TÍTULO

# AN ANALYSIS OF CITES IMPLEMENTATION IN TRINIDAD AND TOBAGO

AUTOR

**David Mahabir**

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**Master's Thesis Research Project**

# An Analysis of CITES Implementation in Trinidad and Tobago

Master's Degree in Management and Conservation of Species in Trade:

The International Framework (13th Edition)

Author

David Mahabir

Trinidad and Tobago

Primary Supervisor: Dr. Yula Kapetanakos

Secondary Supervisor: Mr. Mark Gibson (PhD Student)


UNIVERSIDAD INTERNACIONAL DE ANDALUCIA

Sede Antonio Machado, Baeza (Jaén), Spain.

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**Approval Page**

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## Abbreviation

| | |
|---|---|
| CBD | Convention of Biological Diversity |
| CBO | Community Based Organization |
| CITES | Convention on International Trade in Endangered Species of Wild Fauna And flora |
| EMA | Environmental Management Authority |
| ESS | Environmentally Sensitive Species |
| GORTT | Government of the Republic of Trinidad and Tobago |
| IUCN | International Union for Conservation of Nature |
| MA | Management Authority |
| NGO | Non-governmental Organization |
| NLP | National Legislation Project |
| SA | Scientific Authority |
| T&T | Trinidad and Tobago |
| USFWS | United States Fish and Wildlife Service |
| WLCC | Wildlife Conservation Committee |

**Abstract**

This study used expert interviewing (n=22) to provide the first comprehensive assessment on the implementation of CITES in Trinidad and Tobago (T&T). T&T became a Party to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in 1984. However, T&T's government agencies tasked with implementing CITES has faced numerous obstacles when trying to manage the illegal wildlife trade, many of which need to be addressed. Expert interviewing was used to acquire the data supported; a semi-structured questionnaire was distributed among experts wholly or any part thereof in the field of flora and fauna management, protection and conservation. The results were acquired by summarizing and coding the expert personnel responses to the questions posed. This work was further supplemented with a policy gap analysis of implementation documents, the proposed T&T CITES legislation, roles and functions of the Management and Scientific Authority of T&T and an analysis of CITES traded flora and fauna. The ultimate objective of this research is to make recommendations to guide the Government of the Republic of T&T (GoRTT) so they can have a strong institutional framework for co-ordinated planning and law enforcement operations, which are prerequisites for regulated trade (Eid,2010). The results of the study indicate that there are widely-recognized needs for training in CITES, a lack of communication from the T&T CITES Management Authority to other agencies, a lack of funding to purchase tools and equipment, and a lack of development of CITES implementing legislation.

Keywords: CITES. Implementation. Institutional Framework. Wildlife Trading. Enforcement.

## 1.0 Introduction

The illegal trade in wildlife is a global epidemic affecting a wide range of flora and fauna across all regions with an estimated value of between USD 70-213 billion annually (Nellemann, Henriksen, Raxter, Ash, & Mrema, 2014). More than 100 million specimens of over 36,000 species are estimated to be trafficked each year (Harfoot, *et al*., 2018). The Caribbean region accounts for a large variety of traded CITES-listed wildlife and is the largest exporter of *Strombus gigas* (Queen Conch) in the world (CITES, 2018). The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) went into force in 1975 to ensure that trade in wild plants and animals and their products does not threaten their survival in the wild (Smith, *et al*., 2011). The Convention has been joined by 183 countries (Parties) (CITES, 2019). In CITES, species are listed in Appendices numbered I, II and III which subject them to different levels or types of trade controls to evade over-exploitation (Abensperg-Traun,2009). Countries voluntarily agree to adhere to the rules and regulations of CITES, and once they are signatories (Parties) they are bound to implement the Convention (Smith *et al*. 2011), which includes the development of national legislation specific to CITES (CITES, 2019).

However, many countries, in spite of being Parties to CITES, they are not fully implementing the Convention mainly because their domestic legislations for wildlife protections are weak or non-existent, or are not being enforced to protect CITES-listed species from illegal trade (Dongol, 2011). Therefore, the illegal trade in wildlife can occur unabated with significant negative impacts to wildlife populations worldwide (CITES, 2016). In addition, when one cannot or does not properly implement the Convention, and hence do not systematically regulate trade, there is a massive opportunity for the illegal trade to occur.

