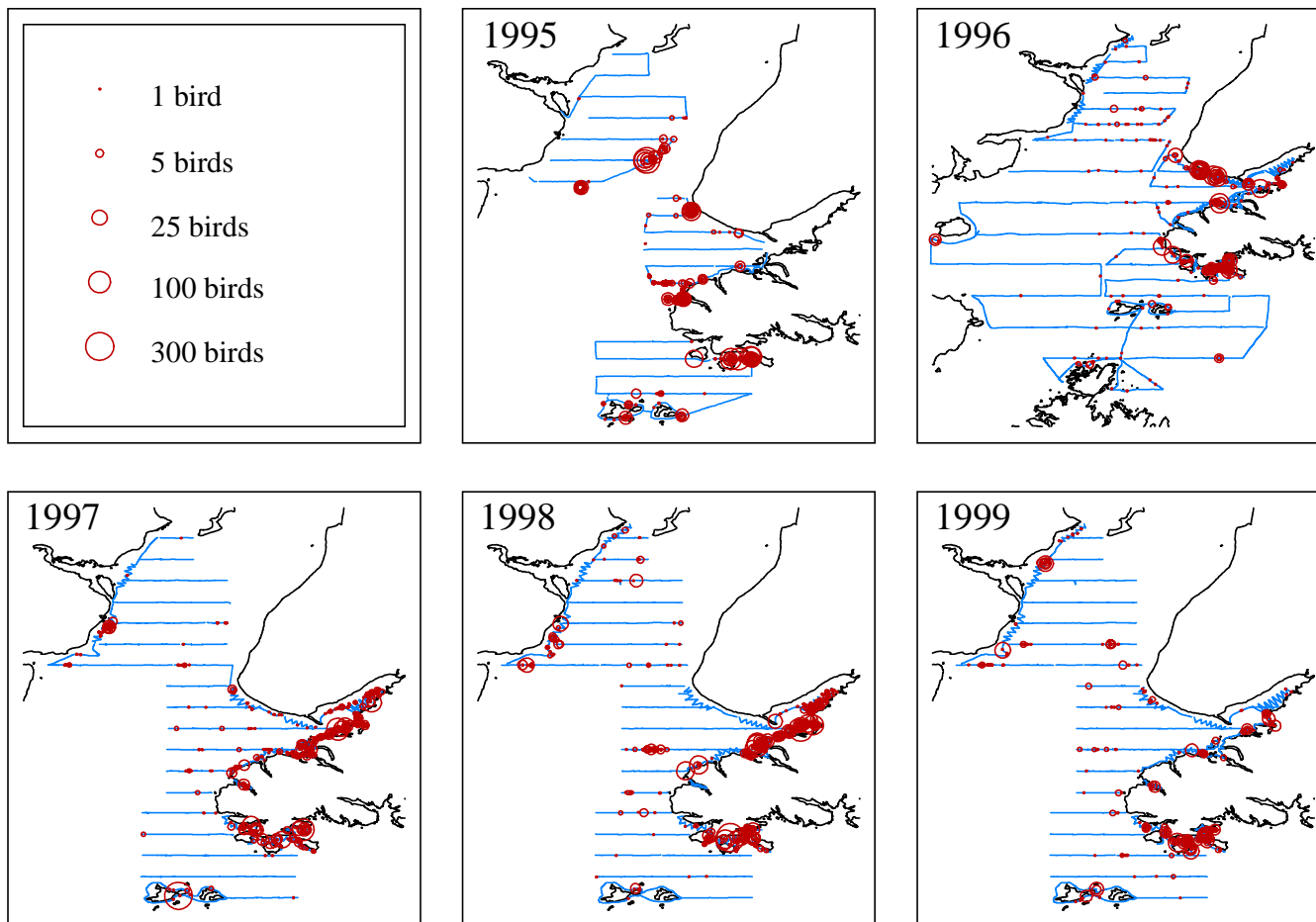


Figure 8.2. Distribution and abundance of Black-legged Kittiwakes in lower Cook Inlet, 1995-1999.

Pigeon Guillemots

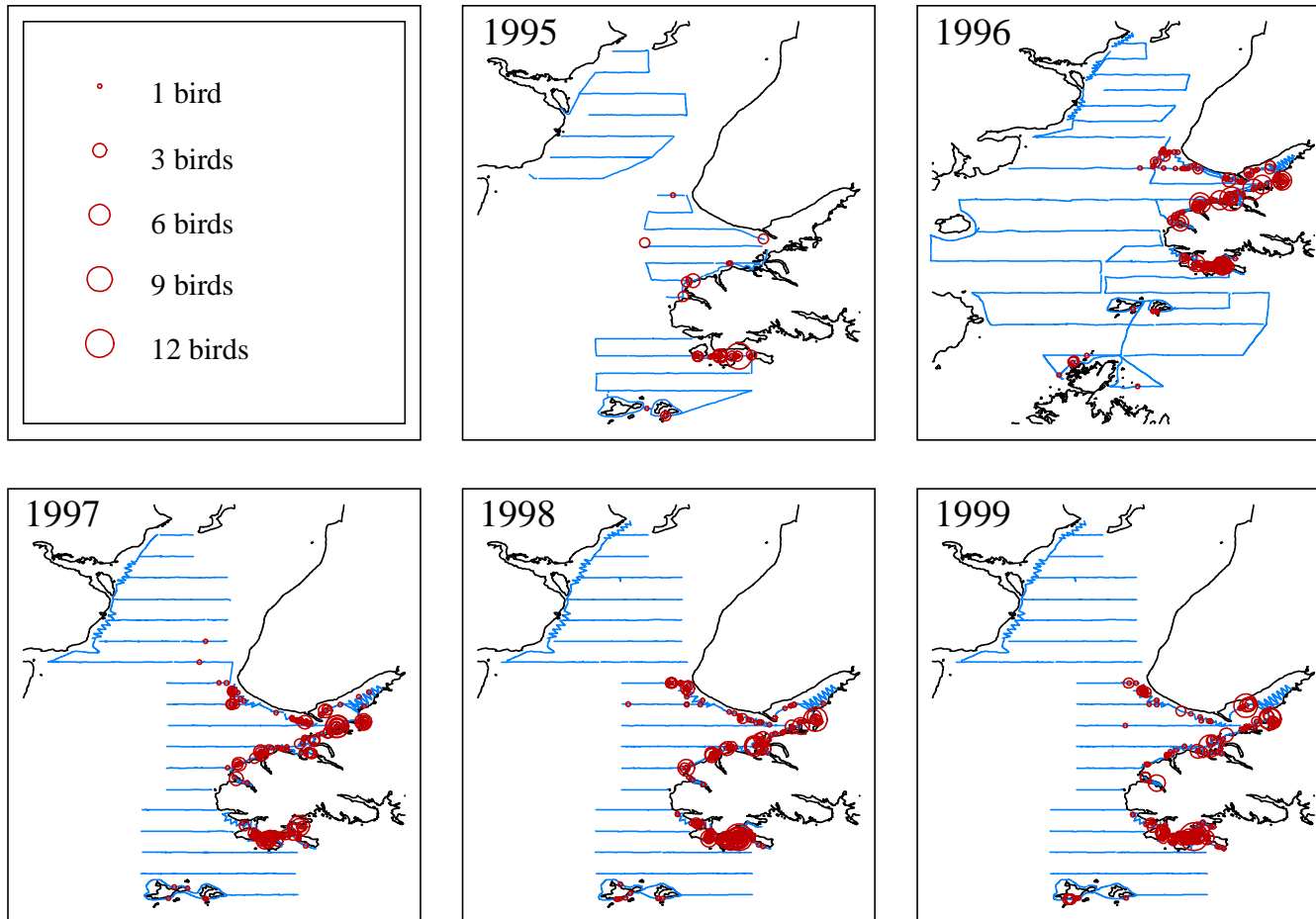


Figure 8.3. Distribution and abundance of Pigeon Guillemots in lower Cook Inlet, 1995-1999.

Horned Puffins

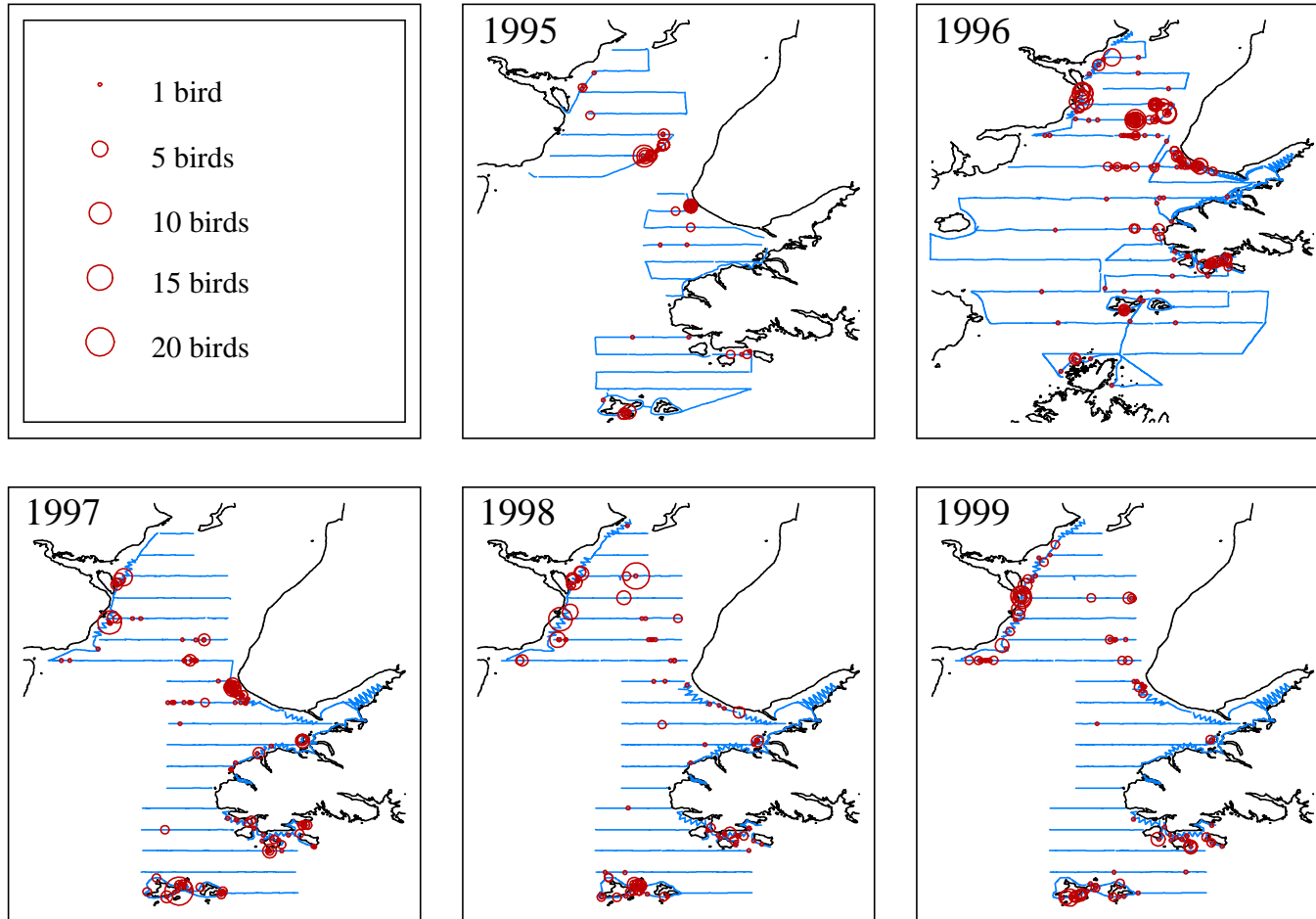


Figure 8.4. Distribution and abundance of Horned Puffins in lower Cook Inlet, 1995-1999.

