



THE FIELD NATURALIST

Quarterly Bulletin of the Trinidad and Tobago Field Naturalists' Club

October – December 2018

Issue No: 4/2018



TOCO BIOBLITZ 2018

Saturday 17th - Sunday 18th November

GENERAL REPORT



by Renoir Auguste

Mike Rutherford started the Trinidad and Tobago Bioblitz in 2012 and spearheaded six annual events up to 2017. However, he was going to be missing in action for 2018 due to other commitments. The Trinidad and Tobago Field Naturalists' Club (TTFNC) along with the Bioblitz committee, took it

upon themselves to ensure that the Trinidad and Tobago annual Bioblitz continued for the benefit of all!

On Friday 16th November, some eager Bioblitzers headed over to the furthest north-east point on



The venomous viper: mapepire balsain Photo: Z. Ali

Inside This Issue

Cover

- 1 **Toco Bioblitz 2018 General Report**
- Renoir Auguste
- 6 **Plant Group Report**
- Mike Oatham, Linton Arneaud, and Shane T. Ballah
- 8 **Mammal Group Report**
- Laura Baboolal, Kerresha Khan, and Danielle Morong
- 10 **Amphibian and Reptile Group Report**
- Renoir Auguste
- 12 **Bird Group Report**
- Elizabeth Seebaran and Mark Hulme
- 16 **Terrestrial Arthropod Group Report**
- Rakesh Bhukal, Tom Yick and Fadeera Mohammed
- 19 **Microbiology Group Report**
- Antonio Ramkisoan, Natalia Santo, Ajay Ramlogan, and Crystal Abraham
- 20 **Aquatic Group Report**
- Marianna Rampaul, Ryan Mohammed, and Kerresha Khan
- 27 **Fungus Group Report**
- Jeffrey Wong Sang
- 28 **Acknowledgments**

Management Notices

Notes to Contributors

Editor's note :

Many thanks to all who contributed and assisted with articles and photographs.

Disclaimer :

The views expressed in this bulletin are those of the respective authors and do not necessarily reflect the opinion and views of the Trinidad and Tobago Field Naturalists' Club

THE FIELD NATURALIST

Quarterly Bulletin of the
Trinidad and Tobago Field Naturalists' Club

October - December 2018

Editor

Renoir Auguste

Contributing Writers

Crystal Abraham, Linton Arneaud, Renoir Auguste, Laura Baboolal, Shane Ballah, Rakesh Bhukal, Kerresha Khan, Mark Hulme, Fadeera Mohammed, Ryan Mohammed, Mike Oatham, Antonio Ramkisoan, Ajay Ramlogan, Marianna Rampaul, Natalia Santo, Elizabeth Seebaran, Tom Yick.

Photographers

Zakariyya Ali, Renoir Auguste, Nigel Austin, Laura Baboolal, Rakesh Bhukal, Nandani Bridglal, Brian D'Abreu, Rainer Deo, Aidan Farrell, Jerome Foster, Anjani Ganase, Pauline Geerah, Steven Griffith, Mark Hulme, Vaughn-Xavier Jameer, Kerresha Khan, Keshan Mahabir, Alexis Marianes, Nicholas Mohammed, Shameel Mohammed, Devan Mulchansingh, Mike Oatham, Marianna Rampaul, Elizabeth Seebaran, Stephanie Warren-Gittens.

Design and Layout

Eddison Baptiste

The Trinidad and Tobago Field Naturalists' Club is a non-profit, non-governmental organization

Management Committee 2018 - 2019

President	Renoir Auguste	761-9197
Vice-President	Palaash Narase	751-3672
Treasurer.....	Selwyn Gomes	624-8017
Secretary	Amy Deacon	390-0826
Assist-Secretary	Danielle Morong	768-7666
Committee members ...	Kris Sookdeo	647-5556
	Dan Jaggernauth	659-2795
	Laura Babolal	705-8716

Contact us!

Email: admin@ttfnc.org

Website: www.ttfnc.org

Facebook: www.facebook.com/ttfieldnaturalistsclub

YouTube: www.tinyurl.com/ttfnc

Postal: The Secretary, TTFNC, c/o P.O. Box 642,
Port of Spain, Trinidad and Tobago

Trinidad – the complete opposite direction from last year's Bioblitz in Icacos. The destination was the scenic Toco. Given the reefs in the area, it was great timing to have this year's Bioblitz at Toco to coincide with International Year of the Reef (IYOR) 2018. The Toco Bioblitz was thus one of the IYOR activities for the year.

The base camp for this year's event was the Toco Regional Complex (TRC). The Bioblitzers mostly comprised members of the TTFNC, staff and students from The University of the West Indies (UWI) and other nature lovers. The main hall of the TRC was turned into a biodiversity display and identification zone with microscopes, books and laptops, and tables covered in specimens. This year the use of iNaturalist was strongly encouraged to record and identify as many species as we can and it is something that will continue for future events.

On Saturday 17th, briefing for the surveying teams began around 11am. At noon, participants headed off in different directions to start the 24 hours of searching which would last until noon on Sunday 18th.

The main area for surveying was a 10km wide circle which stretched from San Souci and the Toco Lighthouse to the north and to Cumana Village and Tompire River to the south. Most of the participants explored within the circle, but areas that were



The survey area and main trails during the Bioblitz. *Figure: M. Hulme*

identified for participants to survey included accessible bays and beaches in the northeast peninsula, Tompire River, Cumana forest, Forest Point, the lighthouse, L'Anse Noire, and around base camp.

Dr. Mike Oatham and Shane Ballah from UWI led the plant surveys. Dr. Oatham focused on vascular plants while Shane focused on the non-vascular plants such as mosses and liverworts. The plant species observed were indicative of the area as noted from the plant group report on page 6.

Members of the mammal group, led by Laura Baboolal of the TTFNC, laid the early ground work for surveys in the area. With assistance from Ryan Mohammed and Kerresha Khan, they set up camera traps prior to the Bioblitz to hopefully photograph some elusive mammals that would normally not be seen during a rapid survey. Mist nets were set up during the Bioblitz with the aim of identifying what bat species were in the area. A summary of the mammal group report is on page 8.

The reptile and amphibian team was led by me: TTFNC president, and Saiyaad Ali of the Serpentarium. Surveys were done during the day and night, with nocturnal surveys being peak time. Some of the species within the area can be seen on page 10 in the amphibian and reptile group report.



Tents set up at base camp

Photo: R. Auguste

The birding group was led by TTFNC members Elizabeth Seebaran, and Dr. Mark Hulme. The group consisted of experienced birders and enthusiastic students who were able to benefit from knowledge-transfer and bird identification. As noted in the bird group report on page 12, some of the bird highlights included the endemic and critically endangered Trinidad piping guan (pawi) and the red-footed booby.

Rakesh Bhukal and his team looked for several small groups of insects, spiders, scorpions and other terrestrial arthropods. The highlight was observing six species of scorpions in the area representing 75% of the country's scorpions. More details on other arthropods found in the area are in the terrestrial arthropods group report on page 16.