Trinidad and Tobago's (T&T's) wildlife resources are being depleted significantly by poachers whom, are removing wildlife from their natural habitats to support the illegal wildlife trade (GoRTT, 2017). Past and present administrations governing T&T, have recognized the need to safeguard the country's wildlife resources from being depleted (CITES, 2019).

The growing illegal trade in wild flora and fauna in T&T poses four primary threats. First, poaching and illegal trade of wildlife has led to population declines of native and endemic species across the country (UWI, 2018).

Second, the illegal exotic pet trade has led to the introduction of non-native and invasive species to terrestrial ecosystems including the country's five pilot terrestrial protected areas, which act as a sanctuary for wild flora and fauna. (UWI, 2018).

Third, trafficked wildlife brought in and sold as pets and bushmeat, have the potential to transmit new zoonotic pathogens to native biodiversity, domestic poultry, and humans via consumption or as a pet (Long & Andres, 2018).

Fourth, trafficked animals are often subjected to harsh conditions and treatment resulting in high losses (Gibson, *et al*., 2018). It was estimated that up to 90% of neotropical birds die from injuries associated with capture or improper care before and during transit (Neme, 2015).

In addition, the threats of wildlife trafficking in T&T extend beyond its borders and into neighbouring countries such as Venezuela. Between the years 1988 and 1989, a total of between 65,000 - 75,000 birds were traded from Venezuela to T&T (Desenne & Strahl, 1991).

The threats of illegal wildlife trade to T&T may also grow substantially if left untreated as the country is already an important geographic transhipment point for drugs, ammunition, humans and others (State Department, 2018). The earliest recorded negative impact of the illegal wildlife trade of a species is Trinidad's native parrot the *Ara ararauna* (Blue and Gold Macaw), which is

a CITES-listed Appendix II species and had its population extirpated in 1960's. This was due to the illegal wildlife trade and nest poaching; presently the population has been re-established by reintroducing Guyana's Blue and Gold Macaw into Trinidad's habitats (Plair, Lal, Ramadhar , & Ramsubhag, 2008). There is the notion that well-regulated trade through a well-functioning CITES and enforcement system, can reduce the illegal wildlife trade. In addition, if CITES is not properly implemented, then there are gaps through which traffickers can operate. To better understand the implementation of CITES, the objective of this research was to look at gaps in policies of CITES implementation to better understand where targeted interventions can produce a positive outcome to regulate wildlife trade sustainably, while mitigating illegal trade.

The approach this research took was using expert interviewing to collect knowledge and implementation procedures from those who work directly and indirectly with CITES traded species. Expert interviewing is an exploratory research technique in which the respondents identified to be interviewed are an expert in the area being studied (Libakova & Sertakova, 2015).

Data was collected using questionnaires which were conducted over a period of 6 months to gain insight from the expert personnel about their work duties and experiences with CITES. The expert personnel included Forest Officers, Game Wardens, Forest Rangers, Customs and Excise Officers, Environmental Police and representatives from the T&T CITES Scientific and Management Authority on key important issues all covered in 56 questions. Both qualitative and quantitative data were collected using a review of literatures, an analysis of CITES traded information, questionnaires and quantifying the answers through coding.

# 2.0 Background and Literature Review

## 2.1 T&T Wildlife Legislations and a Policy Gap Analysis

T&T is the first contact to the English-speaking Caribbean and the rest of the world from South America as illustrated in Figure 1. T&T has over 120 port of entries in which most of these entries remain unsecured (Long & Andres, 2018).