Tufted Puffins

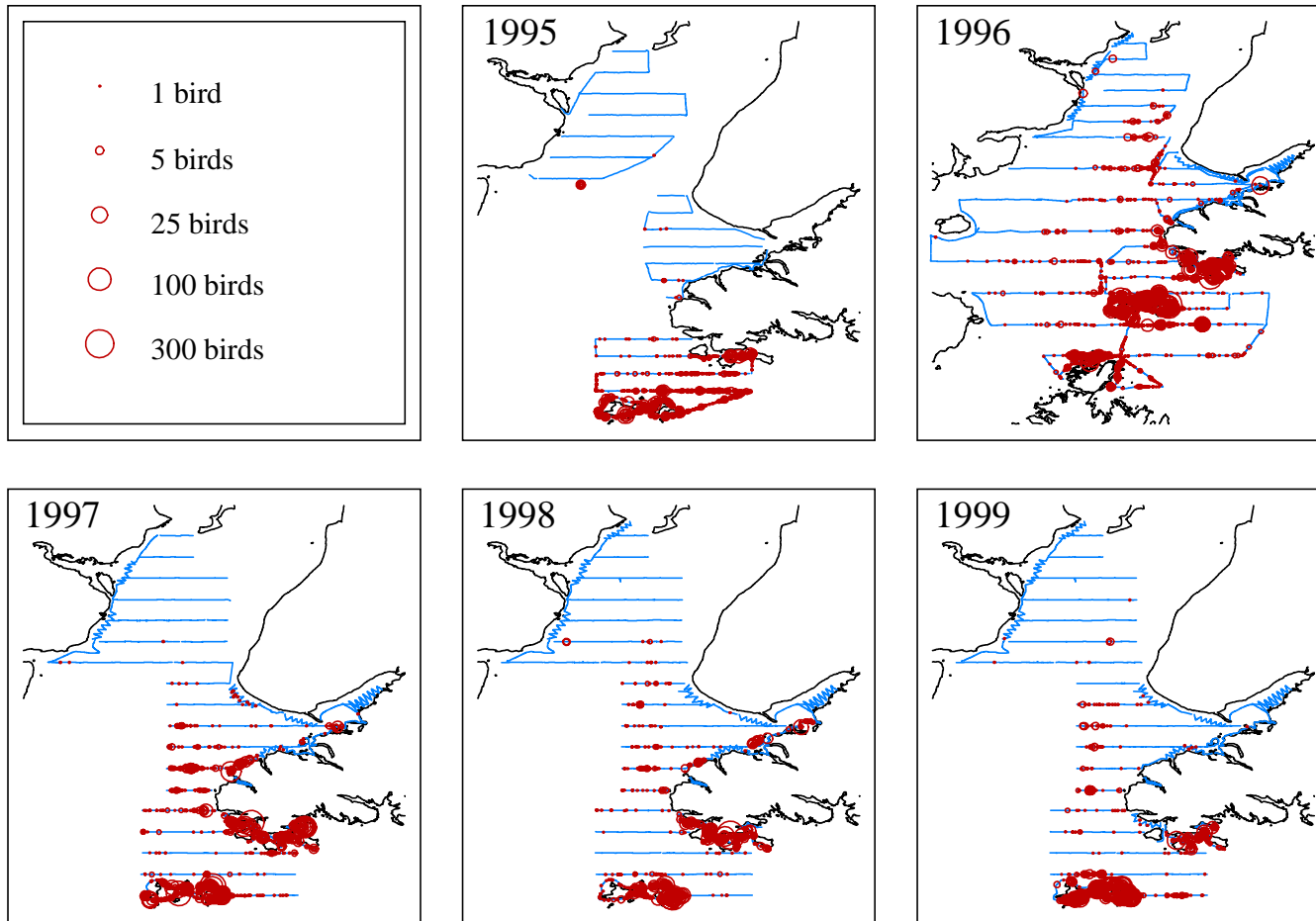


Figure 8.5. Distribution and abundance of Tufted Puffins in lower Cook Inlet, 1995-1999.

All Cormorants

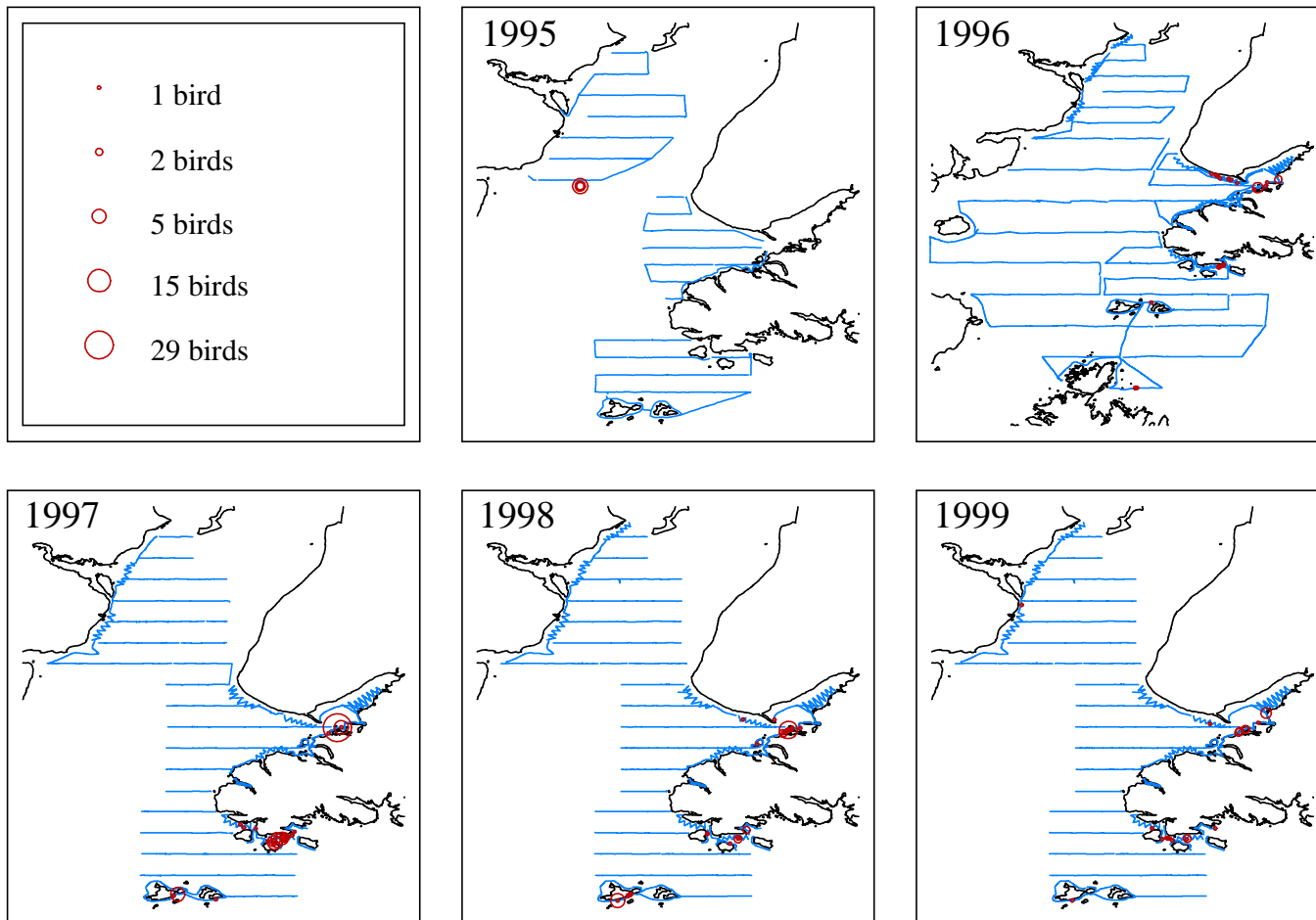


Figure 8.6. Distribution and abundance of Cormorants (spp.) in lower Cook Inlet, 1995-1999.

Glaucous-winged Gulls

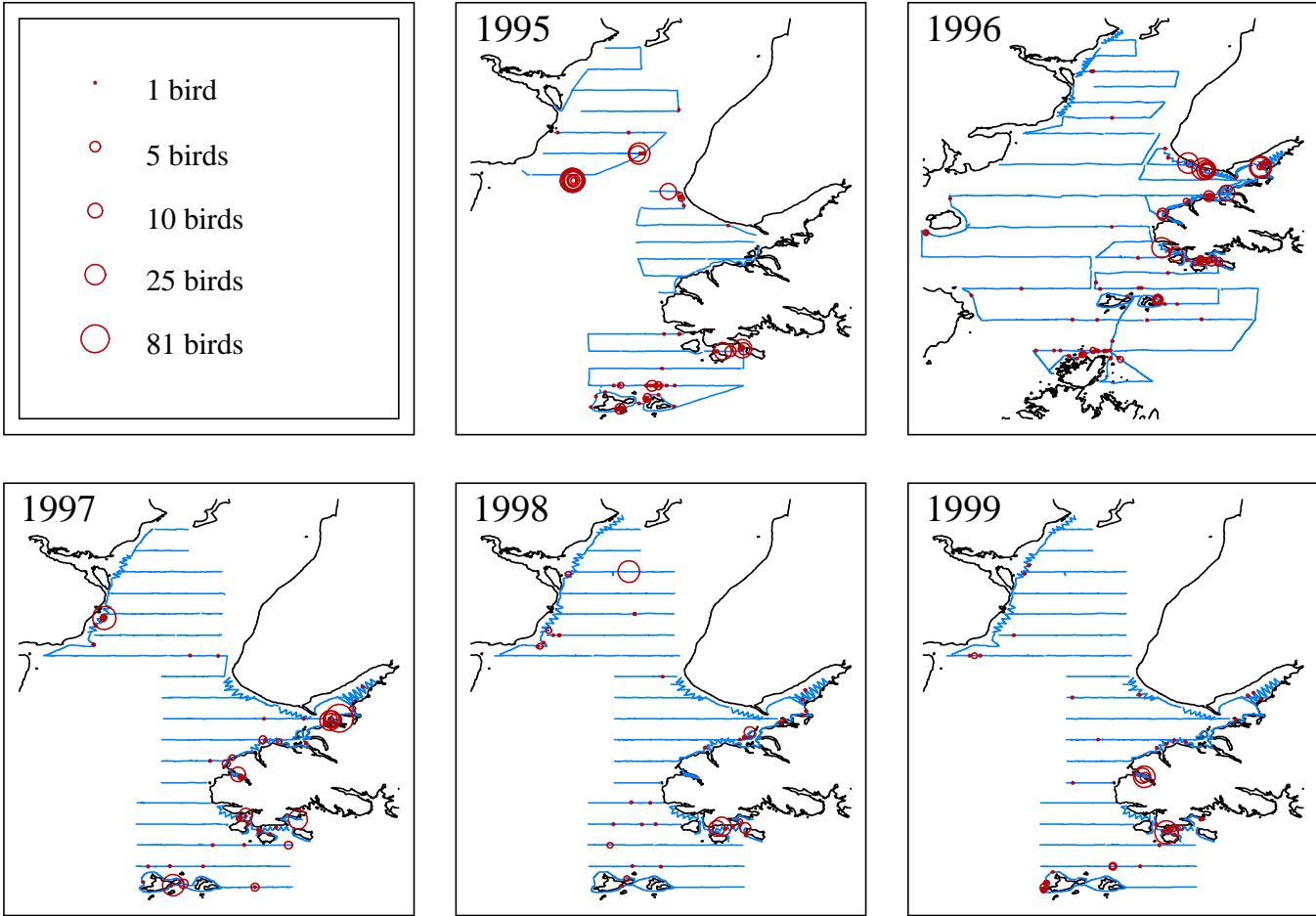


Figure 8.7. Distribution and abundance of Glaucous-winged Gulls in lower Cook Inlet, 1995-1999.

Marbled and *Brachyramphus* Murrelets

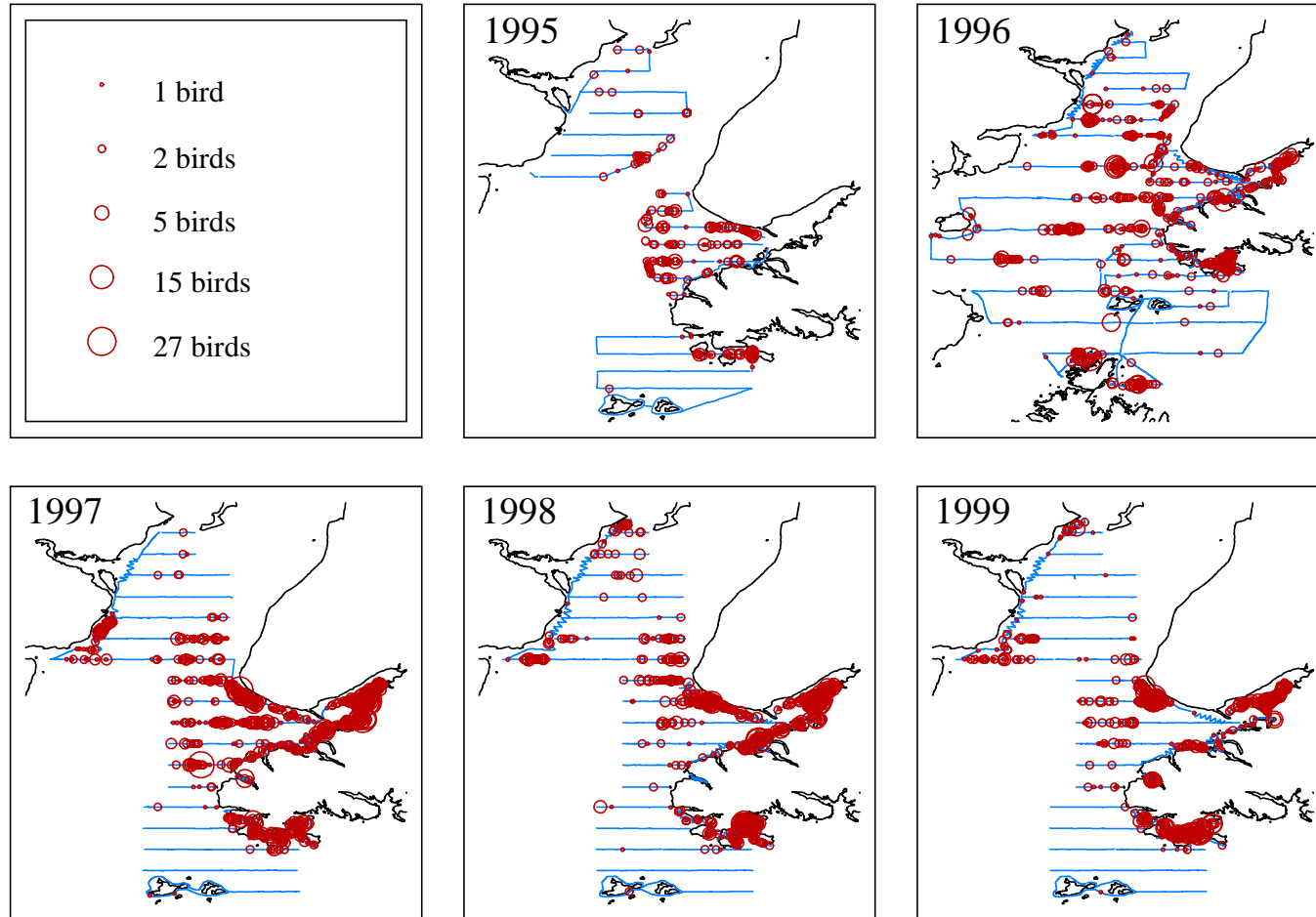


Figure 8.8. Distribution and abundance of Marbled and *Brachyramphus* Murrelets in lower Cook Inlet, 1995-1999.