The microbe team collected soil samples from the area prior to the event and subsequently identified the organisms in lab. Over a 100 distinct classes were identified as noted on page 19 in the microbe group report.

The aquatic team, led by Ryan Mohammed from UWI, focused on freshwater, estuarine and coastal near shore areas, whereas Marianna Rampaul from TTFNC lead the marine group which was perhaps the largest group in terms of number of participants. Highlights from the aquatic group are on page 20.



K. Oatham looking at specimens under microscope Photo: S. W-Gittens



Dan talking about his fruits to visitors

Photo: S. W-Gittens

Jeffrey Wong Sang once again led the fungus (mushroom) group with a summary on page 26.

All volunteers enjoyed a delicious locally made roti on Saturday night, supplied by Michael Chaumette from the excellent Toco lighthouse café.

Amy Deacon, Aidan Farrell and team coordinated outreach displays and activities from base camp on the Sunday, with the assistance of AWNC, FAO and the Serpentarium, who all set up fantastic exhibits. Many of the survey groups also brought specimens back to base camp and displayed information to share with the public.

Amy and Renoir were kindly invited by Mr Chaumette to spend an hour on Sunday morning speaking on Radio Toco on behalf of TTFNC to publicise the Bioblitz, encourage local attendance and raise awareness of the incredible biodiversity of the area, especially in the light of proposed developments.

Just after 1pm on Sunday the total number of species found was announced: 8 mammals, 13 frogs, 24 reptiles, 103 birds, 82 terrestrial invertebrates, 110 microbes (bacteria and fungi), more than 121 marine organisms, 59 freshwater species, and 346 plants, 40 fungi, for a grand estimated total of 906!



Toco Regional Complex

Photo: S. W-Gittens

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

therefore be different as initially highlighted.

The 2018 Bioblitz organizers would like to thank their main sponsors First Citizens who, for the 7th 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. Thanks to those that came out to help with the outreach, including but not limited to Asa Wright Nature Centre and FAO. Thanks to UWI Guild for facilitating transport from UWI to Toco and back. Thanks to Toco police for checking in on us during the weekend. Special thanks to Mrs. Shirnell Edwards-Williams and other staff of the Toco Regional Complex for welcoming the Bioblitz with such open arms and facilitating us. Thank you for all involved for ensuring Bioblitz continues and can be shared with all! 🐞



Most of the 2018 Bioblitzers *Photo: A. Farrell*



PLANT GROUP REPORT

by Mike Oatham, Linton Arneaud and Shane T. Ballah



Vascular plants:

Mike Oatham and Linton Arneaud

Toco is a beautiful place because it is clean and green, and it is green because of the plants. With such thoughts in our twisted botanical minds we looked forward to the Toco Bioblitz with glee. The Toco Bioblitz area is a unique combination of different ecosystems: seashores, littoral woodlands, lowland evergreen forests and lower montane forests- and the secondary derivations of all these ecosystems and also human agricultural landscapes. Toco also represents the point where Guianan flora meets Caribbean flora and Northern Venezuelan Flora. A truly rich place for plant biodiversity, would we reach our Bioblitz record of 327 species set in north eastern Tobago at the Charlotteville Bioblitz? Surely we would!

After driving up from St. Augustine and other points south, we set our up tents at the base camp, or booked into our guesthouses and waited for the 12pm start time. While waiting we divided the plant group into 3 main teams to tackle the main ecosystem types. At last 12pm reached and we were off! Team Urban Plants (Doreen Oatham, Kahani Oatham, Nigel Austin, Joshua Francis, Jonathan Francis, Nikholai Ramsaroop and Melissa Boodoo) used their own locomotive power (their legs) and prowled around the streets of Toco town site and surrounding shoreline. Urban areas are often high in plant biodiversity, usually the species that tend to accompany humans in their conquests across the globe. Team Forest Mora (Nandani Bridglal Aaron Peter, Nadine Peter, Kera Nimblett, and Mike Oatham) struck out for the lower montane forests in the northern foothills of the Northern Range, after a swing through the modified littoral woodland, now agricultural landscape, inland from Point Galera, on the mysterious elevated marine terraces found at the eastern end of the Northern Range.

And Team Forest Lowland (Dan Jaggernauth, Rory O'Connor, Bunty O'Connor and Linton Arneaud) scouted out the Old Toco Rd/ Monsigee Trace which was a mix of lowland evergreen forest and modified agricultural landscapes. Collection continued vigorously and successfully until light began to fade, at which time the different groups returned to the base camp with their species lists of common species that needed no identification, and bags full of specimens of plant species that were mysterious and needed extra work to get them to yield their true identity.

The identification of the unnamed specimens was a truly heroic effort undertaken by all members of Team Plant and with further assistance from Aidan Farrell and Haley Arnold. Using a range of books and computer keys as well as the good old internet, specimens were interrogated one by one until they had yielded at least a provisional name.



Some plant group members

Photo: K. Khan



Mora excelsa

Photo: M. Oatham


This roti-fueled orgy of botanical enquiry continued until 2am on Sunday morning when the final botanist finally succumbed to fatigue and collapsed into a stupor, face down in their identification keys.

Data entry and cleaning up was also a massive task that continued for several days after the Bioblitz concluded. In the end we identified 231 species, well below our record. A disappointment perhaps, but we did record our first endemic on a Bioblitz: *Metastelma freemanii* a small creeper found on the rocks in the littoral zone right next to the sea. A very hardy species that has only been found in the Toco area. We also found the monodominant tree *Mora excelsa* in the foothills of the Northern Range. It had colonized from the southern slopes of the Northern Range and may have been invading the north coast before being delayed by human land use change. The two species mentioned are an example of the mixing of the Guianian flora and the Caribbean flora as the *M. excelsa* has its main populations in South America while the *M. freemanii* has its closest relatives up the islands in the Lesser Antilles.

Non-vascular plants: Shane T. Ballah

The survey was carried out on November 17 and 18, 2019 in secondary forested areas within the Toco region with specific collections made at two locations. The two sites comprised disturbed secondary forest and abandoned cocoa respectively. At these sites all plants encountered were recorded and where necessary samples collected for later identification. Opportunistic sightings of vascular plants along access roads and trails were also recorded. Collections of bryophytes were made from tree barks, roots, the ground, rotten wood and concrete surfaces. Specimens were collected by hand and field notes taken. Specimens were identified by the author.

Five species of mosses and one liverwort were recorded. All of the bryophytes collected have previously been reported for the region. No rare or unexpected plants were encountered.

The high number of weedy species, food crops and exotics recorded are indicative of the historical disturbance on the original forests. Large commercial and subsistence agricultural holdings including abandoned cocoa estates and residential activities were noted during the survey. Consequently the overall species composition at the survey locations was as expected given this level of disturbance. 