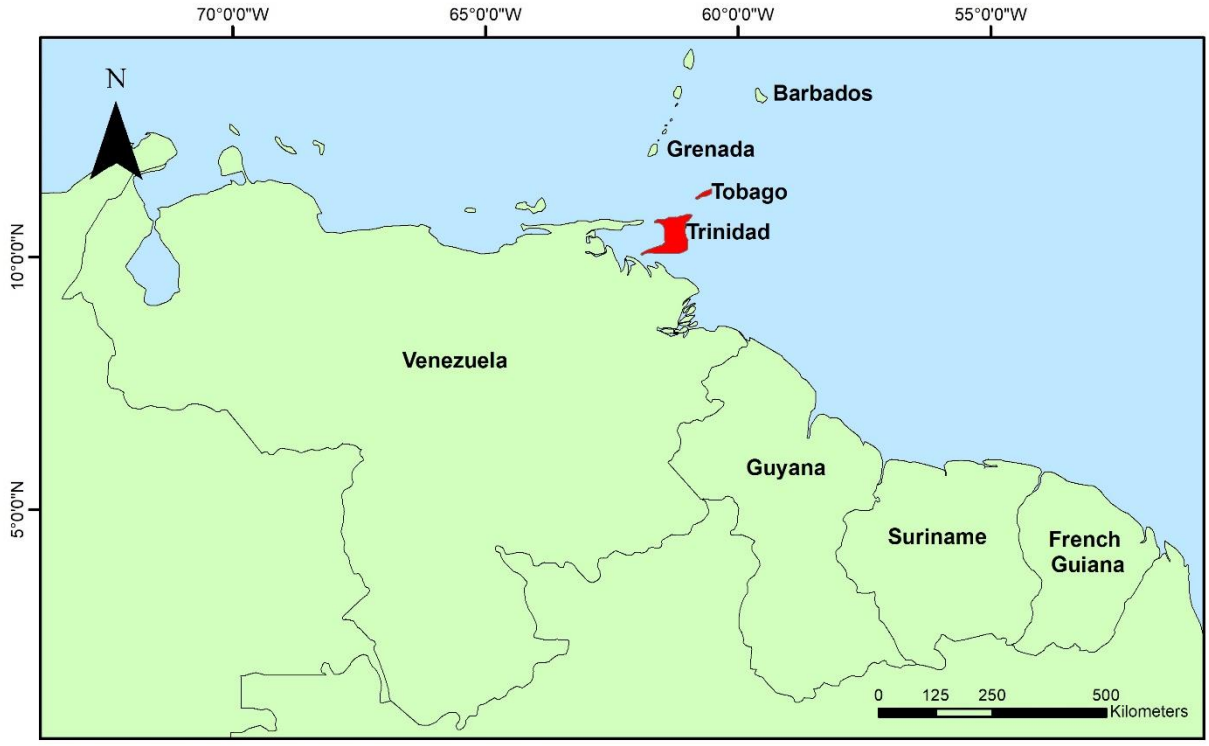


*Figure 1: Map showing proximity of T&T to South America (Constructed using ARC GIS).*

Trade in wild plants and animals crosses the borders of many countries, in order to safeguard wild species from being over exploited the contracting Parties' (signatories to the Convention) local legislations need to include CITES legislation (Challender *et al*., 2015). The major challenge for CITES is to ensure that legal trade remains within sustainable levels and that contracting Parties local legislation can accommodate the implementation and enforcement of CITES (Challender *et al*., 2015).

### 2.1.1 T&T and CITES.

CITES Resolution Conf. 8.4 (Rev. CoP15) states that each Party should have domestic laws to implement CITES as it is crucial in order to have traceable, legal and sustainable trade of protected species. Domestic CITES legislation gives the government enforcers power to act and control human behaviour and eloquent policies in relation to conservation and trade in wild flora and fauna (CITES, 2019). The Resolution further states that although CITES is legally binding for Parties that participate in the Convention, it is generally not self-executing, meaning that it cannot be fully implemented until specific domestic measures have been adopted for that purpose. Therefore, to ensure that trade in wildlife is sustainable and not harmful to populations in the wild, it is essential that CITES Parties have strong legislations that allow them to implement and enforce all aspects of the Convention (CITES, 2019). Although CITES came into effect in 1975, to date only 52.2% of the 183 Parties are Category 1 status (see Figure 2 Showing a comparison of categories and numbers of Parties).

**National Legislation Project**
**Aug-16**

| Category | Parties | Percent |
|---|---|---|
| Category 1 | 95 | 52.2% |
| Category 2 | 45 | 24.7% |
| Category 3 | 35 | 19.2% |
| Recent Parties | 7 | 3.8% |
| Total | 182 | 100.0% |

