THE FIELD NATURALIST

Quarterly Bulletin of the Trinidad and Tobago Field Naturalists' Club

October – December 2017 **Issue No: 4/2017**

ICACOS BIOBLITZ 2017

Saturday 4th - Sunday 5th November

GENERAL REPORT

by Mike G. Rutherford

Before dawn on Saturday 4th November cars loaded with enthusiastic nature lovers made their way to the furthest south-west point of Trinidad. Their aim? To join in the 6th T&T Bioblitz in the beautiful Icacos peninsula. Their initial destination was the Icacos Government Primary School, the base camp for the weekend. The Bioblitzers, made up of members of the TTFNC, staff and students from The University of the West Indies and many others, set up tents, hung hammocks and prepared equipment in preparation for what would be a long but fun weekend. The main hall was turned into a biodiversity display and identification zone with

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Male magnificent frigatebird displaying *Photo: P. Dickson*

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Editor's note :
Many thanks to all who contributed and assisted with articles and photographs.

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October - December 2017

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microscopes, books and laptops, and tables covered in specimens.

The briefing for the surveying teams began just after 11am. At noon, participants headed off in different directions to start the 24 hours of searching which would last until noon on Sunday 5th.

The main area for surveying was a 10km wide circle which stretched from the beach at Icacos to the St. Marie Road just south of Bonasse village. Most of the participants explored four trails during their surveying; Trail 1 took them from the centre of Icacos village to the coast along an old road passing through secondary forest and coconut plantation; Trail 2 started at the Columbus Bay parking area and looped around the headland through some mangrove forest; Trail 3 headed through the cocal plantations to the Icacos mud volcanoes and Trail 4 took the teams along St. Marie Road into some good secondary forest. However, one team ventured outside the circle to visit Soldado Rock, a wildlife reserve about 10km west of Icacos between Trinidad and Venezuela.

The Soldado group took a fishing boat from the Icacos beach and headed to the tiny island. Pelicans and magnificent frigatebirds covered the rocks, with many of the male frigates inflating their bright red throat pouches to display to the females. The team of nine landed on the island and whilst representatives of the plant, bird, reptile and invertebrate groups scoured the land, three members of the aquatic team snorkelled in the small cove to see what underwater life they could find. Interesting finds included a large iguana, a dead giant centipede, two green turtles and even a hummingbird making a quick stop on the way from Venezuela to Trinidad.

Back on the mainland, part of the birding group, led by TTFNC president Darshan Narang, set themselves up along an old trail to the east of Icacos. Instead of walking around searching with binoculars, they let the birds come to them; mist nets placed across a clearing in the forest allowed them to catch small birds, which were identified, had

The survey area and main trails during the Bioblitz

Bioblitzers exploring Soldado Rock
Photo: M.G. Rutherford

a band placed on their leg and then released. The rest of the birders covered the other trails and observed many species including the uncommon crested caracara, grey-cowled wood-rail, pinnated bittern and spotted tody-flycatcher. For more about the bird group see the article starting on page 12.

Members of the mammal group, led by Laura Baboolal, continued using the mist nets that night to catch bats, catching an impressive 50 individuals from seven species. Other mammal sightings included a couple of capuchin monkeys in the forest, most likely these were escaped pets, possibly brought over from Venezuela.

Mixed teams of plant and animal experts followed TTFNC guide Dan Jaggernauth through the cocal plantations to a patch of forest which surrounds the Icacos mud volcanoes. The mammal team had some trail cameras to retrieve from this site and a few more from the forest near Bonasse, analysis of the photos revealed the presence of agouti and manicou. For more about the mammal group see the article starting on page 8.

The plant group, led by Mike Oatham and joined by members of the Forestry Division, visited all the trails and as well as identifying many plants where they found them they also gathered leaves, flowers and seeds to take back to base camp for more accurate identification with the help of expert Winston Johnson and a plethora of books and scientific papers. Members of the National Herbarium of T&T, led by Shane Ballah, focused on mosses and lichens. For more about the plant group see the article starting on page 23.

Learning about marine pollution from Marianna Rampaul
Photo: E. Rutherford

Amy Deacon talking to kids about ocelots
Photo: M.G. Rutherford

The reptile and amphibian team, led by Saiyaad Ali of the Serpentarium and Renoir Auguste from UWI, did some surveying in the day but their main period

Visitors at the base camp
Photo: M.G. Rutherford

of activity was through the night. The Icacos area is well known amongst herpetologists for the variety of frogs to be found there and this weekend it did not disappoint. Seventeen different species were found in the swamps, rivers, ditches and pools of the area. The teams also found many species of snakes and lizards and not surprisingly there were caiman all over the place. The Serpentarium crew brought many of the animals they found to the base camp on the Sunday to temporarily display them for the public. For more about the reptile and amphibian group see the article starting on page 10.

Several small groups looked for insects, spiders, scorpions and other terrestrial invertebrates. Jo-Anne Sewlal spent Saturday afternoon finding spiders in the forests whilst Rakesh Bhukal and his team looked for dragonflies in the swamps in the day and scorpions at night. Lauren Ali did a great job of pulling together all the butterfly sightings. For more about the terrestrial invertebrates see the article starting on page 16.

Whilst most teams spent their time in the forests, the aquatic team, led by Ryan Mohammed from UWI, focused on the beaches and swampy areas. Using a variety of nets and traps they collected a wide range of fish, crustaceans and molluscs. Highlights included a night time survey of Columbus

Aerial view of the cocal and the edge of Icacos Great Swamp
Photo: T. Eastman

Quizzes, treasure hunts and free pens and pencils from First Citizens

Photo: M.G. Rutherford

Bay at low tide under the full moon when many species of marine snails and worms could be found crawling across the muddy beach. For more about the aquatic group see the article starting on page 20.

The Microbe team had been cultivating bacterial and fungal samples in their laboratory over the previous weeks from local water and soil samples collected before the Bioblitz. Members of the team came down to put on a display as part of the educational outreach at the school. With a mix of games and activities they taught the public all about these microscopic forms of life. For more about the microbe group see the article on page 19.

Mike announcing the results

Photo: E. Rutherford

Fungus enthusiast, Jeffrey Wong Sang, came down on Sunday morning. After heading out on a couple of the trails and getting a few specimens and photos collected by other teams he then spent the rest of the time showing visitors his impressive mushroom display. For more about fungus see the article on page 26.

