

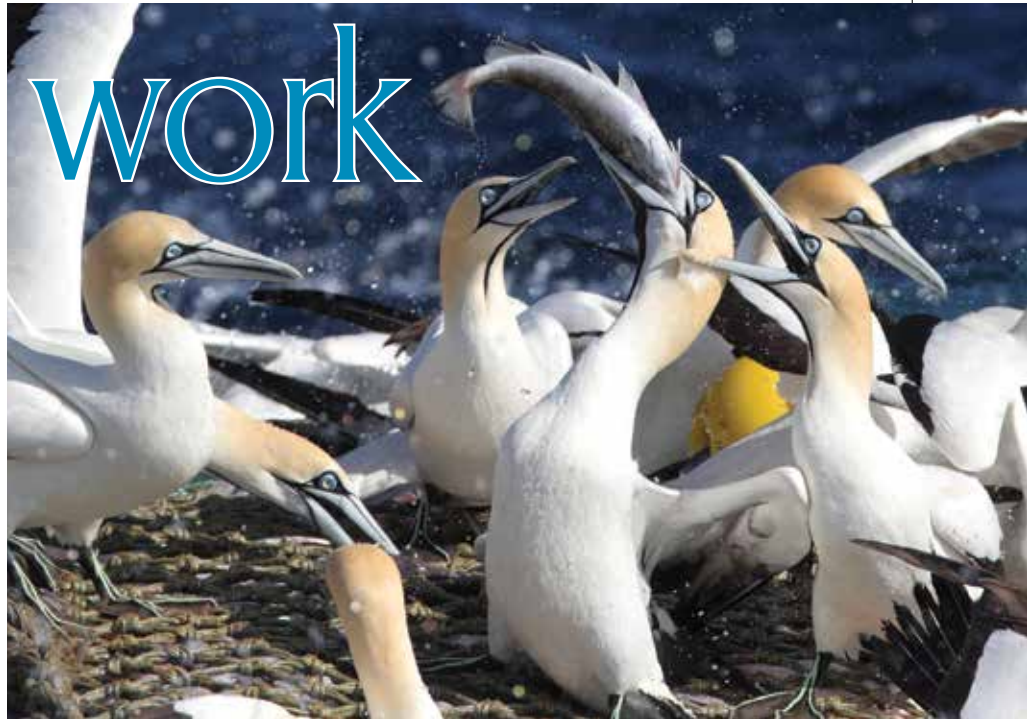
team work

Cape Gannets eat a diversity of fish and the occasional squid and also scavenge from trawlers. However, sardines and to a lesser extent anchovies are their preferred prey. These pelagic fish are especially important when the birds are breeding: chicks raised on bottom fish and fishery discards grow more slowly than those fed oil-rich pelagic fish. Studies on other seabirds indicate that chicks fed a low-quality diet also suffer reduced cognitive abilities and are less able to cope in a changing world.

Schools of sardines and anchovies are patchily distributed at sea, which makes them challenging to locate reliably. Foraging gannets increase their chances of detecting fish schools by looking for other predators, especially other gannets. The adults' striking black-and-white plumage makes them conspicuous at sea, particularly when feeding. They fly high above the sea before diving onto their prey and that makes them visible from many kilometres away.

Gannets leaving their colony head off in the direction from which returning birds come. If they don't encounter a feeding group, they land on the water and wait for passing birds to provide fresh cues as to where to go. Studies using miniature video cameras and GPS trackers have shown that birds that do not respond to other gannets in the vicinity take twice as long to find a school of fish as those that use these social cues.

The distances over which gannets react to feeding gannets is determined in part by the size of the foraging group. Small aggregations of fewer than 50 gannets seldom elicit a response from birds more than 10 kilometres away, but groups of more than



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100 gannets attract birds from up to 40 kilometres. This seems to be a big investment given the transitory nature of feeding aggregations – there may be no fish left by the time you arrive. However, gannets benefit from foraging in large groups.

When threatened by predators, sardines and anchovies form dense, polarised schools known as bait balls, in which all individuals move and turn together. This behaviour confuses predators, reducing their ability to catch a fish. But when a predator attacks the school, the fish scatter briefly, making them easier to target. As a result, gannets are more than twice as likely to catch a fish when they dive in concert with others than if they are the only gannet to dive. This social facilitation explains the successive waves of gannets that dive kamikaze-style onto fish schools. Foraging gannets are highly vocal and their calls probably work in tandem with visual cues to synchronise attacks on fish schools.

Cape Gannets have evolved to breed in large colonies, where they share information about the distribution of their prey and cooperate with other

Cape Gannets forage socially, often leading to intense competition when scavenging from fisheries. But when they target sardines, their preferred natural prey, they benefit from feeding together.

gannets to feed efficiently. The ongoing reduction in the sizes of all five gannet colonies off the west coast of South Africa and Namibia only serves to exacerbate the threat posed by the shortage of fish prey in this region.

Off Namibia, sardines have been replaced by jellyfish and salps, which eat most of the eggs and larvae of the few remaining fish. Even in the absence of fishing, sardine stocks are unlikely to recover and gannet numbers have fallen by more than 95 per cent since the 1950s. There's more hope for the gannets of Malgas Island and Lambert's Bay, but we urgently need spatially explicit fishing quotas to help rebuild the stocks of small pelagic fish off the west coast of South Africa.

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