Maidenhair fern

Photo: N. Austin



MAMMAL GROUP REPORT

by Laura Baboolal, Kerresha Khan, and Danielle Morong



Months before the Bioblitz weekend began, the preparation for mammal's team surveying had begun. A smaller team of Ryan Mohammed, Kerresha Khan and Laura Baboolal, stealthily deployed six camera traps throughout the 10 km radius within the vicinity of Toco, in the hopes of capturing some images of the elusive mammals residing there.

Fast forward to the Friday before Bioblitz as some of our eager team members drove to Toco to prepare for the weekend. As always, the mammal team did most of their surveying at night while the camera traps did the work for us over the deployment period. On the Saturday night, the team trekked deep into forests of Cumana with the intents of a long and busy night of batting. The team set up two ground nets and one triple high net. There were many friendly and familiar faces but also a lot of new and eager persons willing to be involved and learn all about bats. Standard batting procedure was followed where we took turns checking the nets at regular time intervals.



Seba's short-tailed bat

Photo: N. Mohammed



Bushnell

10-28-2018 22:56:28

Crab-eating raccoon

Photo: Camera Trap

The first hour of the night was extremely uneventful with no bats being caught during this time. At this point, some of the team members became restless and yearned to hear a squeak or see the struggle of a bat in the net so we would have some specimen to analyze. Finally, to our relief, one bat was caught after the first hour, a Seba's short-tailed bat (*Carollia perspicillata*). The information gathered included weight of bat, length of forearm and colour of hair to help with identification. At this point, the group became excited again after we caught our first specimen, however, the long wait began once more. We noted that due to the brightness of the moon that night (a full moon), the number of bats caught in the nets may have been low as a result. This could be due to increased visibility for the bats making it easier for them to detect the presence of the nets. In fact, the moon was so bright that most of time, we did not even need to use our headlamps!

We could also see many bats flying around but not getting caught in the nets, frustrating us at some points. Soon afterwards however, another bat was captured, and we were excited to note that it was another species, the Jamaican fruit-eating bat.

Later on, in the night, the weather quickly changed. A sudden downpour of rain made the sample path quite muddy, with some of us sinking ankle deep in the mud. Nets were closed during the downpour and reopened afterwards in hopes of capturing some new species. The night of battling ended with even more excitement as we attempted to take apart the triple high poles which appeared to be stuck. With a little WD40 we eventually disassembled them and packed them away until the next time.

On the final day of the Bioblitz weekend, the camera traps were retrieved from the forests and the photos were processed. We were very pleased to

have captured photos of a variety of species including the elusive crab-eating raccoon (*Procyon cancrivorus*). The mammal group was happy to have had a total of 14 mammals (more than first reported)!

In retrospect, the mammal group had a very successful Bioblitz event and we look forward to the next year of sampling. Thank you to everyone who volunteered at the 2018 Toco Bioblitz Mammal group.

Group members: Laura Baboolal, Nicholas Mohammed, Jo-Marie Westmaas, Steven Griffith, Danielle Morong, Keshan Mahabir, Kerresha Khan, Delezia Singh. 🦋



Some of the mammal group members

Photo: L. Baboolal



AMPHIBIAN AND REPTILE GROUP REPORT

by Renoir Auguste



At around noon on Saturday, we set off to search for diurnal reptiles and scout out a trail at Cumana. We parked our vehicles as far as they could go and then walked the rest of the way. We did not observe much, but did spot a coffee snake (*Ninia atrata*) and calling Garman's thin-toed frogs (*Leptodactylus validus*). However, the vegetation and limited human influence in the area made for potential nocturnal species.

As darkness came, most of the herpetofauna came with it. A variety of frogs were seen and/or heard calling, including Urich's litter frog (*Pristimantis urichi*), Marsupial frog (*Flectonotus fitzgeraldi*), and Minute treefrog (*Dendropsophus goughi*), to name a few. The variety of frogs was no surprise but perhaps the stand out sightings were with the reptiles.



Urich's litter frog Photo: R. Deo



Spectacled caiman

Photo: M. Hulme

Along the trail at Cumana, the group observed four venomous mapepire balsain (*Bothrops* sp). This was by far the most abundant snake observed during the Bioblitz. Caution had to be taken when walking along the trail. However all of the venomous snakes we saw were calm and not aggressive towards us. We also observed a slug-eating snake (*Sibon nebulata*) along the trail that night, before heading back to base camp.

At base camp, we observed three snake species, including a Tropical racer (*Mastigodryas boddaerti*), coffee snake (*Ninia atrata*) and a brown vine snake (*Oxybelis* sp). Other herpetofauna observed included the narrow-mouthed frog (*Elachistocleis* sp) and Caribbean treerunner lizard (*Plica caribeanus*).



Slug-eating snake Photo: R. Deo

While the herpetology group lead by myself focused our surveys near base camp and at Cumana, the Serpentarium covered other parts within the study area. They observed additional species we did not,



Photographing a snake Photo: R. Auguste



Beachrunner lizard Photo: A. Marianes

including the Trinidad leaf frog (*Phyllomedusa trinitatis*), two constrictors: *Corallus ruschenbergerii* and *Epicrates maurus*, and jungle anole (*Anolis planiceps*) to name a few.

Overall, the combined effort of the herpetology group managed to observed 38 species, consisting of 13 frog species, 11 lizard species, 11 snake species, 1 crocodilian and 2 turtles. Special thanks to all the volunteers that came out!

Group members:

Saiyaad Ali, Renoir Auguste, Rainer Deo, Milena Mechkarska, Gervonne Barran, Shameel Mohammed, Peter Dickson, 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. 🐛



Green sea turtle

Photos: A. Marianes



Minute tree frog on Renoir's hand

Photo: S. Mohammed



BIRD GROUP REPORT

by Elizabeth Seebaran and Mark Hulme



The Bird Group at the Toco Bioblitz was formed of 28 highly motivated participants plus a number of intrepid Bioblitzers from other groups. Joining the experienced birders included a number of enthusiastic students from the University of the West Indies, who benefitted from the knowledge-transfer and the ID practice, spotting many interesting species themselves which would otherwise have been missed. Surveying was done via several established methods, including, field surveys with a combination of driving and walking throughout the accessible areas of the survey radius



White-flanked antwren

Photo: J. Foster



Merlin

Photo: D. Mulchansingh

where applicable, bird-banding surveys at the Forest Point location, and some stationary sea-watching at the Galera Point eBird birding hot spot, at the famous Toco Light House. Also, a new method using mounted audio recorders in forested areas overnight to capture bird calls for identification later on, was also employed. Two main groups were tasked with covering as much of the Bioblitz area as possible, noting limitations with vehicle access to some interior forest dirt roads, as well as some limited habitat availability where focus was mainly on forest and some scrubland vegetation, with some river and coastline habitats.