One of the best aspects of this years' Bioblitz was the warm welcome by the villagers of Icacos. The school had done a great job of spreading the word about the event and from early on the Sunday morning groups of kids turned up to see the displays by the UWIZM, TTFNC, Serpentarium and UWI. Soon families were turning up and eventually a whole class of 6th formers from Northgate College came along too. Amy Deacon, UWI lecturer and TTFNC secretary, took the lead in showing the kids all the activities they could do and encouraging them to go out and see what wildlife they could find for themselves.

Roma Wong Sang talking to students about the fungus display

Photo: S. Warren-Gittens

As well as a great turnout from the local population the event was also visited by Mr. Shankar Teelucksingh, the councillor for Cedros, and by The Right Honourable Mr. Clarence Rambharat, MP

Minister of Agriculture, Land and Fisheries. Both stayed for several hours meeting with the public and the surveying teams and learning more about the biodiversity in the region.

Just after 1pm on Sunday the total number of species found was announced: 14 mammals, 127 birds (a new T&T Bioblitz record), 22 reptiles, 17 amphibians, 33 fish, 74 insects, 26 arachnids, 13 crustaceans, 11 myriapods, 33 molluscs, 6 other invertebrates, 40 fungi, 16 bacteria and 318 plants for a grand total of 750. A great result for a very interesting area, quite unlike anywhere else in T&T.

As usual with the Bioblitz the final tally of species for each group can change after the event as records are more closely scrutinised, collected specimens are identified and mistakes are corrected. Some of the totals in the groups reports may therefore be different.

The Bioblitz organisers would like to thank their main sponsors First Citizens who, for the 6th year in a row, have generously funded the event. Thanks also to the Bermudez Biscuit Company for their donation of Wheat Crisps and Dixee crackers, much appreciated by the hungry Bioblitzers.

Sunrise at base camp
Photo: M. G. Rutherford

Thanks as well to Phillipe Agostini of the Coconut Growers Association for access to the estates. And finally a big thanks once again to the staff and students of Icacos Government Primary School for welcoming the Bioblitz with such open arms.

All the Bioblitzers *Photo: E. Rutherford*

MAMMAL GROUP REPORTS

by Danielle Morong

This year's Mammal group saw a changing of the guards, where Laura Baboolal accepted the call to lead the team from Bioblitz veteran, Luke Rostant. Fortified by Luke's blessings (and a very tasty Icacos roti), the team conducted bat trapping on Saturday 4th November and retrieval of the camera traps on the morning of Sunday 5th November.

"I'm the Night" true happenings of Team Bat

Trapping was carried out along Trail 1, located in a forested enclave perpendicular to the sea shore. Two ground nets (12 metres each) were set up from 6pm to 10pm. Over 50 individuals belonging to eight species of bat were captured (see table).

Team Bat had their hands filled as the bats were coming in quick succession, however the capable crew of experienced handlers, birders and new recruits systematically removed, bagged, identified and released all prisoners.

Photos: T. Eastman

Our Bat Spotlight went to the little yellow-shouldered bat (*Sturnia lilium*) – one of these cuties was captured much to the pleasure of the entire group. This tailless, leaf nosed bat was velvety to the touch and just a little heavier than a compact disc. Brightly coloured fur + small size = cuteness overload.

Little yellow-shouldered bat *Photo: T. Eastman*

Common Name	Scientific Name	Trophic Category
Jamaican fruit-eating bat	*Artibeus jamaicensis*	Frugivore
Gervais's fruit-eating bat	*Artibeus cinereus*	Frugivore
Great fruit-eating bat	*Artibeus lituratus*	Frugivore
Seba's short-tailed fruit bat	*Carollia perspicillata*	Frugivore
Brown-bellied broad-nosed bat	*Platyrrhinus fusciventris*	Frugivore
Striped-headed round-eared bat	*Tonatia saurophila*	Carnivore
Little yellow-shouldered bat	*Sturnira lilium*	Frugivore
Greater white-lined bat	*Saccopteryx bilineata*	Insectivorous

Trekking for Camera Traps

Camera traps were set up at three different locations to capture the variety of habitats present in our survey area. These included Trail 1 (forested area perpendicular to the beach), Trail 4, along the trail to the mud volcanos and Trail 3, an area of secondary forest close to St. Marie Road. Photos were checked back at base camp.

Six different mammal species were captured through a combination of direct camera trap recordings, sightings and good old fashioned capture techniques.

Trekking through the coconut groves
Photo: T. Eastman

The Trail 1 camera trap recorded images of an invasive mammal, the brown capuchin (tufted) (*Cebus apella*). Bioblitzers located the shell of a nine -banded armadillo (*Dasypus novemcinctus*) along the beach, much to their surprise. Also spotted scurrying among the coconut trees and even near the school was the red-tailed squirrel (*Sciurus granatensis*). The Herpetology group even captured an arboreal rice rat (*Oecomys paricola*) which was later released.

It's been said that half the journey is getting there. Nothing could more aptly describe the journey along the mud volcano trail. Camera traps along the forested route, recorded common opossum (*Didelphis marsupialis*) and the red-rumped agouti

Arboreal rice rat *Photo: M.G. Rutherford*

(*Dasyprocta leporina*). However the highlight of retrieving these traps, was the actual journey itself. Bioblitzers meandered through groves of coconut by car, walked through grassy fields and hiked along the scenic forested inclines. The camera traps had been removed but with sunny weather and two mud volcanos ahead, who could deny the eager team their cherry on the cake.

Group members:
Laura Baboolal (Team Lead), Darshan Narang, Danielle Morong, Alexis Marianes, Jessica Rosek, Maydiel Canizares, Richard Smith, Vishnu Debie, Keshan Mahabir, Nicholas Mohammed, Jo-Marie Westmaas, Shane Manchouck, Dan Jaggernauth, Katrina Khan-Roberts, Runul Roberts, Michael and Anton. Thanks to Trinibats for the use of equipment and Tarique Eastman for his photography.