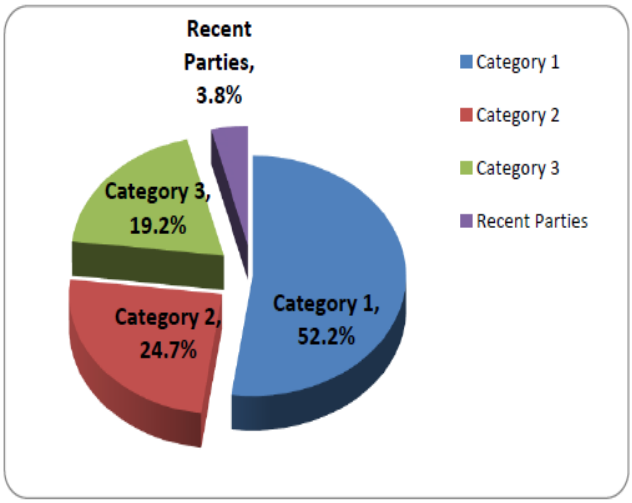


*Figure 2 : Showing a comparison of categories and numbers of Parties (CITES 2019).*

The CITES trade database lists a total of 166 CITES animal species and 160 plant species exported from T&T wildlife population. The 166 traded animals comprise of 16 Appendix I, 142 Appendix II and 8 Appendix III animal species, and a total of 160 plant species which includes 159 in Appendix II and 1 in Appendix III (CITES, 2019).

**CITES Related Legislation**: T&T joined CITES on the 18th of April, 1984 and since then it has remained a CITES National Legislation Project (NLP), Category II country (CITES, 2019). According to CITES Resolution Conf. 8.4 (Rev. CoP15), Category II and III countries do not meet the four minimum criteria established by the NLP for effective implementation of CITES which are to designate at least one Management Authority and one Scientific Authority, prohibit trade in specimens in violation of the Convention, penalize such trade; or confiscate specimens illegally traded or possessed (CITES, 2019). T&T can only issue CITES permits for trade but cannot fully implement CITES because there is no local CITES legislation to confiscate items and apprehend anyone conducting illegal trade with CITES-listed species. The following is a review of T&T implementation of CITES using the Resolution Conf. 8.4 CoP 15 on National laws for implementation of the Convention as a guide:

✓ Designation of at **least one** CITES Management Authority and one Scientific Authority; T&T has a designated Management and Scientific Authority. The Management Authority is presently not fully functional.

X Prohibit trade in specimens in violation of the Convention;

Regarding species: T&T's national legislation does not cover all specimens of all species (animals and plants, live and dead, and parts and derivatives) included in all of the CITES Appendices. The local legislations, which are the Conservation of Wildlife Act 67:01 of 1958,

the Forest Act 66:01 of 1915 and the Environmental Management 35:01 Act of 1995, protects a limited number of flora and fauna listed in the CITES appendices.

Regarding trade transactions: T&T's national legislation is outdated and does not cover all types of transactions, including import, export and re-export.

Regarding permits: The CITES Management and Scientific Authorities of T&T do issue permits for importing, exporting and re-exporting CITES listed species.

**X** Penalties for illegal traded flora and fauna;

There are some existing penalties for illegal trade at the national level.

Domestic legislation lists some activities and species that are listed in the CITES Appendices which are coincidently listed in the national legislations. If persons are found breaching the illegal trading of species protected in the national legislations, they can be penalized but not because it is a CITES listed species.

**X** Confiscate illegally traded or possessed specimens;

There is no CITES legislation in the domestic legislation of T&T to confiscate specimens unless the CITES specimens listed in the Appendices are also listed in the national legislations.

From this review it can be determined that T & T only partially meets the minimum requirements for adequate CITES-implementation legislation (Res. Conf. 8.4, Rev CoP 15). Whereas legislation exists to designate CITES Management and Scientific Authority and legislation does not exist to impose penalties on illegally traded specimens nor for the confiscation of those specimens.

### 2.1.2 A review of the legislations used for the protection of flora and fauna in T&T.

T&T has created several laws to govern the management, protection and conservation of its flora and fauna (See Figure 3). Improvements have been made to the existing laws to strengthen the protection of threatened species. The Conservation of Wildlife Act 67:01 of 1958, Forest Act 66:01

of 1915 and the Environmental Management Act 35:05 of 2000 are the main pieces of domestic legislation that protect, conserve and manage flora and fauna in T&T. These laws acknowledge the importance of T&T's natural resources with the ultimate goal to provide protection, sustainable use and conservation of its flora and fauna for present and future generations.


*Figure 3: Showing the local laws that protect flora and fauna in T&T. Adapted from EMA 2018.*

The Forest Act's (66:01) main objectives are the conservation of flora, watershed management, shelterwood protection, efficient timber utilization, protection of wildlife habitats and sustainable use of forest resources.