At dawn on Saturday morning, one group of overnight camping BioBlitzers, led by Mark Hulme and Jerome Foster, with Alex Sansom, traversed a roadway some ways from base camp, leading into

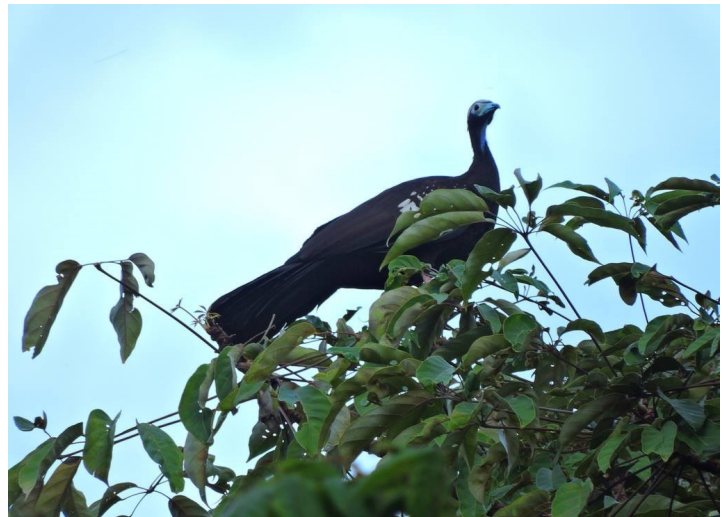
the forested area of west Cumana, probably not best accessed by cars but rather by 4-Wheel Drive vehicles. The highlight of this trip, and perhaps of the entire weekend, included the spotting of the critically endangered, endemic, and declared Environmentally Sensitive Species (ESS), the Trinidad piping guan, also known as pawi, which were seen high in the tree canopy allowing viewing for approximately 5-10 minutes. This sighting east in the Matura National Park, continues to confirm range expansion of Trinidad's endemic bird species, and hence is a wake-up call for review of conservation management plans, as well as training and education. Because, as wonderful such a sighting was for the group, some persons also observed a Pawi being



Jacamar

Photo: N. Bridglal

held captive in a cage at a cabin/house in the same forest area, on the same morning. Thankfully, reports came in over the weekend of the arrest of a resident in the same area, charged with possession of the bird. The sighting of a black hawk-eagle by Zakariyaa Ali also stirred some excitement and commotion, being a locally rare resident, and occasionally found in the Northern Range. Other common and not so common forest species were also recorded in this forested area in Cumana, including the streaked xenops, channel-billed toucans, Trinidad and violaceous euphonias, little tinamou (known for its' melancholic calls, often heard more than seen), crimson-crested woodpecker, white-bearded and golden-headed



Trinidad piping guan Photo: Z. Ali

hunting over the coastline in the vicinity of L'Anse Noir village.

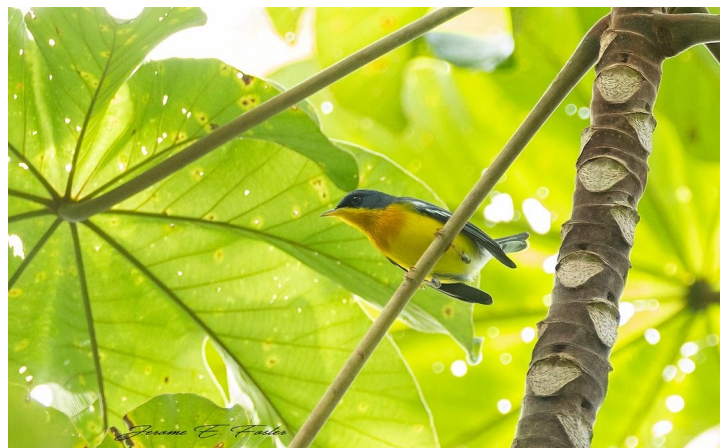
The scrubland areas on the outskirts of Galera Point produced a merlin, a regular winter visitor in small numbers to both Trinidad and Tobago, frequenting mainly open areas and cultivated lands, sometimes over forests, most sightings during October to April. The merlin is a fairly small raptor in the Falcon family, preying on birds, lizards, insects and small mammals including bats. Trinidad birding legend, Richard French, describes the merlin's favorite perch and feeding place seems to be at the top of a large tree located in a savannah, where it would fly out with fast, steady wing beats, making wide, sweeping searches after its prey. As dusk approached in the evening, a common nocturnal raptor, the Ferruginous pygmy-owl, was distinctly heard off in the forested hillsides near to Base



Brown-crested flycatcher Photo: B. D'Abreu

manakins, along with a number of other forest species. Sightings also included the northern waterthrush, a common wintering resident, and the silvered antbird, a fairly common local resident beside streams and rivers in parts of the Northern Range.

On the other side of the official Bioblitz radius, another group of seasoned and experienced field naturalist birders, led by Elizabeth Seebaren, concentrated on the forest edges along the north coast between Sans Souci and Toco, as well as the scrub woodland and windswept vegetation at Forest Point and Galera Point. Birding from midday into the afternoon produced a fair share of raptors, including gray-lined hawk, yellow-headed caracara, and a juvenile common black hawk along the forested Paria main road. An osprey was also observed



Tropical parula Photo: J. Foster



Grey kingbird with butterfly

Photo: D. Mulchansingh

Camp. This very small owl, a common resident in Trinidad, frequents semi-open country and forests at all levels, also urban districts where there are trees. Birding at dawn on Sunday produced additional species to the overall count, including, grey kingbird, a family of golden-fronted greenlets, a female tufted coquette hummingbird, and large flocks of Black Vultures at Galera Point. Walking slowly back along the road from Galera Point and cutting into the bush wherever there was a path produced some rewarding finds including pale-breasted spinetail, skulking in the undergrowth of the semi-open scrub area. Forest Point produced white-chested emerald and copper-rumped

hummingbirds, rufous-tailed Jacamar, yellow-breasted and brown-crested flycatchers, red-eyed Vireo, views of resident warbler, the tropical parula, and several species of tanagers including blue dacnis.

For the first time in Trinidad and Tobago Bioblitz history, the birding group deployed a Wildlife Acoustics audio recorder, with the permission of Forestry Division, which recorded background forest sounds continuously from a section of forest in Cumana. Recorders are compact, weatherproof, single/multiple channels, capable of long-term acoustic monitoring of bird calls, amongst other species such as frogs, insects, and aquatic life. It is known some shy and/or difficult to see bird species



Semipalmated plover

Photo: D. Mulchansingh



Tufted coquette *Photo: E. Seebaran*

are better detected by call. Bird calls from day into night were recorded. Audio data downloaded and analyzed later on added some previously unreported species including the white-necked thrush, greyish saltator and white-bellied antbird. The white-bellied antbird is a widespread yet uncommon Trinidad resident of deciduous woodland and prefers to sulk on the ground or low in the forest undergrowth feeding among dead leaves on the ground, tossing them aside as it forages, and hence unlikely to be seen without effort. One of its' main calls include a loud, ringing series of notes (reminiscent of a woodcreeper), slowing down and ending in several deliberate and less musical notes.