Kittlitz's Murrelets

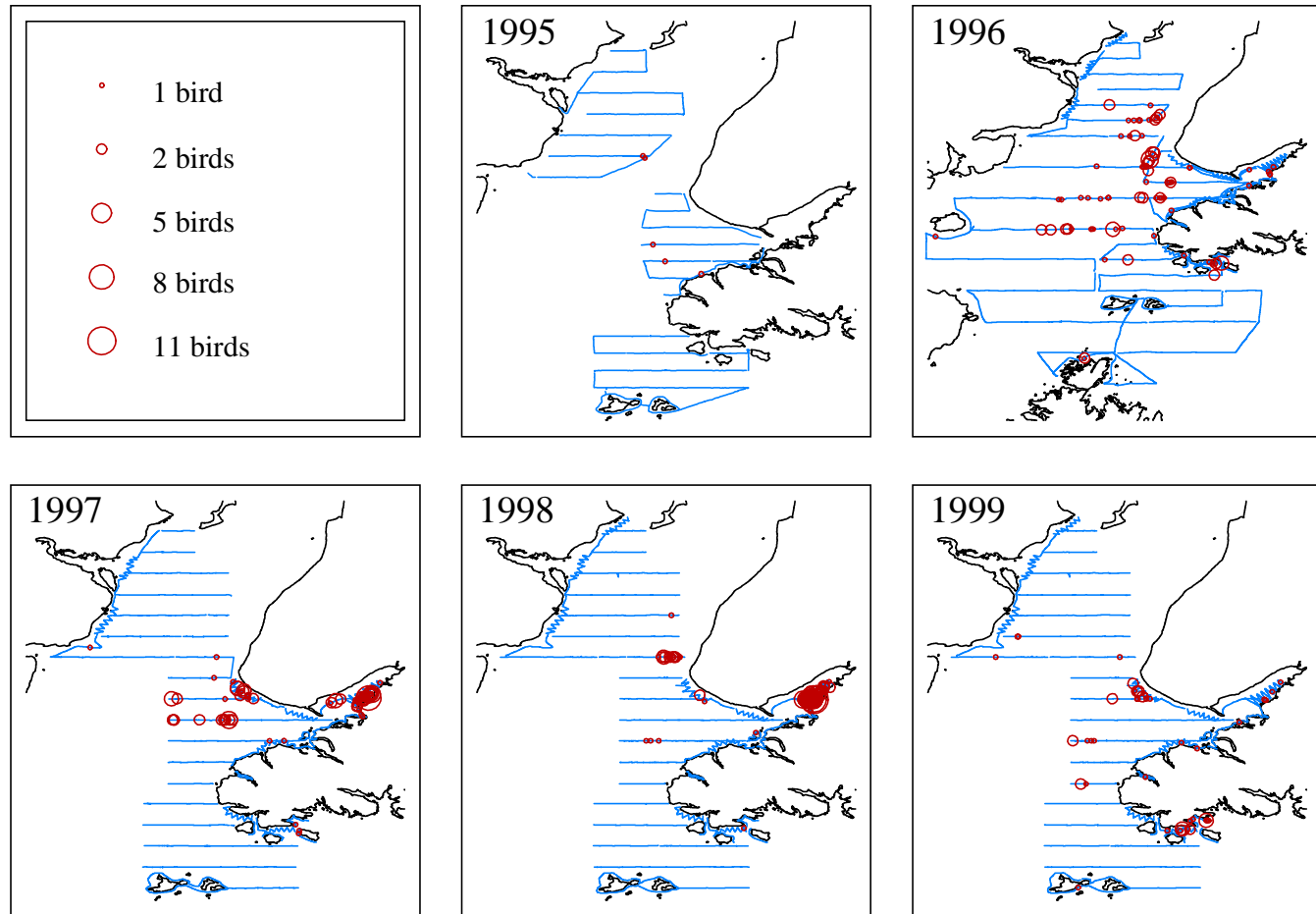


Figure 8.9. Distribution and abundance of Kittlitz's Murrelet in lower Cook Inlet, 1995-1999.

Fish Feeders and Divers

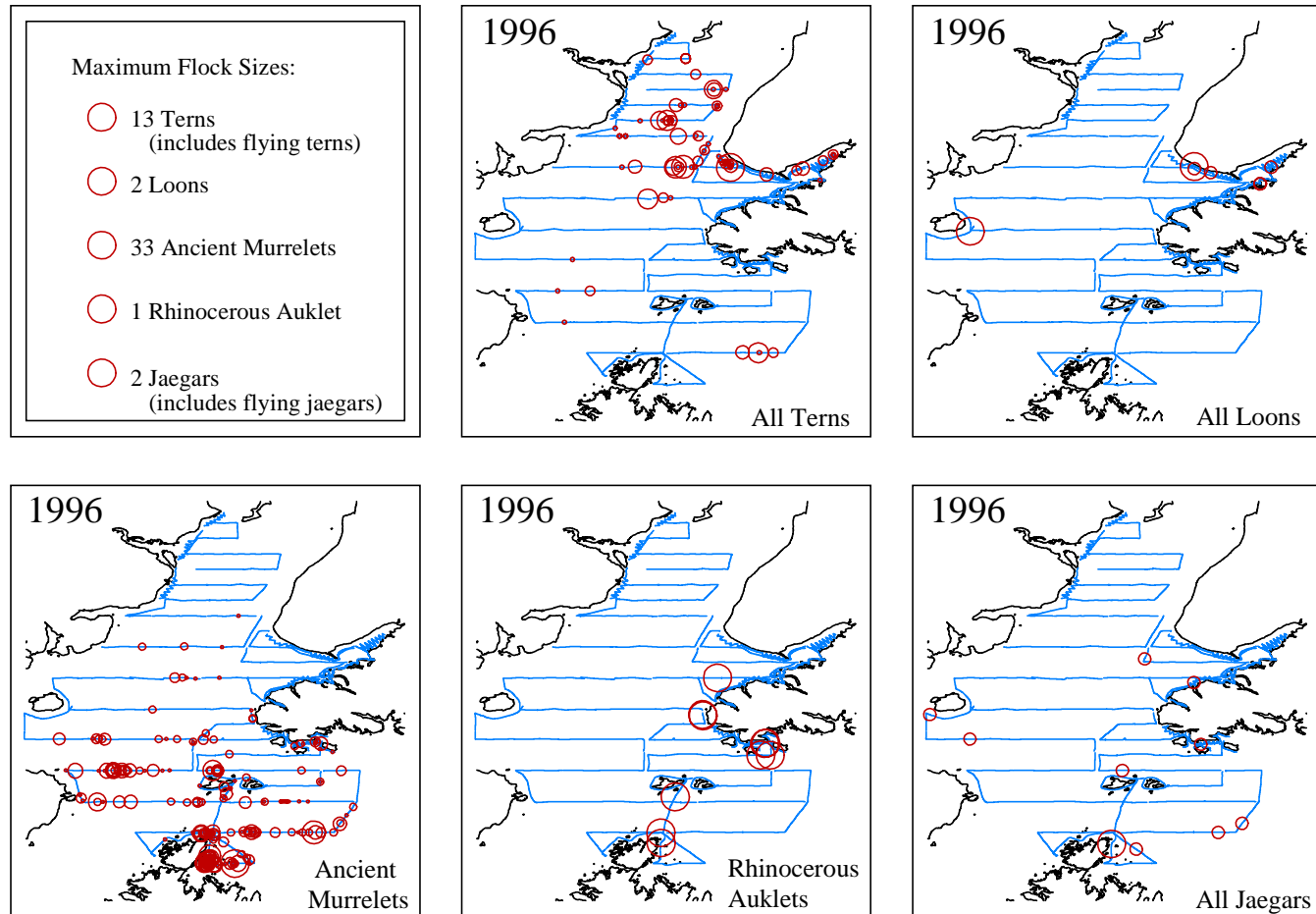


Figure 8.10. Distribution and abundance of various fish-eating or diving seabirds in lower Cook Inlet, 1996.

Plankton and Surface Feeders

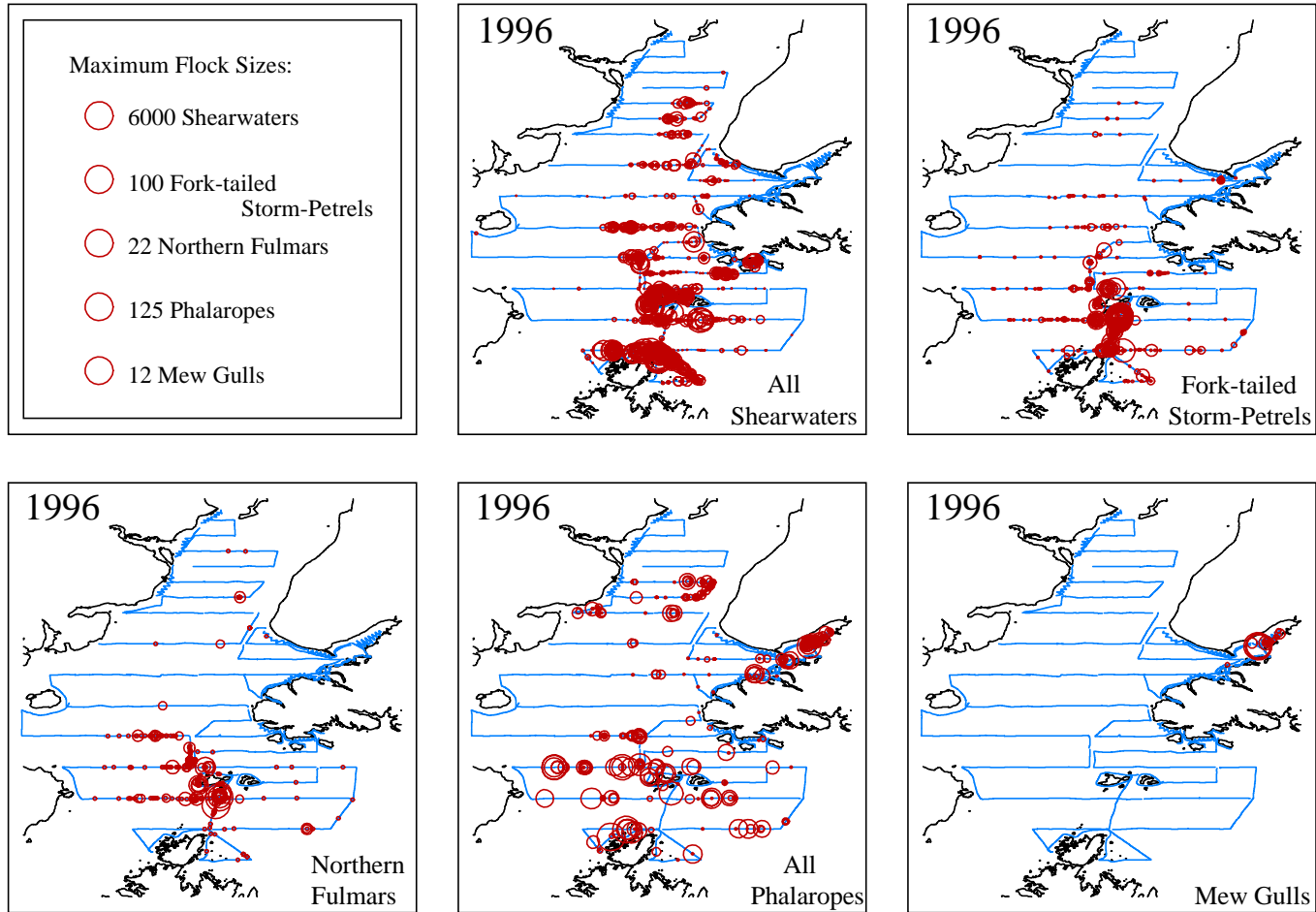


Figure 8.11. Distribution and abundance of various plankton- or surface-feeding seabirds in lower Cook Inlet, 1996.

