



PCNP Annual REPORT 2018

Prepared by: Toledo Institute for Development & Environment

Submitted to the Forest Department - Belmopan



Table of Content

Executive Summary

2017 Accomplishments

1. Protection and Surveillance

- Patrol and surveillance
- Maintenance (patrol equipment)

2. Institutional Management and Strengthening

2.1 Capacity Building

2.1.1 Special Constable training

2.1.2 Green Laws Training

2.1.3 Wildlife Tracking and Bird Language Training

2.1.4 Fisheries Regulations Training

2.1.5 Ranger Skills Training

2.1.6 SMART In-house Training

2.2 Administration

2.2.1 Staffing

2.2.1 Report Writing

2.2.2 Hurricane Preparedness

2.3 Park Improvement

2.3.1 Revision of 3 Years Work plan and Budget

2.3.2 TIDE Fire Management Consultancy

2.4 Networking

2.4.1 Management Team Meetings

2.4.2 PCNP Management Committee Meetings

2.4.3 Meetings and workshops with Forest Department and partners

2.4.4 Host several Donors and Friends of TIDE

3.0 Public Use Planning, Recreation Management, Visitor Safety and Control

- Visitors to PCNP

4.0 Community Development and Education

4.1 Fresh Water Cup

4.2 Continued support to Monkey River Watershed Association Development

4.3 Community Meetings and meetings with community leaders/Groups developing Sustainable Forest Enterprises under Darwin

4.4 Capacity Building for Youths under the CARSI Project

4.5 TIDE WEEKEND

5.0 Natural Resource Management

5.1 Integrated Fire Management

5.1.1 Developed Prescribed Burn Plans

5.1.2 Conduct Prescribed Burns

5.1.3 Wild fire suppression and use

- 5.1.4 Fire effects monitoring
- 5.1.5 Conduct Advance Fire Training for PFB
- 5.1.6 Basic Fire Management Training
- 5.1.7 Fire Awareness
- 5.1.8 Community Fire Management Plan Development

6.0 *Research and monitoring*

- 6.1 Biodiversity monitoring using Camera Traps
- 6.2 Yellow Headed Parrot Nest Monitoring
 - 6.2.1 Chick Health Assessment
- 6.3 Participate in annual Christmas Bird Count for the Punta Gorda Circuit
- 6.4 Crocodile survey and monitoring of nests sites
- 6.5 YHP Roost Counts

7.0 *Infrastructure Management*

- 7.1 Maintenance of park's infrastructure, solar system and grounds
- 7.2 Infrastructure Improvements/Upgrade

8.0 *Financial Report*

Executive Summary

Words from the Manager:

2018 was a very busy year for the staff of PCNP. Staff was engaged in Fire management, Law Enforcement, Research and monitoring and capacity building for both staff and communities.

With Funding from PACT the staff conducted prescribed burns in Deep River Forest Reserve burning some 4000 acres to meet specific objectives and provide basic fire management training for community residents and staff from Protected areas co-managed by TIDE, Ya'axche' Conservation Trust, BAS and the Forest Dept. Advance Fire Training was done for Staff from PFB, RBCMA buffer communities and Forest Dept and Basic fire management training for staff at Sittee River Wildlife Reserve and Belize Sugar Industries staff and other cane farmers affiliated with BSI; building fire management capacity at the National Level as well as assisting with burn plan development for Pine Lumber Company for approval to do some prescribed in their concession in MPR.

To improve our enforcement and other management activities; funding from Mass Audubon, Overbrook and the Summit Foundation assisted with the implementation of SMART to collect enforcement data commenced in March and the information is being used to target more focused patrols especially in the dry season when the access road is in good condition where people are entering into neighboring DRFR to conduct activities that can have some negative impacts on the park such as hunting and lighting of fires. Research and monitoring include Biodiversity monitoring with Camera traps for monitoring of Mammals focusing on Jaguar and Jaguar prey, Fire effects monitoring at 28 plots scattered over PCNP, DRFR and SBFR focusing on Pine and Palmetto and 6 transects done with UB/ERI Students focusing on fire effects on vegetation cover, Yellow-headed Parrot population survey by doing Roost Counts 3 times annually and nest success monitoring with assistance from Fabio Tarazona, a Student from New Mexico State University and his crew and chick health assessments with Vet from BBR to ensure we are contributing our part in the management of this endangered species as well as collaborating with Crocodile Research Coalition on the national survey on Crocodiles.

On Behalf of the staff and management of PCNP we would like to take this opportunity to thank all those who have contributed to the management of PCNP for 2018 and looking forward to your continued support.

Sincerely
Mario Muschamp
Protected Areas Manager, TIDE

2018 Accomplishments:

1. Protection and Surveillance:

The report below highlights the activities encountered in and around PCNP during the first half of 2018 during patrols using SMART from March and for January and February was done before the implementation of SMART which are highlighted in the Table format.



**SMART Terrestrial Patrols
Paynes Creek National Park**



Who Generated Report	Patrol Reporting Start	Patrol Reporting End
Ryan Moore	Jan 1, 2018	Dec 31, 2018

Total Patrols

Ranger Team	# of Patrols	Distance Travelled (km)	# of Patrol Hours
Paynes Creek	191.00	9006.00	1503.34

Ranger Performance

Ranger	# of Patrols	Distance Travelled (km)	Patrol Hours
Augustine Sho	132	4,574.80	1,082.37
Leonard Williams	159	8,202.11	9,820.71
Mario Muschamp	140	7,650.99	9,994.48

Patrols By Mandate

Mandate	# of Patrols	Distance Travelled (km)	Patrol Hours
Biodiversity	8	258.293	45.224
Follow Up			

Mandate	# of Patrols	Distance Travelled (km)	Patrol Hours
Reconnaissance	13	757.947	148.884
Ridge 2 Reef	13	699.041	35.817
Routine	121	5,511.665	925.676
Special	36	1,779.044	347.737
Total	191	9005	1503

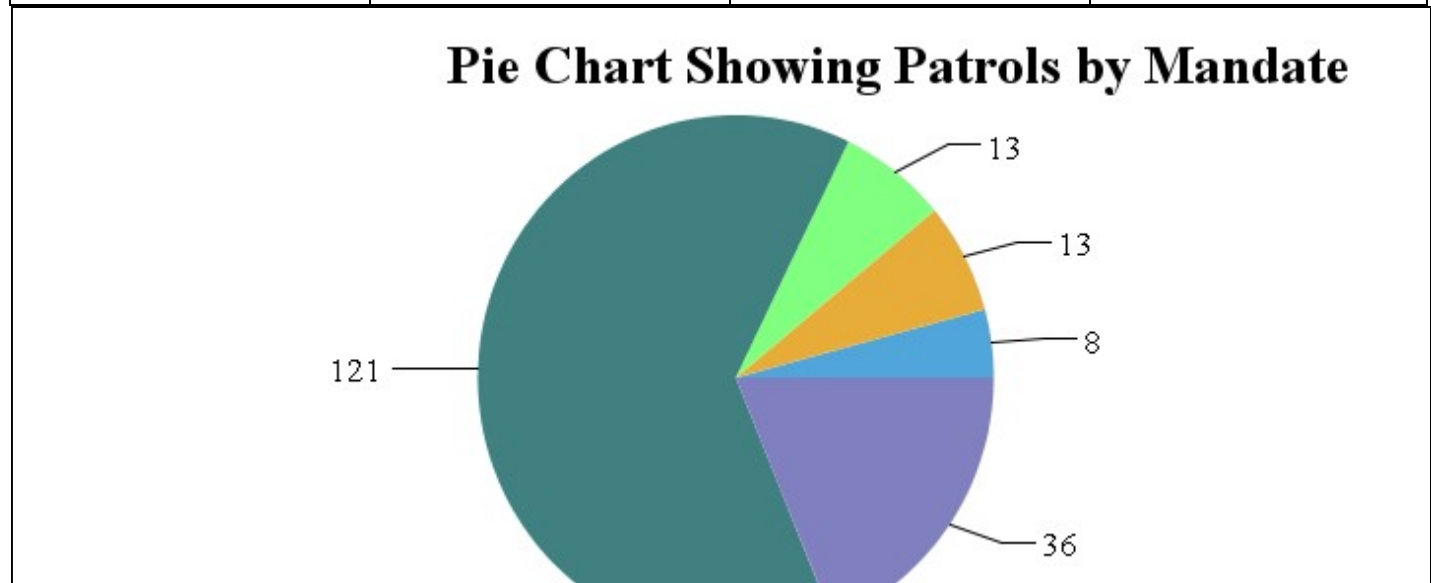


Table Showing Patrols by Mandate and Objectives

Date	Mandate	Objectives	Leader
2018-03-08	Routine		Leonard Williams
2018-03-29	Routine		Leonard Williams
2018-03-29	Routine		Leonard Williams
2018-03-27	Routine	monitor activities in and around boundaries of park	Mario Muschamp
2018-03-28	Routine	monitor activities in and around Payne's creek	Mario Muschamp
2018-03-29	Routine		Mario Muschamp
2018-03-29	Routine		Leonard Williams
2018-03-29	Routine		Leonard Williams

Date	Mandate	Objectives	Leader
2018-03-30	Routine		Leonard Williams
2018-03-31	Routine		Leonard Williams
2018-04-01	Routine		Leonard Williams
2018-04-02	Routine		Leonard Williams
2018-04-02	Routine		Leonard Williams
2018-04-03	Routine		Leonard Williams
2018-04-04	Routine	monitor activities in and around PCNP	Mario Muschamp
2018-04-05	Routine	monitor activities in and around pcnp	Mario Muschamp
2018-04-06	Routine	monitor activities in and around PCNP	Mario Muschamp
2018-04-07	Reconnaissance	monitor activities in and around pcnp	Mario Muschamp
2018-04-08	Routine	monitor activities in and around pcnp	Mario Muschamp
2018-04-16	Reconnaissance	monitor activities in and around pcnp	Mario Muschamp
2018-04-18	Reconnaissance	monitor activities in and around. pcnp and yhp nest monitoring	Mario Muschamp
2018-04-18	Reconnaissance	locate yhp nest sites	Mario Muschamp
2018-04-25	Reconnaissance	monitor activities in and around pcnp	Mario Muschamp
2018-04-26	Reconnaissance	monitor activities in and around pcnp	Mario Muschamp
2018-04-27	Reconnaissance	monitor activities in and around pcnp	Mario Muschamp
2018-04-28	Reconnaissance		Mario Muschamp
2018-04-29	Reconnaissance		Mario Muschamp
2018-04-30	Reconnaissance		Mario Muschamp
2018-04-12	Routine	illegal activities	Augustine Sho
2018-04-13	Routine	to monitor activities in and around tide land	Augustine Sho
2018-04-13	Routine	monitor activities in and around pcnp	Augustine Sho
2018-04-25	Biodiversity	crocodile monitoring with Greg and Merriam from USA s.cucul and andrew	Santiago Cucul

Date	Mandate	Objectives	Leader
2018-05-16	Biodiversity	crocodile monitoring at d pond behind d bae	Mario Muschamp
2018-05-16	Routine	Crocodile Habitat Survey	Andrew Williams
2018-05-16	Routine	Return Sliver truck to Hq	Andrew Williams
2018-04-30	Routine		Mario Muschamp
2018-05-04	Routine	to monitor illegal activities	Augustine Sho
2018-05-05	Routine	monitor illegal activities	Augustine Sho
2018-05-15	Routine	to pick up Polaris	Mario Muschamp
2018-05-15	Biodiversity	crocodile monitoring	Mario Muschamp