The Conservation of Wildlife Act 67:01 aims at the protection and sustainable use of animals (wild and captive-bred) and their habitats. To strengthen and add to the protection of T&T flora and fauna, the Environmentally Sensitive Species Rules 2001 was amended into the Environmental Management Act 35:05 and has named 11 species for protection as Environmentally Sensitive Species (ESS). An ESS may be native to T&T or, if not, existing on both islands for a duration of its life or reproductive cycle. An ESS can also be a plant or animal

that during all or a portion of its range is or probable to become at risk of extinction and its life is at threat if the cause to its survival persists. The 11 ESS of T&T includes the *Pipile pipile* (Pawi), *Trichechus manatus manatus* (West Indian Manatee), *Campylopterus ensipennis* (White-tail Sabrewing Hummingbird), *Phyllodytes auratus* (Golden Tree Frog), *Leopardus pardalis* (Ocelot) *Dermochelys coriacea* (Leatherback Turtle), *Caretta caretta* (Loggerhead Turtle), *Chelonia mydas* (Green Turtle), *Eretmochelys imbricate* (Hawksbill Turtle), *Lepidochelys olivacea* (Olive Ridley Turtle) and *Eudocimus ruber* (Scarlet Ibis). Coincidentally, 9 of the above listed ESS are also CITES-listed species including *Pipile pipile* (Appendix 1), *Campylopterus ensipennis* (Appendix II), *Leopardus pardalis* (Appendix 1), *Dermochelys coriacea* (Appendix 1), *Caretta caretta* (Appendix 1), *Chelonia mydas* (Appendix 1), *Lepidochelys olivacea* (Appendix 1) and *Eudocimus ruber* (Appendix II).

The Forests Act, National Forest Policy and Environmental Management Act protect flora inclusive of many CITES-listed species such as timber species including the controversial *Dalbergia* and *Swietenia macrophylla* (Big Leaf Mahogany), palms, cycads, orchids and many more.

The laws protecting flora and fauna in T&T have components to control the trade of some CITES listed species. Most of these laws are outdated, some having been in place for more than a century, and do not include presently threatened species that need protection from trade. CITES-listed species that are not included in these domestic laws are therefore traded openly. Consequently, persons trading without a CITES permits will not be apprehended and/or charged. The Forest Act 66:01 and the Conservation of Wildlife Act 67:01 made mention that any species that are not mentioned in these Acts are automatically protected under these two pieces of legislations. Therefore, in the interim, until T&T enacts the CITES legislation, most of these

CITES listed species that are mentioned and not mentioned are protected in the Forest Act 66:01 and the Conservation of Wildlife Act 67:01, once a permit or permission is granted according to the laws stated in these two Acts. It should be noted that some of the species listed in these two Acts can be removed, hunted for food or kept as a pet or traded locally without the individual being fined or animal being confiscated, once proper documents and permits are presented. All CITES-listed species being exported, imported or re-exported still need to be traded with a CITES permit issued by the T&T CITES Management Authority.

**Impacts on Communities:** T&T communities are interwoven with forested areas either terrestrial or coastal. Therefore, it is imperative that the GoRTT include community needs when drafting any legislation concerning the forest and its resources (Annual Report of Forestry Division, 2018). In T&T over 200,000 citizens or 15% of the population legally apply for hunting permits during the hunting season which is from September 1st of any given year to the last day of February of the following year (Annual Report of Forestry Division, 2018). There is still a large sector of the population unaccounted for which are those who illegally hunt and remove forest resources throughout the year (Annual Report of Forestry Division, 2018).

The Forestry Division (Trinidad), the Department of Natural Resources and Forestry (Tobago) and the Environmental Management of T&T are the agencies with the responsibilities for the management, protection and conservation of flora and fauna. These agencies are mandated by the GoRTT to ensure that all communities within T&T are actively involved in protection, conservation and sustainable use of T&T's forest and wildlife resources (GoRTT, 2016).

### 2.2 T&T: Biodiversity

To understand T&T in the context of wildlife trade, one needs to fully comprehend the background and the location of the twin-island state. Trinidad, the larger of the two islands has a

land size of 4,827 $km^2$ and Tobago has a land size is 303 $km^2$. They are situated between 10° 2' and 11° 12' North Latitude and 60° 30' and 61° 56' West Longitude, making the twin-island state the most southernly of the Caribbean (Gertrude 1961). T&T has a rich biodiversity as seen in Table 1, which is ascribed to its historical proximity to the South American Continent (GoRTT, 2017).