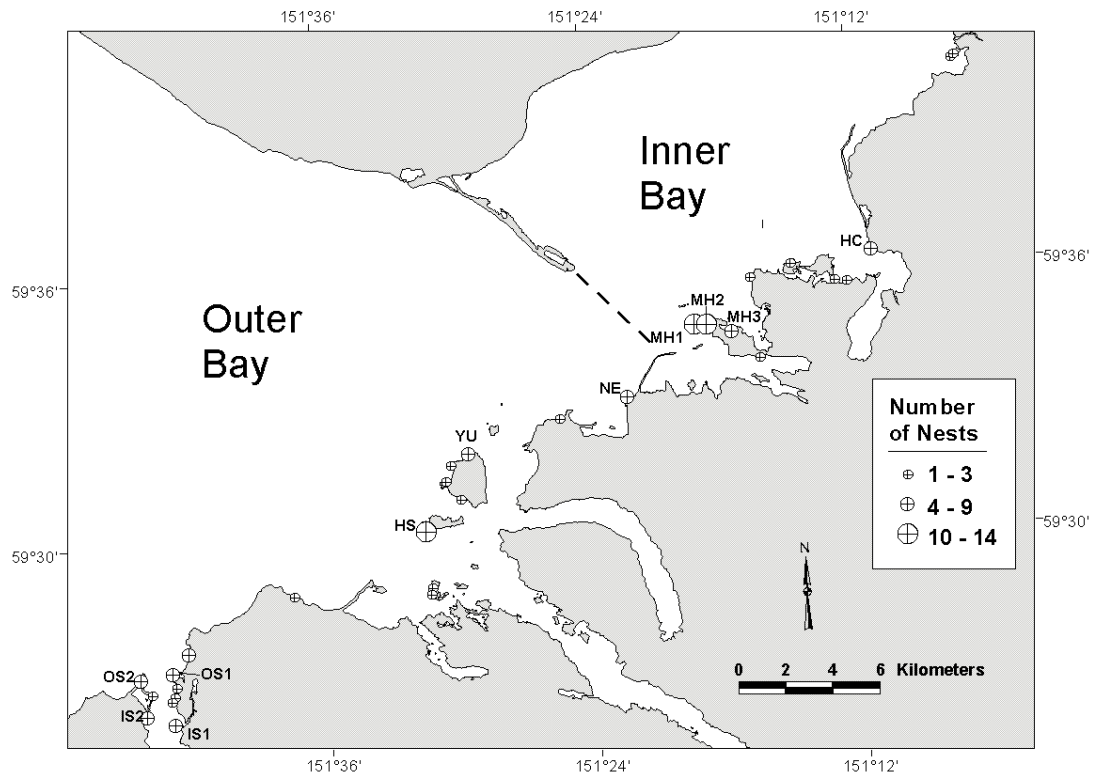


Figure 11.1. Pigeon Guillemot colonies studied during 1995-1999 in Kachemak Bay. Colony name abbreviations as follows: OS = Outer Seldovia Bay, IS = Inner Seldovia Bay, HS = Hesketh I., YU = Yukon I., NE = Neptune Bay, MH = Moosehead Pt., HC = Halibut Cove.

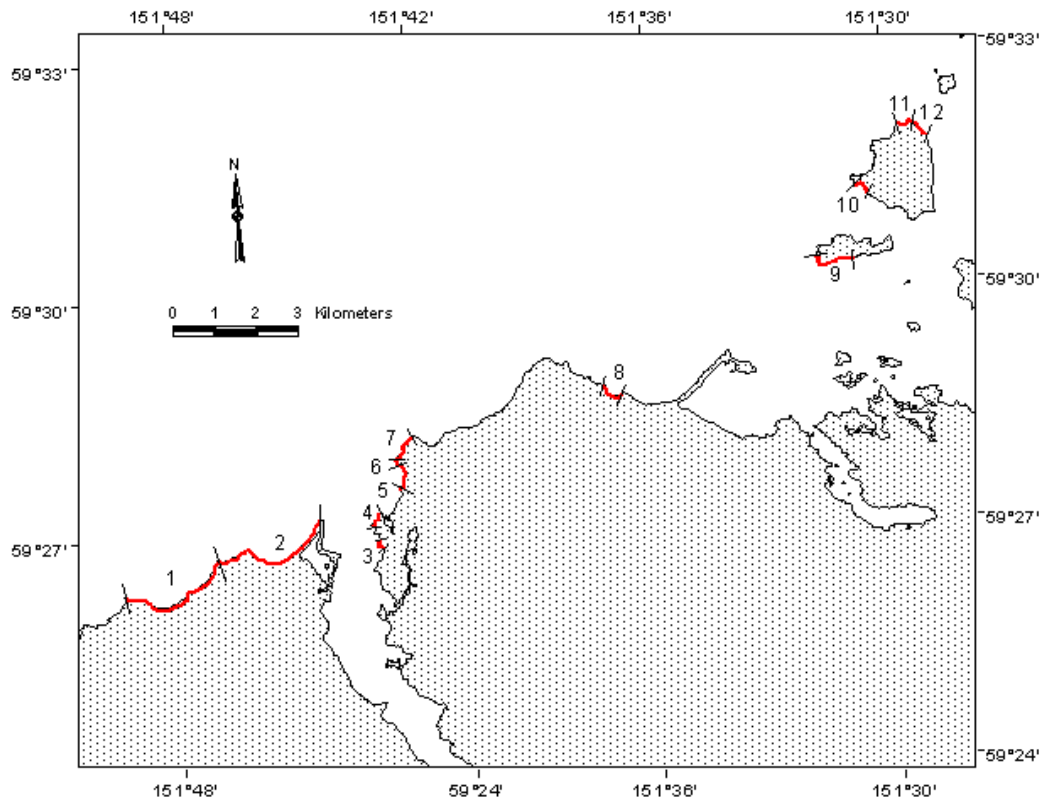


Figure 11.2. Pigeon guillemot colony census sites in western Kachemak Bay. Site names as follows: 1 = Guillemot Meadows, 2 = Naskowhak Pt., 3 = Lemon Cliffs, 4 = Gray Cliffs, 5 = Seldovia Bay, 6 = Sub-Seldovia, 7 = Seldovia Pt., 8 = Kasitsna Cliffs, 9 = Hesketh I., 10 = SW Yukon, 11 = Yukon I., 12 = Sub-Yukon.

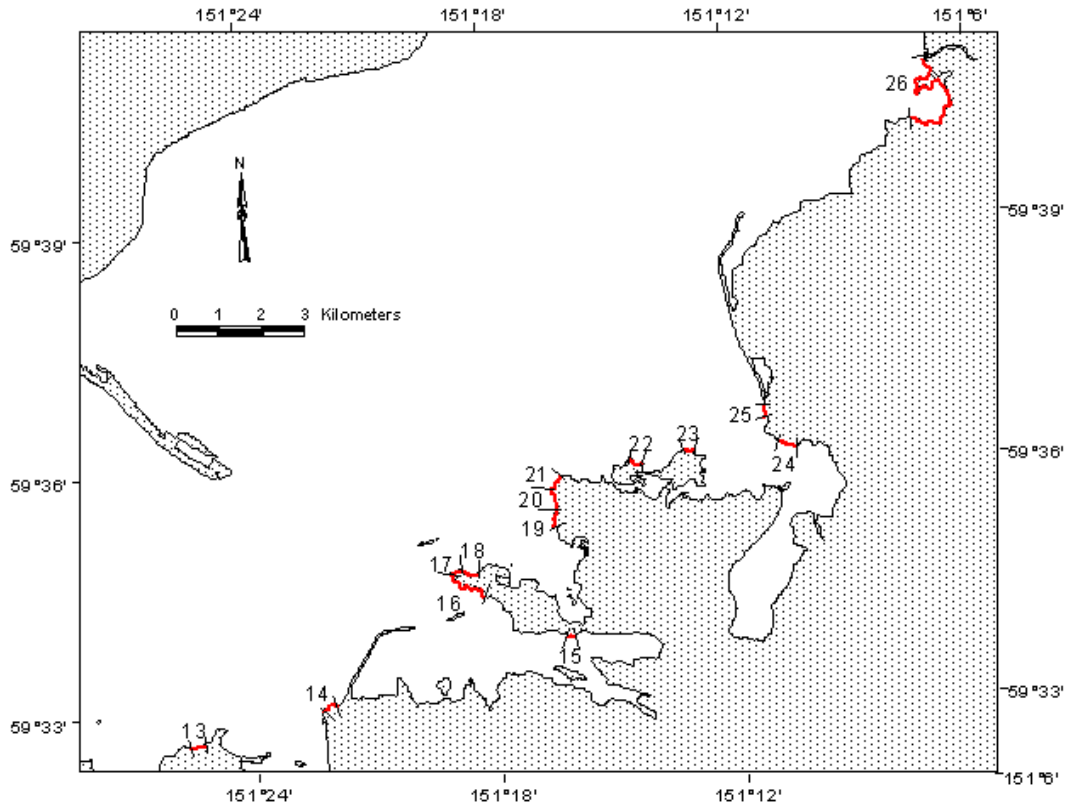


Figure 11.3. Pigeon guillemot colony census sites in eastern Kachemak Bay. Site names as follows: 13 = S. Neptune Bay, 14 = N. Neptune Bay, 15 = China Poot Bay, 16 = Moosehead China Poot Side, 17 = Moosehead N. Side, 18 = Moosehead Peterson Side, 19 = E. Peterson, 20 = The Nose, 21 = Peterson Pt., 22 = Ismailof I., 23 = Sea Cliff Manor, 24 = Triangle Rock, 25 = Goshawk, 26 = Mallard Bay.

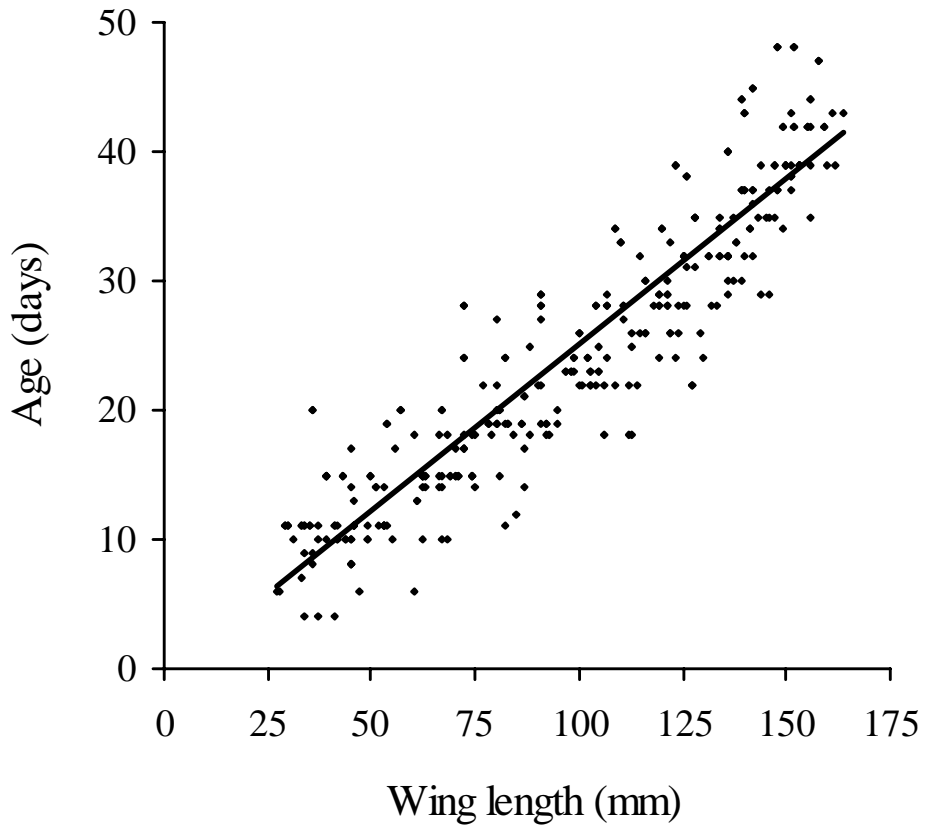


Figure 12.1. Linear regression of Horned Puffin chick age on wing length (n=67 chicks)

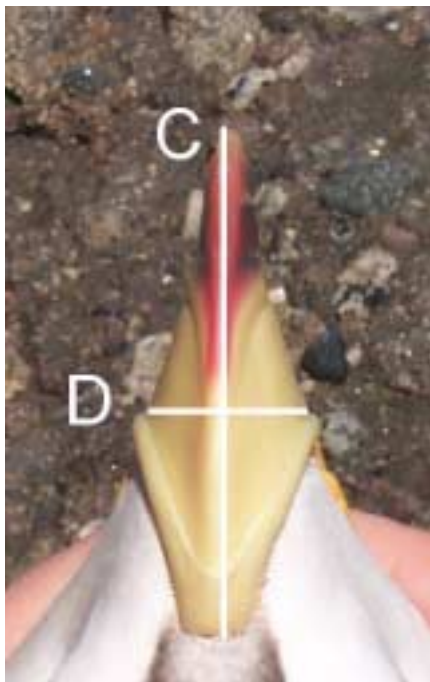
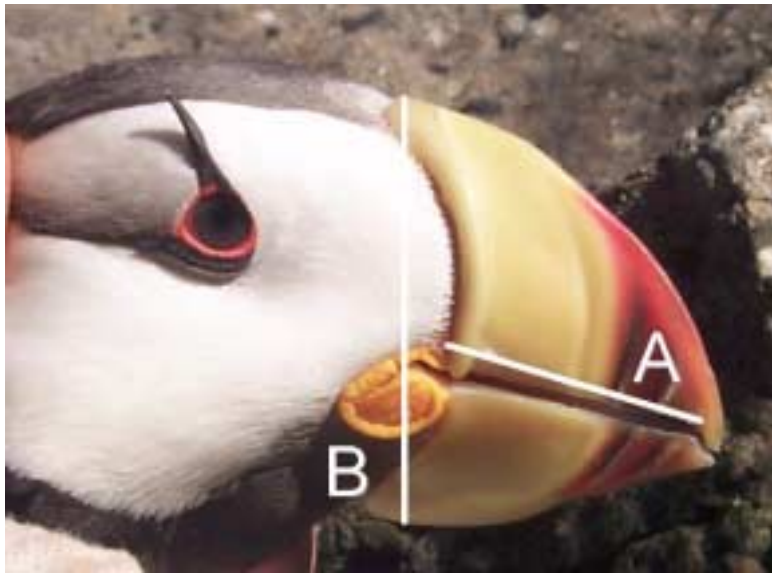


Figure 12.2. Horned Puffin bill measurements. A= cutting edge, B= bill depth, C= culmen, D= bill width.

