

SURVEY OF THE FISHES OF AVES ISLAND

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INTRODUCTION

Aves Island is a small, uninhabited Venezuelan possession in the east-central Caribbean Sea about 220 Km. west of Dominica (15° 40' 33" N latitude, 63° 36' 27" W longitude). It is the only subaerial exposure of the Aves Swell, a submarine ridge extending to the South American mainland, and is separated from the nearest shallow reef systems by great expanses of deep water. The island is a low, rock-cored sandbar with its long axis oriented North-South. Its total length is 580 m and maximum elevation is 3 m.

The geology and physical structure of Aves has been described on several recent occasions, Zuloaga, 1955; Maloney and Schubert, 1968; Pantin, 1971. The island is a major rookery for marine birds and is the site of the most important remaining green turtle nesting aggregation in the eastern Caribbean. There are two species of low, terrestrial plants

and a number of terrestrial invertebrates on the island. To our knowledge, no published information on the aquatic inshore fauna of this island is available.

During July 24-27, 1971; November 16-18 and August 13-September 23, 1972, groups of biologists from the Island Resources Foundation and the Caribbean Conservation Association, (St. Thomas, Virgin Islands), visited Aves Island. As part of a broader base-line study of the terrestrial and aquatic fauna of the island, the authors conducted a preliminary survey of the fishes of the aquatic inshore habitat.

Description of Inshore Habitat

All but the western (leeward) side of Aves Island is surrounded by reefs located 50-100 m from shore (Fig. 1). Behind the outer edges of the reefs, extending to shore, are areas of shallow reef flats, less than 2 m below mean high tide (tidal range appeared to be less than 1/2 m). At the outer edges of the reefs the depth drops abruptly to a bottom of carbonate sand interspersed with patch reefs at depths of 8-12 m. Particularly conspicuous in the reef structure off the northwest and southwest shores of the island are large nearly barren slabs of eroded carbonate rock. This rock is also exposed along much of the shoreline and is the same material which underlies the sand and gravel surface of the island (Pantin, 1971).

The western shore is principally a carbonate sand and rubble beach which extends from the waterline to 3-5 m offshore. Further offshore to

westward the bottom is covered with calcareous sand with scattered emergent patches of carbonate rock with some growth of coral and calcareous algae.

In July, large amounts of filamentous benthic algae, detached and suspended in the water by wave surge in the leeward bay greatly reduced visibility near shore. The same phenomenon occurred during the second and third visits, interspersed with periods of reduced wave action and extreme water clarity.

Fish Species

Fishes of the inshore waters of Aves Island were surveyed using fish traps, hook-and-line, spearfishing, seines, dipnets, and by SCUBA and snorkeling observations. We surveyed from the shoreline to about 50 m seaward of the margin of the fringing reef on the north, south and east sides of the island and to about 200 m offshore on the west side. Depth of the water surveyed ranged up to 20 m.

A total of 87 fish species representing 65 genera in 41 families was collected or observed during the three expeditions (Table 1).

Conspicuous among the fishes found along the outer edges of the reefs was the black durgon (Melichthys niger) which was the most abundant species observed in this area. Surgeonfishes (Acanthuridae), particularly the blue tang (Acanthurus coeruleus) and the ocean surgeon (A. bahianus), were exceedingly abundant on or about coral formations, as was the sergeant major (Abudefduf saxatilis). The brown chromis (Chromis multilineata) was observed

in large numbers feeding along the edges of the main reef and above patch reefs. Also common were squirrelfishes and soldierfishes (Holocentridae), generally in caves or beneath overhangs; parrotfishes (Scaridae) and wrasses (Labridae). Fishes with more pelagic habits found in this zone were the black jack (Caranx lugubris), bar jack (C. ruber), ocean triggerfish (Canthidermis sufflamen), sennet (Sphyræna picudilla), and the great barracuda (Sphyræna barracuda), which was observed in loose schools of up to 20 individuals.

In the shallow reef flats the following species or groups were predominant: the saddled blenny (Malacoctenus triangulatus); the redlip blenny (Ophioblennius atlanticus); the clown wrasse (Halichoeres maculipinna); and the damselfishes (Pomacentridae), particularly the bicolor damselfish (Eupomacentrus partitus) and the dusky damselfish (E. dorsopunicans). The frillfin goby (Bathygobius soporator) was common in rocky pools near the edge of the beach where it was observed darting about in water only a few centimeters deep. Numerous specimens of the reef silverside (Allanetta harringtonensis) were collected by seine near the surface along the east shore. Most of these reef flat inhabitants were also found in the other habitats around the island, though in lesser numbers.