Due to its recent geological partition from the South American Continent, the biota and environment of Trinidad especially mirrors the biology of the equatorial South America (CBD, 2015). T&T supports approximately 433 bird species in which 2 species are endemic, 85 reptile species and 100 mammal species (including 27 families; 8 orders) and 67 species of bats. In the marine zones, there are an estimated 36 species of reef-building corals in which Tobago waters are known to host the largest Brain Coral in the world (GoRTT, 2017). The Islands also supports 3638 plant species in which 53 are endemic as seen in Table 1.

According to the 2018 IUCN Red List, 66 species in T&T are listed as either vulnerable (46), endangered (12), or critically endangered (8) (IUCN, 2018). This is an increase of 24% in the number of species listed since 2010. Fishes are the most threatened group, followed by invertebrates and amphibians (GoRTT, 2016). The threats to T&T's biodiversity are land cover changes due to urban and building development, agriculture by the use of chemicals and clearing land to plant crops and farm animals (GoRTT, 2017). Also, fires ignited mostly by humans, solid waste pollutions, over harvesting and resource consumption for both flora and fauna are other threats to T&T biodiversity (GoRTT, 2016).

Table 1*: Number of Species of T&T (Table adapted from GoRTT, 2017)*

| **Major Categories of Plant and Animal Species** | **Number of Species** | **Number of Endemics** | **Source** |
|---|---|---|---|
| Plants | 3,638 | 53 plants | Comeau *et. al.* 2016 |
| Mammals<br>(land and marine) | 100 including 67 bat spp. | 2 mammals:<br>1 rodent: Trinidad spiny rat - *Proechimys trinitatus*<br>1 deer: Trinidad Red Brocket - *Mazama trinitatis* | Kenny, 2008<br>Gomes, 2015<br>IUCN, 2016<br>McKnight &<br>Emmons, 2008 |
| Birds | 433 | 2 birds:<br>- Pawi/piping guan (*Pipile pipile*)<br>- Trinidad motmot (*Momotus bahamensis*) | ffrench, Richard,1991<br>Kenefick *et al*., 2011 |
| Fish (Freshwater)<br>- Stream | 66 | 3 freshwater fish:<br>- *Hemibrycon taeniurus OC* (Characidae)<br>- *Ancistrus maracasae* (Loricariidae)<br>- *Poecilia boesemani* (Poeciliidae) | Phillip *et al*, 2013 |
| Fish (Freshwater)<br>- Coastal | 60 | Not available | Phillip *et al*, 2013 |
| Fish (Marine) | 1,013 coastal and marine finfish species<br>Up to 957 species | 4 marine fishes:<br>- *Acanthemblemaria johnsoni OC (Chaenopsidae)*<br>- Tawny Blenny *Starksia rava (Labrisomidae)* | Ramjohn, 1999 |

| | | | |
|---|---|---|---|
| | | - Darksaddle Blenny *Starksia sella (Labrisomidae)*<br>- Tobago Coralbrotula *Ogilbichthys tobagoensis* (Bythitidae) | |
| Amphibians | 38 species | 7 frogs:<br>- *Mannophryne olmonae* (Anura Dendrobatidae) Bloody Bay Fragrant Frog<br>- *Mannophryne trinitatis* (Anura Dendrobatidae) Yellow-throated Frog<br>- *Phyllodytes auratus* (Anura - Hylidae) El Tucuche Golden Tree Frog<br>- *Leptodactylus nesiotus* (Anura - Leptodactylidae) Trinidad Thin-toed Frog<br>- *Pristimantis charlottevillensis* (Anura - Strabomantidae) Charlotteville Litter Frog<br>- *Pristimantis turpinorum* (Anura - Strabomantidae) Bloody Bay Litter Frog<br>- *Pristimantis urichi* (Anura - Strabomantidae) Urich's Litter Frog | Murphy, 1997<br>Living Natural Treasures, n.d. |
| Reptiles | 98 species including marine turtles (93 according to Murphy, 1997) | Newly discovered snake (2016) - *Erythrolampus pseudoreginae* (Tobago Stream snake) | Boos, 2001<br>Living Natural Treasures, n.d. |

| | | | |
|---|---|---|---|
| Marine Invertebrates | 523 species | 1 endemic marine benthic amphipod *Ampelisca paria* | IMA, 1999; Gobin, 2007; Gobin, 2010 |