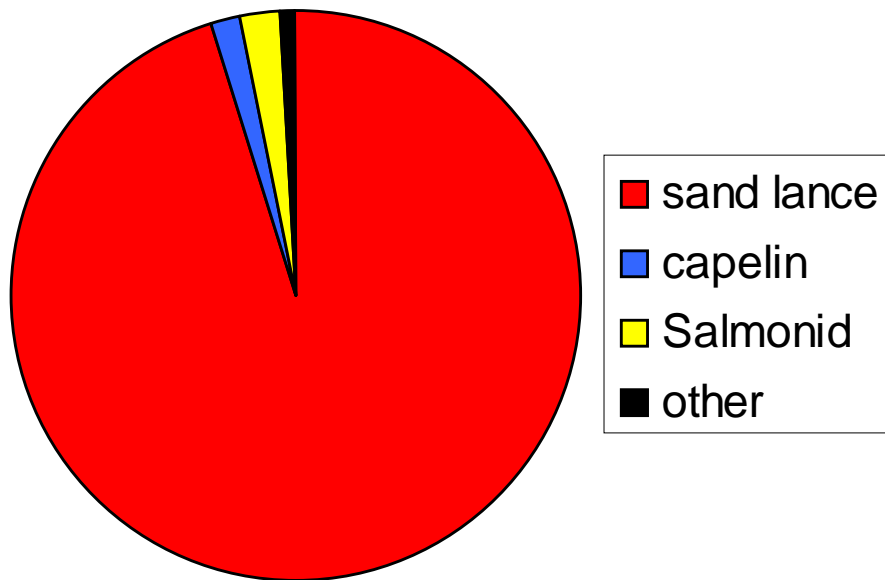


Figure 12.3. Horned Puffin chick diet composition (% number of all prey items (n=2658) collected in 1995-1999).

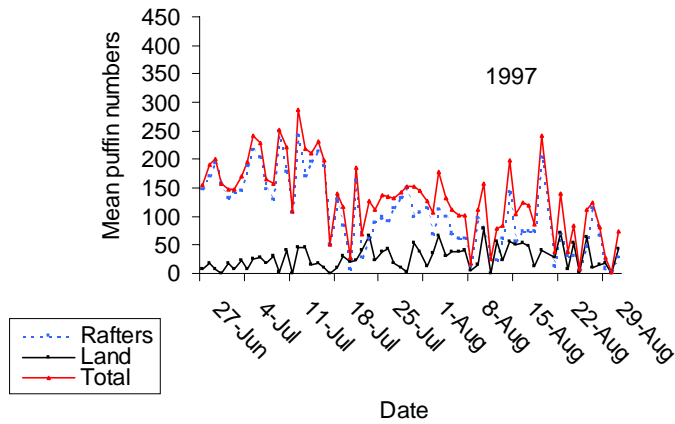
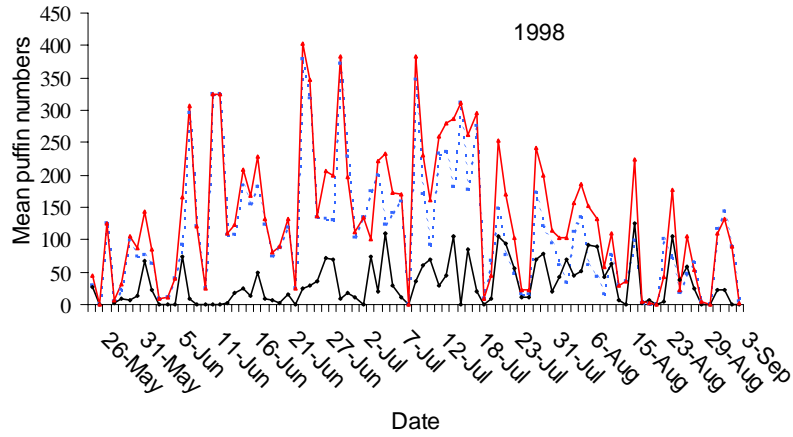
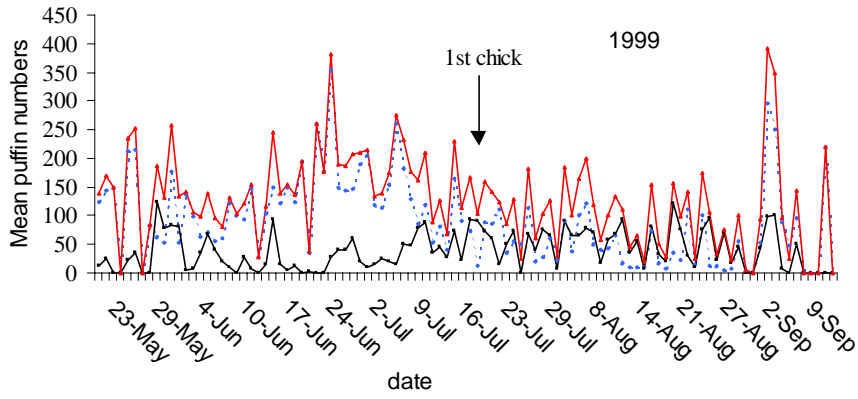


Figure 12.4. Seasonal colony attendance of Horned Puffins at Duck Island.

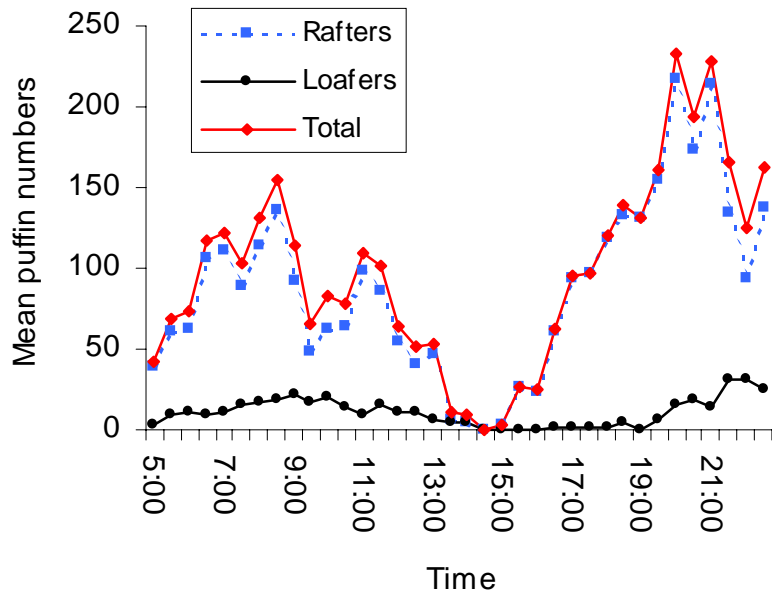


Figure 12.5. Diurnal attendance patterns of Horned Puffins in North Cove, Chisik. Average attendance on 8, 9 and 10 July, 1997.

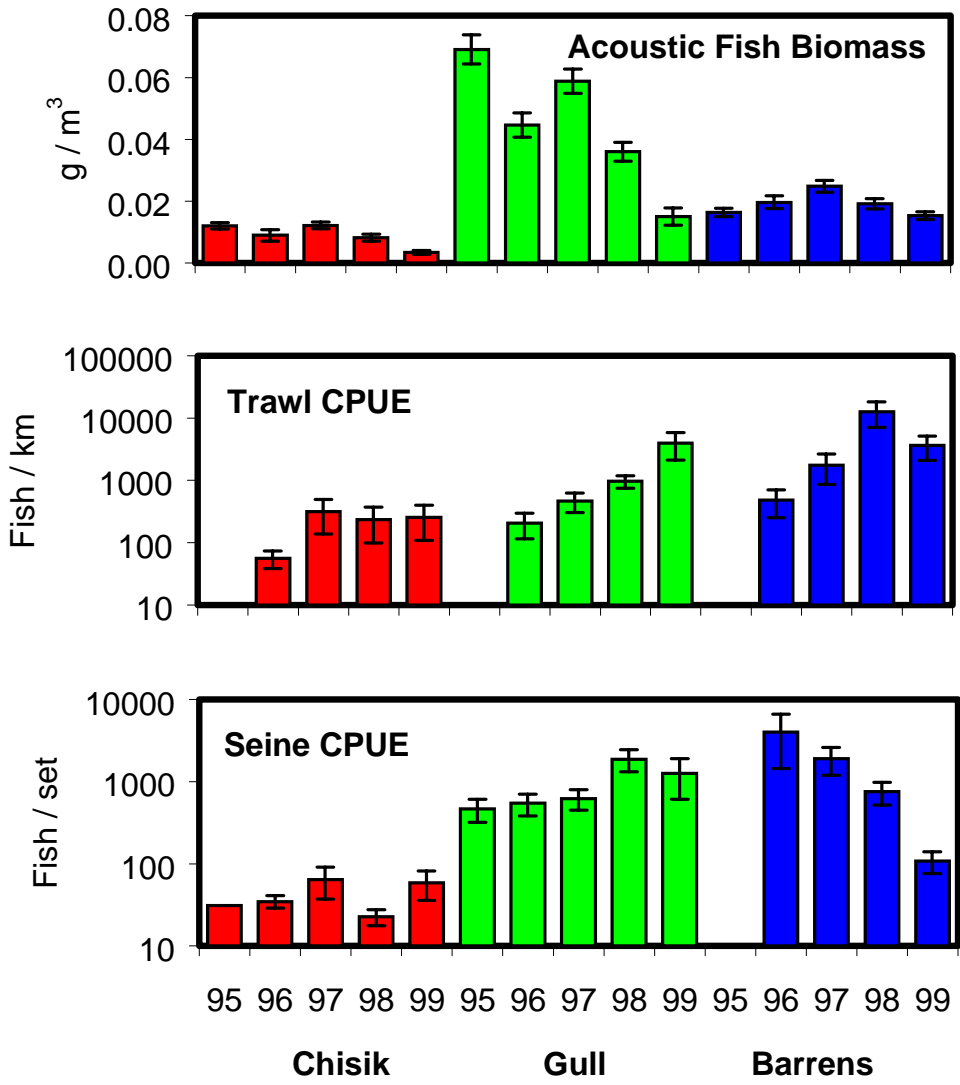


Figure 14.1. Summary of fish abundance indices (acoustic biomass, trawl CPUE, seine CPUE) observed around Chisik, Gull and Barren islands, Cook Inlet, during 1995-1999.

