

column beneath the floating ice, “I’ll be resorting to the old tried and tested means of manual labour to get data for the scientists,” said Pen Hadlow, one of the expedition members.

“It’s a disappointment, but I’m not surprised — I’m hoping that at least a new SeaCat will come out on the next resupply.”

The team report that they initially covered predominantly first-year ice with just a scattering of multi-year ice floes. The team are now moving into an area of predominantly second-year ice — that which has survived a summer warming.

Preliminary results suggest that the extent of multi-year ice is much reduced and now confined to a narrow swathe east of 130W along the north-west Canadian Arctic archipelago and Greenland coast.

The 28 countries who have signed the Antarctic Treaty agreed at a meeting last month to limit access to the continent in the future to help preserve the delicate environment

While data are being gathered on the increasingly fragile Arctic ice sheet, interest in the Antarctic is growing as it suffers many of the problems of the northern Pole under climate change. Human interest in the extraordinary and increasingly fragile ecosystem there is soaring. Tourist numbers have risen from 6,700 in 1992 to more than 45,000. The 28 countries who have signed the Antarctic Treaty agreed at a meeting last month to limit access to the continent in the future to help preserve the delicate environment.

Cruise ships carrying more than 500 passengers will not be allowed to land anyone. Other, smaller boats will be allowed to land up to 100 people at any one time, in an attempt to limit damage.

The rapid growth in tourism has alarmed environmentalists in many of the signatory countries keen to protect a region under threat from climate change that is home to several penguin and seal species and is a vital feeding ground for many whales.

High-level twitter

A new study finds that a social bird responds to the position from which it receives information. **Nigel Williams** reports.

For many species, information has to be gleaned the hard way — from experience of interactions with the environment — and the lessons can be tough. But for social species, there is another option — listening to and looking at their group members. Such ‘public information’, however, comes with pitfalls — how reliable is it?

A new study reported in the *Proceeding of the Royal Society series B* (published online) reveals that one species of social bird not only gleans information from other individuals on ‘sentinel’ duty, but reacts to where they believe it to be.

Andrew Radford at the University of Bristol and colleagues in Bristol and

Cambridge have worked with groups of the pied babbler in Southern Africa.

What the researchers found was that group members of the pied babblers were able to perceive the position of sentinel birds — a task undertaken by all the members of the group at times — which greatly helped their ability to forage when the birds perceived the sentinel to be high up in neighbouring foliage.

Information about a sentinel could be obtained by foragers in two ways: first, through visual monitoring, which is how social information is generally assumed to be gathered; second, from visual cues because, while on duty, sentinels of several species produce regular quiet vocalisations known as the ‘watchman’s song’.

Research has shown that foragers use these calls to detect the presence of a sentinel but they might also use them to gain additional information, such as the sentinel’s height.



Top notes: Pied babblers respond differently to sentinel birds at different heights. (Photo: Andrew Radford.)

The researchers used recordings of a sentinel's 'watchman's song' played back at different heights to observe the differences in behaviour.

And indeed they found that the higher a song was transmitted, the more confident foragers were in extending the distance and duration of their activities.

When sentinels moved to a higher position, their probability of detecting predators is likely to be greater, the researchers believe. Their group reduced their vigilance, spread out more widely and were more likely to venture into the open, the team said.

"Consequently, they spent more time foraging and increased their foraging efficiency, resulting in a substantial increase in biomass intake." As the babblers in this study were accustomed to human association, weighing them on scales on which they jumped was relatively easy, said Radford.

"This is the first study to link explicitly a measure of the potential quality of public information with a fitness measure from those relying on the information," the researchers say.

Sentinel behaviour, where an individual adopts a raised position, scans for danger and gives alarm calls to warn foraging groupmates of predatory threats, has evolved in a number of bird and mammal species, the researchers say.

"In the presence of a sentinel, foragers can benefit from both lower predation risk, because sentinels tend to detect predators more often and from further away than do individuals on the ground, and a lowered starvation risk, because they can spend more time foraging and can do so more efficiently," they believe.

Although individuals are known to respond differently to alarm calls given by callers of differing reliability, no study has investigated whether foragers monitor features associated with sentinel reliability and adjust their behaviour when these change, they say.

Because pied babblers are preyed upon by a variety of terrestrial mammals, snakes and raptors, "the movement of a sentinel to a higher perch would potentially reduce the vulnerability of foraging group members, and thus explain their increased spread and use of open areas, as well as their reduced vigilance."

Panda rebuild

China begins this month building a new panda centre to replace the world-famous preserve badly damaged in last year's devastating earthquake in Sichuan province. The Wolong Panda Breeding Centre, near the state capital, Chengdu, was nearly destroyed in the earthquake, which left 90,000 people dead or missing.

The new facility will be at the core of more than \$200 million in projects to preserve the endangered species, the official Xinhua news agency said.

Most of the 63 pandas living there were relocated to zoos around the country. The Wolong preserve has been at the centre to use captive breeding to help save the giant pandas.

Xinhua said the new centre will be in Huangcaoping, about 10 kilometres from the former Wolong centre. "The pandas will be comfortable living here as it is not far from the former base," said Huang Jianhua, an official with the nature reserve administration.

The new facility, to be called the China Giant Panda Protection and Research Centre, will run 25 projects funded by the government of Hong Kong for \$190 million and the state forest department will

fund 19 projects totalling \$40 million.

Only about 1,600 pandas live in the wild, mostly in Sichuan. An additional 180 have been bred in captivity, many of them at Wolong, and many have been loaned or given to zoos abroad with revenues helping to fund conservation programmes.

The World Wide Fund for Nature (WWF) has played a key role in helping the Chinese authorities handle the panda population. It was the first international conservation organisation to be invited by the Chinese government to help manage the panda population almost 30 years ago and created a management plan for the animals that was adopted by the Chinese government in 1992.

But there are worries that the reconstruction plan for Sichuan may damage further the bamboo forests that provide wild pandas with their native habitat. The panda sanctuaries, which comprise almost one million hectares, incurred significant damage during the earthquake. The problem of up to five million earthquake refugees is also adding to the issue of managing the remaining wild animals.

Nigel Williams



New support: China is building a new panda centre after the damage created by last year's earthquake in Sichuan. (Photo: Sheila Lau.)