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STATUS OF THE BLACK RAT ON SAN SALVADOR ISLAND, BAHAMAS

John S. Hall
Department of Biology
Albright College
Reading, PA 19612

Craig Stihler
WV Division Natural Resources
Elkins, WV 26241

Phillip L. Dougherty
Department of Chemistry
Albright College
Reading, PA 19612

ABSTRACT

The presence of the black rat (*Rattus rattus*) on San Salvador Island, Bahamas was documented in Hall, et al (1996). We now report on further studies of the status of the black rat during 1996 and 1997. Fifteeen black rats were trapped and prepared as skins and skulls. Four individuals were caught in a wild situation and 11 were caught in commensal settings. The black rat seems to have expanded from a wild situation into commensal settings since 1995. This rat has now become a pest in the consuming of crops, and by invading human habitation.

INTRODUCTION

The black rat is one of three species of rats throughout the world that are important human commensals. This species was known as the "ship rat", and was brought to the New World in the 16th and 17th centuries aboard ships from Europe.

The Norway rat (*Rattus norvegicus*) reached the New World in 1775, and displaced the black rat throughout most of North America. The black rat is found in tropical America, and the islands of the West Indies (Schwarz and Schwartz, 1967).

We found black rats in the interior regions of San Salvador Island in 1995 (Hall, et al., 1996). At that time the species was not known to occur along the coast in human commensal settings.

In this paper we report on the results of our studies since 1995 on the ecology and status of the black rat on San Salvador Island.

MATERIALS AND METHODS

Live trapping was conducted at a wild site along the Hard Bargain Trail and a commensal site at the Bahamian Field Station. Trapping was also done at a commensal site at Holiday Tract. Specimens were prepared as standard museum specimens of skins and skulls. A study area for a long-term marking and re-capture study was established along the Hard Bargain Trail.

RESULTS AND DISCUSSION

Fifteen specimens of the black rat were collected from four sites on San Salvador Island (Figure 1). The site along the Hard Bargain Trail is a wild setting located more than 2 km from any human habitation. Other sites at Bernie's Cave, Holiday Tract, and the Bahamian Field Station are commensal settings, since they are associated with human habitation. Three specimens were taken from the wild site, and 12 from commensal sites. Body measurements for the 15 specimens are presented in Table 1.

The tail of the black rat is longer than the body. The upper body color ranges from gray to black, or tawny. The species is divided into 30 sub-species by Schwarz and Schwarz (1967). The black rats in the West Indies are assigned to the sub-species *R.r. frugivorus*.

The males captured on San Salvador Island were slightly larger than females (Table 1). The mean for 14 of our specimens are just below the minimum values for this sub-species as presented by Schwarz and Schwarz (1967). Have the black rats on San Salvador Island changed while in isolation for perhaps as much as 400 years? That question can not be answered until exact comparisons are made with specimens from other areas and former times.