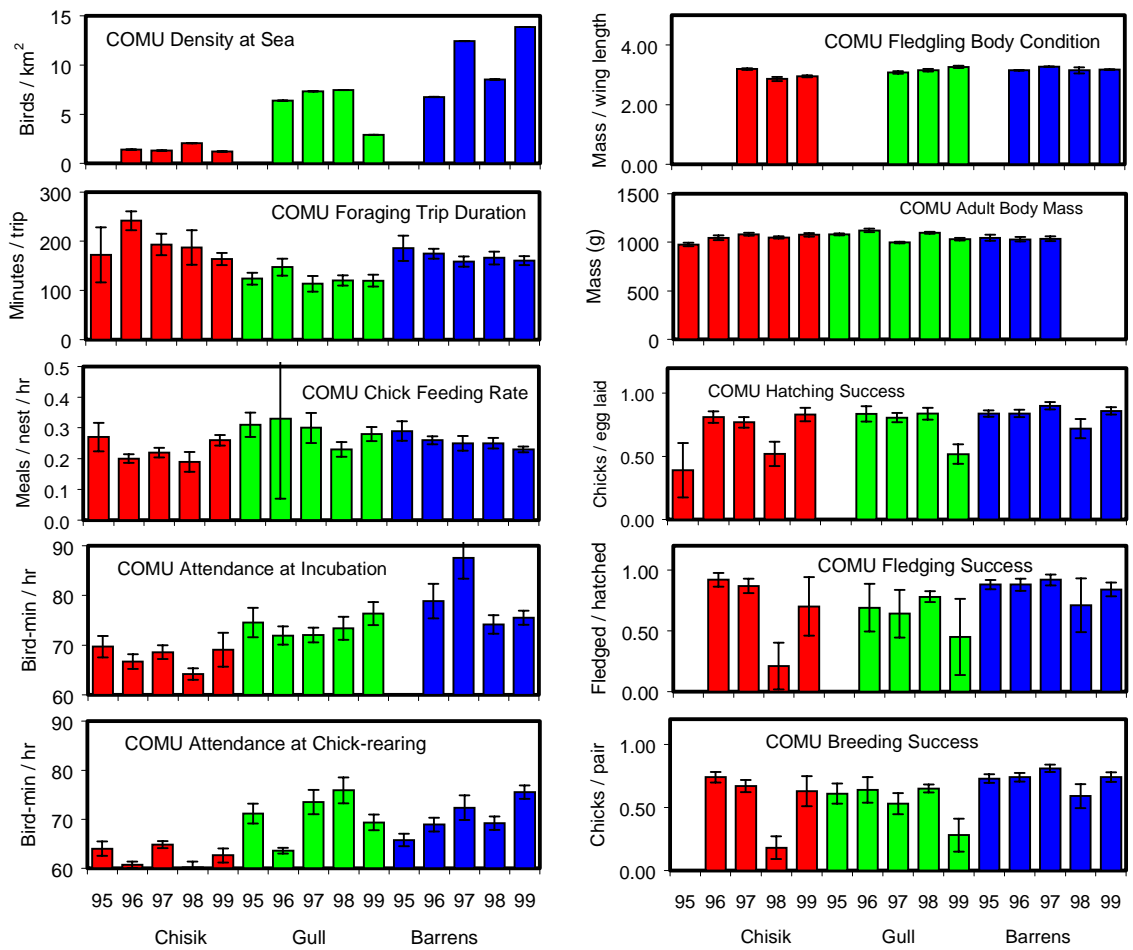


Figure 14.2. Summary of Common Murre breeding and behavioral parameter values observed at Chisik, Gull and Barren islands, Cook Inlet, during 1995-1999.

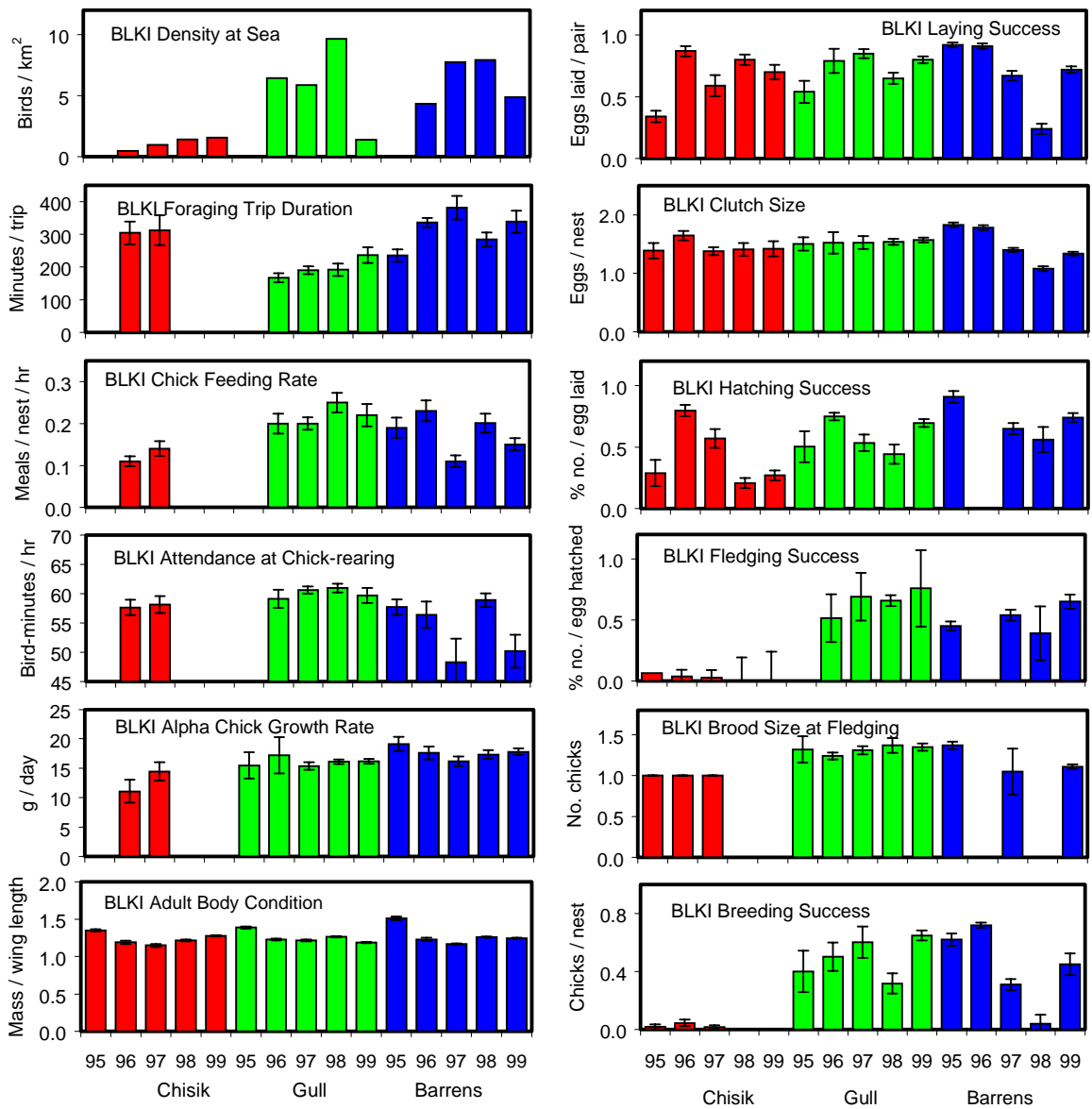


Figure 14.3. Summary of Black-legged Kittiwake breeding and behavioral parameter values observed at Chisik, Gull and Barren islands, Cook Inlet, during 1995-1999.

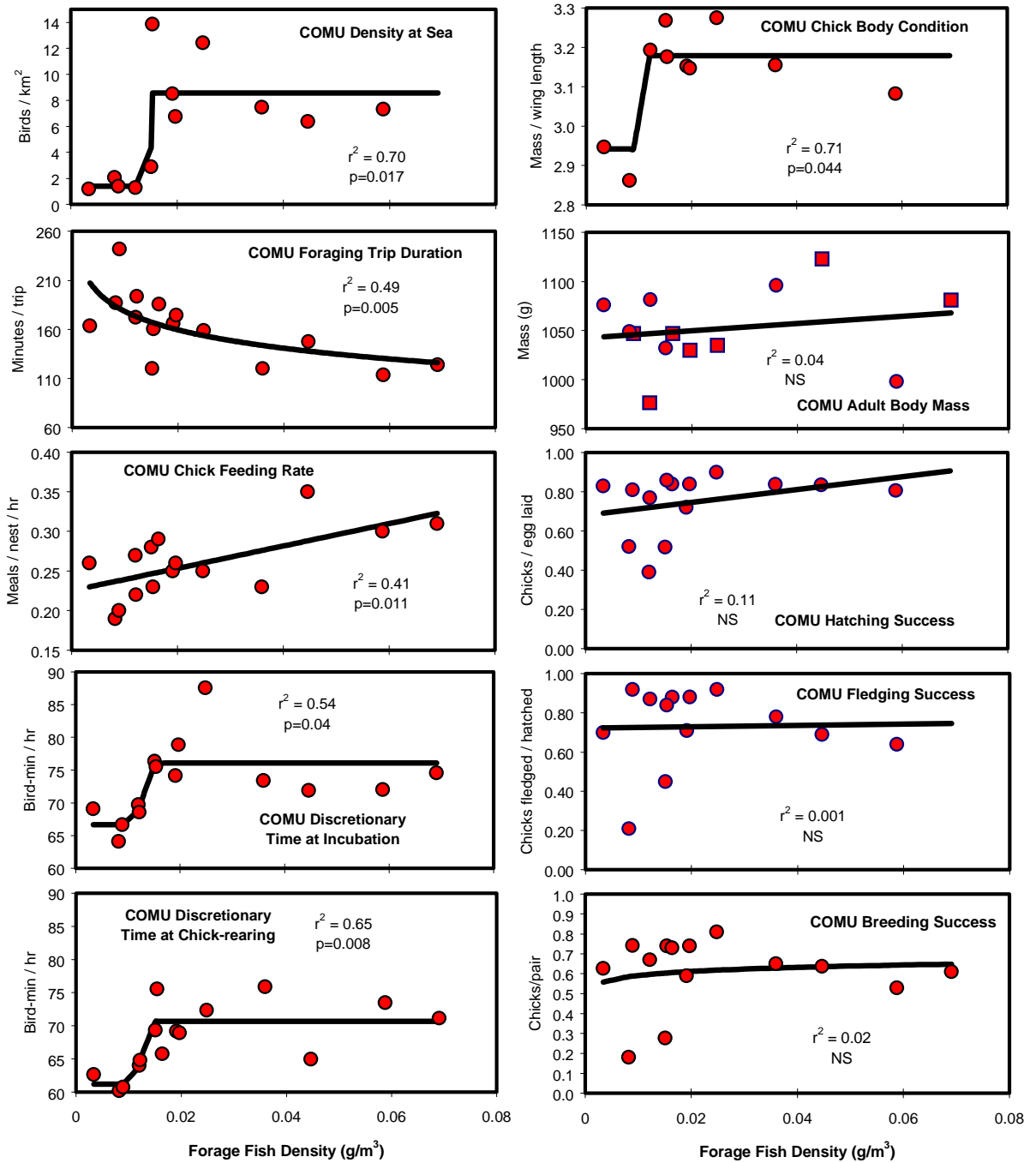


Figure 14.4. Functional response of Common Murre breeding and behavioral parameters to variation in food supply.

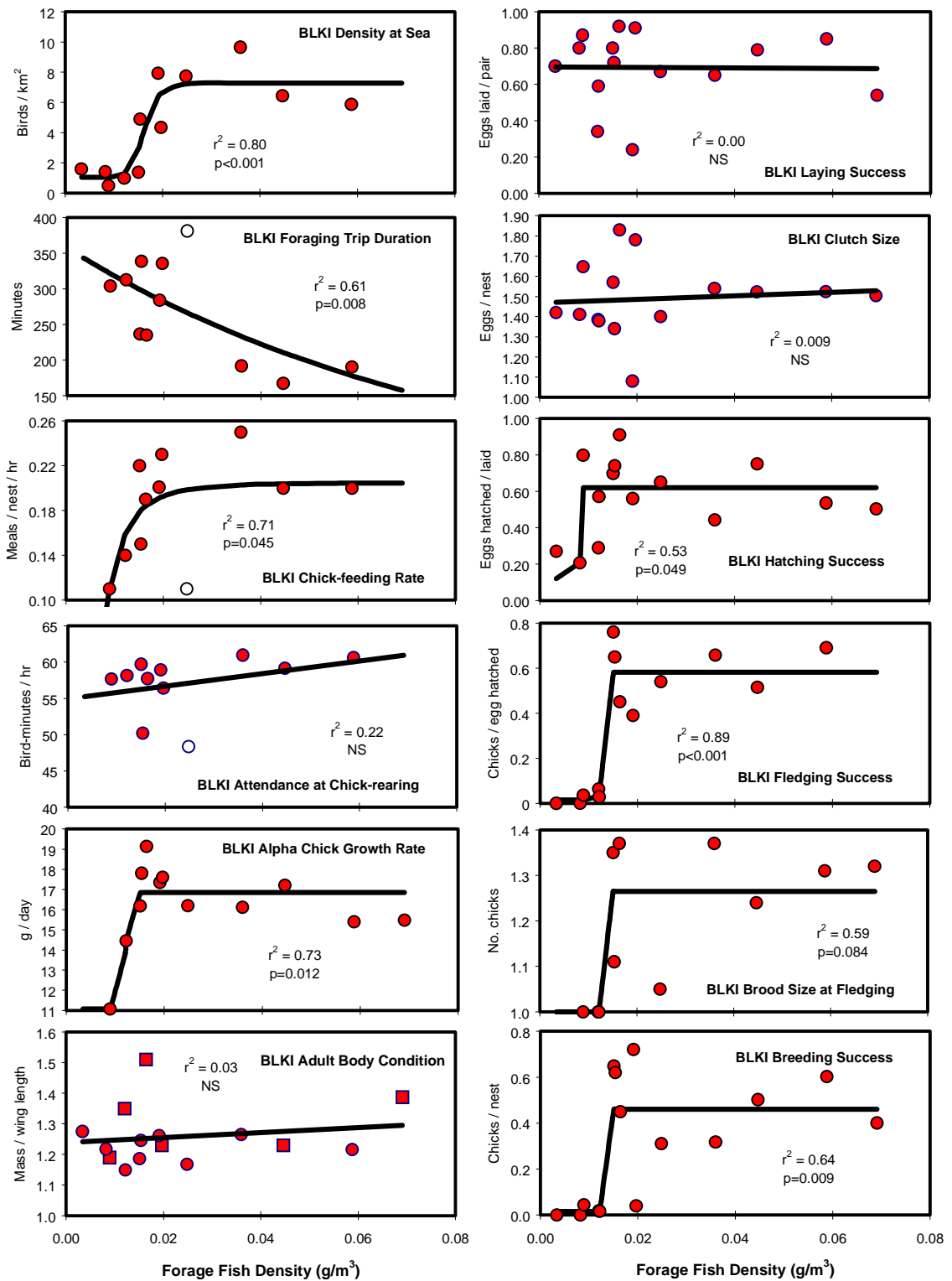


Figure 14.5. Functional response of Black-legged Kittiwake breeding and behavioral parameters to variation in food supply.