Birding at river mouths including at the Toco-Salybia Bay and at the TOMPire River produced ringed and green kingfishers, as well as semipalmated plover and spotted sandpiper shorebirds. Sea-watching at Galera Point with spotting scopes was able to confirm least and royal terns. Brown pelicans and magnificent frigate birds were common along the coastline at Toco and Sans Souci. The Bird Banding team led by certified bird banders Darshan Narang and Carl Fitzjames, set-up mist nets along the coast at Forest Point, to safely capture birds, in order to collect biological data on each individual such as species, age, sex, moulting strategy, mass and wing length. A number of species were caught and banded, including bran-coloured flycatcher. During their time at Forest Point, they also observed brown booby from their coastal location. Alexis Marianes whilst on her travels was able to record spectacled thrush in the village area. An unusual sighting, photographed and ID confirmed by the ever-helpful global contributors to the iNaturalist website and app, confirmed red-footed booby along the coast. Ishmael Angelo was able to contribute white hawk and chestnut-bellied seedfinch, a probable escape from his walks throughout the Toco area. Other

contributions included yellow-rumped cacique by Peter Dickson and Southern Beardless Tyranulet by Devan Mulchansingh. A grand total of 108 individual bird species were recorded over the weekend, an impressive haul with the effort of everyone involved. Many thanks to all who attended, assisted, and endured.

Group members:

Brian D'Abreau, Diane Renaud, Elizabeth Seebaran, Khalisha Ottley, Stephanie Davis, Devan Mulchansingh, Professor Mike Wu, Kay Hinkson, Dianne Boodoo, Winston Boodoo, Jerome Foster, Sabira Ali, Mark Hulme, Alex Sampson, Zakariyya Ali, Darshan Narang, Alexis Marinars, Carl Fitzjames, Ishmael Angelo Samad. 🐛



Some members of the bird group Photo: E. Seebaran



TERRESTRIAL ARTHROPOD REPORT

by Rakesh Bhukal, Tom Yick and Fadeera Mohammed



This year's Bioblitz was highly anticipated by members of the terrestrial arthropod group as our survey site was none other than Toco, an area that can be considered to be a naturalist's paradise as it is known to be rich in biodiversity with little existing records of its diverse flora and fauna. Our surveys began Friday evening while most of the other survey teams were still arriving and setting up camp around the grounds of the Toco Regional Complex, the designated base camp for the weekend. After tents were pitched and secured against the strong ocean winds, "bug enthusiasts" wasted little time in gathering their gear, which consisted mainly of sloop nets, forceps and collecting vials of various sizes, in a bid to survey and record whatever species they could find in the immediate surroundings of base camp as well as Cemetery Road, a little winding road that descended to a small beach with a split in the road that led up a short trail through a forested area. Already on the first day the area revealed that it was booming in terrestrial arthropod diversity as numerous species of insects were collected from various microhabitats.

At sunset our focus switched to the surveying of scorpions, creatures which brings both fear and fascination to the minds and hearts of bug enthusiasts and non-bug enthusiasts alike. The team lead, Rakesh Bhukal, gave a short briefing and demonstration on how to properly collect and



Scorpion illuminating under UV light

Photo: R. Bhukal

handle scorpions in the field since there are many venomous species which comprises our scorpion fauna. Trails were soon illuminated with UV light (395 nm) from hand held torches in an attempt to reveal these nocturnal creatures as their exoskeleton fluoresces brightly under this wavelength of light giving them a characteristic "glow", and because of this, these cryptic creatures are easily revealed in the various microhabitats that they occupy. The first specimen to be collected was that of an *Ananteris cussinii* that was seen running along the pitched trail that led to the beach. Its tail was gently clasped with the use of forceps and placed into a collecting vial, a procedure that would be used for the collecting of mostly all scorpions encountered for the night's survey. The most abundant scorpion species recorded for that night was *Microtityus rickyii*. These scorpions were observed in small crevices under tree roots and bark of trees that were along the bushy trail.

At 8am on Saturday morning team arthropod gathered once again, this time to explore a wider area of the north eastern peninsula that is Toco. In several convoys we drove once along Paria Main Road up to San Souci to identify potential trails to conduct our surveys. There along the San Souci River we began over first day time exploration using



Spider Photo: R. Bhukal



Scorpion group members *Photo: R. Bhukal*

sweep nets to collect and positively identify the various Odonata (dragonflies and damselflies) that were displaying and flying over the water. While some of the dragonflies and damselflies proved difficult to trap, these particular species along with butterflies were identified by visual observation with aid of illustrative field identification guides. Other invertebrates such as spiders, stick insects, and grasshoppers were also collected amongst the vegetation that bordered the river. After approximately an hour of surveying, we then moved down the Paria Main Road stopping at an unnamed dirt and stone road. Along this winding uphill course we identified several species of butterflies, and captured multiple species of grasshoppers, and most notably two particularly large spiders precariously resting on one shared web. The exploration uphill eventually came down as the convoy moved further east from Paria Road onto Galera Road towards the famous Toco Lighthouse. Out at the extreme east of Trinidad not much was to be seen compared to Toco's interior, with the exception of few butterflies and the occasional dragonfly that was already recorded.

Following the Saturday morning explorations, we retired to base camp and gathered at 7pm that night to further our exploration; this time our surveys took us inside Cumana. We abandoned pitch for the thrill of something off road, as we moved into the darkness up a dirt trail to search for scorpions once again, in addition to nocturnal insects. Along this trail in Cumana several species of scorpions were seen fluorescing as UV lights pierced the darkness. These scorpions were not only on the ground but



Cloudless sulphur

Photo: N. Birdglal

above head in the canopies of trees, as no surprise however, as some species are known to be arboreal and can often be observed at great heights above ground. Knowing well that scorpions natural reflex if touched would be to fall from their branch, we gently brushed them using whatever sticks and branches we gathered on the ground, while other team members looked for them when they fell to the ground. Several large specimens of *Tityus trinitatis*, the most venomous scorpion species in all of the West Indies, were successfully collected and identified, along with one *Broteochactas nitidus*, a very robust bodied, non-venomous species of scorpion. At approximately midnight the survey was concluded and the survey team returned to base camp after an intense and exciting surveying trip.



Wasp

Photo: V. Xavier-Jameer




Owl butterfly

Photo: V. Xavier-Jameer



Dragonfly

Photo: N. Bridglal

On Sunday morning the various specimens collected from the surveys were identified, labeled and put on display. A count was subsequently done on all the species recorded (stick insects, dragonflies, spiders, moths, butterflies, beetles, grasshoppers etc.) and this revealed a total of 82 species, with an astounding six (6) species of scorpions, just two (2) shy of the country's total of eight (8). 