Date	Mandate	Objectives	Leader
2018-05-16	Biodiversity	crocodile monitoring at. crocodile pond	Mario Muschamp
2018-05-17	Routine	Out Fire from lightning strike	Andrew Williams
2018-05-19	Routine	to pick up water tank	Mario Muschamp
2018-05-21	Routine	drop back water tank then to Monkey River to pick up boat	Mario Muschamp
2018-05-24	Routine		Mario Muschamp
2018-05-30	Routine	to abalone to assist at phmr	Mario Muschamp
2018-06-01	Routine		Mario Muschamp
2018-06-05	Routine		Mario Muschamp
2018-06-08	Routine		Leonard Williams
2018-06-08	Ridge 2 Reef		Leonard Williams
2018-06-08	Ridge 2 Reef		Leonard Williams
2018-06-11	Routine		Leonard Williams
2018-06-12	Special	To pick up Arnoldo to fix toilets etc.	Mario Muschamp
2018-06-12	Ridge 2 Reef	to drop back Arnoldo	Mario Muschamp
2018-06-14	Routine	To Abalone for staff meeting and service engine	Mario Muschamp
2018-06-18	Routine		Mario Muschamp
2018-06-18	Routine		Mario Muschamp
2018-06-21	Special	to drop off CRC personal	Mario Muschamp
2018-06-22	Routine	To Monkey River	Mario Muschamp
2018-07-03	Routine	monitor illegal activities and change battery for camera to monitor crocodile nest by Payne's creek pond	Leonard Williams
2018-07-03	Routine	monitor illegal activities on water,coastline.	Leonard Williams
2018-07-10	Routine		Leonard Williams
2018-07-11	Routine	Hold over Abalone Station for PHMR Rangers	Mario Muschamp
2018-07-12	Special	To pick CRC personnel	Mario Muschamp
2018-07-12	Special		Mario Muschamp

Date	Mandate	Objectives	Leader
2018-07-13	Routine	To submit itinerary and meet with Neil Stuart	Mario Muschamp
2018-07-14	Biodiversity	monitor camera at croc nest	Mario Muschamp
2018-07-15	Routine		Mario Muschamp
2018-07-16	Routine	change over day	Mario Muschamp
2018-07-18	Routine		Leonard Williams
2018-07-19	Biodiversity	change battery in camera at Crocodile nest	Mario Muschamp
2018-07-19	Special	to drop off POD volunteer	Mario Muschamp
2018-07-21	Routine		Mario Muschamp
2018-07-22	Routine		Mario Muschamp
2018-07-24	Special	To meet Allen to look at Coleman property in New Heaven	Mario Muschamp
2018-07-24	Biodiversity	pick up camera from Crocodile nest	Mario Muschamp
2018-07-25	Special	To meet with CRC personnel to deliver camera from crocodile nest and meet with Ryan	Mario Muschamp
2018-07-26	Special	To meet with Ryan on SMART	Mario Muschamp
2018-07-26	Routine	retired from SMART data collection meeting with Ryan	Mario Muschamp
2018-07-28	Special	to pick up rangers and their families for rangers day party	Augustine Sho

Date	Mandate	Objectives	Leader
2018-07-29	Routine		Mario Muschamp
2018-07-30	Routine	change over day	Mario Muschamp
2018-07-31	Routine	To Abalone to service engine etc.	Mario Muschamp
2018-08-01	Ridge 2 Reef	pick up cook for R 2 R	Leonard Williams
2018-08-01	Ridge 2 Reef	pick up R2R	Leonard Williams
2018-08-01	Ridge 2 Reef		Andrew Williams
2018-08-02	Ridge 2 Reef	to Abalone to borrow extra hammer etc	Mario Muschamp
2018-08-02	Ridge 2 Reef	manatee watching	Mario Muschamp
2018-08-03	Ridge 2 Reef	To Monkey River to install signs at St. Martin's blk.	Mario Muschamp
2018-08-04	Routine	to monitor activities in and around pcnp and to return tools to phmr	Mario Muschamp
2018-08-05	Routine	to monitor activities in and around pcnp	Mario Muschamp
2018-08-06	Routine	change over day	Mario Muschamp
2018-08-07	Special	To travel to Gomez sawmill to service fire equipments	Mario Muschamp
2018-08-07	Routine	return from Gomez sawmill	Mario Muschamp
2018-08-08	Routine	To assist at phmr	Mario Muschamp
2018-08-10	Routine	To deliver itinerary and meet with group from Stanford University	Mario Muschamp
2018-08-11	Reconnaissance	To St. Martin's blk on the Monkey River to install signs	Mario Muschamp
2018-08-12	Routine	drop Mario off	Leonard Williams
2018-08-13	Routine	change over day	Leonard Williams
2018-08-15	Routine	coast patrol to Marcos omalla to pick up Mario and wiliam	Augustine Sho
2018-08-16	Routine	I am in tppl working so we are heading to pcnp to see if everything OK there.	Augustine Sho
2018-08-19	Routine	depart by tppl heading to pcnp for over night cause Augustine pop need to pick up Mario muscham monday	Augustine Sho
2018-08-20	Special	heading to Monkey River to pic up Mario muscham	Augustine Sho
2018-08-20	Routine	return from PG	Mario Muschamp
2018-08-22	Special	To drop Leonard at Abalone to assist at PHMR then to Monkey River to meet with engineer installing geitubes	Mario Muschamp

Date	Mandate	Objectives	Leader
2018-08-23	Special	to collect rice trash for garden	Mario Muschamp
2018-08-24	Routine	To Monkey River to assist with geotube installation	Mario Muschamp
2018-08-26	Ridge 2 Reef	pick up cook for R2R	Leonard Williams
2018-08-28	Ridge 2 Reef	drop off cook for R2R	Leonard Williams
2018-08-29	Routine	To Abalone to assist at PHMR	Mario Muschamp
2018-08-30	Special	To travel to Gomez sawmill to do inventory	Mario Muschamp
2018-08-30	Special	To Monkey River to assist with geotube installation	Mario Muschamp
2018-09-03	Routine	change over day	Leonard Williams
2018-10-24	Routine	coast line patrol from pcnp to tppl base	Mario Xi
2018-09-03	Routine	ranger change over day heading to pcnp along with ridge to reef	Augustine Sho
2018-09-04	Routine	heading to PHMR to try find manatee sighting	Augustine Sho
2018-09-05	Routine	we are heading along ridge to reef to do manatee sighting to upper fresh water creek	Augustine Sho
2018-09-06	Ridge 2 Reef	to drop ridge to reef by tide warf	Augustine Sho
2018-09-06	Routine	heading back to tppl	Augustine Sho
2018-09-07	Routine	conduct a routine patrol by block 123 ,2977,pine hill area.	Augustine Sho

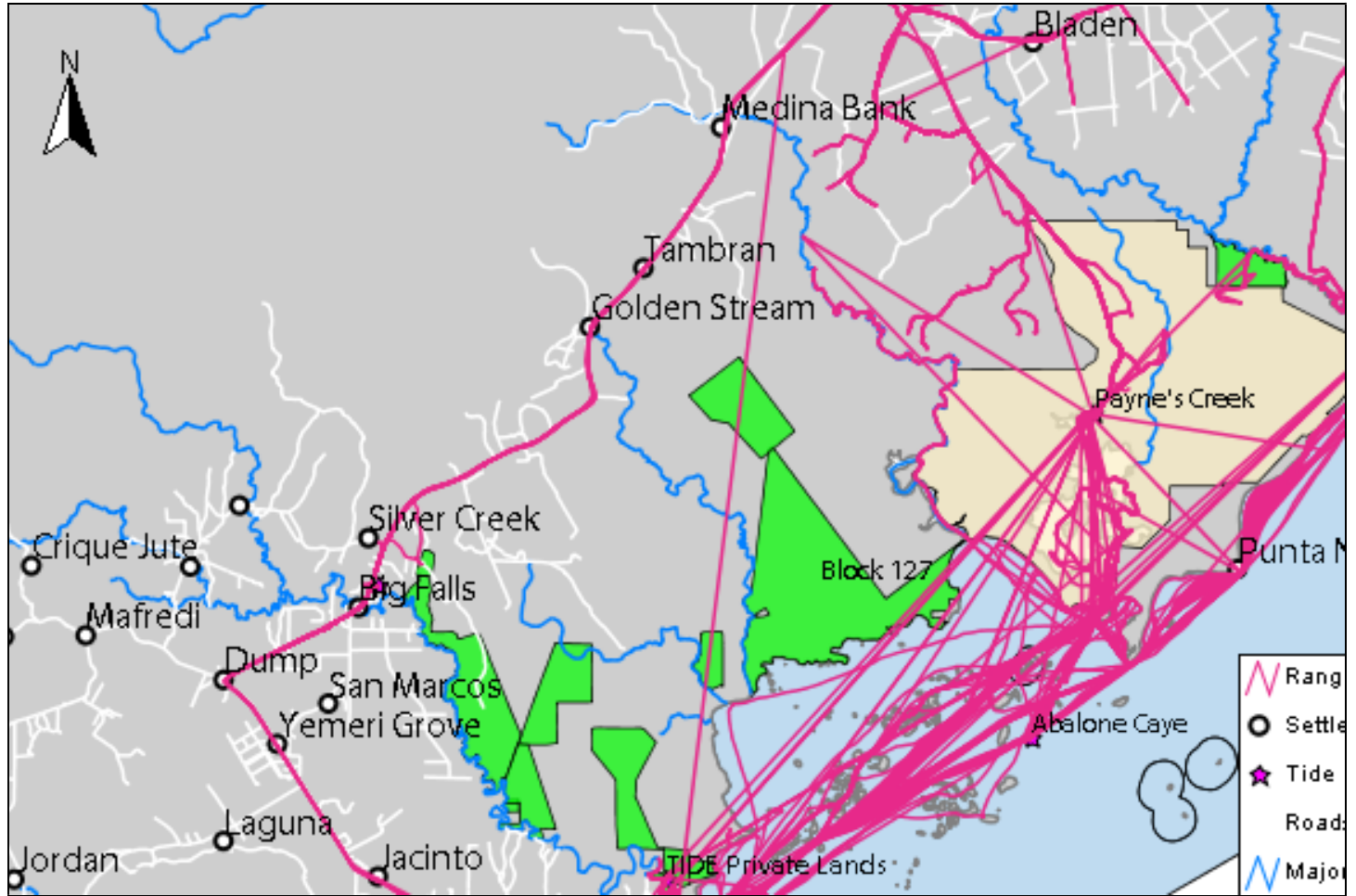
Date	Mandate	Objectives	Leader
2018-09-11	Special	from tppl heading to pick up Mr Mario muscham then head to tide warf.	Augustine Sho
2018-09-11	Routine	return from town	Mario Muschamp
2018-09-14	Routine	to submit itinerary and to travel to DRFR, SBFR and access road into PCNP to monitor palmetto seed harvest	Mario Muschamp
2018-09-14	Reconnaissance	to monitor palmetto seed harvest	Mario Muschamp
2018-09-14	Routine		Leonard Williams
2018-09-17	Routine	change over day	Mario Muschamp
2018-09-19	Routine	Return from assisting at PHMR	Mario Muschamp
2018-09-20	Special	To attend presentation on communication strategy	Mario Muschamp
2018-09-20	Routine	To Monkey River to do repairs to engine and going off for the weekend	Mario Muschamp
2018-09-24	Routine	change over day	Mario Muschamp
2018-09-27	Reconnaissance	To DRFR and SBFR via highway to monitor palmetto seed harvest	Mario Muschamp
2018-09-27	Routine	in from TPPL	Mario Muschamp
2018-10-01	Routine	change over day	Mario Muschamp
2018-10-03	Routine	Lagoon patrol in from TPPL/Abalone	Mario Muschamp
2018-10-04	Special	To work on stalls and to travel to Bze City for Radio Show	Mario Muschamp
2018-10-08	Routine	pick up Mario n to tide	Mario Muschamp
2018-10-09	Routine	in from PG/TPPL	Mario Muschamp
2018-10-11	Special	To collect coconuts and to assist with pre conservation festival activities	Mario Muschamp
2018-10-12	Special	To assist with pre conservation festival activities	Mario Muschamp
2018-10-13	Special	To work at conservation festival	Mario Muschamp
2018-10-16	Routine		Mario Muschamp
2018-10-17	Ridge 2 Reef	heading by reforestation	Mario Xi
2018-10-19	Routine	to work on map with Ryan	Mario Muschamp
2018-10-22	Routine	change over day	Mario Muschamp
2018-10-23	Routine	monitor activities in and around pcnp	Mario Muschamp