Dan and Laura remove a camera trap
Photo: Z. Ali

AMPHIBIAN AND REPTILE GROUP REPORT

by Renoir Auguste

The southwest peninsula of Trinidad is known to have a high diversity of reptiles and amphibians (herpetofauna) for the country. There are also some unique species of frogs and snakes that are only known from that part of the island. Could we find them during this Bioblitz? The group once again consisted of the Serpentarium lead by Saiyaad Ali, who co-lead the herptile group along with Renoir Auguste, from UWI. Both lead their respective groups of enthusiasts and searched across the survey area.

At around noon on Saturday, we set off to search for diurnal lizards and snakes. Some of the highlights

Great dark-spotted thin-toed frog
Photo: J. Foster

within the vicinity of the base camp included seeing the very abundant beachrunner lizard (*Cnemidophorus lemniscactus*) and the common Zandolie (*Ameiva atrigularis*). Other reptiles seen during the day included the matte (*Tupinambis cryptus*) and green iguana (*Iguana iguana*). I did spot a hawk (probably the common black hawk) carrying away with what appeared to be a snake in its talons but identification was not possible.

Peter Dickson representing the Herpetology group went to Soldado Rock and saw a surprising sighting of the rain lizard (*Kentropyx striata*). This lizard prefers marshy areas where it sleeps on vegetation

Small-headed treefrog
Photo: R. Auguste

along puddles and pools of water. What it is doing on the rather dry Soldado Rock, and how it got there is anyone's guess. Did it hitch a ride from debris from Venezuela? It may be interesting to know how many individuals are on Soldado Rock. Another interesting sighting was the green turtle (*Chelonia mydas*) in the water just off Soldado Rock.

As darkness came, most of the herpetofauna came with it. A variety of frogs were seen and/or heard calling, including the southwest peninsula restricted species such as *Leptodactylus latrans* and

Jungle anole *Photo: R. Auguste*

Dendrosophus mininsculus. Species that were seen or heard in abundance included *Dendrosophus microcephalus* and *Scarthyla vigilans*. The latter was first discovered on Trinidad in the southwest of the island (after previously only being known from South America) but has since extended its range on Trinidad. A total of 17 frog species were recorded during this event, second only to the Nariva Swamp 2014 Bioblitz. This was no surprise as the region has a variety of habitats and close proximity to Venezuela for colonization.

Twenty-four reptiles were recorded during this Bioblitz and consisted of 1 turtle, 1 crocodilian (Spectacled caiman – *Caiman crocodilus*), 12 lizards and 10 snakes. Of the 10 snakes recorded, 3 of them were constrictors; but not the anaconda. There is a good chance the anaconda is in the area, but it evaded us this time. However, perhaps the most significant snake sighting was the rare double-striped water snake (*Thamnodynastes ramonriveroi*). There have been less than a handful of sightings of this snake alive in Trinidad, thus its observation was fantastic.

On Sunday morning some of the Herpetology group went out to spot more species before the 12 noon deadline. Meanwhile, I kept watch over some of the specimens collected the night before and had them on display to speak to members of the public about them. Closer to noon, Serpentarium had up their displays of live animals, also, mainly collected from the previous night. Outreach is an important component of biodiversity conservation, especially for a group of animals (herpetofauna) known to not be liked by many members of the public. As such, raising awareness of them and about their importance not only to the ecosystem but to people is vital. Overall, this Bioblitz was relatively successful in terms of species spotted. There were no new surprises, but perhaps locals from the area may see some interesting herpetofauna one day.

Ratonel *Photo: R. Auguste*

Group members:
Saiyaad Ali, Renoir Auguste, Rainer Deo, Milena Mechkarska, Gervonne Barran, Shameel Mohammed, Peter Dickson, Vaughn-Xavier Jameer, Joshua Francis, Siddeeq Ali, Samuel Seashole, Ken Alfieri, Thad Bowman, Daryl Abraham, Joel Lennard, Nalini Rampersad-Ali, Sattish Rampersad, Jai Roopchan, Mason Ramdawar, Taariq Ali, Kyle Dharmoo, Javiel Sthilaire, Drew Howell, Kester Dass, Darius Baldeo, and thanks to everyone else who spotted some herpetofauna.

UWI Herp Team and Serpentarium Team *Photos from Renoir and Saiyaad*

BIRD GROUP REPORT

by Elizabeth Seebaran

Birders who conducted the area searches managed to document an impressive list of the common, as well as the not so common birds within the survey radius of the Icacos Peninsula. Armed with long lens cameras, binoculars, spotting scopes, field guide books and notebooks, several small groups of birders traversed on foot, by car and even by boat, to the various pre-identified trails and viewing locations on the Saturday afternoon and the Sunday morning period.

Wattled jacana *Photo: L. James*

Driving along the Southern Main Road, out of the Icacos village area and away from our base camp, we encountered the usual wetland type birds, characteristic to the waterlogged coconut estates, mangrove and brackish water fern and bulrushes habitats observed. Independent birding groups during both survey days managed to observe and record a great blue heron fishing, amongst random scattered clumps of ferns, a life event for some birders. The great blue heron is a large wadding bird from the heron family. It stands almost motionless in the water, whilst it searches for prey. It may be easily confused with the grey heron, however we were able to observe the characteristic cinnamon markings on the wing shoulder tip coverts, as well

Black-bellied whistling ducks

Photo: D. Mulchansingh

as on the upper parts of the legs, ruling out confusion. Water levels of the swamp were relatively high. The great blue heron is known to submerge itself this way, almost belly deep in shallow water or open fields, whilst searching for prey with long and deliberate steps.

There had been significant amounts of rainfall within the last few weeks leading up to the Bioblitz. Along with high tide conditions at the time, the elevated swamp water levels may have resulted in unfavorable conditions for shore birds, resulting in the low counts of such species as compared to other times of the year. Whilst birders sat quietly

Cocoi heron *Photo: J. Foster*

hunched down in vehicles making observations, oncoming noisy traffic on the man-made causeway through the swamp on the Saturday afternoon caused the great blue heron to unintentionally flush out a deceptively hidden adult cocoi heron in the same area. Both birds flew deeper into the safety of the swamp, and out of view. Sunday morning birders headed through the swamps at dawn, in the direction of the Icacos village, were quick to observe a brown stocky bird fly out briefly from the bulrushes and grasses, which landed almost perfectly and within close view. Speculations for a juvenile bird were quickly dismissed, as the bird was identified as a pinnated bittern. The pinnated bittern is the largest of the three bitterns that can be found in Trinidad, also a member of the heron family. It has a buff-brown appearance, with heavy markings

Spotted tody-flycatcher *Photo: J. Foster*

and cryptic patterns. Though is it a widespread species of waterlogged grassy swamp and rice lands, it is rarely seen due to its' sulking habits.