### 2.2.1 Illegal trade from the mainland to the T&T.

A broad range of conservation stakeholders, including animal rehabilitation centres and environmental NGOs, perceived that there is an illegal wildlife trade from Guyana and Venezuela to T&T (See Figure 4) (Sewlal, 2017). Venezuela's illegal trading of wildlife has possibly been exacerbated in recent years by the economic collapse in their economy, as Venezuelans seek alternative means to generate income and obtain food (Long & Andres, 2018).

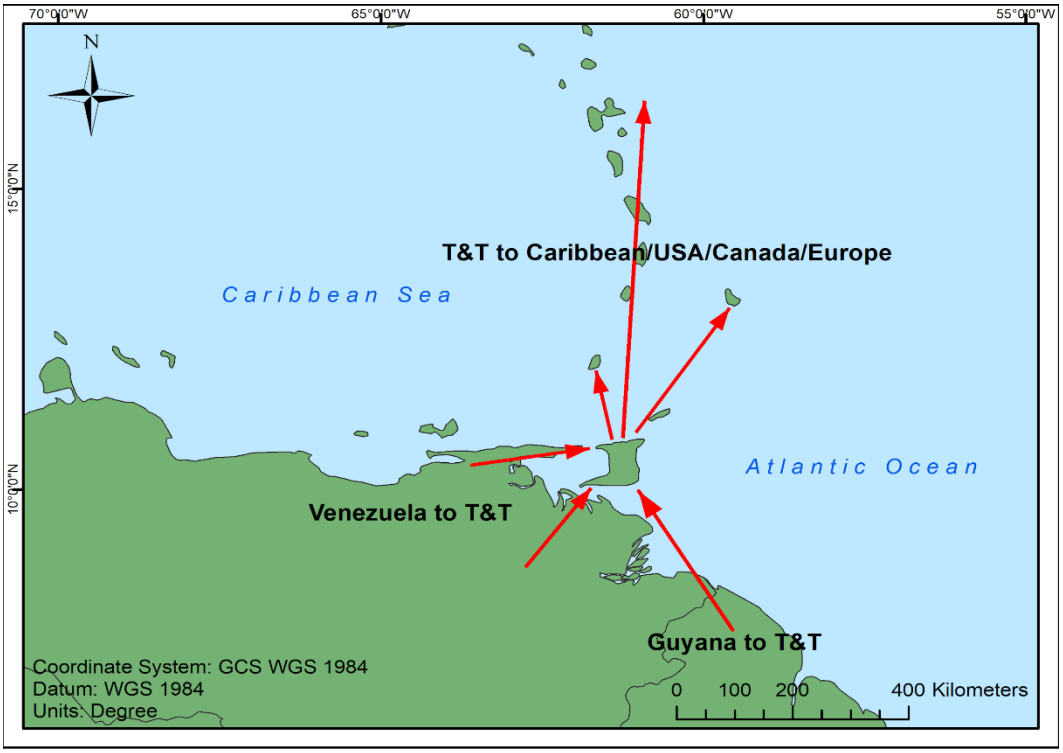


*Figure 4: Showing the illegal wildlife trade from South America to Trinidad and the rest of the world.*

The illegal wildlife trade between T&T and Venezuela can eventually affect its biota; this illicit trade may also potentially have a number of negative impacts on biodiversity in T&T (Gibson, *et al*., 2018). The unauthorized importation and release of species not native to T&T into the country

can increase the potential impact of invasive species competition with native biodiversity, such as the locally threatened Blue and Gold Macaw (*Ara ararauna*), Ocelot (*Leopardus pardalis*) and Red Howler Monkey (*Alouatta macconnellii*) (Sewlal, 2017). Past illegal wildlife trade has already introduced the non-native and highly-competitive species to the forests of Trinidad such as the Yellow-crowned Parrot (*Amazona ochrocephala*), Tufted Capuchin (*Cebus apella*), and Capybara (*Hydrochoerus hydrochaeris)* (Sewlal, 2017). Trade has also contributed to the transmission of new zoonotic pathogens to native biodiversity, domestic poultry and personal pets (Torres, 2018). Animal welfare is also of concern in that trafficked animals experience gross cruelty while in transit between South America and T&T. Birds, monkeys, and other animals often do not survive the journey (Torres, 2018). This can be seen in Table 2 below which gives an assessment of the number of animals seized during the period 2010 to 2017 which are protected under the Conservation of Wildlife Act 67:01 but coincidently are CITES-listed species. Therefore, if the CITES legislation is implemented in T&T and enforcers of the legislation are trained and educated in identifying CITES-listed species, more species than what is listed in Table 2 can be identified and seized.