Date	Mandate	Objectives	Leader
2018-10-24	Routine	To Abalone to assist at PHMR	Mario Muschamp
2018-10-25	Special	To pick up Jill to design classroom at Pcnp	Mario Muschamp
2018-10-25	Routine	take in shalita n Ms Jill back to town	Leonard Williams
2018-10-25	Routine	heading back at tppl base for over night	Leonard Williams
2018-10-26	Special	assist with ub out to Basel	Leonard Williams
2018-09-10	Routine	conducted a day patrol by coastline from TPPL to Marcos amaya.	Augustine Sho
2018-10-26	Special	assist with ub	Leonard Williams
2018-10-26	Special	Assist with ub students	Leonard Williams
2018-10-28	Special	assist with ub students	Leonard Williams
2018-10-28	Routine	back then base	Leonard Williams
2018-10-29	Routine	pick up Mario den to town	Mario Muschamp
2018-11-03	Special	To Abalone to drop off Coast Guard personnel after training and then to Monkey River	Mario Muschamp
2018-11-05	Routine	change over day	Mario Muschamp
2018-11-09	Routine	To Monkey River to drop off manager	Mario Muschamp
2018-11-12	Routine	change over day	Mario Muschamp

Date	Mandate	Objectives	Leader
2018-11-12	Routine	departing tide warf heading to pcnp for a ranger skills training	Augustine Sho
2018-11-17	Routine	heading to tppl base	Augustine Sho
2018-11-18	Routine	pick up fire equipments n back to TPPL	Leonard Williams
2018-11-20	Routine	change over day	Leonard Williams
2018-11-24	Special		Mario Muschamp
2018-11-25	Special	to drop off Dale and contractors	Mario Muschamp
2018-11-26	Routine	change over day	Mario Muschamp
2018-11-20	Routine	routine patrol coat line from tide office to pcnp base with Fabio an his crew	Santiago Cucul
2018-11-23	Routine	routine coast line patrol from pcnp base an to office to pick up board for contractor that working at pcnp an den to tppl base	Santiago Cucul
2018-12-04	Routine	joint patrol with pcnp an set up camara via pcnp area	Mario Muschamp
2018-12-30	Routine		Pedro Shol
2018-11-26	Routine	change over day	Mario Muschamp
2018-11-28	Routine	to Monkey River to drop off Mario	Mario Muschamp
2018-12-03	Special	to pick up Mario muscham from Monkey River then head back to tide warf for ranger change over day.	Mario Muschamp
2018-12-05	Routine	To Monkey River to install camerad	Mario Muschamp
2018-12-06	Special	Advisory Committee meeting	Mario Muschamp
2018-12-07	Routine	To Monkey River to drop off manager	Mario Muschamp
2018-12-08	Routine	pick up someone from d office then to town	Leonard Williams
2018-12-09	Routine	pick up cook fi next week	Leonard Williams
2018-12-10	Routine	chang over day	Leonard Williams
2018-12-13	Routine	drop in cook	Leonard Williams
2018-12-14	Routine	meeting on new PACT project	Mario Muschamp
2018-12-16	Special	To travel on staff Retreat	Mario Muschamp
2018-12-20	Special	To Tppl to over night to travel to Bze City for PACT award	Mario Muschamp
2018-12-21	Special	to travel to Bze City	Mario Muschamp

Date	Mandate	Objectives	Leader
2018-12-22	Routine	to Monkey River	Mario Muschamp
2018-12-28	Special	To transport supplies and cook for R2R group	Mario Muschamp
2018-12-29	Biodiversity	download pictures from camera traps	Mario Muschamp
2018-12-30	Special	to drop off cook after group left	Mario Muschamp

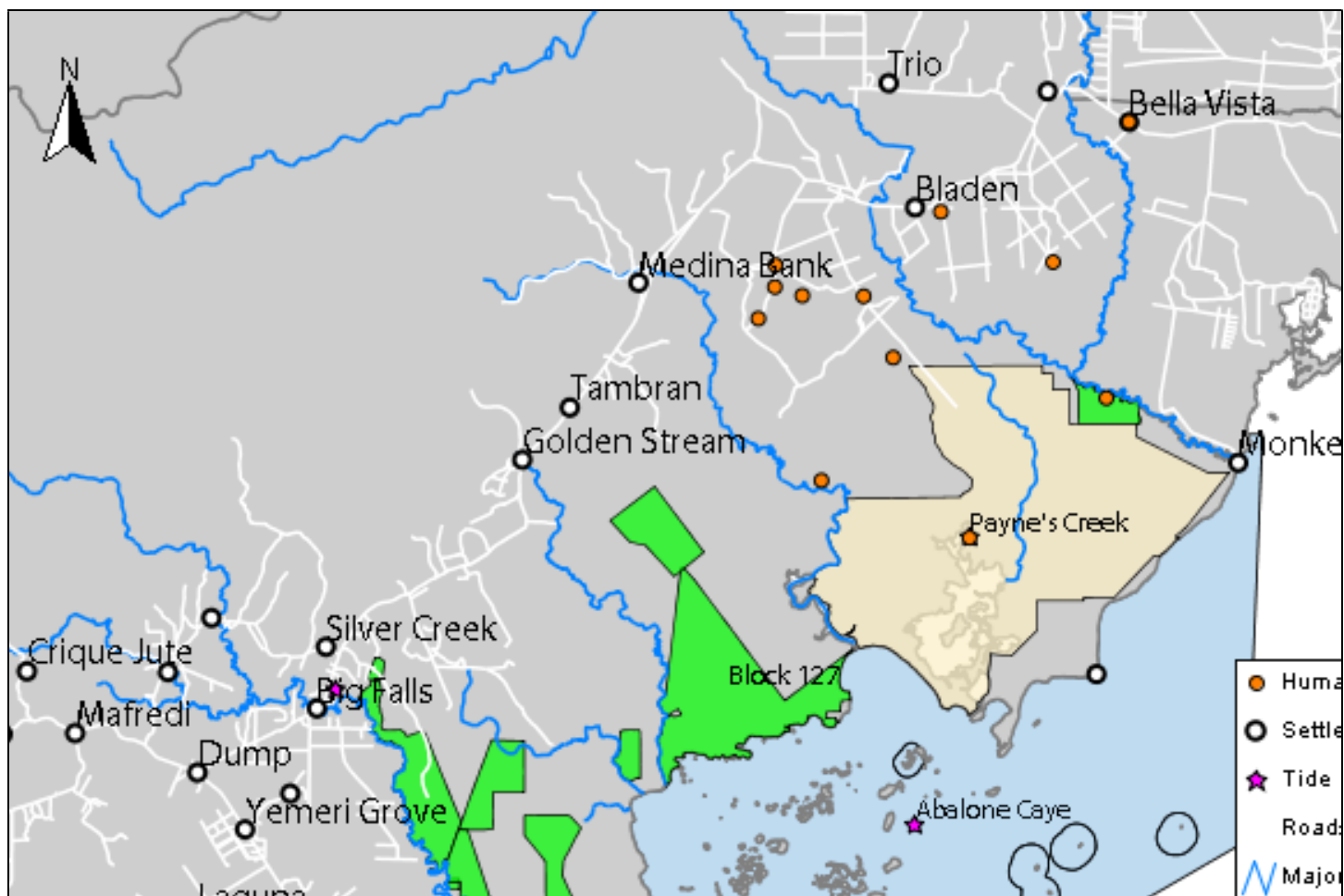
Map Showing Patrol Routes



Human Activity

Observation Date	Observation	Activity Comments
2018-04-05	Tracks	motor cycles in the Beetic Penn area of DRFR we believe to fishing on Deep River
2018-05-04	Forest Fire	wildfire
2018-09-27	NTPF Harvest	14 bags palmetto seeds
2018-09-27	NTPF Harvest	palmetto
2018-09-27	NTPF Harvest	palmetto seed harvest by cutting down of trees in SBFR
2018-04-18	Cut Lines	leading to Bladen River
2018-04-08	Tracks	heading to Beetic Penn area of DRFR we believe to. fish
2018-04-18	Forest Fire	wildfire about 6 days ago
2018-04-18	Logging	heard chainsaw South of location
2018-04-07	Tracks	bicycle along thousand Creek we believe to fish
2018-12-29	Tracks	we believe to hunt
2018-03-29	Tracks	two bike tracks on deep river road hand line fishing