The schoolmaster (Lutjanus apodus), yellowtail snapper (Ocyurus chrysurus), sand tilefish (Malacanthus plumieri), Spanish hogfish (Bodianus rufus), yellowtail damselfish (Microspathodon chrysurus), coney (Cephalopholis fulva) and other sea basses (Serranidae), goatfishes (Mullidae) and grunts

(Pomadasyidae) -- primarily the French grunt (Haemulon flavolineatum), sailor's choice (H. parrai) and bluestriped grunt (H. sciurus) -- were among the fishes most commonly recorded from the open sand and patch reef habitat characteristic of the inshore waters on the western side of the island. The relative abundance of serranid fishes seems to differ considerably from lesser Antillean islands with more diverse and extensive living reef development. The coney and rock hind are remarkably abundant and the tiger grouper appears to be the most abundant large (up to 10-15 kg) resident carnivore but many species common elsewhere are either rare or absent.

Limited trolling efforts near the island have yielded pelagic blackfin tuna (Thunnus atlanticus), and semi-pelagic king mackerel (Scomberomorus cavalla), barracuda (Sphyraena barracuda), and blackjack (Caranx lugubris). We know of no incidents of ciguatera fish poisoning from Aves Island fishes.

In July, 1971, 25 adult green turtles (Chelonia mydas), including five mating pairs, were observed by divers. On one occasion seven individuals (five males and two females) were seen together. Approximately two-thirds of the sightings were males. All were observed along the western (leeward) or southeastern shores of the island. We saw no turtles in the water in November.

Literature Cited

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Acta Cient. Venezolana 19: 152-54.

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TABLE 1. - CHECKLIST OF FISH SPECIES COLLECTED AND OBSERVED
IN THE INSHORE WATERS OF AVES ISLAND.

<u>Scientific Name</u>	<u>English Common Name</u>	<u>Spanish Common Name</u>
ORECTOLOBIDAE		
<u>Ginglymostoma cirratum</u>	Nurse shark	Gata
CARCHARHINIDAE		
<u>Negaprion brevirostris</u>	Lemon shark	Galano
DASYATIDAE		
<u>Dasyatis americana</u>	Southern stingray	Raya
MYLIOBATIDAE		
<u>Aetobatis narinari</u>	Spotted eagle ray	Chucho pintado
MURAENIDAE		
<u>Gymnothorax moringa</u>	Spotted moray	Morena
ALBULIDAE		
<u>Albula vulpes</u>	Bonfish	Ratón
BELONIDAE		
<u>Strongylura timucu</u>	Timucu	Agujon
HEMIRAMPHIDAE		
<u>Hemiramphus brasiliensis</u>	Ballyhoo	Marao fósforo
CLUPEIDAE		
<u>Harengula humeralis</u>	Red-ear sardine	Manzanillera
ATHERINIDAE		
<u>Allanetta harringtonensis</u>	Reef silverside	Tinicalo
HOLOCENTRIDAE		
<u>Adioryx coruscus</u>	Reef squirrelfish	Candil
<u>Holocentrus ascensionis</u>	Longjaw squirrelfish	Candil
<u>Holocentrus rufus</u>	Common squirrelfish	Candil
<u>Myripristis jacobus</u>	Blackbar soldierfish	Candil de piedra
AULOSTOMIDAE		
<u>Aulostomus maculatus</u>	Trumpetfish	Corneta
SPHYRAENIDAE		
<u>Sphyraena barracuda</u>	Great barracuda	Picua corsaria
<u>Sphyraena picudilla</u>	Southern sennet	Picua china

TABLE 1. (Cont'd.)

<u>Scientific Name</u>	<u>English Common Name</u>	<u>Spanish Common Name</u>
BOTHIDAE		
<u>Bothus lunatus</u>	Peacock flounder	Arreves
SERRANIDAE		
<u>Cephalopholis fulva</u>	Coney	Corruncha
<u>Epinephelus adscensionis</u>	Rock hind	Mero cabrilla
<u>Epinephelus guttatus</u>	Red hind	Tofia
<u>Epinephelus itajara</u>	Jewfish	Guasa
<u>Hypoplectrus puella</u>	Butter hamlet	
<u>Mycteroperca tigris</u>	Tiger grouper	
<u>Mycteroperca venenosa</u>	Yellowfin grouper	Cuna cucaracha
<u>Petrometopon cruentatum</u>	Graysby	Cuna cabrilla
<u>Serranus tigrinus</u>	Harlequin bass	
GRAMMIDAE		
<u>Gramma loreto</u>	Fairy basslet	Gramma real
GRAMMISTIDAE		
<u>Rypticus saponaceus</u>	Soapfish	Pez jabon
ECHENEIDAE		
<u>Echeneis naucrates</u>	Sharksucker	Pega
PRIACANTHIDAE		
<u>Priacanthus cruentatus</u>	Glasseye	Catalucia
BRANCHIOSTEGIDAE		
<u>Malacanthus plumieri</u>	Sand tilefish	
CARANGIDAE		
<u>Caranx fusus</u>	Blue runner	
<u>Caranx lugubris</u>	Black jack	
<u>Caranx ruber</u>	Bar jack	Cojinua negra
<u>Trachinotus falcatus</u>	Permit	Pampano
<u>Trachinotus goodei</u>	Palometa	Pampano pata de mula
LUTJANIDAE		
<u>Lutjanus apodus</u>	Schoolmaster	Pargo cotorro
<u>Luthanus mahogoni</u>	Mahogany snapper	Pargo
<u>Ocyurus chrysurus</u>	Yellowtail snapper	Rabirrubia

