EXOTIC INVASIVE SPECIES; US VIRGIN ISLANDS

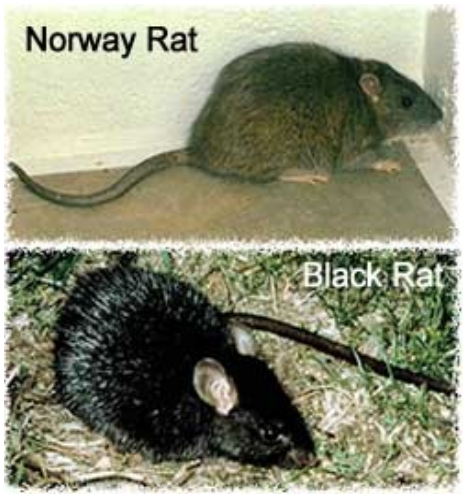
Rats *(Rattus rattus and Rattus norvegicus)*

HARMFUL ANIMALS

Introduced mammals have had a profound and sustained effect on the health of Virgin Islands' forests. Rats gnaw on the tasty new growth of trees and shrubs, and eat the seeds that are required to produce the next generation of trees. Mongoose prey upon many of the pollinators and seed dispersers that are required for tree reproduction and also supplement their diets with the seeds themselves.

Native Range Ship Rat—India

Norway Rat—Southeast China



(Photo: AAAnimal Control, Orlando, FL)

Description

There are two rat species found in the Virgin Islands. The Norway rat has brown fur on its back and a pale grey belly. They have small ears and their tail is shorter than the combined head and body length. The black rat or ship rat is slender with hairless small variably colored ears. The uniformly colored tail is longer than the head and body length combined**.**

Historical Introduction

Rats are presumed to have arrived in the Virgin Islands on the earliest wooden sailboats. They abound in the main US Virgin Islands initially spreading in association with human settlement. Today they are known on many of the offshore cays.

Ecological Threat

Rats are considered one of the 100 worst invaders worldwide. They cost hundreds of millions of dollars in damages and control costs to industry, utilities and native habitats throughout the world. They are responsible for the extinction of multiple species of mammals, birds, reptiles, invertebrates and plants and are particularly damaging to the flora and fauna of islands. Rats also spread diseases and cause extensive damage to utilities by gnawing through transmission lines.

Preferred Habitat

Rats are found in just about every habitat, from mature forests to urban areas, beaches, agricultural areas and wetlands. Norway rats prefer to live near water and can swim for up to 2 km in open water, while ship rats prefer drier areas and generally avoid swimming. They can live in trees or on the ground, indoors or outdoors.

Management Options

Trapping rats is effective on a small scale, but most populations contain a few trap-shy individuals that cannot be eliminated. These few individuals can quickly repopulate an area to pre-trapping levels. It is unlikely rats can be eliminated from the main islands of St. Croix, St. Thomas and St. John, however managers have been successful in eliminating them from the offshore cays. Rats cause a disproportionate amount of damage to the native flora and fauna of these small uninhabited islands. The use of poison is almost always necessary to eliminate all rats from an island, but the use of poison near sensitive ecosystems requires extensive application and approvals. Locally, The US National Park Service eliminated rats from Buck Island in 2000. Before rats were eliminated, the flower buds and ripening green fruit from the trees and cactus on Buck Island were usually observed to be eaten, but this stopped as soon as the rats were eliminated. Reforestation accelerated because the seeds that fall to the forest floor can germinate into the next generation of forest trees.

Additional Information

NPS Buck Island

http://www.nps.gov/buis/naturescience/upload/Info%20Flyer%20Ameiva%20March%2008.pdf

Invasive Species Specialist Group:

Www.issg.org

EXOTIC INVASIVE SPECIES FACT SHEET SERIES

Small Asian Mongoose *(Herpestes javanicus)*

HARMFUL ANIMALS

Description

Mongoose are ground dwelling mammals with elongated brown bodies and long tails. They are often seen darting across Virgin Islands roads. Although they resemble weasels in appearance, they are more closely related to cats and hyenas.

Native Range Northern Saudi Arabia, Iran, Iraq, Afghanistan, Pakistan, India, Nepal, Bangladesh, Burma, Thailand, Malaysia, Laos, Vietnam, and southern China

(Photo: Virgin Islands Division of Fish and Wildlife)

Historical Introduction

Mongoose were intentionally introduced to a number of islands in the Caribbean to control rats in sugar cane fields, not to get rid of snakes, as many people believe. According to the Invasive Species Specialist Group (ISSG) mongoose were introduced to St. Croix and St. John in 1884 and St. Thomas in 1900. The introduction initially severely depleted the rat population on St. Croix. However the rats adapted by escaping to the trees which mongoose could not climb and the rat population quickly recovered.

Mongoose were forced to find other food sources and turned to eating anything and everything they were able to catch including birds (both chickens and wild birds), lizards, insects, plants, snakes, and even seeds, nuts and fruits.

On St. Croix, the mongoose is responsible for the extinction of an endemic snake and the elimination of the St. Croix ground lizard from the main island of St. Croix.

Ecological Threat

Experts consider mongoose to be one of the top 100 worst invaders in the world (ISSG) and a high threat to any ecosystem that they invade. Although they are primarily carnivores, they will eat just about anything, plants included. They are well adapted to living with humans and thrive in human-altered habitats, especially forest edges.

Mongoose have had a marked effect on the flora and fauna of every habitat they inhabit. Because they eat just about any animal they can catch, they quickly deplete the animals that forests depend on for seed dispersal and pollination.

Preferred Habitat

In their introduced range, mongoose are found in just about every habitat, although they prefer secondary forest, coastal areas (especially coastal forest), shrublands, and near human habitation. They tend to prefer edge habitat.

Management Options

Mongoose are very difficult to control and probably impossible to eradicate from the main US Virgin Islands. Trapping is a common method of control and can be successful in the short term in a limited area, but eventually other mongoose will fill in the vacancies created by the trapped mongoose. They reproduce several times a year with litters of two to four pups each time, so they can fill "open" habitat very quickly. Sustained trapping projects have successfully removed mongoose from Buck Island and several smaller cays. Ongoing monitoring is required

Citation Information
Daley, B., J. Valiulis, & R. Slatton. 2012. Exotic Invasives; US Virgin Islands; Species Effecting Forests. Doc. # GS-VIDA-1201. St. Croix, US Virgin Islands

Species Notes: There is some disagreement among experts as to which species of mongoose is actually found in the Virgin Islands. Many believe it is the small Indian mongoose (Herpestes auropunctatus) rather than the Javan mongoose.

Produced by Geographic Consulting for the Virgin Islands Department of Agriculture, Forestry Division. For more information call the VIDOA at (340)-778-0997.

www.geographicconsulting.com/services/invasive-species/

Www.vifresh.com/forestry.php