



Science

Creating a floating scarecrow

Out at sea, understanding seabird cognition may be a key to safer fisheries.

Every day, hundreds of seabirds unknowingly dive into fishing nets hiding beneath the surface. Bycatch – the accidental capture of non-target species in fishing gear – is one of the biggest threats affecting seabirds worldwide, killing an estimated 400,000 seabirds a year including vulnerable species such as velvet Scoters, black guillemots and long-tailed ducks. So the RSPB looks for solutions that fishers would be happy to use.

The best practice for minimising seabird bycatch is to avoid fishing from certain areas and at certain times – but it's an unpopular solution as it can impact profitability for fishers. What if we could stop seabirds from diving into gillnets in the first place, without affecting fish catch? Effective technical solutions such as bird-scaring lines already exist in certain fisheries, but none so far for gillnets. Marking the otherwise nearly invisible gillnets with LED lights has shown promising results in reducing bycatch of turtles and cetaceans, but had no success on seabirds when tested in the murky waters of the Baltic Sea. Ideally, the solution needs to work across species and fisheries.

Perhaps, the answer lies above the water rather than below it. Collaborating with engineers at Fishtek Marine, RSPB and BirdLife scientists used

Above: The fixed gaze of the looming-eyes buoy keeps sea ducks safely away.

their knowledge of seabird cognition to develop the 'looming-eyes buoy' (LEB). It's basically a floating scarecrow: a modified buoy with a pair of eyespots fixed to a pole, which resemble the staring eyes of a predator with an unpredictable, looming movement that's driven by the wind.

Gillnets are usually suspended between two marker buoys, so adding a pair of googly eyes to them is a fairly low-cost, simple solution. The next step was putting these watchful-looking devices to the test. After securing funding from the National Geographic Society RSPB scientists, in collaboration with the Estonian Ornithological Society, deployed LEBs in a sea-duck wintering ground off Estonia. Some 250 hours of observation later, the team found that the buoys reduced numbers of long-tailed ducks by around a quarter within a 50-metre radius. And, importantly, the birds weren't scared to return to the area once the buoy had been removed. LEBs have undergone their next stage of testing, this time in real fishing conditions. Tests are under way in Iceland and Cornwall, along with predator-shaped kites – a similar concept for bycatch mitigation. If these googly-eyed buoys stand up to the test, they could soon be making seas safer for seabirds. ●

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