Golden silk orbweaver

Photo: J. Foster



MICROBIOLOGY GROUP REPORT

by Antonio Ramkisoorn, Natalia Santo, Ajay Ramlogan and Crystal Abraham



Microbe poster at base camp

Photo: N. Bridglal




Microbe team members

Photo: from N. Bridglal

Soil samples were collected one week prior to the Bioblitz event. Soil samples were diluted in Phosphate buffer saline and plated on Nutrient agar and Potato dextrose agar for bacterial and fungal growth and enumeration. Bacterial plates were incubated at 35°C for 24-48 h and fungal plates were incubated at 25 °C for 96 h. Selected colonies were chosen and putative ID's were obtained via morphological and biochemical characterization of the cells.

Based on these examinations, 110 distinct classes of bacteria and fungi were identified. These included 10 fungi and 100 types of bacteria.

The 110 identified microorganisms obtained from this site represents a very small fraction of the true microbiota of the area, as millions of cells were left unclassified and billions not being able to be cultured within laboratory conditions.

Group members: Antonio Ramkisoorn, Natalia Santo, Ajay Ramlogan, Crystal Abraham, Vijai Ramdhan. 



Microbe display

Photo: N. Bridglal



Microbe display

Photo: N. Bridglal



AQUATIC GROUP REPORT: MARINE

by Marianna Rampaul



Trinidad's north east peninsula is known for its wild beauty and rich marine and aquatic habitats. Being Trinidad's furthest point from the Orinoco-Amazon riverine discharge, Toco's marine environment most closely resembles the coral reef habitats present in Tobago and northerly islands of the Caribbean which are less impacted by the sediment and nutrient rich freshwater discharges. The marine team explored the coastal and nearshore habitats of Grand L'Anse Bay (the location of the proposed Toco Port), Galera Point and Salybia Reef in Toco. Salybia Reef is Trinidad's largest and best developed fringing reef. Most of what we know about this unique and resilient ecosystem is thanks to the dedicated research of the late Dr. Dawn A.T. Phillip who conducted numerous research trips with her students at the University of the West Indies and collaborators from Universities overseas. The 2018 Bioblitz presented the perfect opportunity to revisit this reef and assess how it may have changed over the years.

This Bioblitz saw the largest marine team ever, with an impressive force of fifty (50) volunteers, including a first time collaboration with the University of Trinidad and Tobago's (UTT) Dr. Kelly Kingon and her students. The culmination of our team's efforts was the identification of 122 marine flora and fauna species, second only to the plant group's tally.

Coincidentally, the marine conditions over the



Porities sp. coral and zoanthids at Salybia Reef
Photo: S. Warren-Gittens



Sunrise at Galera Point

Photo: M. Rampaul

Bioblitz weekend were not ideal and presented an unfortunate but not insurmountable challenge to survey efforts. Bioblitz fell in the middle of a swell event (common at the end of the year), meaning that for most of the weekend, a rough seas advisory was in effect.

Additionally, a low tide was needed for ideal survey conditions, however, for that weekend low tides coincided with the hours around dusk and dawn, meaning very early or late survey times and pressure to make the best and safest use of the precious daylight hours. Nevertheless, with careful planning, risk management and a dedicated and enthusiastic team of volunteers, the marine group achieved success!

With a lot of survey techniques and safety measures to cover, the marine team briefing commenced at 9:30am on Saturday morning, followed by the official Bioblitz event briefing and kick-off. At 12:00pm we headed off to our first site, Grand L'Anse. Various survey techniques were employed by sub-groups who surveyed for organisms by six main categories; (i) fish, (ii) crustaceans, (iii) echinoderms, (iv) corals, gorgonians, sponges and other invertebrates, (v) molluscs, (vi) macroalgae and other species.



Setting fish pot at Salybia Photo: M. Rampaul

Volunteers searched the shoreline, in-between rocks and in shallow areas for any sign of life. Sediment sieving was also conducted to sample the smaller marine invertebrates such as polychaetes and amphipods. Some volunteers also tried their hands at net casting, and were quick to learn the technique managing to capture one palmoeta (*Trachinotus goodie*). Other species identified here included mojarra (*Gerreidae* sp.), a dead chain moray eel (*Echidna catenata*) and several species of crab and mollusc. Through a combination of photo records and on the spot identification by our resident experts, the marine species list was off to a good start!



Setting fish pot at Salybia Bay

Photo: S. Griffith

The next stop was the beach we referred to as Basecamp Beach, located just a stroll away from the Toco Regional Complex on Cemetery Street. This site was generally rockier with coarser grained sand and provided suitable habitat for some large West Indian fuzzy chitons (*Acanthopleura granulata*), mangrove tree-climbing crabs (*Aratus pisonii*), and zebra periwinkles (*Echinolittorina ziczac*) among many others.

The next and most anticipated site was Salybia Reef. Considering the 5:49pm low tide, our survey started closer to 3:00pm to capture the falling tide and transition from day to night in hopes of witnessing a changing of active diurnal species to nocturnal species, a terrific suggestion from one of the team experts Mark Charran. Snorkelers stayed in the shallows for safety reasons and made the best use of a limited supply of dive torches, however the water was just too turbid to permit detection of a plethora of species that were detected on previous reconnaissance trips earlier in the year. We were however able to add a few more species to our growing list such as encrusting sponges (*Clinona* spp.), Queen Conch (*Strombus gigus*) and 13 intricate algal species including green feather alga (*Caulerpa racemosa*), hollow green weed (*Enteromorpha* sp.) and serrated strap algae (*Dictyota* spp.). Prior to the official start of the event, on Saturday morning, a few of us ventured out on to the reef to set a fish pot, graciously provided by team member Marc Bejai. After laying out on the reef all day, baited with juicy bonito fish scraps, by afternoon time, we discovered that our pot had caught... absolutely nothing. We left it out again overnight, hoping for better luck in the morning.

On Sunday morning, we had planned to survey just Galera Point, to ensure sufficient time to complete all photo identifications, however I decided that the unfortunate turbid conditions at Salybia Reef the day before did not do the site justice. Therefore, after a 5:30am survey at Galera, I returned to Salybia Reef with small team of surveyors who were the strongest swimmers with the most experience, considering that conditions were still not ideal for novice swimmers.



Tidal spray crab at Galera Point Photo: M. Rampaul

Our time at Galera was limited, due to a rapidly rising tide and the precarious survey site which required us hiking down the steep hillside to a small rocky beach. Our efforts were certainly rewarded by the addition of numerous new species, many of which were spotted by keen observers in between and beneath rock crevices under the crystal clear water. Species detected here included our first lobster, four anemone species including beaded (*Plymanthus crucifer*), branching (*Lebrunia neglecta*), red warty (*Bunodosoma granulifera*) and sponge anemones. In about half an hour though we had to make a quick retreat as the waves started crashing in between rocks.