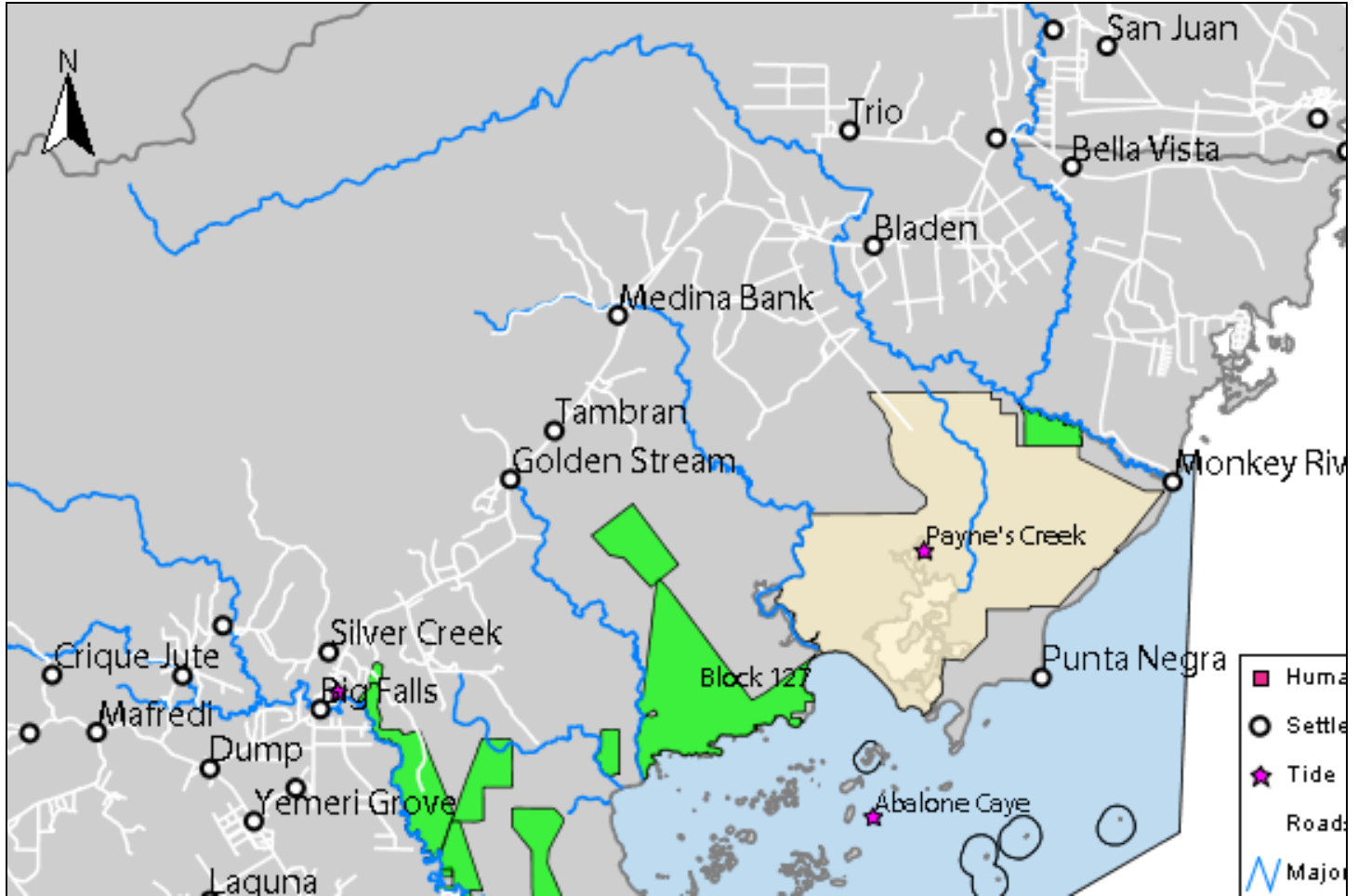
Map Showing Human Activity



Human Encounters

Date	Name of Person	Activity Engaged On	Action Taken
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Map Showing Human Encounter



Recreational Activity Sightings

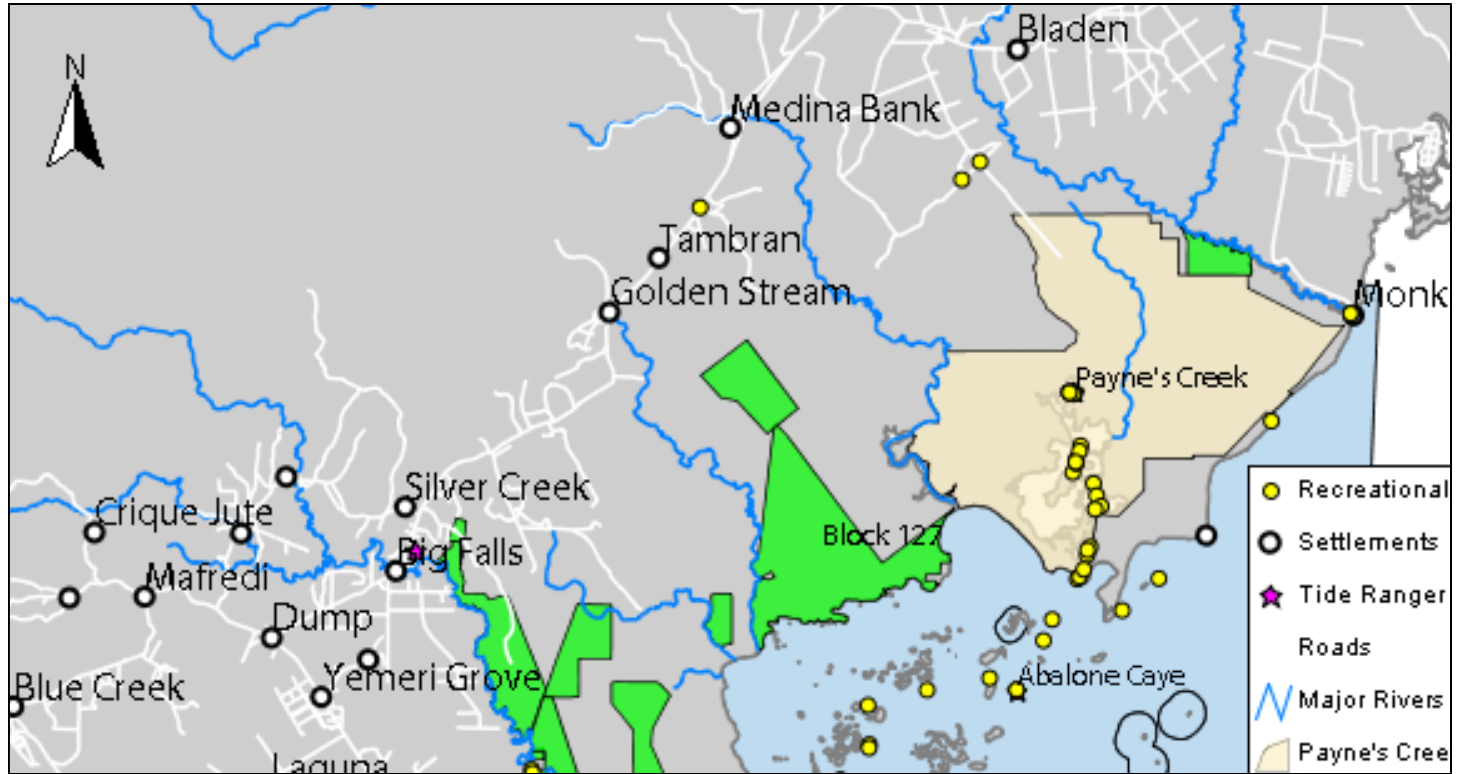
Date	Recreational Activity	# of Individuals
Jun 18, 2018	Fly Fishing	2
Jul 26, 2018	Recreational Fishing	3
Oct 9, 2018	Recreational Fishing	1
Oct 9, 2018	Recreational Fishing	3
Oct 9, 2018	Fly Fishing	2
Dec 10, 2018	Fly Fishing	2
Jul 31, 2018	Canoeing	1
Jul 31, 2018	Canoeing	1
Jul 31, 2018	Canoeing	1
Jul 31, 2018	Canoeing	1
Oct 26, 2018	Fly Fishing	1
Apr 29, 2018	Recreational Fishing	3
Sep 27, 2018	Recreational Fishing	3
Dec 30, 2018	Fly Fishing	2
Aug 22, 2018	Canoeing	3
Sep 4, 2018	Canoeing	2
Dec 7, 2018	Fly Fishing	2
Aug 6, 2018	Fly Fishing	2
Aug 6, 2018	Recreational Fishing	3
May 15, 2018	Recreational Fishing	2
May 15, 2018	Fly Fishing	3
Aug 30, 2018	Fly Fishing	2
Jul 19, 2018	Recreational Fishing	2
Jul 19, 2018	Fly Fishing	4
Sep 24, 2018	Fly Fishing	2
Oct 22, 2018	Recreational Fishing	2

Date	Recreational Activity	# of Individuals
Jul 18, 2018	Fly Fishing	3
Aug 16, 2018	Fly Fishing	1
Aug 16, 2018	Fly Fishing	1
Sep 3, 2018	Canoeing	3
Dec 13, 2018	Fly Fishing	3
Dec 6, 2018	Fly Fishing	2
Jul 12, 2018	Recreational Fishing	1
Jul 12, 2018	Fly Fishing	2
Apr 30, 2018	Canoeing	2
Jul 18, 2018	Canoeing	1
Aug 23, 2018	Recreational Fishing	2
Apr 8, 2018	Recreational Fishing	2
Jul 25, 2018	Fly Fishing	2
Aug 14, 2018	Canoeing	1

Date	Recreational Activity	# of Individuals
Nov 25, 2018	Recreational Fishing	3
Nov 25, 2018	Fly Fishing	6
Oct 25, 2018	River Tour	1
Jul 13, 2018	Fly Fishing	3
Apr 16, 2018	Fly Fishing	2
Apr 16, 2018	Fly Fishing	2
Aug 26, 2018	Recreational Fishing	3
Jun 12, 2018	Fly Fishing	2
Jun 12, 2018	Fly Fishing	2
Jun 12, 2018	Fly Fishing	2
Jun 12, 2018	Recreational Fishing	4
Aug 20, 2018	Fly Fishing	2
Aug 10, 2018	Fly Fishing	2
Aug 1, 2018	Recreational Fishing	3
May 5, 2018	Kayaking	2
Apr 30, 2018	Fly Fishing	2
Sep 10, 2018	Canoeing	2
Sep 10, 2018	Canoeing	3
May 24, 2018	Fly Fishing	2
May 24, 2018	Fly Fishing	2
Aug 23, 2018	Canoeing	1
Aug 23, 2018	Canoeing	1
Nov 12, 2018	Canoeing	1
Aug 24, 2018	Recreational Fishing	5
Aug 23, 2018	Fly Fishing	2
Jul 16, 2018	Fly Fishing	6
Jul 16, 2018	Fly Fishing	3

Date	Recreational Activity	# of Individuals
Dec 8, 2018	Fly Fishing	2
Nov 27, 2018	Canoeing	2
Total		154