Other birds identified in the swamp viewing areas included: striated heron, grey kingbird (more characteristically found in Tobago, less common in Trinidad), copper-rumped hummingbirds, pied water tyrant, white-headed marsh tyrant, great egrets, southern lapwings, cattle egrets, anhinga, and little blue heron. Common gallinule lived up to their name at the open water swamp areas. Wattled jacanas were plentiful, seen trotting on the tops of water plants in the mangrove swamp area, as well as in waterlogged muddy patches on the coconut estates. Yellow-chinned spinetails were more often

Crested caracaras *Photo: E. Seebaran*

heard than seen along the grasses and reeds of the roadside edges along the swamps. At one point, a grey-cowled wood rail managed to also show itself in clear view along the roadway at the swamp area.

Driving through coconut estates produced its' fair share of raptors, that is birds of prey, distinguished by their sizes, wing shapes, feeding habits, and vocalizations. Common black hawk, yellow-headed caracara, and savanna hawk were recorded on both Saturday and Sunday. Most notable were the sightings of one immature and two adult crested caracaras at dawn hours on Sunday, whist driving through the coconut estates. Although it looks like a hawk, and tends to associate with vultures, (these were seen feeding on dead carrion and garbage along the roadways), the crested caracara belongs

Long-billed starthroat *Photo: J. Foster*

Red-eyed vireo *Photo: D. Mulchansingh*

to the falcon family. It tends to favor semi-arid, semi-open habitats, and cultivated, agricultural areas. It is strikingly patterned, broad-winged, with an orange-red facial skin and cere area. In the immature, the facial skin and cere area appears dark-hued pink. Based on recent and more frequent sightings, there have been suggestions for increasing population numbers and range expansion in Trinidad. An osprey was observed surveying the swamp areas. A flyover by a grey-lined hawk was also observed in the transition zone between the coconut estates and the forested areas, whilst heading towards St. Marie Road – Trail 4. Trail 4 consisted of a paved road that ran through mixed forest that stood some distance from the roadway, with hidden streams, dense shrub and grass vegetation at ground level where the forest area had been disturbed. Two bat falcons were pleasantly observed at this Trail 4 area during dawn hours on Sunday by two birding groups.

Along the forest trails at St. Marie Road, birding finds included a plentiful number of tropical kingbirds, blue-black grassquits, turkey and black vultures, squirrel cuckoo, brown crested flycatcher, southern beardless tyrannulet, crested oropendola, yellow-rumped cacique, white-winged swallow, and barred antshrike. Along the roadway vegetation leading from the base camp to the beach headed

Streaked woodcreeper
Photo: D. Mulchansingh

Saffron finch *Photo: L. James*

west, the spotted toddy flycatcher was properly and abundantly recorded. Trail 1, heading east from the base camp, consisted of a paved road through a marshy forested area, with low hanging trees and branches along the roadway. The area produced at every turn brown crested flycatchers, with the constant calls of black crested antshrikes and red eyed vireos. A flock of yellow-rumped cacique were also seen. For brief moments, a grey-cowled wood rail was heard but not seen, and an American pygmy kingfisher sat motionless on an exposed branch near the roadway in desirable view, overlooking the marshy area, before disappearing into the vegetation. The base camp area is characteristic by a micro-habitat of arid savanna and scrub, favoured by

scaled doves along with juvenile and adult saffron finches during the late afternoons.

One mixed group of surveyors left on the Saturday afternoon to find out what surprises the Soldado Rock may have in store. As the boat approached the target, persons were able to observe male magnificent frigate birds perched, displaying their proud and striking scarlet throat sac, which they inflate to attract a female mate. As such these males were attired in their breeding plumage. Nonbreeding males are all-black. The females are also black, however with a white breast and lower neck sides, characteristically separate from the males. The magnificent frigate bird is a large sea bird, with long narrow wings and a deeply forked tail. Frigate birds will feed on fish taken during flight from over the ocean's surface, and may also pester and harass other sea birds forcing them to regurgitate their food, which they then steal as their own meal!

Other species found at the Soldado Rock included the quite common brown pelican, laughing gulls, common tern, and some single records for solitary sandpiper, spotted sandpiper, and what was strongly suspected as a yellow-crowned night heron. A peregrine falcon was also spotted, as well as a black-throated mango hummingbird, possibly on a long journey between Trinidad and the mainland.

Unplanned interesting night bird observations were also made at dark hours, when a birder or two bravely joined other non-birding groups, such as herpetology, during their night searches. A common potoo, a tropical screech owl, and common paraque were recorded along Trail 4 – St. Marie Road. Another non-birding group noted the sighting of a barn owl during their Bioblitz adventures. During the very early morning pre-dawn hours of Sunday, another brave group of birders observed common paraques intermittingly along the roadway heading into the coconut estates of the Icacos peninsula.

In conclusion, along with the bird banding team who were set-up along Trail 1, the birding group was able to document a grand total of 129 species, going down in "Bioblitz History" for the most recorded number of bird species in any Trinidad and Tobago Bioblitz to date!

Group members:
Faraaz Abdool, Sabira Ali, Zakariyya Ali, Laura Baboolal, Shawn Baldeosingh, Brian D'Abreau, Vishnu Debie, Carl Fitzjames, Jerome Foster, Halim Ghany, Lawrence James, Alexis Marianes, Stuart Miller, Maydiel Canizares Morera, Devan Mulchansingh, Darshan Narang, Feroze Omardeen, Sanjiv Parasram, Gayatrilakshmi Raghava-Singh, Ejaz Rahaman, Jessica Rozek, Elizabeth Seebaran, Richard Smith, Jo-Marie Westmaas

Some members of the bird group *Photo: F. Omardeen*

TERRESTRIAL INVERTEBRATE REPORTS

by Rakesh Bhukal and Mike G. Rutherford

Scorpions and Odonata (R.B.)