Most of the team returned to basecamp with a few live specimens and new photos to identify. Meanwhile a team of five comprised of Anjani Ganase, Nele Thijs, Garth Mannette, Barry Sakhan and myself returned to Salybia Reef where we were greeted with perfect visibility and shallow depth which allowed us to snorkel and photograph the full extent of the reef. This time the species list grew considerably, even recording species that were not previously detected during reconnaissance trips such as the gorgeous sharptail eel (*Myrichthys breviceps*) which I unexpectedly found myself floating mere inches above.

Garth and Barry surveyed perpendicular to the shore, covering the back reef to reef crest in hopes of picking up any zonation of species, while the rest of us covered the westward to eastward expanse of the reef. Here we identified six species of hard coral: finger coral (*Porites porites*), blade and branching fire coral (*Millepora complanata* and

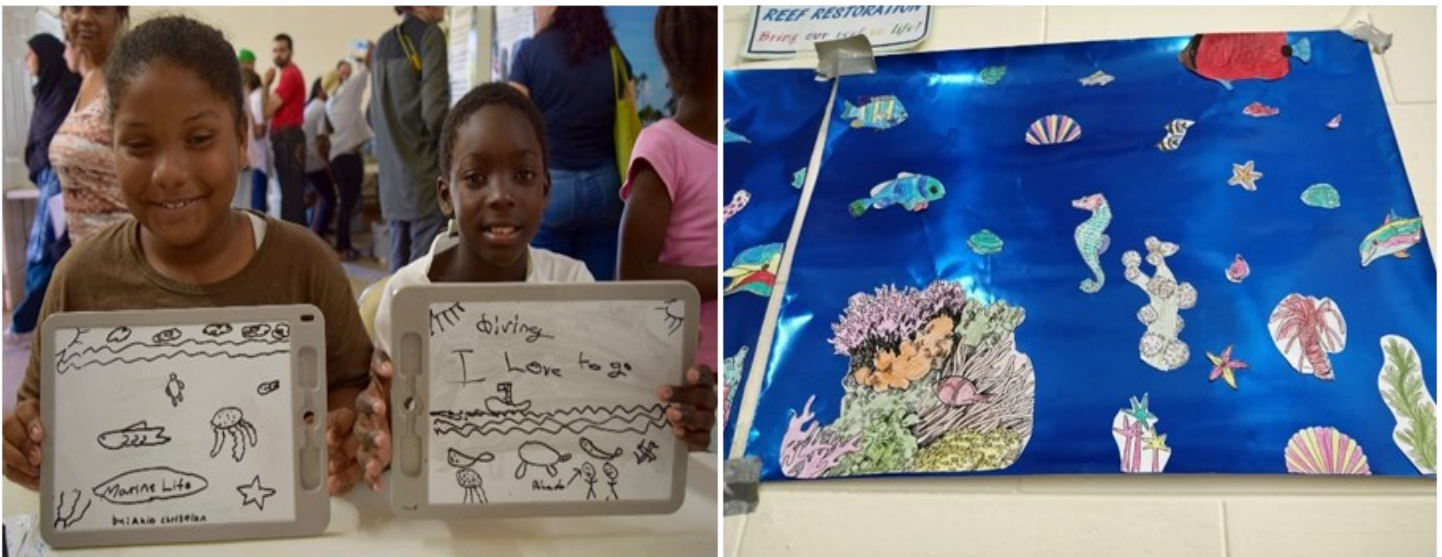
Milleporal alcornis), lesser starlet coral (*Siderastrea radians*) and massive starlet coral (*Siderastrea sidera*), 3 zoanthids: green sea mat (*Zoanthus sociatus*), mat zoanthids (*Zoanthus pulchellus*) and most common of all, the white encrusting zoanthid (*Zoanthus sociatus*). These hard and soft coral species present are well adapted to high stress conditions associated with such a shallow reef in frequently exposed, hot and dry conditions during low tides, and high energy impact from breaking waves. Hard coral morphologies are also compact and minimally branching to reduce fragmentation from wave impacts. Generally, species composition remain unchanged from previous records from this site, suggesting a relatively stable community despite the presence of human activities and natural stressors.

At almost every site, there was evidence of sea turtle presence in the area as numerous scutes (shell portions) were discovered. Best assessment of the size, shape and colour of the scutes point to the possible presence of hawksbill turtles (*Eretmochelys imbricata*). A green turtle (*Chelonia mydas*) was also spotted (and confirmed) at Salybia Reef and are also known to inhabit the area around Galera Point.

Unfortunately, our fish pot remained empty all weekend.



Beaded anemone Photo: M. Rampaul



Marine artists and their artwork Photos: A. Ganase and K. Mahabir

Base camp activities

Back at base camp, Seleste Herbert oversaw the collection and sorting of volunteer photos for species identification throughout the day. On Saturday the aquarium display was set up and maintained over the weekend by Mark Charran. With the help of the UTT volunteers, he assembled a diverse collection of marine specimens by Sunday which comprised several sea cucumbers, anemones, molluscs, fish and crustaceans. All specimens were identified by Mark, Imran Khan and Dr. Kingon's UTT students. The smallest specimens were examined under the microscope by Neema Ramlogan and Rudra Badree. At the conclusion of the Bioblitz, all live specimens were safely returned to the sea.

Sunday's public engagement activities were overseen by Seleste and Melissa Herbert, Keshan Mahabir and members of the SpeSeas team, Farahnaz Solomon and Anjani Ganase. Visitors participated in interactive games about biodiversity and climate change. Children also had the opportunity to draw, colour and bring life to an undersea mural. There was also an assorted collection of shells and the live aquarium display too. The SpeSeas team educated visitors about coral reefs and the marine environment in light of 2018 being 'International Year of the Reef'. Their display even included an

ROV (remotely operated vehicle) which is used for underwater habitat surveys.

It must be noted that several species identified during reconnaissance trips in August and October were not identified during the Bioblitz event. This could have been due to a variety of factors such as time of year, survey conditions and pure chance. These species are still noted as present but not as official Bioblitz records.

The overall the marine survey and outreach activities were successful thanks to the tremendous effort and passion of our many volunteers who I look forward to seeing at future events. We achieved our main objectives of rapidly assessing the areas' biodiversity, bringing together a diverse team of collaborators and volunteers and sharing valuable knowledge and inspiration with visitors. 🐞



West Indian fuzzy chiton Photo: M. Rampaul



Green moray eel *Photo: M. Rampaul*

Marine group volunteers: Anjani Ganase, Barry Sakhan, Bria De Costa, Charran Sookram, Farahnaz Solomon, Finbar Garcia, Garth Mannette, Imran Juman, Imran Khan, Jo-marie Westmaas, I. Hinkson, Jacqueline Forbes, Jonelle Sookdeo, Karishma Rampersad, Karissier Gokool, Keshan Mahabir, Kristina Sankar, Leah Fouchong, Marc Bejai, Marianna Rampaul, Marion Hosein, Maritsa Harry, Mark Charran, Melissa Herbert-Mohammed, Neema Ramlogan, Nicole Lee-Wing, Rea Raghunanan, Reesa Forester, Rudra Badree, Sanjeev Boodoo, Seleste Herbert, Sharis Garcia, Stephanie Warren-Gittens, Kelly Kingon, Crystal Edwards, Sterling Lue Shue, Jeunisse Mohon, Kizzy-Ann Pasqual, Kelly-Ann Persue, Christopher Ragobar, Adrian Wilson, Krizia Chang, Miquel Garcia, Nele Thijs, Sarita Emmanuel, Dale Kingon, Vaughn-Xavier Jameer, Yevgeniya Malyutina and Yinka Jagbir.