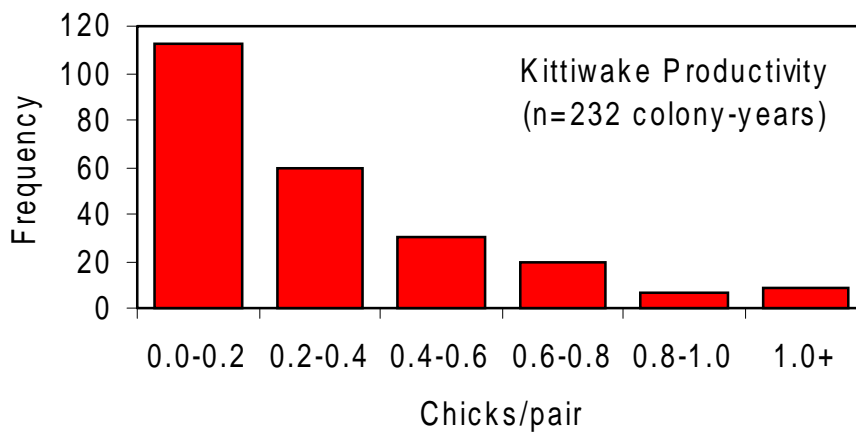
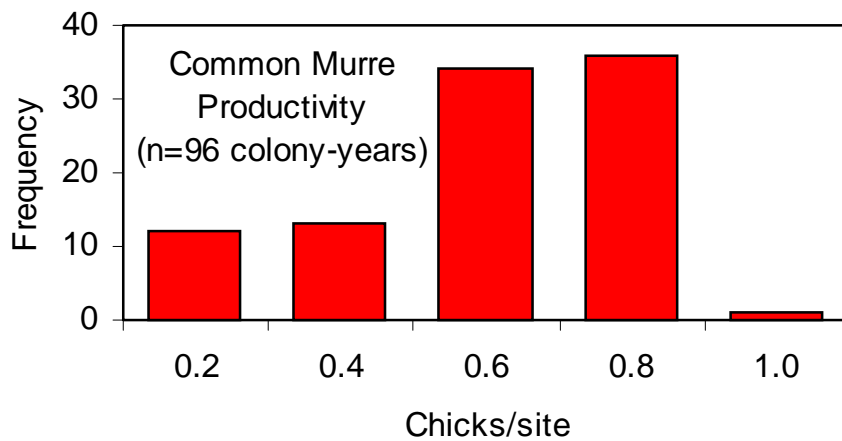


Figure 14.6. Frequency of different levels of breeding success for Common Murres and Black-legged Kittiwakes in Alaska. (Data from Hatch et al. 1993, Dragoo et al. 2000, Kettle et al. 2000, and this study).

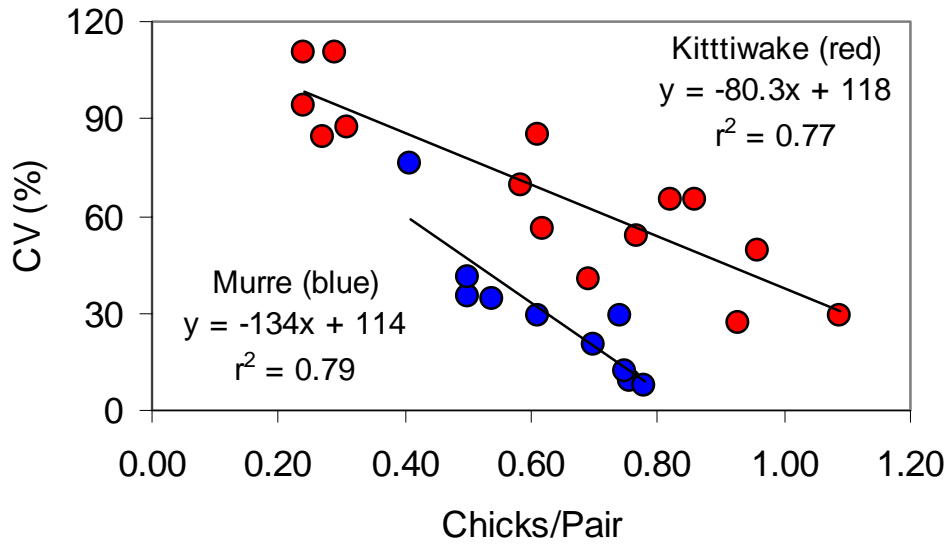


Figure 14.7. Variability in breeding success versus breeding success in Common Murres and Black-legged Kittiwakes around the world.

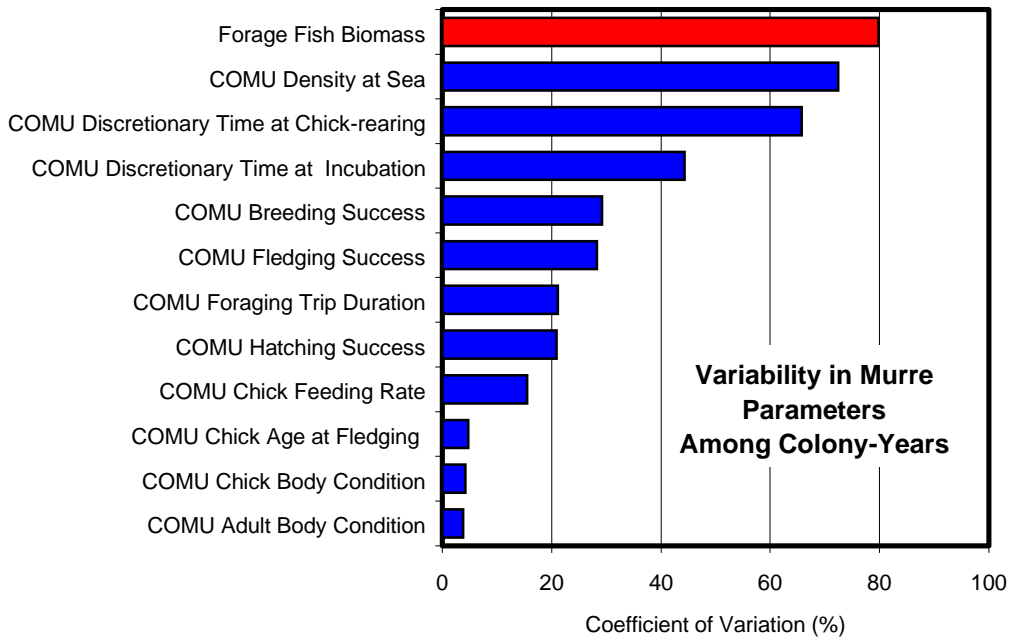
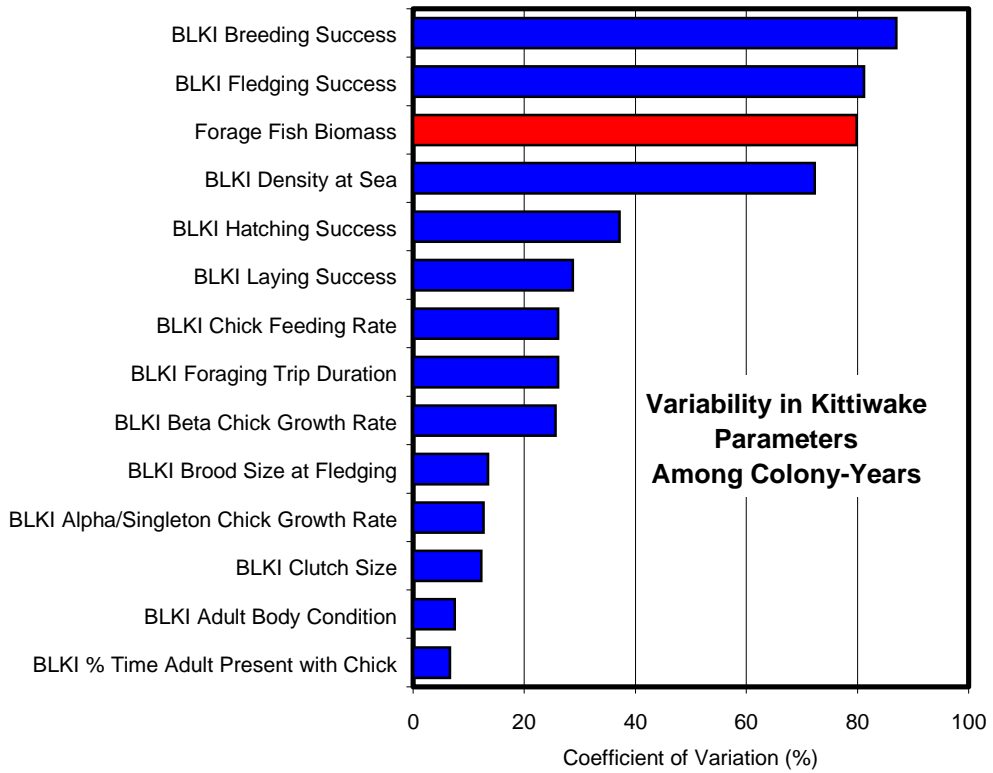


Figure 14.8 Ranked variability (Coefficient of Variation) in breeding and behavioral parameters for Common Murres and Black-legged Kittiwakes among colony-years in Cook Inlet.

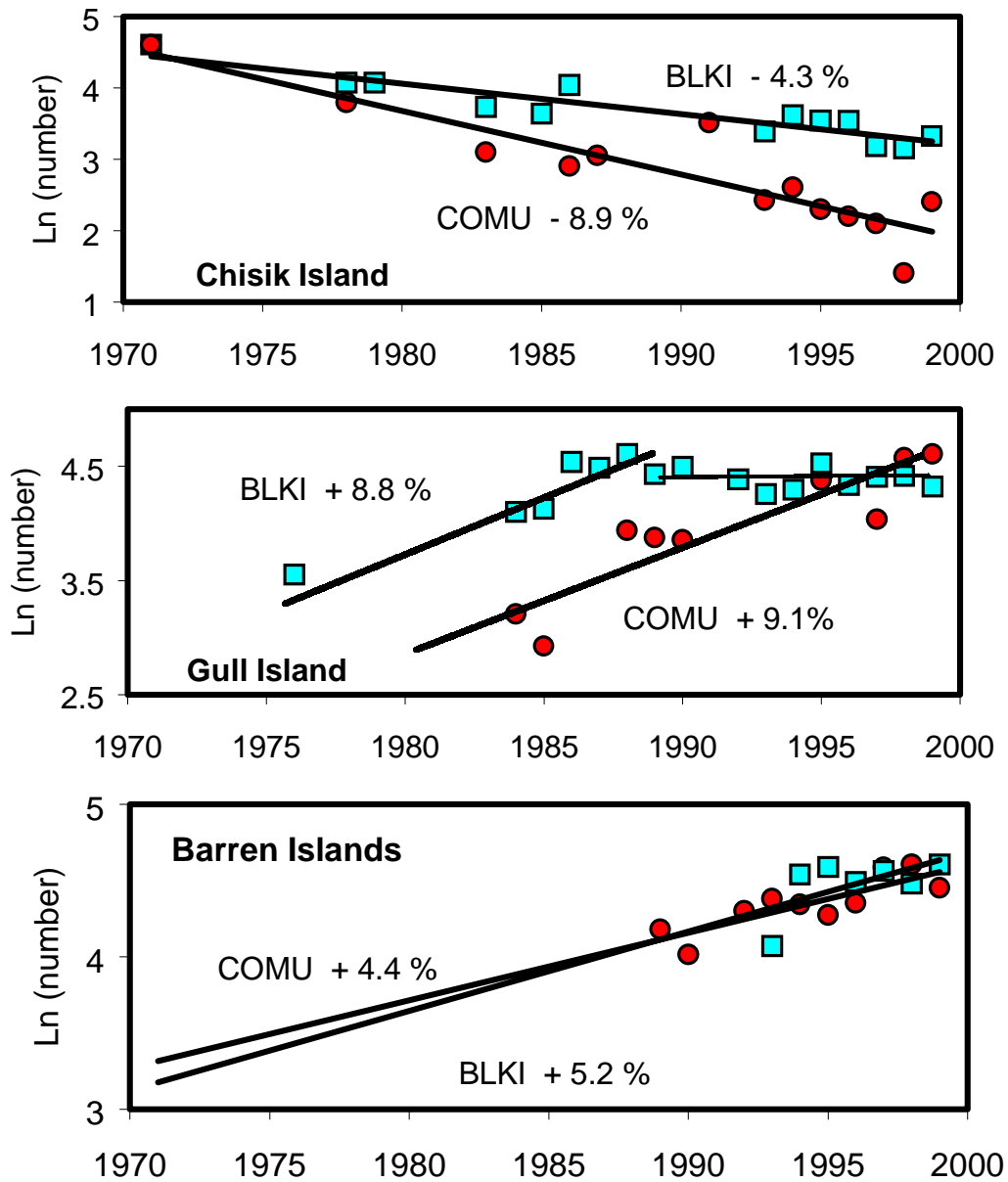


Figure 14.9 Population trends for populations of Common Murres and Black-legged Kittiwakes at Chisik, Gull and Barren islands. Data for Gull and Chisik from this study, and historical data reported in Zador et al. 1997. Data for Barrens from Roseneau et al. 1998, Kettle et al. 2000.

