

# Researchers release endangered crows into the forests of South Pacific island

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A Mariana crow, or Aga, takes flight upon release Sept. 28. Credit: Henry Fandel

For more than 2 million years, the native forests on the South Pacific islands of Guam and Rota were home to several thousand crows,

members of a species found nowhere else on Earth. But over the last 60 years, the Mariana crow—called the Aga in the Chamorro language—has completely disappeared from the island of Guam and rapidly declined on neighboring Rota. Today there are only about 175 Aga left on the planet.

To ensure the survival of the species, scientists from the University of Washington and San Diego Zoo Global are partnering with the Northern Mariana Islands Department of Lands and Natural Resources and the U. S. Fish and Wildlife Service on a bold new project that they hope will stabilize the population of Aga on Rota.

The population got a new start on Sept. 28, when the first cohort of five captive-reared Aga were released on public lands on Rota.

"Aga are a critical strand in the ecological and cultural web that make up the forests of Guam and Rota. Without drastic measures, we could lose this part of our natural and cultural heritage forever," said Anthony Benavente, secretary of the Northern Mariana Islands Department of Lands and Natural Resources, or CNMI-DLNR.

An additional five [birds](#) will be released into the same area later this year. Researchers will continue to monitor and support the birds for approximately one year after the release to ensure their continued success in the wild.

In 2016, researchers began collecting eggs from wild Aga nests to be reared in captivity as part of a program to raise the birds until they pass the critical period of highest mortality and then release them into the wild.



Rota is the southernmost island of the Northern Mariana Islands and is home to the Aga Recovery Project. Credit: Andrew Zoechbauer

"Today, there are many species in decline all over the world, and we are really proud to be part of an effort to bring a species back from extinction," said Renee Robinette Ha, the UW research associate professor of psychology who has led the university's Aga research efforts since 2005. "Our research has determined some causes of mortality in Mariana crows, and by working collaboratively with our partners, we have been able to start turning that around."

The Aga was driven to extinction on Guam by the brown tree snake—an invasive predator from Australia and Melanesia—which decimated most of Guam's endemic birds after it arrived there in the 1950s. But the

reasons for the Aga's decline on Rota are less clear.

Predation by feral cats, interference from humans, nest loss from typhoons, habitat degradation, inbreeding and disease are all considered threats to the birds. Over the past 22 years the population of Aga on Rota has fallen by over 80 percent. Only about six out of 10 juvenile Aga survive their first year, a much lower percentage than is seen in healthy populations of other species of crows.



Aga nestlings are reared in captivity by San Diego Zoo Global. Credit: San Diego Zoo Global

In 2005, the CNMI-DLNR asked the UW to determine the causes of the population decline and the current status of the species. At that time, very few Aga were banded for research, and there had been no consistent tracking of breeding pairs since the late 1990s.

An intensive nest searching and monitoring program was implemented, in addition to a radio-telemetry program to determine causes of bird mortality. At the same time, federal biologists worked with island residents to encourage maintenance of bird habitats, especially through a landowner incentive program. With these efforts, the population appears to have stabilized—albeit at a very low number.

"This has been an ongoing learning process for everyone. This current effort highlights the importance of commitment to the long-term goal of bringing the Aga back to a stable population," said Manny Pangelinan, director of the CNMI-DLNR's Division of Fish and Wildlife.



University of Washington field technician Rumaan Malhotra (right) begins the ascent to a nest, belayed by UW field technician Dylan Hubl (left). Both Hubl and Mahotra also worked as volunteers for San Diego Zoo, to assist with egg collection. Credit: Andrew Zoechbauer

One of the notable recent successes in Aga conservation is the ability of conservation experts to successfully hand-rear Aga chicks using techniques perfected with other species at the San Diego Zoo Global Hawaiian Bird Center.

"Although we are very experienced in such work, it is always a challenge to attempt to rear a chick from a new species in a new place," said Susan Farabaugh, associate director of the San Diego Zoo's Institute for Conservation Research. "In the case of the Aga we were extremely successful. We had 100 percent hatch success and 96 percent rearing success."

Aga in the wild have a high mortality rate for the first two years of their life, so the goal of the project is to boost the population of Aga by helping birds survive to adulthood. Thus this approach could double the number of broods in a year—while increasing the survivorship of the captive-reared birds.

"By closely monitoring nests of the Mariana [crow](#) we realized we had the opportunity to intervene and double the output of a wild pair by pulling one clutch of eggs early in the season for captive rearing and allowing the pair to produce a second clutch in the wild, " said Ha. UW and CNMI also formed a collaboration with the Smithsonian Institution and Binghamton University, a relationship that, in the future, may allow UW scientists to target specific genetically healthy pairs for collection of eggs, which San Diego Zoo Global biologists to could then rear and

release.



An Aga is shown upon release. Credit: Henry Fandel

"Each year we break new records on the number of new birds that are banded and genetic samples that are collected, and the number of nests found," Ha said. "So we are getting better and better at understanding and studying this population."

The project does not end with the release of the birds. Researchers will continue to monitor and track the released birds as they work to ensure a future for the Aga.

"Recovering threatened and endangered species takes dedicated partnerships," said Mary Abrams, field supervisor for the U. S. Fish and Wildlife Service. "We are working to ensure the long-term survival of Aga, but that can't happen in a vacuum. There is a whole ecosystem at work here, and the cooperation that has brought us this far is a great example of the kind of work that is necessary in conservation."

Provided by University of Washington

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