On Saturday morning the members of the bug group were all geared up and eagerly awaiting the official start of the much anticipated Icacos Bioblitz. With sweep nets, collecting vials, notepads and other pieces of "bug" collecting and recording equipment in hand we made our way out of base camp shortly after the briefing and immediately started collecting and recording species. There was a tidal stream just on the outskirts of the base camp that proved to be quite fruitful for the recording of dragonflies, and the open grassy lands with intermittent shrubby vegetation just opposite was prime ground for butterfly and general insect collecting.

Around mid-evening when environmental condition was most conducive for the recording of Odonata (dragonflies and damselflies), we made our way to the swamp lands where dragonflies were out in their numbers. At this time, we were accompanied by an additional group member, Romano Macfarlane from the Wildlife Section of the Forestry Division who proved to be quite an avid field observer spotting many species. Specimens were identified primarily by visual observation in the field, however, macro photographs using a DSLR camera (Nikon D3300 with Sigma Macro-Telephoto lens 55-300mm) were also taken for all specimens observed.

Rhino beetle (*Strategus* sp.) *Photo: A. Marianes*

Pin-tailed pond hawk dragonfly

Photo: M.G. Rutherford

These photos would aid in further clarification of the identities of the specimens encountered, and would also serve as record for specimens encountered on the surveys. Around 5pm we all returned to base camp to reset for our nighttime surveys which were for the cryptic, feared and much respected group of arachnids, the scorpions.

Surveys for this group was conducted between the hours of 8pm and 1am on Saturday night and commenced with a safety briefing on the handling and collecting of these specimens in the field as there are numerous venomous species comprising our scorpion fauna. The surveys entailed walking through various habitat types and actively searching for them from the ground level straight up to the canopies of trees with the use of hand held Ultra-violet flashlights of wavelength 395 nm. This wavelength of light was chosen because scorpions fluoresce or "glow" brightly when they are irradiated. All specimens were collected by gently clasping their tail with a large forceps and safely and securely placing them in collecting vials to be taken back to base camp for identification. Three species

were identified out of the specimens collected.

On Sunday morning the survey team took to the field again but this time the focus was streamlined to mainly dragonflies. The swamp lands were our main focus for this recording trip as it proved to be the correct recipe of microhabitat types for these winged insects. The use of an inflatable kayak was used on this instance to get the most coverage of the swampy area. Emergent vegetation was thoroughly searched as dragonflies typically perch on projecting branches and can easily go unnoticed even to the most skilled observer.
On returning to base camp there was a "kiddies"

Apta fruit-piercing moth (*Eudocima apta*) *Photo: J. Foster*

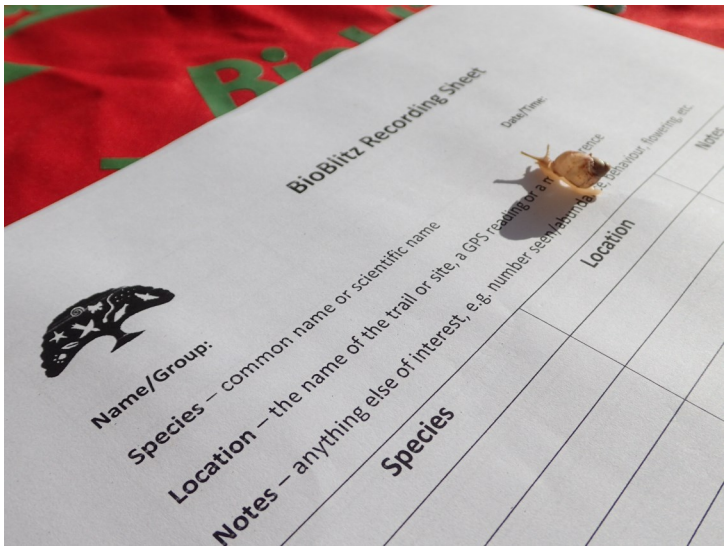
activity where the children from the village, many of whom attend the school that was used as our base camp, were taught how to collect various bug specimens in the areas just on the outskirts of the school. They proved to be quite a meaningful collecting force and their efforts added several beetle and bug specimens amongst others to the total number of species collected.

A tally of the various "bug" species that were recorded and collected for the event showed that there was a record high for the Odonata at this Bioblitz when compared to previous ones with a total number of 13 species collected.

Moth (*Feigeria mycerina*) Soldado Rock
Photo: M.G. Rutherford

Other Invertebrates (M.G.R.)

This year there was no dedicated Lepidoptera team but fortunately such a beautiful group of animals attracted the attention of many Bioblitzers and a good record was built up based on photographs taken. Lauren Ali took charge of collating the data and at the end of the event had listed 25 species. After the event was over the photos were sent to Matthew Cock (a butterfly expert) who confirmed the identity of the butterflies and informed us that two of our sightings were noteworthy. The first was a large moth (*Feigeria mycerina*) I saw on Soldado Rock which was the first record for Trinidad since



Land snail at base camp *Photo: M.G. Rutherford*

the 19th century. The second was an apta fruit-piercing moth (*Eudocima apta*) photographed by Jerome Foster which was the first record for Trinidad, although the species is known from Tobago.

Jo-Anne Sewlal, helped by three friends, spent the Saturday afternoon searching for spiders. They concentrated on Trail 1 where with a mix of hand collecting and sweep nets they found 13 species. Back at base camp other Bioblitzers showed them photos and specimens which brought the spider and opilione total up to 23.

Two young Bioblitzers finding a moth
Photo: M.G. Rutherford

Shane Manchouck concentrated his time on the leggiest animals – millipedes and centipedes. Visiting trails 1, 3 and 4 he pulled together a list of 10 species and then added one more when the crew who went to Soldado Rock brought back a dried dead giant centipede (*Scolopendra* sp.).

I looked for land snails in the forest around the mud volcanos and in the forest at the end of trail 4. As well as finding empty shells from larger species soil samples were collected and then sieved and examined for micro-snails (those with a shell smaller than 5mm wide). Ten species were found, from the 1.5 mm long *Karolus consobrinus* to the 10cm long *Megalobulimus oblongus*, all of which were common and wide spread throughout the country.

Orange-spotted flower moth being eaten by crab spider *Photo: N. Bridglal*

As usual there were also many extra invertebrate records from other Bioblitzers and from some of the visiting public. Several of the kids from Icacos Primary had a great time on the Sunday morning finding all sorts of mini beasties around their school grounds. The final totals on the day were 74 insects, 26 arachnids, 11 myriapods and 10 snails.

