

Puffins in peril

Scientist Mike Harris explains that the puffin seems about to join the list of seabirds whose numbers are declining.

It's a grey day in early April on the Isle of May off the east coast of Scotland. Far out to sea a small dot appears on the horizon. It rapidly increases in size, suddenly turning into a puffin that lands with a splash on the water. This bird probably hasn't seen land for five months, but now it's returning to its colony for the breeding season.

The first puffin is soon joined by others and together they bob on the sea. Newly returned birds are nervous but, as the days pass, they gain confidence and begin reclaiming the underground nesting burrows they made the previous year by tunnelling into the soft earth on the top of the cliffs. **(1)**..... They have to hurry because it takes three months to rear a chick and all the birds must leave by early August to spend time feeding intensively before the winter.

I visit the island every April, eager to see how many of the adult puffins we have caught and attached identification rings to have returned. **(2)**..... With a team of helpers I counted every occupied burrow on the island – something we undertake every five years.

The island's puffin population had been increasing every year for the previous 40 years, and so we anticipated at least 100,000 pairs. To our dismay we found just 42,000. **(3)**..... Experts from other research programmes have concluded it must be connected to where puffins spend the winter months.

Last spring we also caught and weighed some returning adults and found they were significantly lighter than the birds we caught 10 years ago. **(4)**..... Puffins are long-lived and can cope with a few poor productive seasons, but not with such a large loss of adults.

In early August, the puffin colonies empty rather abruptly. Virtually all puffins leave within a week, though a few adults remain to feed a late chick. **(5)**..... I have

always believed, though, that few of them venture far from the North Sea. Now, however, the development of instruments known as geolocators, small enough to be fitted around a puffin's leg, is enabling us to test this idea.

We fitted these units to some puffins two years ago and caught the birds again last year to download the data. Some did remain within the North Sea, but others went much further. For someone who has spent years watching puffins for only part of their lives, this new technology is providing some fascinating information. (6)..... This would still leave us with the question of what they eat in winter and whether there are sufficient quantities of prey available.

The good news is that we now have an idea of the areas our puffins go to in winter, and we can check whether conditions there might have altered due to climate change or overfishing. Maybe we can then take some steps to help them. Hopefully it is just a local problem, because there are in fact still plenty of puffins to see around the Scottish coast.

- A** We weren't the only ones to wonder why this might be happening.
- B** From this moment on, we know remarkably little about where these birds end up and what could possibly be affecting them there.
- C** But we should also take into account that if a young puffin survives the winter, it will come back the following July.
- D** Other devices will also hopefully tell us how much time puffins spend diving for food.
- E** This was further evidence that something unusual is happening at sea before they return to the colony.
- F** Puffins are always among the earliest seabirds to lay eggs.
- G** Last year there was an additional task.