TABLE 1. (Cont'd.)

<u>Scientific Name</u>	<u>English Common Name</u>	<u>Spanish Common Name</u>
POMADASYIDAE		
<u>Haemulon album</u>	Margate	Jallao
<u>Haemulon flavolineatum</u>	French grunt	Corocoro amarillo
<u>Haemulon parrai</u>	Sailors choice	Corocoro plateado
<u>Haemulon sciurus</u>	Bluestriped grunt	Corocoro pato
GERREIDAE		
<u>Eucinostomus argenteus</u>	Spotfin mojarra	Española
PEMPHERIDAE		
<u>Pempheris schomburgki</u>	Copper sweeper	
SCIAENIDAE		
<u>Equetus acuminatus</u>	Cubbyu	Obispo
MULLIDAE		
<u>Mulloidichthys martinicus</u>	Yellow goatfish	Salmonete
<u>Pseudupeneus maculatus</u>	Spotted goatfish	Salmonete
KYPHOSIDAE		
<u>Kyphosus sectatrix</u>	Bermuda chub	Morocoto
SCORPAENIDAE		
<u>Scorpaena plumieri</u>	Spotted scorpionfish	Sapo chaznente negro
CHAETODONTIDAE		
<u>Chaetodon striatus</u>	Banded butterflyfish	Isabelita
<u>Holacanthus ciliaris</u>	Queen angelfish	Cachama de piedra
<u>Holacanthus tricolor</u>	Rock beauty	Cachama medio luto
<u>Pomacanthus paru</u>	French angelfish	Cachama negra
POMACENTRIDAE		
<u>Abudefduf saxatilis</u>	Sergeant major	Petaca
<u>Abudefduf taurus</u>	Night sergeant	Petaca
<u>Chromis cyanea</u>	Blue chromis	
<u>Chromis multilineata</u>	Brown chromis	
<u>Eupomacentrus partitus</u>	Bicolor damselfish	
<u>Eupomacentrus dorsopunicans</u>	Dusky damselfish	
<u>Microspathodon chrysurus</u>	Yellowtail damselfish	Morocota
CIRRHITIDAE		
<u>Amblycirrhitus pinos</u>	Redspotted hawkfish	

TABLE 1. (Cont'd.)

<u>Scientific Name</u>	<u>English Common Name</u>	<u>Spanish Common Name</u>
LABRIDAE		
<u>Bodianus rufus</u>	Spanish hogfish	Loro gallo
<u>Halichoeres maculipinna</u>	Clown wrasse	
<u>Thalassoma bifasciatum</u>	Bluehead	
SCARIDAE		
<u>Scarus coelestinus</u>	Midnight parrotfish	Loro medianoche
<u>Scarus guacamaia</u>	Rainbow parrotfish	Guacamaya
<u>Scarus vetula</u>	Queen parrotfish	Vieja lora
<u>Sparisoma viride</u>	Stoplight parrotfish	Loro verde (colorado)
CLINIDAE		
<u>Malacoctenus triangulatus</u>	Saddled blenny	
BLENNIIDAE		
<u>Ophioblennius atlanticus</u>	Redlip blenny	
<u>Entomacrodus nigricans</u>	Pearl blenny	
GOBIIDAE		
<u>Bathygobius soporator</u>	Frillfin goby	Guaseta
ACANTHURIDAE		
<u>Acanthurus bahianus</u>	Ocean surgeon	Sangrador, Navajon
<u>Acanthurus chirurgus</u>	Doctorfish	Sangrador, Navajon
<u>Acanthurus coeruleus</u>	Blue tang	Sangrador azul
BALISTIDAE		
<u>Balistes vetula</u>	Queen triggerfish	Cachua
<u>Canthidermis sufflamen</u>	Ocean triggerfish	
<u>Melichthys niger</u>	Black durgon	Cachua negra
<u>Alutera scripta</u>	Scrawled filefish	Cachua perra
<u>Cantherhines macrocerus</u>	Whitespotted filefish	
<u>Cantherhines pullus</u>	Orangespotted filefish	
OSTRACIIDAE		
<u>Acanthostracion polygonius</u>	Honeycomb cowfish	
<u>Lactophrys bicaudalis</u>	Spotted trunkfish	
<u>Lactophrys triqueter</u>	Smooth trunkfish	Chapin
DIODONTIDAE		
<u>Diodon holacanthus</u>	Balloonfish	Corrotucho espinoso