Group members: Authors and Shane Manchouck, Krista Ali, Clara Jargoonsingh, Celeste Madray, Ryan Josh Pierre, Tesha Sooklal, Devina Supersad, Rachel-Ann Suraj, Sachin Maraj, Rainer Deo, Romano Macfarlane, Kerresha Khan, Ryan Mohammed, Jo-Anne Sewlal, Gordon Deane, Raymond Aaron, Hezron Granville. Lauren Ali

Queen butterfly on apple snail
Photo: P. Dickson

MICROBIOLOGY GROUP REPORT

by Nikhella Winter, Akilah Stewart and Renee Ali

Microbes are very small organisms and the oldest form of life on Earth. Studying microbes is important in order to understand aspects of our past and present. This year the Microbiology team surveyed five different points along the Icacos Peninsula in an effort to assess the local microbial diversity. A range of sample sites were included; near a mud volcano, a stream near the host school, the roadside along the Icacos Great Swamp, the Icacos Swamp and a roadside ditch near a beach at Galfa Point.

Environmental water and soil are known to be inhabited by a fascinating array of microorganisms. As such, soil and water samples were collected from each site and carried back to the Mycology lab, UWI for screening. One gram of soil (the same weight as a 10 cent coin) can contain millions of microbial organisms. Samples were diluted and evenly spread onto Nutrient Agar for bacterial growth, as well as Potato Dextrose Agar for fungal growth using sterile techniques.

As expected this resulted in an assortment of bacterial and fungal colonies of varying colours, sizes, textures and other characteristics; signifying different species. Unique physical features were used to select strains that were then isolated into pure cultures for identification. A total of 35 unique microorganisms were detected. There were 16 morphospecies of bacteria and 19 morphospecies of microfungi. Further analysis will be conducted to identify specific morphospecies.

Microbe team and display

Photo: from N. Winter

Kids learning about microbes

Photo: M.G. Rutherford

Environmental microbes play a crucial role in the global ecosystem. They facilitate the cycling of nutrients through numerous habitat types and are important in sectors such as agriculture and fisheries. In addition, they have the ability to break down harmful toxins, bioremediation and add useful nutrients into the environment, bioaugmentation. The Department of Life Sciences Microbiology group studies these organisms to understand their functions in a spectrum of important ways; for example risk assessment of pathogenic water borne organisms and vector borne diseases, analysis of agriculturally important crop diseases and bioprospecting for useful antimicrobial compounds. Findings from this type of research have the potential to impact the social and economic well-being of Trinidad and Tobago.

Group members: Authors and Brent Daniel, Vijai Ramdhan, Hailey Harkoo and family, Nassir Khan, Royann Edwards, Carlos Rampersad, Christine Fraser, Diyaday Ramsaran, Milena Mechkarska, Adesh Ramsubhag and Jayaraj Jayaraman.

AQUATIC GROUP REPORT

by Marianna Rampaul, Amy Deacon and Ryan Mohammed

Icacos offered an exciting range of habitats for this year's aquatic team – the sea around Soldado Rock, vast expanses of sandy shores and little-known streams and ditches recently colonised by South American species via the Orinoco outflow.

Snorkelling around Soldado

The members of the marine team could not have wished for better weather and sea conditions for their expedition to the famous Soldado Rock. Having done our research into the currents and typical sea conditions of the south-west peninsula, we had mentally prepared ourselves for a rough 10km boat ride out to this mysterious location, previously unexplored by the team. As we headed out from shore at 12:30pm, we were pleasantly surprised and quite relieved to be greeted by an almost perfectly calm sea and gentle breeze.

Given the proximity of Soldado Rock to the Venezuelan mainland and the outflow of the Orinoco and Amazon Rivers, we were intrigued to learn what species would thrive in the sometimes-brackish water. Our boat crew also remained vigilant lest we be visited by some of our curious South American neighbours.

The team of snorkelers included Mike, Marianna and Mark. As we slipped into the water and below the waves, the uniqueness of Soldado became apparent. The jagged limestone rocks that made manoeuvring

Dog snapper *Photo: M. Charran*

The boat at Soldado Rock

Photo: M.G. Rutherford

the boat into the inlet an exciting challenge now became the backdrop for an eerie scene, with ghostly outlines of fish lingering in the turbid water. Diving down for a closer look, we found some of the largest specimens that we've ever seen of the Atlantic spadefish (*Chaetodipterus faber*) and sergeant major (*Abudefduf saxatilis*).

Slates and cameras ready, we started our exploration in the sheltered cove on the western side. Although the waters were characteristically turbid for the south-west coast, the team saw lots of marine life including brightly coloured yellow and black sergeant major and night sergeant juveniles (*Abudefduf taurus*), grey snapper (*Lutjanus griseus*) and dog snapper (*Lutjanus jocu*).

Although turbid waters do not favour coral growth, there was a colourful community of marine algae and sponges which decorated the limestone rocks that included y-branched algae (*Dictyota* spp.), white scroll alga (*Padina sanctae-crucis*), crustose coralline algae and turf algae.

Hiding within rock crevices, among the barnacles and oysters were several colourful crabs including porcelain crabs (*Petrolisthes* sp.) that were very easy

Porcelain crab *Photo: M. Charran*

to miss and proved impossible to capture but not for lack of trying!

Mark and Mike ventured even further, climbing out of the water to walk along the jagged terrain to spy whatever crustaceans and molluscs were hiding there. They came upon several species of crabs and twelve species of molluscs including ubiquitous periwinkle gastropods (Littorinidae) marking the high water line, checkered nerites (*Nerita tasselata*) and ghostly looking discarded moults of the Sally lightfoot or red rock crab (*Grapsus grapsus*).

The team was also surprised to find a curious iguana hiding within the crevices, possibly having arrived at

Night survey at Columbus Bay
Photo: S. Warren-Gittens

Soldado as a passenger on board floating vegetation washed down from the Orinoco River during a heavy rainfall event.

Molluscs by moonlight

After a successful expedition, the team headed back, over still calm waters, taking in the myriad of marine avifauna along the way but the marine exploration wasn't over yet. Smaller teams headed out at low tide on Saturday night around 10pm to Columbus Bay and on Sunday morning around 10am to Cedros Bay.