Map Showing Recreational Activities



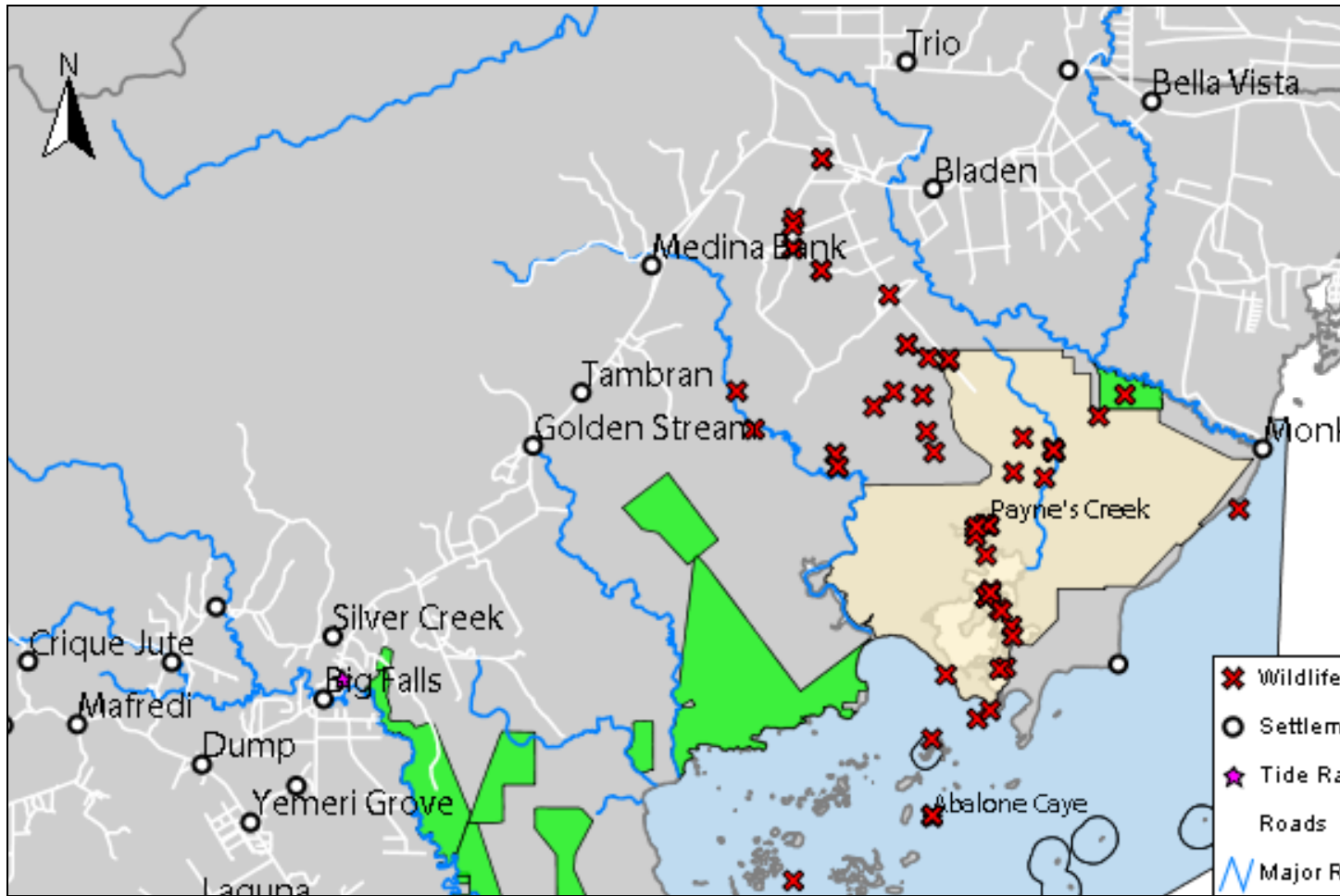
Wildlife Activity

Wildlife Sighted	Comments	No. of Wildlife
Manatee		1
Crocodile	crocodile nest	1
Unknown	turtle shell	1
Manatee		2
Other	yhp nest site in DRFR	1
Other		1
Other	YHP nest in DRFR	
White Tailed		2
Manatee		1
Manatee		1
Morelet's Crocodile	nest site	1
Other	American Bittern	1
White Tailed		1
Unknown	dolphins	3
Manatee		1
Manatee		1
Manatee		1
Manatee		1
Manatee		3
Manatee		3
White Tailed		
Manatee		2
	the three chicks that we clean around their natural #8 by boundary line pcnp.	3

Wildlife Sighted	Comments	No. of Wildlife
	we are doing a cleaning around the yellow -headed parrot natural nest cause wildfire is reaching there.one wildfire in the Western side ,one in the Northeast side too.	
Other	nesting site for an American Crocodile	
Other	American Crocodile nest	
Manatee		1
Grey Fox		1
White Tailed		1
	monitor yellow-headed parrot natural nest	1
	visit the natural nest of yellow-headed parrot#8 and collect one chick in nest it will be taken at bbr(Belize bird rescue.	1
Manatee		1
Bottlenose		3
Manatee		1
White Tailed		1
Howler		2
Other	grey and short tail hawk	2
Grey Fox	grey fox	
White Tailed	white tail deer	1

Wildlife Sighted	Comments	No. of Wildlife
Manatee		1
Manatee		1
Manatee		1
Manatee		1
American Saltwater		1
Manatee		2
Manatee		3
Manatee		1
Manatee		1
	dolphins	5
Other	nest with 1 chick and 2 eggs	1
Other	NB# 25 PCNP/4 eggs laid/4 hatched/4 chicks in box	4
Other	greater yellow legs, spotted sandpiper and collared plover	3
Other	NB#1 DRFR/3 eggs laid,/3 hatched/3 chicks in box	3
Other	NB#7 DRFR/3 eggs laid/3 hatched/chicks were predated or poached	0
Other	Nat Nest #1 DRFR/3 eggs laid/2 hatched/2 chicks in nest/already with some yellow head feathers	2
Other	eggs hatched but chicks were predated	
Other	NB#8 DRFR/3 eggs laid/3 hatched/3 chicks in box	3
Yellow Headed Parrot	yhp nest #3 DRFR. adult at nest	1
Other	NB#3 DRFR/3 eggs laid/3hatched-3 fat chicks in box	3
Other	nest # 6/1 egg/1 hatched/1 chick	1
Other	Nat Nest #7 DRFR/3 eggs laid/2 hatched/2 chicks in nest	2
Howler		6

Wildlife Sighted	Comments	No. of Wildlife
Howler		6
Manatee		1
Bottlenose		2
Manatee		2
Manatee		2
Manatee		1
Manatee		1
Manatee		1
Manatee		1
Manatee		1



1.1 Surveillance/Patrols (implementation of SMART)

The table below highlights the patrols for January and February not captured under the SMART patrol report:

No. Of Patrols	Illegal Activities	Tourism Activities	Fishing/Hunting Activities	Wildlife Sightings

29 Water Based Patrols	0	18 Boats with 29 Guests were encountered doing Tourism Related Activities (Fly-fishing) Boats were from PG and Placencia.	3 boats with locals from PG hand line fishing in PHMR	5 Manatee and 10 Bottlenose Dolphins sightings were recorded in Lagoon and PHMR on these patrols.
4 Land Based Patrols	0	0	Signs of bicycles entering DRFR along Thousand Creek and the Beetie Penn area we believe to hunt and fish	Tracks from Jaguar, Tapir, White Tailed Deer and Grey Fox were observed along patrol Routes.

1.2 Maintenance (Patrol equipment):

The regular servicing of our outboard engine was done as specified in the Owners' manual changing engine oil, oil filter and gear oil as well as fresh water wash and re-grease. Major jobs such as changing impellor etc; was done by mechanic in Monkey River. The repairs and maintenance done on the Polaris used for land patrols and fire management activities was done by mechanic from Thomas Gomez and Sons Lumber Ltd. One of the SBFWG members.

2. Institutional Management and Strengthening

2.1 Capacity Building

2.1.1 Special Constable training

Park Ranger Agustin Pop participated in a 2 weeks Special Constable Training organized by the Forest Department for protected areas staff from around the country and facilitated by the Belize Police Department held at the Police Training Academy from 14th to 25th May 2018. This training has now given our newest Ranger here at PCNP the powers of arrest etc.

2.1.2 Green Laws Training

Park Ranger Agustin Pop attended Green Laws Training organized and facilitated by the Forest Department on 8th and 9th February 2018 held at the Tropical Education Center. This training has build the capacity of our Ranger in knowledge of the laws governing the management of Belize's protected areas and now better knowledgeable of the Laws he is to enforce at his work place as well as he is now with information he can share with his community to help with compliance in the management of Belize's protected areas system.

2.1.3 Wildlife Tracking and Bird Language Training

Protected Areas Manager and PCNP Head ranger participated in a one week training in Wildlife tracking and Bird Language organized by TIDE Tours for Tour Guides and rangers facilitated by from the organization Cyber Tracker that covered identifying prints to species, left from right and front from back legs and how the animal is moving through the area whether it is walking, trotting or speeding and Bird language that covered topics such as what is Bird Language, principles governing Bird Language, SIT method, knowledge of Territory, mapping of SIT spot, Bird Behavior, Identifying 5 voices (baseline/alarm), Vocalization (song, companion call, Territorial Aggression, Begging, Alarm) and Shapes of Alarm (Hook & Pop Corn, Parabolic/Umbrella, Wake Hunting/Secondary Alarms/Cascading Alarms). These trainings will greatly assist Rangers with their Biodiversity Monitoring and Tor Guides with improving their guests experience while on tours focusing on wildlife. Both parks' participants got high marks n both aspects of the trainings (Tracker iii for the wildlife tracking one level from Advance Training which is a Trainers training and the highest level in the bird language training)



Wildlife Tracking Training

2.1.4 Fisheries Regulations Training

Park staff participated in a Fisheries Regulations Training organized by TIDE under a European Union Funded project facilitated by Fisheries Department personnel Mr. Calman Hall and Mr. Gamboa held in Punta Gorda on 12th January 2018. The focus was on the new Fisheries regulation relating to Managed Access, Fisher folk License, Size Limits, Closed Seasons, Case file preparation etc. Staff is now better knowledgeable of the Fisheries regulations and now better assist the Fisheries Department and PHMR with enforcement of the Fisheries Regulations.

2.1.5 Ranger Skills Training

Park staff participated in this training facilitated by the Belize Coast Guard with Funding through a European Union project being implemented by TIDE with the beneficiaries' being staff from TIDE, BAS, SEA and the Fisheries Department. The training covered topics such as Boatmanship, Maritime Laws, Navigation, GPS use and mapping, Chart Reading, Basic outboard engine maintenance, Boating Handling Skills, Boarding Procedures and some Self Defense. This training was very valuable to us and all that we have learnt in this training is being used in our daily activities to ensure compliance to protected areas rules and regulations.

2.1.6 SMART Training

Did some in-house training in SMART for all terrestrial Rangers with Ryan Moore bringing everybody up to speed in the use of the technology to improve our data collection on enforcement and biodiversity of the protected areas. All Rangers are now verse in the use of the program and are gathering valuable data to improve the management of the area.

2.2 Administration

2.2.1 Staffing

In an effort to be more strategic and cost effective TIDE has streamline the Protected Areas Management with the appointment Andrew Williams as Field Officer and the hiring of a New Head Ranger for the TIDE Private Protected Lands in Mr. Mario Xi will help with data entry and storage from Research and Monitoring activities as well as the SMART data.

2.2.2 Report Writing

Terrestrial manager and park staff produced Quarterly reports that were submitted to TIDE Board of Directors to update them on projects and project activities being implemented in the park.

2.2.3 Hurricane Preparedness

Park staff reviewed and revised the park's Hurricane Preparedness Plan and submitted changes to management for inclusion into the organization's Hurricane preparedness Plan for the 2018 hurricane season.

2.3 Park Improvement

Budget/Workplan Development

Park staff participated in an exercise to revised the 3 years work-plan and budget (2019-2021) and identify funding gaps so that fundraising for remaining balance can be sort for in new proposals to PACT and other Funding Agencies. As a result of this exercise the 3yrs work-plan and budget was submitted to PACT to enter into a partnership, which was approved. Awards for this Agreement was done in December at the Radisson Fort George to which Park manager, TIDE's Executive Director and Development Director attended.