Some of the marine aquatic team *Photo: A. Ganase*



AQUATIC GROUP REPORT: FRESHWATER, ESTUARINE, COASTAL NEAR SHORE

by Ryan Mohammed and Kerresha Khan



Sampling started promptly with a moderate sized group venturing along the north coast road towards Sans Souci. At this site the group divided themselves into three parties each using a different sampling technique; seining, general collecting with dip nets and benthic macroinvertebrates with a kick net. This was repeated at six sites along the north coast road with a fish trap being deployed for overnight fishing at four sites where the water depth was suitable.

At 4pm, after a brief break at base camp, the team divided into two with some members joining various night sampling groups. The remaining members deployed a fish trap at a riverine forest site within the Cumana forest. We then proceeded to the Red Head area on the east coast. Here the large beach seine was used to fish the lagoon at the Tompire River mouth.

Following this the team returned to base camp for dinner. A few of us then took a short walk to the river mouth close to the base camp where Sachin and Rakesh fished using a cast net. Before returning to base camp, however another fish trap was deployed as well.

On Sunday morning all fish traps were retrieved and two beaching seines were attempted. The first was done at Mission Bay and the second at Salybia Bay. Both were subsequently abandoned as the wave height and currents were not conducive for safe fishing with either the large or smaller seines.

Despite this setback, we were still able to record six marine fish species of the 15 fish reported for this group's activity. Fifteen crustaceans were also recorded with six of these being true crabs, six being freshwater shrimp and one being a parasitic isopod on marine fish. Only four freshwater molluscs were observed and this included the invasive turren snail, *Melanoides tuberculata*.

One freshwater turtle, *Kinosternon scorpioides* was observed crossing the Cumana Forest road heading towards the river and a caiman was seen at the river close to the base camp. Mostly dragonfly larvae were collected by the macroinvertebrate collection group. The American eel, *Anguilla rostrata* was noticeably absent from all sites despite multiple techniques used. Nonetheless, they have been observed in within the sample area radius within the last year. The estuarine regions are particularly important for the completion of the lifecycle of this species and this would be a great loss should this species go locally extinct.

Group Members: Kerresha Khan, Jacqueline Forbes, Vaughn-Xavier Jameer, Ryan S. Mohammed, Sachin Maraj, Hanan Lachmansingh, Delezia Singh, Hanan Mayal, Dillon Ramadin, Danielle Jaimungal, Felicia Collins, Shaueel Persadee, Sweelan Renaud, Ajay Ramlogan, Bradley Boodoosingh, Trina Halfhide, and Amy Deacon.



Coastal near shore sampling Photo: S. W-Gittens



FUNGUS GROUP REPORT

by Jeffrey Wong Sang



Mushroom group members

Photo: S. Warren-Gittens

Bioblitz Again !

Same annual issue of trying to get help to search for fungi and more important, assistance in getting correct identifications. Continues to be frustrating but the thrill of the search is still entertaining on a personal level. This year 2018, the team comprised of Pauline Geerah, Roma Wong Sang and myself ably assisted by Darius Baldeo who was managing a double portfolio.

We arrived after the 11am briefing at base camp which was located at the Toco Regional Complex



A large fungi

Photo: J. Wong Sang

this year. We had agreed on a preconceived plan of covering two main areas accessible by vehicle and on foot. 1) Lighthouse to base camp 2) Base camp to Sans Souci.

Saturday evening bore a few samples after the Salybia beach, most on the roadside to the Lighthouse. Nothing unusual, the regular suspects. However that night, Darius had quite a productive outing with the reptile group in the Tompire area. He brought in the largest specimen ever collected to date at any Bioblitz a five layered *Amauroderma rude*, 9.9 pounds (4.5 kg) in weight, diameter 21.5 inches (54.6 cm), height 13 inches (33 cm). Another new find of a white fungi on some leaves was also discovered yet to be identified.



Bird's nest fungi

Photo: P. Geerah

Sunday, our first find was a giant Puffball on the lawn of the Toco Police Station. We also encountered on the Toco main Road to Sans Souci, a rare Bird's Nest fungi hardly seen because of its minute size and only discovered when Pauline was in pursuit of a butterfly.

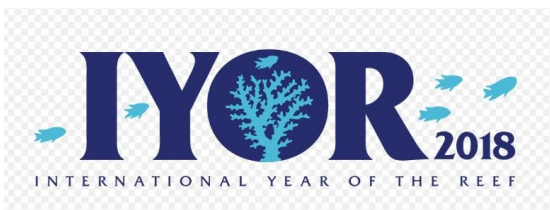
We had mounted a display at base camp and returned about 10am to maintain a public appearance and to tally a final count of 40 species or the Toco Bioblitz 2018.



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



The TTFNC and the Bioblitz organisers thank all of the following organisations for partnering with us for the 2018 Toco Bioblitz



TTFNC QUARTERLY BULLETINS & INDEX ONLINE LINK :
<http://ttfnc.org/publication/field-naturalist/>



Management Notices

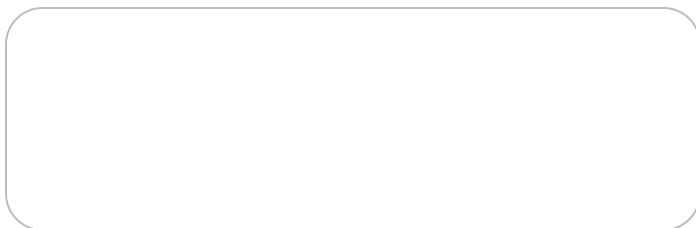
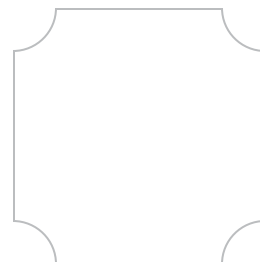
New members; Volunteers; Publications

New Members

The Club warmly welcomes the following new members: Ranessa Austin, Wayne Hutchinson, and Adoma Salina.

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 Toco 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>

Your 2019 Annual Membership Fees are Due:

Please view bottom right of the mailing label to check if your subscription has been paid.

Submission of articles and field trip reports:

- 1. All articles must reach the editor by the eighth week of each quarter.**
- 2. Electronic copies can be submitted to the 'Editor' at: admin@ttfnc.org or directly to the editor or any member of Management. Please include the code QB2019 in the email subject label.**