It was quite thrilling to see the bustle of activity at night among the usually reclusive gastropods and we soon learned to spot the signs and trails of different mollusc and annelid species as they foraged by moonlight. The team searched the extensive stretches of exposed shoreline for mollusc trails. A quick 15 minute survey was also made at the Icacos fish depot on Saturday afternoon. Altogether we discovered 36 species of marine mollusc including the local favourite chip-chip (*Donax denticulatus*), plum marginela (*Prunum prunum*) and the colourful Atlantic natica (*Natica canrena*).

Freshwater fishing

Meanwhile, the freshwater team surveyed streams and ditches around the peninsula. Alan, Micah and Anton concentrated on the tidal stream running alongside the school grounds, flowing to the coast, while Ryan led the remaining team members (Kerresha, Delezia, Sachin, Stephanie and Seleste) further afield to explore some of the streams draining the Grand Lagoon.

Freshwater diversity yielded typical fresh and brackish water fauna for the region, including fiddler crabs (*Uca* sp.), swimming crabs (*Callinectes* spp.) and swamp guppies (*Micropoecilia picta*). Fish traps left in selected streams overnight captured several Pemecou sea catfish (*Sciades herzbergii*), attracted by the bait.

Perhaps the most exciting discovery by the freshwater team was capturing two specimens of the rare elongate hatchet fish (*Triportheus elongates*) near base camp. This species has only been noted at

Pemecou sea catfish from a fish pot
Photo: A. Deacon

three locations in Trinidad, all along the southern coastline. Another unique find was the freshwater gastropod *Neritina clenchi* at the same location.

Within the Grand Lagoon several Tarpon (*Megalops atlanticus*), Mullet (*Mugil* sp.) and snook (*Centropomus* sp.) were noted, indicating the importance of this area a nursery region for juvenile species of commercial fishery importance. Additionally several spectacled caimans (*Caiman crocodilus*), the apex aquatic predator in this ecosystem, were also noted.

Invasive species were also noted within the survey area and in particular within the Grand Lagoon: black or swamp tilapia (*Oreochromis mossambicus*), red-rimmed melania (*Melanoides tuberculata*) and lastly fox tail weed (*Ceratophyllum demersum*).

The Icacos peninsula boasts a rich aquatic flora and fauna which is facilitated by the marine and freshwater interface. The effects of the Orinoco cannot be ignored as this region is an ideal colonizing zone due to its estuarine nature and wide

Hatchetfish *Photo: K. Khan*

expanses of lotic and lentic habitats. As a result, future surveys in this region will almost certainly add even more South American species to the list.

Back at base camp we created three aquaria to display a variety of our marine, brackish and freshwater finds to the public, to showcase just some of the aquatic treasures to be discovered in this remote but fascinating part of the country.

The Aquatic Team *Photo: E. Rutherford*

Group members:
Marianna Rampaul, Amy Deacon, Ryan Mohammed, Mark Charran, Stephanie Warren-Gittens, Kerresha Khan, Delezia Singh, Alan Chan, Sachin Maraj, Lauren Ali, Aidan Farrell, Shane Ballah, Seleste Herbert, Vaughn-Xavier Jameer, Joshua Francis, Rakesh Bhukal

PLANT GROUP REPORT

by Mike Oatham and Shane T. Ballah

Expectations

The Bioblitz for 2017 took place in the botanically underexplored area of Icacos in the extreme SW of Trinidad. Icacos is known for its coconut plantations and this was the largest vegetation community in the 2017 Bioblitz area. There were also coastal vegetation types, freshwater marshes, mangrove swamps, urban areas and secondary forest. The novelty ecosystem for the Icacos Bioblitz was the secondary vegetation surrounding the Icacos mud volcanoes.

Some areas of interest in the Icacos Bioblitz was the influence of nearby Venezuela as this part of Trinidad is the closest to the South American mainland and in theory may receive plant and animal migrants on a regular basis. Soldado Rock was also included in the Bioblitz area and a check on the five species of plant found on the Rock (*Eleusine indica*, *Plumbago scandens*, *Paspalum vaginatum*, *Mariscus ligularis* and *Portulacca oleracea*) was planned.

Some of the species we were on the lookout for were either endemics, rare or found nowhere else in Trinidad: the iconic fat pork (*Chysoballanus icaco*) for which the area is named, the Trinidad endemics *Rhynchospora ierensis* (a sedge found on savannas), and the vine *Aristolochia boosii.* The palm *Astrocaryum aculeatum,* the shrub *Capparis badduca* (gray knickernut) and the tree *Sacoglottis amazonica* are not endemic to Trinidad but are only found in the Icacos-Cedros area in Trinidad.

Swamp flatsedge from Soldado Rock

Photo: S. Parasram

Heliconia with a vine

Photo: C. Crooks

Methods

The Icacos Bioblitz area was examined on the USDA Forest Service map of ecosystems and the topographic map. All the different ecosystem types were noted and the access points (roads and trails marked on the maps and known to group members and Bioblitz organizers) were also noted. The group was split into three for the first day (12pm to 5-6pm) in order to cover the maximum number of ecosystem types given the topography and availability of access points. One group concentrated on walking a trail to reach the Icacos Mud Volcano. Another group used a vehicle to access as many different ecosystem types as possible from Icacos to Colombus Bay on the coast to Cedros and the old Coast Guard tracking station. They covered more ecosystem types but did not move away from the road. The Forestry Division formed the third group who visited the secondary forests to the south of the Cedros township and the southern coast of the Cedros peninsular. Groups encountered active coconut estates, secondary vegetation (abandoned

Silk cotton tree trunk
Photo: C. Crooks

coconut estates, abandoned cocoa estates and active estates) and also native vegetation communities (in various stages of degradation) around the coastline of the peninsular. Each group maintained a list of plant species visually sighted (identification certain- mainly common species) and they also collected specimens of plant species they were unsure of. In the evening of the first day and into the next morning, all specimens collected were examined and compared to keys and photographs from the literature for identification. New species were added to the list and already listed species were confirmed. On the morning of the second day, a group revisited the mud volcano for interest and to keep an eye out for further species. Further species were also found in the pleasant grounds of the Icacos Primary School.