2.2.3 TIDE Fire Management Consultancy

In January TIDE's Fire management consultancy got busy with assisting Pine Lumber Company with Developing Prescribed Burn Plans to submit to the Forest Department for areas where they need to conduct Prescribed Burns. Six burn Plans were developed and submitted to FD for approval that were approved and 4 of those Burns were executed successfully by staff form Pine Lumber Company. In February the Training Team consisting of Mario Muschamp, Owen Leonard Williams, Norman Andrew Williams from the TIDE staff and Thomas Richard Anderson Fire Ecologist from Florida with over 20 Years working in Belize conducted an Advance Fire Training for 27 participants including staff from PFB, Forest Department and community Residents from buffer communities of the Rio Bravo Conservation and Management Area from 19th to 23rd February 2018 and Basic fire training to some 25 staff from THE RESERVE formerly Sanctuary Belize to address their fire management needs there. Also as part of that consultancy we are also developing an Integrated Fire Management Plan for the Pine Savanna of THE RESERVE. Also in November The Training Team consisting of all local guys did Basic Fire Training for some 17 staff and Cane farmers from Belize Sugar Industries in Orange Walk Town. These trainings have greatly enhances the fire management capacity at the Nationally level.



Advance Fire Training at RBCMA



BSI Fire Training

2.4 Networking

2.4.1 Management Meeting

Park manager and staff attended the regular management and all staff meetings which takes place bi-weekly where the management team is updated on projects being implemented at protected areas and to discuss where resources can be pooled to effectively and efficiently implement the projects. This is also accompanied by project review meetings where we look at all projects and update their progress and see where resources can be pooled to improve the implementation where needed. These meetings assist with the smooth implementation of the projects being implemented and assist with the reporting to co-management partner and donors.

Assist at PHMR/TPPL

Park staff from time has been called upon to assist at the two other protected areas managed by TIDE. At these protected areas staff assists with patrols and surveillance, boundary line maintenance, research and monitoring, education and outreach, riparian reforestation among others. The time spent at the other protected areas are beneficial to us as we get to know the protected areas better, build healthy relationship with the staff and the communities that buffer these areas and allow for deeper appreciation of the work of field staff.

2.4.2 Advisory Council Meetings

Payne's Creek National Park Management Committee and the Port Honduras Advisory Council have merged to form one group to advise TIDE on the management of both PCNP and PHMR. For this reporting period the committee held 3 meetings to discuss the implementation of projects and overall management at both sites.

2.4.3 Meetings/workshops with Forest Department and partners

Launch of SMART, SFM and Fire Management Communications Strategy

Protected Areas Manager attended the Launch of SMART, Sustainable Forest Management and Fire Management Communications Strategy organized by the Forest Department on 24th January 2018 at the Radisson. TIDE was instrumental in the development of the Fire Management Communications strategy and SMART for terrestrial protected areas.

Terrestrial Protected Areas Enforcement Protocol

Staff is also participating in the development of an enforcement protocol under a PACT funded project being implemented between TIDE, Ya'axche' Conservation Trust and Belize Audubon Society for terrestrial protected areas in southern Belize. This document is now available for approval and implementation.

3.0. Public Use Planning, Recreation Management, Visitor Safety and Control

3.1 Visitors to PCNP

Keeping up with getting accurate data on visitation to PCNP continue to be a challenge due to the many access points into the protected area. From patrols conducted in the estuary system park staff encountered some 32 vessels with some 50 guests conducting tourism related activities in the area such as fly fishing and manatee watching via Punta Gorda, Monkey river and Placencia. We know for a fact that there are more guests that we have not captured doing fly-fishing due to us not able to do daily water patrols to capture all fly-fishing taking place in the area. Most of the visitors currently accurately accounted for are those via TIDE Tours/Ridge to Reef expedition amounting to 86 for this reporting period.

4.0. Community Development and Education TIDE's Education and Outreach

The New Year brought many great opportunities for the communities buffering the three protected areas managed by TIDE and to a larger extent the Toledo District. There has been the expansion of the Freshwater Cup program, which included 44 schools, Summer Camp at three Communities and continuous presentations at schools to give them information on key messages.

4.1 TIDE Freshwater Cup (FWC) Program

Numerous schools were engaged in the program that enabled children (male and female) to improve their environment through mini-projects, conducting education awareness sessions within their school systems/ communities. It also involved them in direct impacts such as tree planting, community cleanup, construction of eco-parks, recycling projects, improving waste disposal systems and education awareness of their peers, to qualify to participate in our award winning FWC Program.



Picture above: Renovation of concrete garbage bin and establishment of an eco-park for outdoors learning.

The three outstanding environmental projects were awarded framed paintings of the first place project, which was painted by a local artist.



Picture above: Indian Creek RC and Forest Home Methodist School awarded for environmental projects.

The 44 schools that made up the FWC program had different breakdowns. Twenty-one of the schools were primarily engaged in the Freshwater Cup aspect of the program. There were 17 primary schools clustered into four zones namely: Maya Mountain South, Maya Mountain North, Maya Mountain Central and Maya Mountain East and 4 high schools (Toledo Community College, Julian Cho Technical High School, George Town Technical High School, Independence High School) directly improving their environment.



Picture above: St. Peter Claver RC Females and Golden Stream Gov. Males team participated for FWC.



Picture above: George Town Technical High School Females and Independence High School Males awarded

Three of the coastal schools were engaged in the Saltwater Cup program. Saltwater Cup schools have too low a population to be able to participate in a football tournament. These schools include St. Phillips RC School, St. Cuthbert’s RC School and St. Joseph Anglican School. This year, that event took place in Monkey River Village. This trio helped to combat coastal erosion faced by their communities and to collect marine debris that continuously wash unto their coastline.

The additional 20 Roman Catholic schools were engaged in the Esteban Assi Cup program. These schools worked on a poster competition that sensitized their communities to Drug Awareness and Healthy Living. School children used the ‘Health and Family Life in Education’ session of their normal school hours to plan, design and create their posters. A day was set aside to present their completed poster to their peers and the wider community. A team of judges assisted to grade their presentations and posters using a rubric created for the purpose of the project.



Picture above: Healthy Living and Drug Awareness posters created by Roman Catholic Schools

The overall inclusion of 44 schools into the FWC program, which engages young minds to be active participants in improving their environments, made headlines in Toledo. TIDE had the support of the communities, businesses and most of the government sector in implementing aspects of the project. The Community Policing Unit assisted in educating all the schools on crime offences and charges, drugs and bullying. The National Drug Abuse Control Council assisted in ensuring that information was provided on the effects of drugs as it relates to health. The Education and Outreach from Ya'axche Conservation Trust assisted by sharing the importance of protected areas. We need healthy stakeholder involvement to continue conserving our pristine waters and lush green forests. These partners were grateful for the opportunity offered by TIDE to sensitize the citizen on important issues.

Finally, through the outreach program schools were provided with first aid kits, soccer balls, shinguards, complete sets of football jerseys and field trip experiences (for two schools) to visit Port Honduras Marine Reserve. It is important to continue site visits to ensure that our future generations are given the opportunity to visit these areas, to acquaint themselves for a more knowledgeable, concerned society.

4.2 Contributing to the Monkey River Watershed Association

As part of the Local Early Action Plan developed in 2015 with the assistance of Megan Gombos, The MRWA was born with representation of the 14 communities (Red Bank, San Pablo, San Juan/Cowpen, San Isidro, Bella Vista, Trio, Bladen, Esperanza and Monkey River to name a few) living on the watershed, 4 NGOs (TIDE, YCT, SEA, BFREE) working in the area and the Banana Growers Association. The Association was registered in January of 2017 and has submitted 2 proposals to PACT for \$27,000 and UNDP GEF/Small Grants Program for \$1000,000 to “Develop a Road Map to restore the functionality of the watershed so it can become the provider of water and sediment to the PHMR and Monkey River

Coastline". TIDE; through its representative continue to support the Association through attendance to meetings etc. The Association have been implementing the 2 grants mentioned above and so far have done assessments with assistance from USGS to identify some of the major threats to the functionality of the water shed, have carried out surveys in the communities and held community meetings to get information from the communities on what they are seeing on the watershed, have developed a Road Map form the information gathered to chart the way forward to restoring the functionality of the water shed so it can become the conveyor of clean water, nutrients and sediments to the PHMR and coastline associated with the watershed. Also as part of the project funded by UNDP, the installation of some coastline protection mechanism to address the erosion faced by the community of Monkey River. After consultation with several coastal engineers the use of Geo Tubes for the coastline protection in Monkey River was recommended and since the association have purchase 550 ft of geo tubes to be installed as part of the first stage of the installation of the erosion control measure and have identified a contractor to do the installation.



Gravel mining directly from riverbed



Coastline erosion in Monkey River

4.3 Meetings with Communities and Community Leaders

SFE Development with Community Groups (Darwin Project)

Incubation of four community group businesses continued under the Darwin project during the first quarter of 2018. These groups include Adventures in the Last Corridor in Medina Bank, San Isidro Farmers Agroforestry Association (SIFAA), Xibe Women’s Group from San Isidro and United Hands in Trio. Adventures in the last Corridor launched their day tour during the third week in February. During the first 6 months they had 200 visitors, this group plans to improve infrastructure to accommodate visitors during the 2019 tourist season. Xibe Women’s group established a snack shop in the village, SIFA were able to coordinate the sale of their farm products and United Hands continue with pig rearing.

4.4 Capacity Building for Youths under the CARSJ Project

Nine Vocational trainings were completed under the CARSJ project. The aim of this project is to provide youths with the capacity building and tools as an alternative to crime and violence. The total number of

graduates from seventeen trainings is 360 youths from the Toledo District. This project will culminate with a career fair on August 10th at the Punta Gorda Central Park.



5.0. Natural Resource Management

5.1 *Integrated Fire Management*

Integrated Fire Management is a management tool use in the management of fire dependent ecosystems across the world and in the park's largest and fire dependent ecosystem its pine savannas. It's a tool that brings together all stakeholders and incorporates local knowledge, science and technology to conduct safe fire operations.

5.1.1 Development of Prescribes Burn Plans

Prescribed Burn Plans for 5 units in Deep River Forest Reserve were developed and submitted to the Forest Department for approval; which were granted by Mr. Lisbey the person in charge of fire management at the Department.

5.1.2 Conduct Prescribed Burns

Prescribed burns for the 2018 fire season were done in February as part of the Basic fire management training done under Pact and Darwin Funded projects and with assistance of UB/ERI student group. 5 Units in the concession hold by Thomas Gomes and Sons covering approximately 4,000 acres were burnt to meet various objectives. The implementation of the burns were led by trained Burn Bosses from SBFWG Group members trained in 2014 and 2017.

5.1.3 Wildfire suppression and Use

2018 was a busy year for the MMMC with wildfires in SBFR, DRFR and PCNP. Wildfires were observed in SRFR from January through May burning practically the entire pine savanna of the Reserve and in DRFR wildfires occurred in February, March, April and May burning some 5000 or so acres. Fortunately in DRFR all the fires were started late afternoon and went out in the

night. In PCNP we had 4 wildfires 2 started by Hunters accessing the area via access road from the highway and Deep River (April's fire) and 2 were lightning strike fires (May) which were suppressed by park staff while the 2 April Burns were left to burn as they started late in the afternoon and went out in the night. Some 3000 acres of pine savannas in PCNP were burnt in these fires.



