

Figure 4. Location of all cow/calf pairs sighted during directed surveys conducted in winter 1996 (3 and 5 August) and in winter 1997 (26 and 31 July). Dashed line represents the 20 m depth contour.

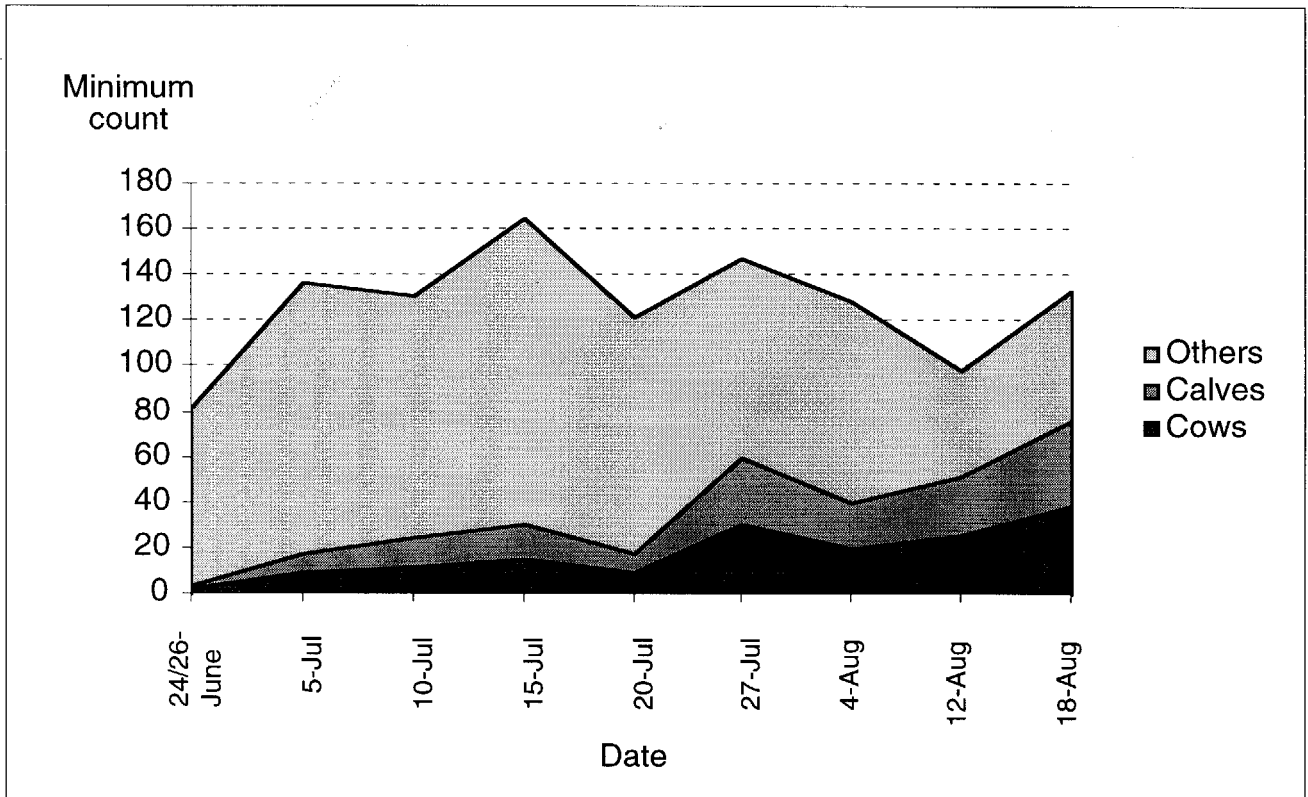


Figure 5. Minimum abundance counts of cows, calves and other whales during the 1998 winter season. The 24/26 June abundance represents an estimated total from two partial surveys of different areas.

