Still looking for that woodpecker

An expensive recovery plan to save the ivory-billed woodpecker from extinction may come decades too late.

Nearly five years after biologists thrilled the conservation world by saying that they had videotaped the elusive ivory-billed woodpecker, the US Fish and Wildlife Service (FWS) is on the verge of approving a final recovery plan to manage the species. The plan will lay out a conservation strategy, including what habitat should be preserved — all for a bird that many prominent ornithologists have given up on.

In 2005, a team reported[1] videotaping an ivory-billed woodpecker (*Campephilus principalis*) in eastern Arkansas, in what seemed to be the first documented sighting of a creature thought to have become extinct at least 50 years earlier[2]. Other experts have challenged the claim[3], although the team members maintain that they spotted one bird[4].

But after five years of fruitless searching, hopes of saving the species have faded. "We don't believe a recoverable population of ivory-billed woodpeckers exists," says Ron Rohrbaugh, a conservation biologist at Cornell University in Ithaca, New York, who headed the original search team.

The FWS has spent $14 million trying to document and conserve the ivory-billed woodpecker throughout the southeast United States, including $8 million for habitat preservation and $2 million for search-associated costs. The hunt was suspended last October after it ran out of money. Chasing down a string of dubious and faked claims of sightings added an extra burden, undermining already-stressed wildlife programmes, experts say.

Jerome Jackson, an ornithologist at Florida Gulf Coast University in Fort Myers who serves on the FWS's ivory-billed woodpecker recovery team, says that a draft recovery plan from 2007 is "incredibly biased". In his view, the plans have overemphasized evidence of the bird's existence to shore up political support for saving it. "I don't think I'm going to be happy with the final plan either," he adds.

"We don't believe a recoverable population exists."

Laurie Fenwood, coordinator of the ivory-billed woodpecker project at the agency's office in Atlanta, Georgia, says that recovery plans are needed to collect the best scientific knowledge on species — even if it's not clear whether they have already gone extinct.

Rohrbaugh and others have continued to publish[5–7] on the likelihood of the woodpecker's existence. One study concluded that if there was just one surviving ivory-billed woodpecker in the area of Arkansas searched, the team had a 12% chance of finding it. The FWS recovery plan is meant to consider such estimates.

Along the way there have been plenty of false hopes. Last spring, avian ecologist Jeff Hoover was trying to verify a photo said to be of an ivory-billed woodpecker in the Cache River State Natural Area in southern Illinois. But as Hoover, of the Illinois Natural History Survey in Champaign, was studying the photo, the person responsible for it confessed that the photo was faked.

Steve Sheridan, a graphic artist in Lexington, Kentucky, says that he did see an ivory-billed woodpecker in the region, and created the photo to encourage conservation of the area.

"I told him the effect could be the exact opposite, setting back restoration for years," says Hoover.

Other sighting reports continue to meet

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with scepticism from experts. Last December, an Indiana physician named Gary Erdy told Illinois officials he had a new photograph of an ivory-billed woodpecker from the same area. They later revoked his search permit.

Meanwhile, experts are dealing with protests by Daniel Rainsong, a landscaper based in Ames, Iowa, who says he recently photographed an ivory-billed woodpecker near the Sabine River in east Texas. Rainsong filed a formal complaint earlier this month alleging ethical and financial misconduct, because biologists he approached would not come with him to the Sabine region to confirm the sighting so that he could collect a $50,000 reward.

Rohrbaugh says the Cornell team will release an analysis of Rainsong's photo in about a week. ■

Rex Dalton

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Testing time for stem cells

The drug industry is keener on stem-cell technologies than ever before — and not just as a source of new treatments. A wave of new partnerships aims to use stem cells as a way to screen other potential drug candidates.

In the latest such example, Roche last week announced a deal worth some US$20 million with Harvard University in Cambridge, Massachusetts, and Massachusetts General Hospital in Boston. Roche, based in Basel, Switzerland, will use cell lines and protocols developed by academic researchers to screen for drugs to treat cardiovascular disease and other conditions.

Because relevant human cell types are often unavailable, current screens tend to use cells from rodents or human tissues other than the ones researchers want to target. The hope is that stem cells could provide exactly the type of cells relevant for an assay.

The deal is the latest in a string of similar partnerships. Within the past 15 months, Pfizer of New York and GE Healthcare of Chalfont St Giles, UK, signed deals geared towards using stem cells in drug discovery with the California companies Novocell of San Diego and Geron of Menlo Park, respectively. In 2008, GlaxoSmithKline teamed up with the Harvard Stem Cell Institute for research in neuroscience, heart disease, cancer, diabetes, musculoskeletal diseases and obesity. And in 2006, AstraZeneca of London began collaborating with Cellartis of Gothenburg, Sweden, to use stem cells to make human liver and heart cells for safety tests.

Although using stem cells for drug screening and early research should be easier than developing them into replacement tissues, even the most ardent advocates admit that it won't be straightforward. "At the moment it's all really early days," says Stephen Minger, who left King's College London last year to head GE Healthcare's efforts to develop drug-screening tests with cells derived from human embryonic stem cells.

"What needs to be demonstrated is the actual application of the technology," adds John Walker, the chief executive of iPierian, a stem-cell company in San Francisco, California. The firm has created motor neurons using induced pluripotent stem (iPS) cells derived from people with and without spinal muscular atrophy, a neurodegenerative disease. Company scientists are investigating whether drug candidates can disrupt telltale protein clumps seen in neurons derived from affected individuals. Eventually, this work could lead to what Walker calls an "*in vitro* clinical trial" in which iPS cells derived from a wide variety of individuals could be used to predict patients' response to a drug.

Most drug companies remain to be convinced that new screens can predict drugs' properties as well as or better than existing methods. They also don't know whether cells can be produced reliably in sufficient quantities for screening, and whether regulatory agencies will accept data derived from them.

Roche says that it is already running screens based on stem cells to test drugs for cardiotoxicity and effects on neurogenesis. Matthias Steger, the company's global business development director for stem-cell alliances, says that under the latest deal, Harvard and Massachusetts General Hospital will work on embryonic stem cells and iPS cells derived from individuals with various forms of cardiovascular disease. The institutions will receive milestone payments as screens are validated, and the collaboration will last 3–5 years.

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A deal between Roche and two academic institutions will focus on stem-cell-based drug screening.

Ruth McKernan, chief scientific officer of Pfizer's regenerative medicine unit, notes that although screens based on stem cells will be useful, they are not the main reason that Pfizer is interested in these cells. "This progress, though important, is incremental when compared to the real promise in using these cells as therapeutics," she says. ■

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