Wildfire suppression

5.1.4 Fire Effects Monitoring

Hosted UB/ERI students from 24th to 26th February to get assistance with fire effects monitoring on six 1km long transects set focusing on vegetation as part of our collaboration in research and monitoring and did training in fire management techniques during a prescribed burn in the Payne's Creek National Park. This year we also trained the students in the new methodology using permanent sample plots and did data collection at 4 plots focusing on pine and palmetto with the students. The other 10 plots were done later by park staff with assistance from Fanny Tricone a volunteer Biologist and Liberato Pop community researcher from Bladen Village using the pine and palmetto monitoring protocol developed under the Darwin Project.



PSP data collection on fire effects focusing on Pine and Palmetto

5.1.5 Advance Fire management Training

Advance Fire Management Training was provided to some 27 participants including staff from Programme for Belize, Forest Department and 3 residents from Rio Brave Conservation and Management Area facilitated by 3 TIDE staff (Mario Muschamp, Owen Williams, Norman Williams) and Fire Ecologist from Florida (Thomas Richard Anderson) held from January 19th to 23rd 2018 at RBCMA Field station at Hill Bank. The training cover topics such as Basic Fire Behavior Concepts, Contingencies and safety, Fire Weather and prescribed Fire, Fire Breaks and Ignition Techniques, Managing the Burn and Mop up to bring all participants on the same page and then we did Burn Planning going over parts of the plan using a template developed by the Southern Belize Fire Working Group and divide participants into groups to go into the field to collect data needed to develop burn plans and had groups developed plans for areas to be burnt during the training as field practical. Participants were also introduced to and trained in the use of the various, we also did some field exercise with the tools constructing fire lines using hand tools and also doing black line using fire. Unfortunately the weather affected the number of burns we wanted to do to build coordination in the PFB team so they would be in a better position to address the fire issues they faced. All participants are now equipped with the knowledge to assess a fire, determine the method of attack to suppress the fire and can now assess an area and develop burn plan to safely burn that area safely to meet specific objectives.



5.1.6 Basic Fire Training

Basic fire training was provided to some 20 participants from Ya'axche Conservation Trust, BAS and Buffer communities to protected areas co-managed by TIDE, Ya'axche' and BAS held at the GSCP field station for classroom sessions and Deep River Forest Reserve for field practical session from February 13th to 16th 2018 funded under two funded projects (PACT, Darwin). Topics covered include Basic Fire Behavior Concepts, Fire Weather and prescribed Fire, Contingencies and safety, Fire Breaks and Ignition techniques, managing the Burn and Mop up. Participants also got the chance to use what was taught in the classroom in the field with participating in conducting a prescribed burn in Deep River Forest Reserve. Community members from the buffer communities and the 2 NGOs now have better knowledge to address the fires they are seeing in their area and can now conduct a safe burn.

5.1.7 Fire Awareness

Tide's Protected Areas Manager appeared on National Radio and Television on Love FM/LOVE TV and channel 5 morning shows on 18th January 2018 to share information with the general public on matters pertaining to wild-land fire management with staff from the Ya'axche' Conservation Trust and again on October 5th with the TIDE TEAM on the importance of managing our fires, especially targeting farmers who use fire as a tool for clearing land for farming. The message we send deal with informing people on safe fire practices and the laws pertaining to the agricultural fires.

5.1.8 Community Fire Management Plan Development

With assistance from Kathy Smith from the Darwin Project and Rick Anderson, a Fire Ecologist from Florida and consultation with the community of Bladen the first Draft of a Community Fire Management Plan was developed for that community. This is probably the first of its kind for Belize and we believe is the way forward in addressing the fire issues faced by many communities especially those living in the southern coastal plains pine savannas. The plan speaks to the fire management needs; threats and strategies to address those fire threats to the community. Then community led by the 2 newly trained Burn Boss Agustin Sho and Liberato Pop has already started implementing their fire plan this year by doing fire suppression of fire that threatened their community and constructed a fire break using the black lining technique to stop the threat from fires coming to the community from Trio Access Road and the community of Trio area.

6.0. Research and Monitoring

6.1 Biodiversity Monitoring

Our Biodiversity monitoring using camera traps continued for this reporting period completing the assessment of the first 4 camera trapping sites in the pine savannas of the park. Cameras were at these sites for 3 months and collected valuable data to assist us with establishing baseline for Jaguar and jaguar prey. Jaguars were captured at 3 of the 4 sites assessed to date. 3 further sites were set up in December of 2018 in the Broad-leaf forest of the park along the Monkey River where we captured pictures of Jaguar, Puma, Agouti, opossums, Red Brocket Deer and Paca.



6.2 Yellow-headed Parrot Nest Monitoring

Yellow-headed Parrot Restoration and Management Project Preliminary Report

Background

The Yellow-headed Parrot (*Amazona oratrix*) is an IUCN Red-listed species and is considered in danger of extinction across its range. The distribution of the race *Amazona oratrix belizensis* is primarily restricted to the coastal pine savannas found throughout eastern Belize. Nesting behavior is initiated in January and February, with 2-4 eggs being laid by March.

Nest monitoring for this report was conducted from March 14th to June 27th in 2017, and March 22nd to June 3rd in 2018. Monitoring was conducted in the Maya Mountain Marine Corridor within Payne's Creek National Park, Deep River Forest Reserve, Bladen Nature reserve (2018 only). Additional nests were found in Swasey Bladen Forest Reserve.

Data Summary

A total of 25 nests were located in 2017, and 31 nests were located in 2018. Overall nesting success was 32% for both 2017 and 2018. In 2017, 68% of nests were located in artificial nest boxes, and in 2018; 58% were located in boxes. In 2017 nesting success in natural nests was 23% and was 42% in artificial nest boxes. In 2018 nesting success was 21% in natural nests, and 41% in artificial nest boxes.

A total of 52 eggs were discovered in 2017, and 83 eggs in 2018. Of these eggs, 39 hatched in 2017, and 43 hatched in 2018. A total of 14 young fledged in 2017, and 21 fledged in 2018. The highest cause of nest failure was predation. This includes predation of the eggs or nestlings, as well as predation of a parent that caused nest failure. The parents abandoned a small number of nests. One nest was abandoned in 2017, and 2 in 2018.

In addition to natural nest failures such as predation, a total of 5 nests were poached in 2017, and 2 were poached in 2018. The poached nests were located in Swasey Bladen Forest Reserve and Deep River Forest Reserve. Nest poaching occurred in both natural nests and artificial nest boxes.

When chicks were determined to be in danger of being poached, they were extracted and transferred to Belize Bird Rescue. These birds were raised and rehabilitated, and released back to where they were extracted the following spring. A total of 7 chicks were extracted in 2017, and 23 were extracted in 2018.

Of the nests that had surviving chicks (either fledged or extracted), 45% were from natural nests in 2017, and 55% were from artificial nest boxes. In 2018, 41% of surviving chicks came from natural nests, while 59% were from artificial nest boxes.

Conclusion and Recommendations

Aside from natural predation and habitat loss, poaching is the largest threat to nesting success of the Yellow-headed Parrot in the Maya Mountain Marine Corridor. Educational outreach programs working

with nearby communities to address poaching issues, as well as sharing alternative livelihood programs are essential to reduce the amount of poaching that occurs in the protected lands. Patrols of these lands should be increased and done jointly with support of the Belize Forest Department personnel. Continued collaboration with the Belize Bird Rescue is recommended to help with at risks chicks from poaching and any health issues.

The artificial nest box program should be continued with an increase in the number of boxes especially in areas with no natural nests and tree size available to support nest boxes. The artificial boxes provide suitable nesting sites where there are few natural options.

It should be noted that although it appears that nesting boxes have higher nesting success, this can be explained by the location of the boxes. The majority of the artificial nest boxes used are located in Payne’s Creek National Park, and Deep River Forest Reserve. Both of these locations are more remote and less accessible to poachers and have some form of management presence. The majority of the poaching occurs in areas adjacent to nearby communities.

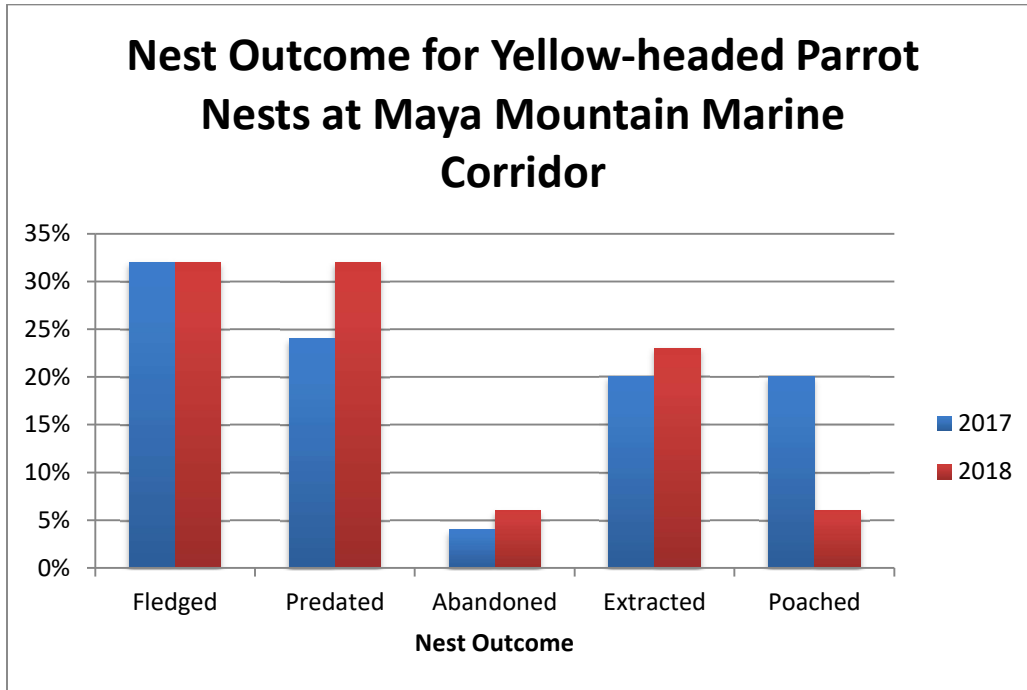
To improve the habitat and increase availability of natural nesting sites, effective fire management and education needs to be continued within the protected lands and nearby communities.

Lastly, in order to keep this program viable, TIDE will need to find additional volunteers, workers and thesis students to continue the monitoring program in future years.