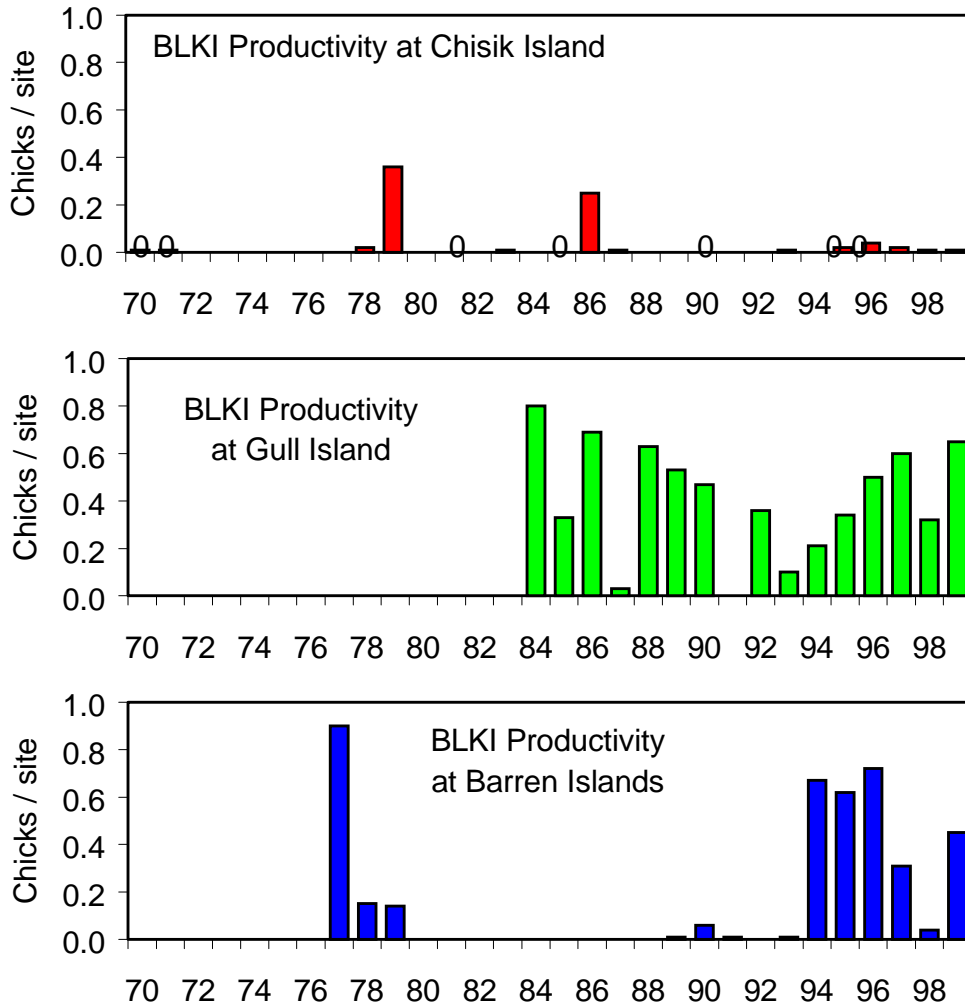


Figure 14.10. Historical productivity of Black-legged Kittiwakes at Chisik, Gull and Barren islands, 1970-1999. Data from this study, and as reported in Zador et al. 1997, Kettle et al. 2000, Dragoo et al. 2000.

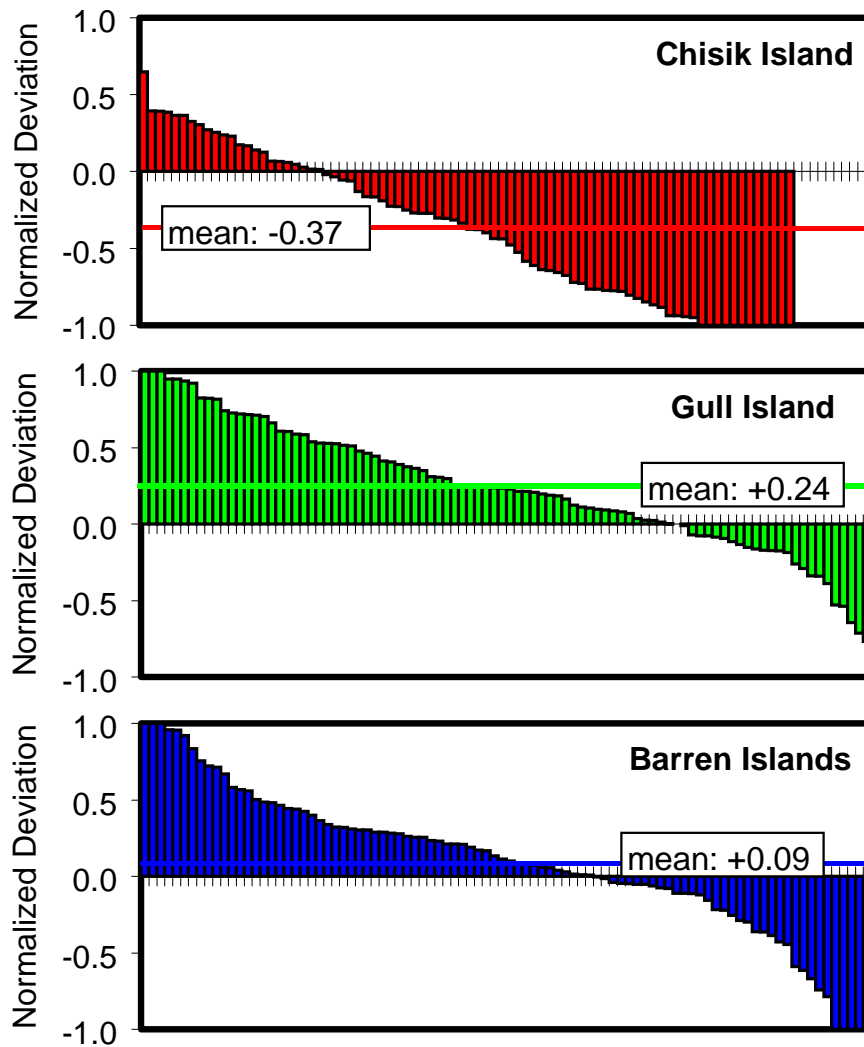


Figure 14.11. Normalized deviations from average of seabird breeding and behavioral parameters at Chisik, Gull and Barren islands, 1995-1999. Deviations have been arbitrarily ranked by magnitude from most positive (left) to most negative (right). Barrens data from Kettle et al. 2000.

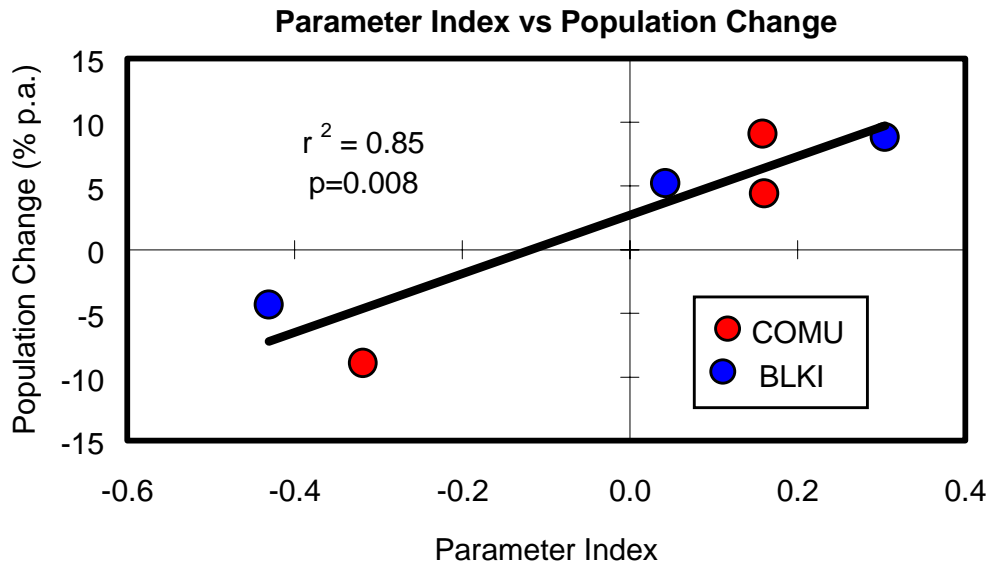


Figure 14.12. Average parameter index (from Fig. 14.11) versus population trend (from Fig. 14.9) for Common Murres (COMU) and Black-legged Kittiwakes (BLKI) at Chisik, Gull and Barren islands.

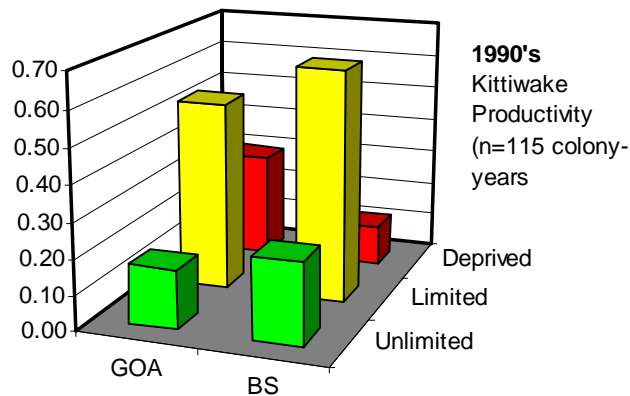
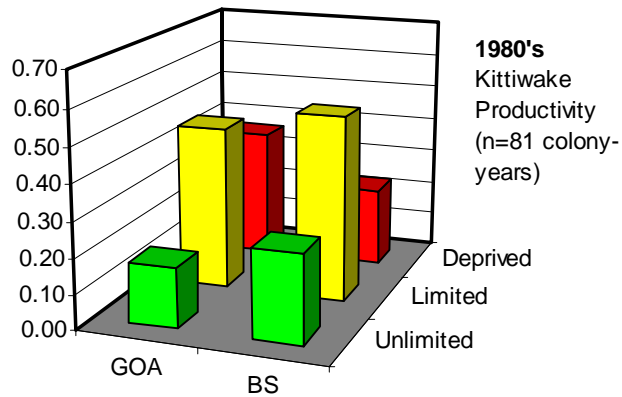
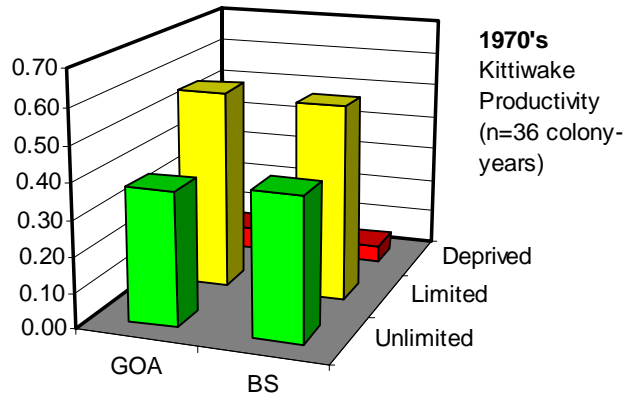


Figure 14.13. Historical breeding success (bs) of Black-legged Kittiwakes in the Gulf of Alaska (GOA) and Bering Sea (BS), categorized by functional relationships with food supply as "Deprived" ($bs < 0.015$ chicks/pair), "Limited" ($0.015 < bs < 0.46$ chicks/pair), and "Unlimited" ($bs > 0.46$ chicks/pair). Data from Hatch 1993, Zador et al. 1997, Dragoo et al. 2000, Kettle et al. 2000.