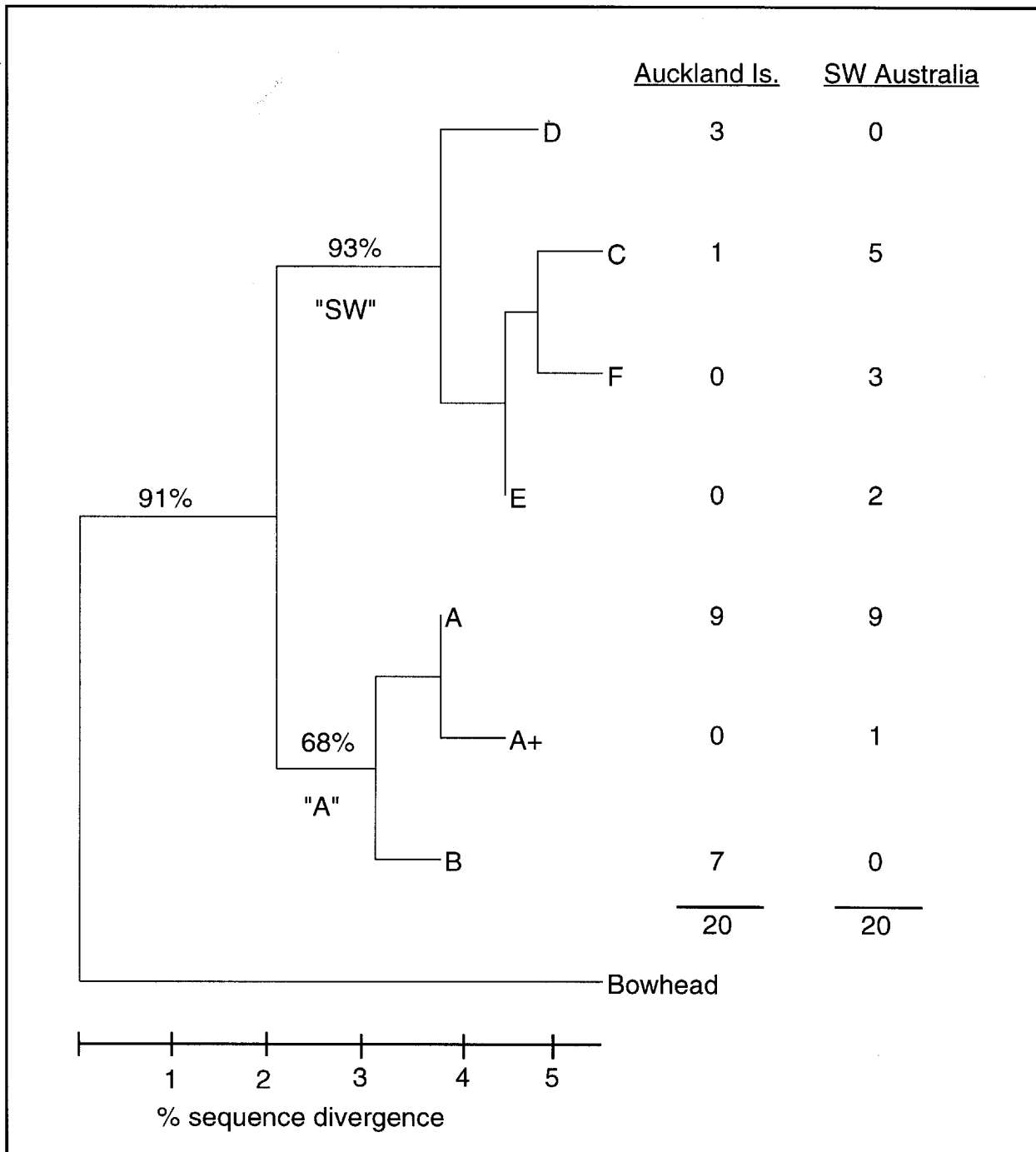


Figure 6. Phylogenetic relationship among mtDNA haplotypes (A-F) of southern right whales from the Auckland Is. and Southwest Australia. The numbers above the branches indicate bootstrap support (% of 1,000 simulations) for the two major clades, "A" and "W". The tree is rooted by the outgroup method with a published sequence from the bowhead whale. Modified From Baker et al. (1999).

Appendix 1. Whale behaviour categories

The behaviour of southern right whales were categorised by the following:

- 1) Rest: whale remaining motionless, moving only slightly to breath; for cow/calf pairs, rest referred to the cow, regardless of the activity of the calf.
- 2) Travel: directional forward movement that resulted in a change of location;
- 3) Social: two or more non-calves interacting at the surface; no attempt was made to differentiate between social activity and sexual activity.
- 4) Boat approach: whale altering its course to actively investigate the research vessel;
- 5) Play: above surface activity not apparently linked to social activity. This included breaching, pectoral slaps, lobtailing and interactions with kelp.
- b) Feeding: whale traveling at the surface with mouth open.
- 7) Random Underwater Movement Pattern (RUMP): animals exhibiting underwater movement that resulted in a change of location but without apparent direction. It is unclear whether these animals were feeding, showing signs of boat avoidance or some other unknown function.

Table 1. Relationship of group size and group composition to activity (1995-97).

Group size	Rest (%)	Travel (%)	Play (%)	Social (%)	Boat approach (%)	Groups total (N)
Single	60	*10	11	-	19	90
Pair (excluding cow/calf)	29	12	5	45	9	82
Group 3-10 (excluding cow/calf)	14	3	0	83	<1	103
Cow/calf pair	64	36	0	0	0	67
Cow/calf pair and other(s)	50	13	0	38	0	16

* One whale was observed swimming back and forth in a rip, presumably feeding

Appendix 2. Locations of cow/calf pairs plotted during weekly surveys