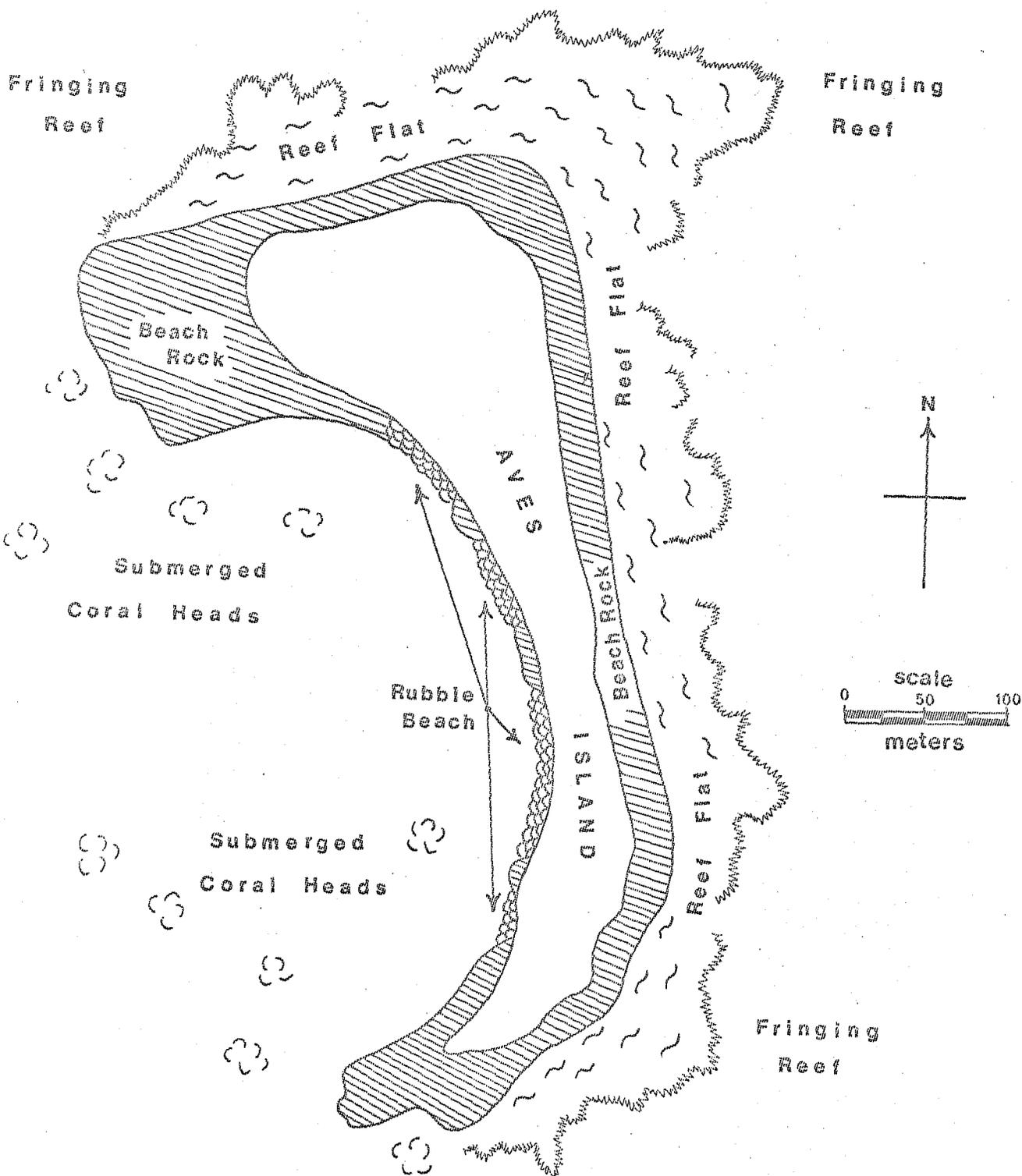


Figure 1.- Map of Aves Island showing types of inshore habitats. The central (light) portion of the map represents the exposed surface of the island.