

**KING CORMORANTS *PHALACROCORAX* [*ATRICEPS*]
ALBIVENTER FORAGING FROM WITHIN A SOOTY
 SHEARWATER *PUFFINUS GRISEUS* RAFT**

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Cormorants belonging to the Imperial Cormorant *Phalacrocorax atriceps* species complex typically forage on or near the sea bottom in shallow, inshore waters (Cooper 1985, Marchant & Higgins 1990). When numbers are sufficient, foraging may occur in groups of up to several hundred individuals, often in a synchronized manner (e.g. Derenne *et al.* 1976, Strange 1992). With smaller numbers present, foraging is usually undertaken solitarily, although single birds leaving roosts may fly toward foraging birds and commence diving in their vicinity (Cooper 1985).

I observed King Cormorants *Phalacrocorax atriceps albiventer* flying towards a Sooty Shearwater *Puffinus griseus* raft a few hundred metres west of Kidney Island National Nature Reserve, East Falklands on 17 March 2006. The raft, which was observed at close quarters from a small vessel in the evening for about 40 minutes, consisted of about 400 birds (one of which was a Great Shearwater *P. gravis*) clustered closely together. All cormorants observed landed within the raft or no more than 10 m from its edge. Birds then dived, surfacing within the raft or again within 10 m of its edge. No synchronized diving was observed, although at times small groups of cormorants (up to four) formed on the surface within the raft. Cormorants regularly arrived and departed from the raft during the period of observation, all singly. Several scan counts of cormorants on the surface resting between dives gave a maximum of 14, seven of which were in adult plumage and seven being juveniles. Two scans with binoculars up to c. 150 m in all directions from the raft revealed no cormorants present on the sea surface. The shearwaters appeared to take little notice of the cormorants within their midst, other than giving them a little more room than their conspecifics. Likewise, the cormorants seemingly ignored individual shearwaters that swam near them.

I believe the cormorants were purposefully flying to and then foraging below the shearwater raft, and were presumably obtaining some material advantage by doing so. The advantage may be related to improved opportunities for catching prey, perhaps because the shearwater raft attracted suitable prey species below it in much the same way that fish-aggregation devices work. An alternative

explanation is that the shearwater raft afforded some level of protection from predators or kleptoparasites. Although a single Subantarctic Skua *Catharacta antarctica* was seen flying in the vicinity, no interactions with cormorants were observed. However, on Saunders Island in the Falklands the previous day, I observed a Subantarctic Skua chase a flying King Cormorant which landed clumsily on the sea surface and immediately dived, presumably to avoid further interaction.

Future observations should attempt to time dives and subsequent surface rest periods of individual cormorants within shearwater rafts for comparison with those of birds foraging in similar depths away from rafts, both solitarily and in flocks of varying sizes, so as to ascertain any differences that might reflect a foraging advantage. Observations of kleptoparasitism should also be recorded.

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