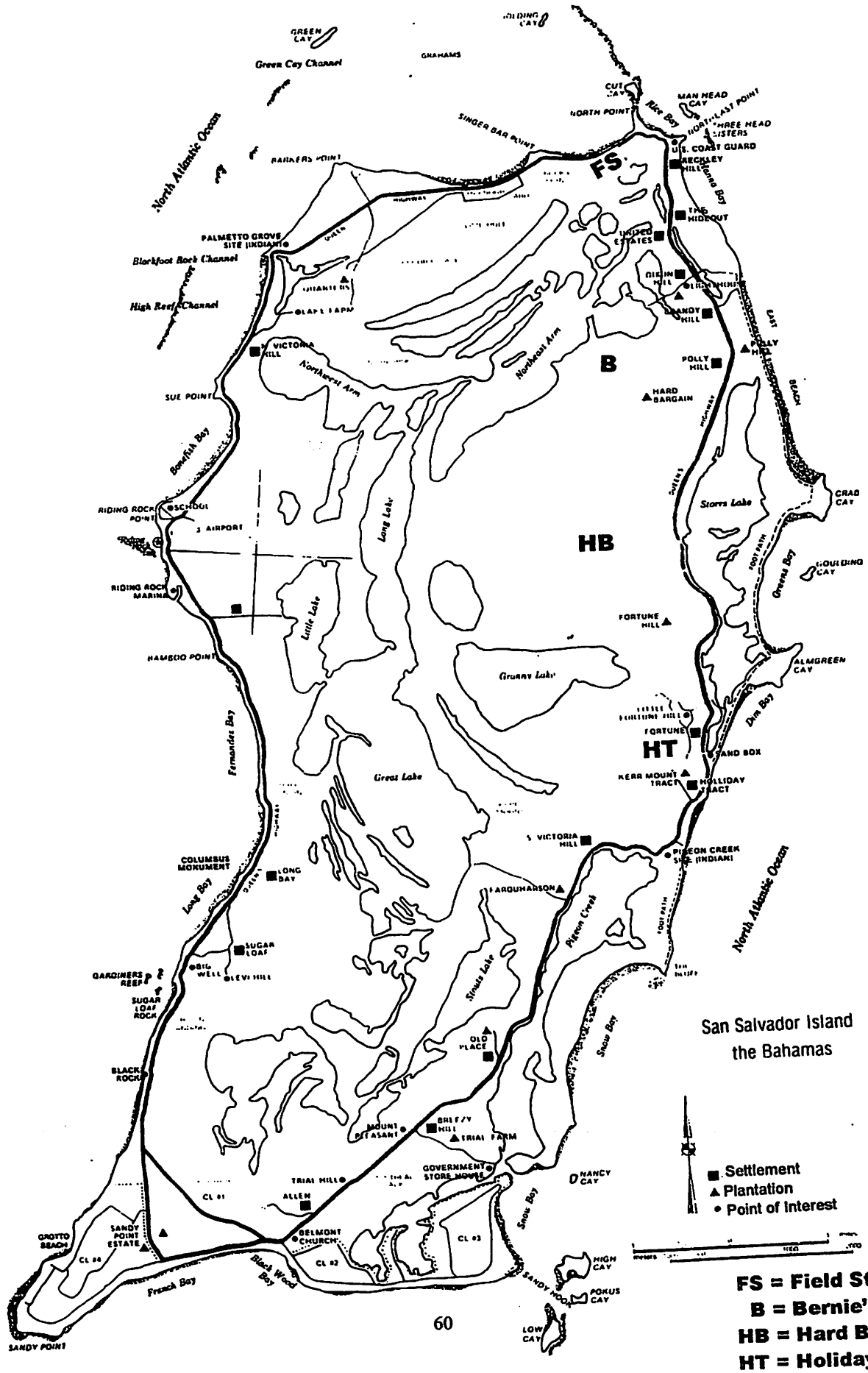
San Salvador Island
the Bahamas
Settlement
Plantation
Point of Interest
FS = Field Station
B = Bernie's Cave
HB = Hard Bargain Trail
HT = Holiday Tract
North Atlantic Ocean
Green Cay Channel
Blackfoot Rock Channel
High Reef Channel
Bonefish Bay
Fernandez Bay
Long Bay
French Bay
Black Wood Bay
Snow Bay
Pigeon Creek
Storrs Lake
Long Lake
Little Lake
Grassy Lake
Great Lake
Northeast Arm
Northwest Arm
RIDING ROCK POINT
RIDING ROCK MARINA
HAMBCO POINT
SUE POINT
NORTH POINT
SINGER BAR POINT
CUT CAY
MAN HEAD CAY
THREE HEAD SISTERS
U.S. COAST GUARD
RECKLEY HILL
THE HIDEOUT
PALMETTO GROVE SITE (INDIAN)
VICTORIA HILL
POLLY HILL
HARD BARGAIN
FORTUNE HILL
FORTUNE
SAND BOX
KERR MOUNT TRACT
HOLLIDAY TRACT
PIGEON CREEK SITE (INDIAN)
MARQUHARSON
COLUMBUS MONUMENT
LONG BAY
SUGAR LOAF
BIG WELL
LEVI HILL
GARDINERS REEF
SUGAR LOAF ROCK
BLACK ROCK
OLD PLACE
MOUNT PLEASANT
GRIFFY HILL
TRIAL FARM
GOVERNMENT STORE HOUSE
TRIAL HILL
ALLEN
BELMONT CHURCH
SANDY POINT ESTATE
GROTTO BEACH
SANDY POINT
NANCY CAY
HIGH CAY
POKUS CAY
LOW CAY
CRAB CAY
GOULDING CAY
ALMGREEN CAY
CL 01
CL 02
CL 03
CL 04

Table 1. Mean body measurements for 15 specimens of the black rat from San Salvador, Bahamas, 1996-1997.

N	Total Length (mm)	Tail Length (mm)	Body Length (mm)	Body/Tail Ratio	Body Mass (g)
FEMALES					
6	364.7	196.7	168.2	.856	97.8
MALES					
9	375.6	200.8	174.8	.870	102.4

ECOLOGY AND HABITAT

The black rat on San Salvador Island was living primarily in a wild habitat when we first trapped them along the Hard Bargain Trail in March, 1995. The rats were associated with the typical karst topography of the area, living in small caves and sinkholes. Burrows were constructed in the soft earth in sinkholes and cave floors. A rat was caught in Bernie's Cave 50 feet from the cave entrance.

In 1995 there was no indication of rats living in a commensal situation in human habitation in the coastal area. However, by January, 1996, rats were being reported near human habitations in agricultural fields and buildings. The rat population seemed to increase dramatically. As an example of rat density in a commensal situation, we caught seven rats in 40 trap nights at the Bahamian Field Station, with some being caught in buildings. Local inhabitants reported rats invading houses and fields. Crops, such as peanuts, were being eaten, and rats were evident in the daylight hours. The rats have become a pest.

This increase in the rat population on San Salvador Island seems to be associated with the recent increase of the human population of the island. The factor which favors the rat population is the manner of solid waste disposal. Garbage and trash are disposed of in open dumps. Trash, such as abandoned cars, are left out in the open. At the Bahamian Field Station rats were always caught in and around abandoned vehicles.

However, abandoned vehicles were not uncommon on the island before 1995. The recent population explosion of rats may be more closely related to an apparent increase in available food materials being deposited in open dumps. This increase of garbage is associated with the increase of the human resident population, as well as the development of a large tourist population in the past few years.

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