

Conservation news

Antigua announces 15th island cleared of invasive alien mammals

The once-forested island nation of Antigua and Barbuda in the Eastern Caribbean looks starkly different today. Besides having lost most of its forest cover—first to agriculture and later to urban sprawl and tourism developments—this small country has suffered from a wide range of harmful invaders. Among the most devastating for wildlife are the Eurasian black rat *Rattus rattus*, which reached the Caribbean with European settlers in the 17th century, and the small Asian mongoose *Herpestes javanicus*, introduced in the late 19th century in an attempt to control the rats. Many native species have been lost, including the Antiguan burrowing owl *Athene cunicularia amaaura*, the endemic Antiguan and Barbudan muskrats '*Ekbletomys hypenemus*' and *Megalomys audreyae* and, most recently, the Lesser Antillean iguana *Iguana delicatissima*.

While native biodiversity declined on Antigua and Barbuda, the country's uninhabited offshore islands emerged as vitally important natural refugia. More than 30 small limestone islands scattered across Antigua's shallow coastal shelf are home to globally important colonies of seabirds, the Vulnerable West Indian whistling-duck *Dendrocygna arborea*, nesting marine turtles and many of the country's last endemic plants, reptiles and invertebrates. Collectively, the islands have been internationally recognized as a Key Biodiversity Area, an Alliance for Zero Extinction Site, and an Important Bird Area.

By the 1990s, however, most of Antigua's offshore islands were occupied by rats, and mongooses had reached the larger islands, further depleting their native flora and fauna. Among the many species affected was the Critically Endangered Antiguan racer *Alsophis antiguae*, a harmless dipsadid snake. Only c. 50 racers remained when the species was first surveyed by Fauna & Flora International (FFI) in 1995, all confined to the 8-ha Great Bird Island, and most had been injured by black rats. To save these rare snakes, rats were successfully eradicated from Great Bird Island and two neighbouring cays in 1995 by staff from FFI, the Forestry Unit and the Environmental Awareness Group. Since then efforts to remove invasive alien mammals have expanded across the archipelago, with 15 islands successfully targeted: Great Bird, Galley Major, Galley Minor, Redhead, Rabbit, Lobster, Little Lobster, Maiden East, Maiden West, Unnamed, Green, York, Pelican, Codrington and Guardhouse. The last three islands were cleared of rats and mongooses in 2014 with grants from the Critical Ecosystem Partnership Fund and rat bait generously donated by Syngenta plc.

Our methods of eradicating black rats have remained largely unchanged for 20 years. A brodifacoum-based bait

(Klerat) is distributed manually across the islands at intervals of 10–40 m for 3 weeks (c. 5 kg bait per ha in total). Uptake is monitored closely and any uneaten bait, and carcasses, disposed of. The same bait is used in permanent bait stations to detect and prevent any further rodent incursions. These methods have proved to be remarkably safe and effective on these islands, with 100% success in eradicating rats and no sign of any non-target animals being harmed. Mongooses are removed quite easily using live traps baited with tinned fish or chicken. The eradication operations have typically cost c. USD 1,000 per ha, with most of the labour provided by local and international volunteers.

The responses of native wildlife to removing rats and mongooses have been conspicuous and swift. Since 1995 the national population of Antiguan racers has grown more than 20-fold to over 1,100 individuals, spread across four islands that have been cleared of invasive alien mammals. Vegetation biomass and invertebrates have visibly increased on the rat-free islands, which now support a three-fold greater density of the endemic lizards *Ameiva griswoldi*, *Anolis watti* and *Anolis leachi* than neighbouring islands containing alien mammals. Colonies of seabirds and land birds that nest on the offshore islands have increased 6–20 fold during the same period. Not only does the absence of mammalian predators aid intrinsic population growth, it appears birds actively seek out such islands to colonize. In 2014 30 pairs of least terns *Sternula antillarum* began nesting on Pelican Island within 2 months of the rats and mongooses being eradicated—the first time that any seabirds have nested on Pelican Island in living memory.

With 15 islands cleared of invasive alien mammals and plans to restore two more, Antigua and Barbuda is leading the Caribbean in tackling this threat to island biodiversity and is enabling its native species and forests to thrive again.

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Conservation Leadership Programme: 30 years of building capacity for conservation

This year the Conservation Leadership Programme (CLP) celebrates 30 years of building capacity and supporting threatened species conservation. A collaborative partnership between BirdLife International, Fauna & Flora International and the Wildlife Conservation Society, the