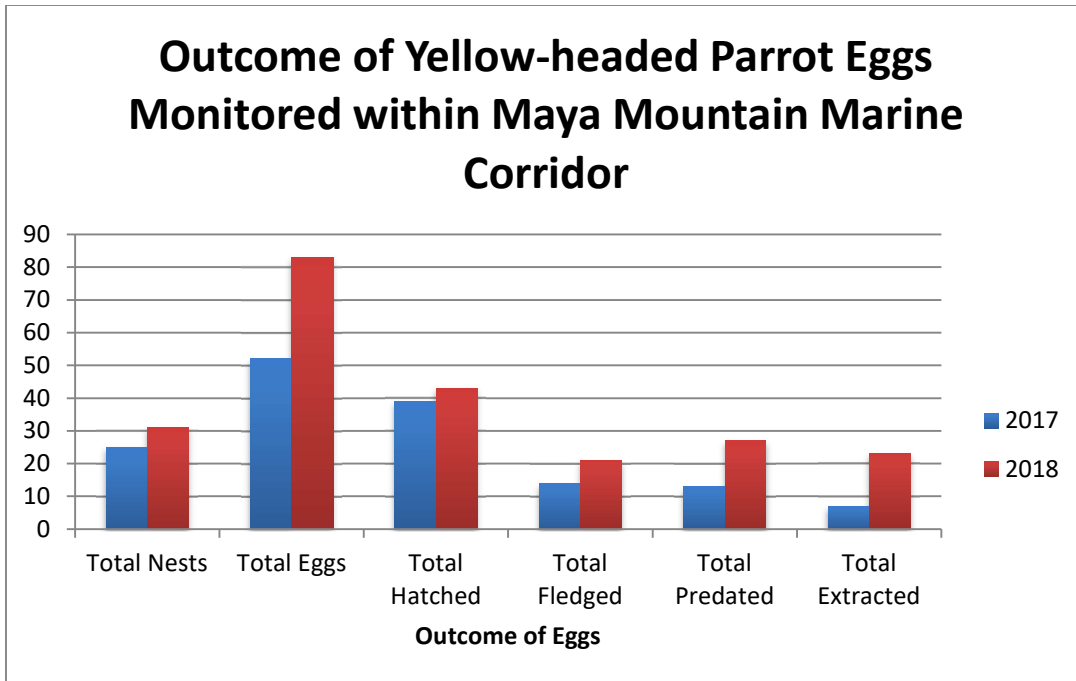
<i>Table 1.</i>	2017	2018
Number of Nests	25	31
Number of Eggs	52	83
Number Hatched	39	43
Number of Chicks Fledged	14	21
Number Chicks Extracted	7	23
Number of Nests Poached	5	2
Percent of Nest Success	32%	32%
Percent of Nests Predated	24%	32%
Percent of Nests Abandoned	4%	6%
Percent of Nests Extracted	20%	23%

Percent of Nests Poached	20%	6%
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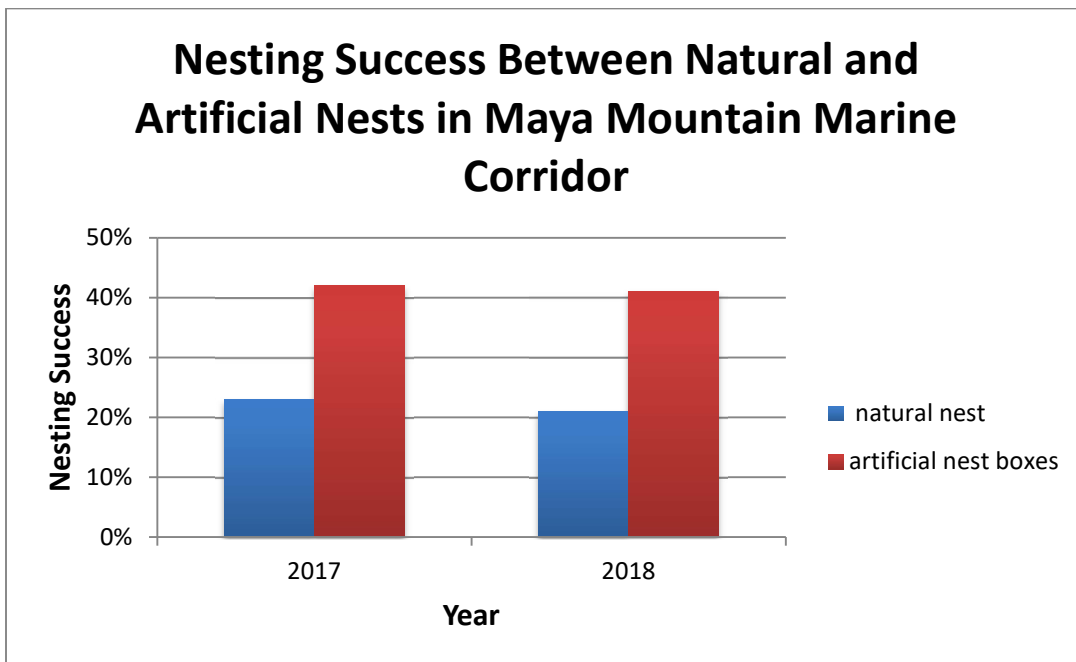
Graph 1



Graph 2.



Graph 3.





Installing an artificial nest box



Yellow-heading parrot exiting
natural nest.



Installed artificial nest box

Monitoring a nest box

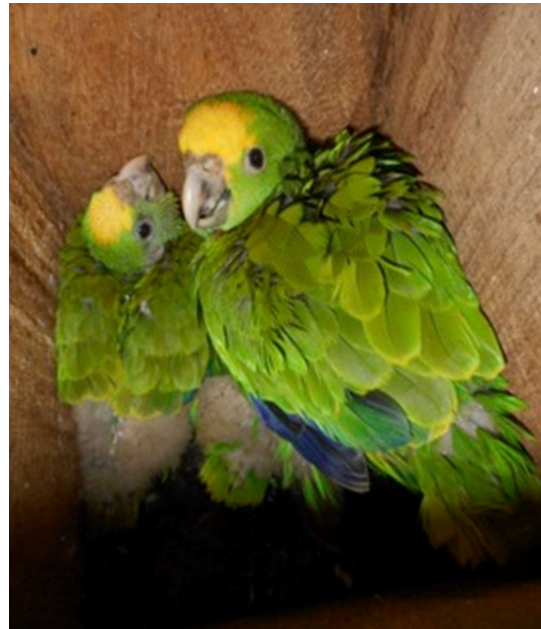


Eggs in a nest box

Newly hatched chicks



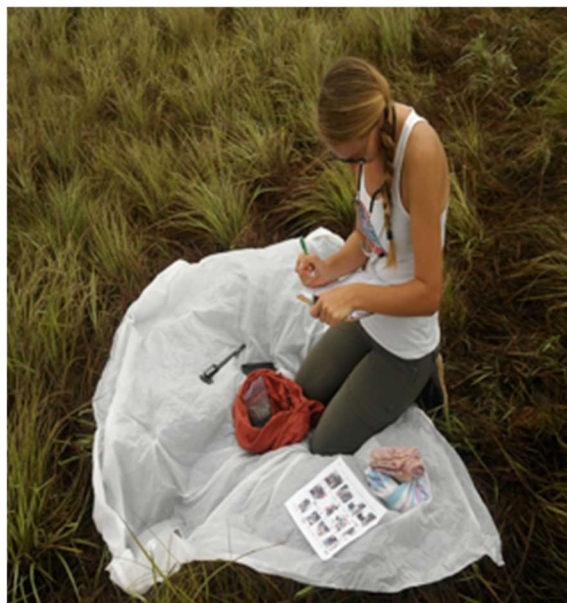
Chicks in natural nest



Chicks in box almost ready to fledge

6.2.1 Chick Health Assessment

Health checks with assistance from a Vet from BBR were conducted in May. All chicks were in excellent conditions except 2 chicks in Natural Nest in DRFR were with Mites.



6.3 Participate in annual Christmas Bird Count for the Punta Gorda Circuit

Terrestrial Protected areas staff participated in the annual Christmas Bird Count for the Punta Gorda Circuit held on January 5th 2018 where a total of 152 species were recorded on the Rio Grande River the area the Ranger Team covered.

6.4 Crocodile Survey and nest monitoring

The Crocodile Research Coalition in collaboration with the Toledo Institute for Development and Environment (TIDE) conducted scientific research on crocodiles in Toledo district as part of the nationwide Morelet’s crocodile survey. Research was conducted from April to July 2018; we surveyed 6 sites in areas managed by TIDE. We conducted crocodile nocturnal eyeshine counts, habitat monitoring surveys, and capture surveys of crocodile encountered.

Eyeshine Surveys-

We covered 79.69 km of survey route and encountered 53 crocodiles across the 6 surveyed sites. The overall encounter rate for crocodiles around San Pedro is 0.7 crocodiles/km surveyed. Of the 53 crocodiles surveyed 11 were identified as Eyeshine Only (EO) as a size estimate could not be attained. Of the crocodiles for which a size class could be determined, 0 hatchlings were encountered, 21 juveniles, 5 sub-adults, and 16 adults.

	Juvenile	Sub-Adult	Adult	EO	Total
Golden Stream	2	0	1	2	5
Deep River	15	1	3	7	26
Payne’s Creek Lagoon	1	1	1	0	3
Payne’s Creek Pond	3	1	8	2	14

Payne's Creek Coastal Lagoon	0	2	3	0	5
Payne's Creek creeks	0	0	0	0	0

Capture Surveys-

During research we capture 17 crocodiles. Each crocodile captured had morphometric data (11 measurements) collected, health assessed, individual identification pictures taken, individually marked and tissue collected for heavy metal and genetic analysis. Of the crocodiles captured 15 were juveniles, 1 sub-adult, and 1 adult. Of the crocodiles that were large enough to sex (5), there were 4 males and 1 female.

Habitat Assessment-

Habitat was assessed at all survey sites. The best habitat was observed within the Payne's Creek protected area at the "croc pond". The most highly impacted habitat was observed at Golden Stream where we observed the most solid waste pollution pushed downstream in the river. Habitat was also highly conserved in Deep River area with minimal pollution and human activity observed.



Crocodile survey pictures

7.0. Infrastructure Management

7.1 Maintenance of Park's infrastructure, solar system and grounds

The staff is responsible for the upkeep of the park's facilities making sure they are clean at all times. Park staff engage in the daily cleaning of the facilities, the minor repairs such as replacing broken screens, ensure that running water is available at all times by checking water lines for leakage on a regular basis and repair where needed and servicing of water pump. We also do the maintenance of the solar/wind hybrid system that supplies us with power for lighting, charging communications equipment and running our computer. Staff also engages in the cleaning of the grounds around all park's facilities that include the ranger station/visitors center, kitchen, lodge, storage room, toilet facility and water tower to protect them from fire damage in the event of a wild fire or during prescribed fire operations. During this reporting period with assistance form local contractor from Punta Gorda we did some repairs to 5 cement posts on Ranger station that were damaged during earthquake tremors and repairs to stairs on lagoon side of the station.

8.0 Financial Report

	Jan - Jun 18
Ordinary Income/Expense	
Income	
4001 · Grants	167,146.53
4004 · Other Income	8,472.96
Total	
Income	<u>175,619.49</u>
Expense	
3001 · Equipment	5,137.78
5001 · Salaries/Wages & Benefits	70,803.96
5002 · Travel & Transportation	206.85
5004 · Donations	48.21
5006 · Insurance, Licensing & Permits	1,155.00
5007 · Postage & Delivery	1,049.56
5008 · Professional Fees	15,593.64
5009 · Public Awareness & Env. Ed.	4,175.11
5010 · Repairs and Maintenance	7,932.79
5011 · Supplies	15,530.28
5012 · Training	4,603.38
5014 · Board/Advisory Board Expense	657.00
5016 · Telephone, Comm. & Internet	3,260.60
5017 · Bank Charges	2,900.26
5019 · Reserves & Parks Improvement	1,871.64
5020 · Net Working	1,716.32
5025 · Institutional Strengthening &	207.00
5035 · Surveillance, Patrol & Enforce	14,341.26
5037 · Community Development	14,486.27
Total Expense	<u>165,676.91</u>
Net Ordinary	
Income	<u>9,942.58</u>
	<u>9,942.58</u>