

◀ organisers of Ludum Dare – a “game jam” where thousands of people get together to make games over a weekend. Ludum Dare has been held in the UK three times a year since 2002 and the number of people taking part each time has grown considerably. At the April event this year over 2300 games were made, and Kasprzak expects the final tally from the latest jam, held from 23 to 26 Aug, to be even higher. The great benefit of game jams is that they motivate people, says Francis. “They’re a kick in the pants,” he says.

Game jams also snowball, says games developer Sophie Houlden. “People will play these games and hear they were made by somebody not dissimilar to them and will think about taking part in the next jam.”

Sharing online plays a big part in how the DIY ethic spreads. Houlden thinks we will soon see the gaming equivalent of YouTube or DeviantArt. The heavy hitters are already on board: Sony and Microsoft have made sure that their new consoles will let amateur games developers self-publish.

Tools and game jams are also giving gamers a creative outlet that they might not otherwise have had. “There is now a large group of under-represented people expressing themselves through games,” says Mike Treanor, who studies video game design at the University of California in Santa Cruz. But though the tools are still improving, none is yet to game-making what the pen and paper or the keyboard is to writing. Treanor points out that they still force amateur developers to shoehorn creative expression into a certain form. The most easy-to-use tools tend to support only 2D games, for example. “More than limiting the types of games people end up making, this limits the types of games that people can even conceive of making,” he says. “We are still figuring out how to express ourselves with games.” ■



Cicada to the right, 100 metres

## The unsuspecting naturalist

An app will let you log the numbers of endangered animals just by listening to their calls

Paul Marks

TO THE untrained ear, the chirping noises made by many small creatures or insects sound very similar. Now there is a new breed of app that will allow anyone with a smartphone to identify the unique calls of endangered animals, and keep an eye on biodiversity.

Assessing the numbers of a species in a certain area is painstaking, tiring work, particularly when the animal you are looking for is small – and extremely rare. The new app Cicada Hunt works much like Shazam, which samples short music clips to help identify a mystery song. This time, though,

the software is listening out for the call of the endangered New Forest cicada, *Cicadetta montana*. The app could also be trained to detect many different animals, from birds and bats to grasshoppers and crickets.

Developed by Alex Rogers and a team at the University of Southampton, UK, Cicada Hunt was designed so that the millions of people who annually visit the New Forest, ancient woodland that lies west of Southampton, can help monitor how the cicada is faring.

The idea is that tourists wander in the woods with the app running in the background on their smartphones. Once the app has recognised the insect’s call, it

sounds an alert to tell the user to record a brief sound clip that can be emailed later to researchers, who then create a heat map of the insect’s spread.

The team was partly inspired by eBird, an American birdwatching network in which twitchers recognise and count rare birds in the field and use an app to send the data to researchers at Cornell

**“The app recognises the rare New Forest cicada by seeking out two telltale wavelengths in its song”**

University, New York. But Rogers’s team wanted the app to do the recognition work and tap into the power of the crowd.

Cicada Hunt is similar to a voice recognition system. “It has to easily differentiate between the cicada, which has a constant song, and other common insects, particularly the dark bush cricket, which chirps,” says Rogers. The system recognises *C. montana* by seeking out a ratio of two telltale wavelengths in its song.

In tests on a known population in Slovenia, the app was easily able to detect cicada, says Rogers. The team is now updating it to identify 20 species of grasshopper and cricket, as well as birdsong. The app was presented at an artificial intelligence conference in Beijing, China, on 9 August.

It was born of a desire to take advantage of the power of smartphone-based sensing to broaden searches. For instance, Google has equipped the Surui tribe in the Brazilian Amazon with Android phones to let them track illegal logging.

Biologists like Kenichi Ueda of the website iNaturalist.org are pretty excited. “If their technique can be generalised to identify the sounds of any animal and not just cicadas, then I think the stage is set for some kind of Animal Shazam service that will tell you what crickets are chirping in your backyard, or what shrieking bird just woke you up at 4 am.” ■