Giant leather fern in Icacos Swamp
Photo: N. Bridglal

Results

Approximately 274 species were observed in the Bioblitz area around Icacos. This is a moderate number of species and reflects the relative uniformity of the habitats across the Bioblitz area and their human disturbed nature. The vegetation communities included active coconut plantations over much of the Bioblitz area and the majority of the rest of the area of the Bioblitz was secondary forest, probably abandoned coconut plantation. The relief was flat so that there was no variation in habitats with altitude similar to Nariva Swamp with similarly low numbers of species and in contrast to Charlotteville and Arima Valley with the highest number of species for a Bioblitz.

Plant team in the coconut estate
Photo: C. Crooks

As usual for a Bioblitz, no endemics were found and few rare species. The Bioblitz format does not seem to lend itself to finding the plant species of conservation importance, probably because no area is looked at in any great detail and the emphasis in the survey is identifying as many species as possible which means those species that cannot be identified immediately are often overlooked or ignored. The uncommon palm species *Astrocaryum aculeatum* was observed however not many individuals were found. The spikey grey nickernut (*Capparis badduca*) was found to be well established and common along the seashore to the west and north of Icacos village. The grey nickernut is a common drift seed so its presence is not surprising, however it is surprising

that the species is not more widespread along the coasts of Trinidad and Tobago. Another species that sets its seeds to drift on the oceans is the vine manioc la chapelle (*Entada polystachya*) which was found with its large orange flower spikes in the mangroves behind Columbus bay beach.

The characteristic giant leather ferns of brackish water *Acrostichum aureum* and *A. daneaefolium* were very obvious in the swamps on the road to Icacos but the most dominant species in the Bioblitz area was the coconut (*Cocos nucifera*). The plant species

Manioc la chapelle flowers
Photo: J. Wong Sang

previously found on Soldado continue to persist with no obvious additions. Fat pork (*Chrysobalanus icaco*) is found in the area but does not seem to be anywhere common unlike previous historical accounts. It seems the old Icacos Savannas with all their fat pork shrubs has been eliminated and planted to coconut.

Conclusions

The moderate number of plant species picked up in this Bioblitz is a reflection of the relatively flat survey area that has been largely cleared by humans at some stage in the past. Hence the majority of natural ecosystems have been eliminated and the only remaining ecosystems are those in the swamps and coastal littoral zones which tend to have naturally restricted plant species richness. Methods for rapidly observing plants and reducing the number of specimens that need to be collected has

Visitors at the TTFNC display
Photo: S. Warren-Gittens

increased the ability of the plant group to record the maximum number of species in the 24 hours of the Bioblitz. However, this method relies heavily on the knowledge in plant ID of a small group of people and in particular on Mr Winston Johnson, recently retired from the National Herbarium of Trinidad and Tobago.

Group members:
Mike Oatham, Winston Johnson, Linton Arneaud, Nandani Bridglal, Chernell Crooks, Adanna Alexander, Wyvonne Crooks, Jarrah Oatham, Andrew Jodhan, Aaron Peter, Nadine Ali, Dan Jaggernauth, Carlton Roberts, William Trim, Mr. Dwarika and Aidan Farrell.

Plant group members with the results
Photo: from N. Bridglal

FUNGUS GROUP REPORT

by Jeffrey Wong Sang

I had been looking forward to this particular Bioblitz for some time owing to its location and the scenic Icacos Swamp. But God has a way of throwing curveballs at you to keep you moving in a positive direction.

Mushroom display at base camp

Photo: R. Wong Sang

Whilst trying to balance my tour guiding class and the surge of field trips that came along with those classes, it was inevitable a clash would occur. And so it did. I ended up with a Tobago class on the first morning of the Bioblitz, thus was unable to be there for the briefing and the official start and the usual issue of reliable help reared its head again this year.

I had already committed to the Bioblitz count with Mike Rutherford and was determined to do my part at least on Sunday morning and also mount my fungi public display. So even after returning from Tobago in the late evening, I still packed up the car to depart home at 3:45am Sunday morning for the long trek in the darkness on not so familiar roads to Icacos.

I picked up some help along the way; two volunteers, Jalaludin Khan and Michele Cardijian, a first time visitor to the Bioblitz. Both provided invaluable assistance with the limited time I had.

With the creeping light of dawn at our backs, we arrived in Cedros and made our first detour into Columbus Bay and were rewarded with fungi by the swamp and the bay itself along with some spectacular scenery on the beach at Los Gallos. A few scarlet ibis made their presence felt as we departed the bay to Icacos.

Another photographic stop at the swamp encountering fellow Bioblitzers with a drone before arriving at base camp about 7:30am to setup my fungi display. Another hour and a half was spent there and after satisfying myself that the display could be left by itself and renewing acquaintances and salutations with many, I struck out on the trails with Michele to discover what we could before having to return to base camp to tally our finds.

We opted first on turning right to the Constance coconut estate and beach and then headed left on trail 2 to complete my fungi collecting and counting. This last trail was very fruitful and my only regret was that I was not able to start on the Saturday, but it was what it was.

Returning to base camp by 11am and counting and bottling my meager count to add to the overall Icacos Bioblitz 2017 tally. Thanks to a few Bioblitzers that gave me pictures from some of the trails that I could not visit. We also got out first sample from Soldado Rock thanks to Mike.

The macro fungi tally on the day was 21 for this year's Bioblitz.

Split gill fungus from Soldado Rock

Photo: M.G. Rutherford

The TTFNC thanks First Citizens for their generous support as the main sponsors of the Bioblitz and Bermudez for their contribution of snacks

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http://ttfnc.org/publication/field-naturalist/

Management Notices

New members; Volunteers; Publications

New Members

The Club warmly welcomes the following new members: Ian Sammy, Michael Boswell, Martin Gebauer, Rajesh Boodoo

NOTICE FROM THE EDITORS: ***Do you have any natural history articles, anecdotes or trip reports that could be published in The Field Naturalist? We welcome contributions from members. Please email your ideas or finished pieces to admin@ttfnc.org. We look forward to hearing from you.***

Trinidad and Tobago Field Naturalists' Club
P.O. Box 642, Port of Spain, Trinidad and Tobago

For more information about the Icacos Bioblitz and previous Trinidad & Tobago Bioblitzes see the webpage:

https://sta.uwi.edu/fst/lifesciences/bioblitz-events-trinidad-tobago

For more photos and posts about the event see the Facebook page:

https://www.facebook.com/TandTBioblitz

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