Table 2*: Showing CITES listed Species Seized for the Period 2010 to 2017 (Wildlife Section, 2018)*

| **SPECIES** | **NUMBER SEIZED (2010-2017)** |
|---|---|
| *Ara ararauna (Blue and Gold Macaw)* APPENDIX II | 154 |
| *Ara macao* (Scarlet Macaw) APPENDIX I | 63 |
| *Alouatta seniculus* (Red Howler Monkey) APPENDIX II | 27 |
| *Cebus apella* (Tufted Capuchin Monkey) APPENDIX II | 8 |
| *Leopardus pardalis* (Ocelot) APPENDIX I | 6 |
| *Amazona barbadensis* (Yellow Shouldered Amazon) | 59 |

| | |
|---|---|
| *Amazona oratrix* (Yellow-headed Amazon) APPENDIX I | 372 |
| *Puma concolor* (Cougar) APPENDIX II | 1 |
| *Ara chloropterus* (Red-and-green Macaw) APPENDIX II | 7 |
| *Boa constrictor* (Macajuel) APPENDIX 1 | 11 |
| *Pionites melanocephalus* (Black-headed Parrot) APPENDIX II | 84 |
| *Cacatua alba* (White Cockatoo) APPENDIX II | 1 |
| *Pyrrhura molinae* (Green-cheeked parakeet) APPENDIX II | 12 |
| *Forpus passerinus* (Green-rumped Parrotlet) APPENDIX II | 14 |
| *Chelonia mydas* (Green Turtle) APPENDIX 1 | 28 |
| *Eretmochelys imbricate* (Hawksbill Sea Turtle) APPENDIX 1 | 19 |
| *Ara glaucogularis* (Blue-throated Macaw) APPENDIX I | 6 |
| *Mazama americana* (Red Brocket Deer) APPENDIX III | 10 |
| *Eudocimus ruber* (Scarlet Ibis) APPENDIX II | 16 |
| *Eira barbara* (Tyra) APPENDIX III | 5 |
| **TOTAL** | **903** |

## 2.3 Implementation of CITES

### 2.3.1 A review of global CITES implementation literature.

In 1963, international trade was recognised by many countries as posing a growing threat to many wild species of flora and fauna, which stimulated the 1973 Plenipotentiary Conference in Washington DC (CITES, 2019). This conference resulted in the formation of CITES that came into effect in 1975. Today, over 183 Parties are signatory to the CITES, it is the most voluminous multilateral agreement on trade of wildlife species in the world. CITES regulates international

trade of more than 36,000 species of animals and plants through a system of reciprocal sanctions and permits (CITES, 2019). In an article by Harfoot *et.al*. (2018), they conducted a study to observe the pattern and trends in CITES-listed species trade in which they recorded 16 million shipments for 28,282 species, from 1975 and 2014. Harfoot *et.al*. (2018) revealed that CITES-listed species trade increased to an astonishing 100 million whole-organism equivalents per year from 25 million per year. The authors went on to conclude that their research began to expose the wildlife trade as it shifts trade routes and sources over the 40yrs from wild caught to captive-bred (Harfoot *et al*., 2018).

Countries such as T&T are signatories to CITES but, as mentioned above, there is no local CITES legislation to appropriately implement CITES. The most significant problems facing many countries that are signatories to international treaties are lack of enforcement and implementation and CITES is not exempted (Hewitt, 2002). Arroyo-Quiroz, *et.al*. (2005) conducted a study on CITES implementation in Mexico and developing countries which emphasised the Hewitt (2002) point that some countries accede to CITES without any real interest to implement it (Arroyo-Quiroz, Ramón, & Leader-Williams, 2005). Arroyo-Quiroz *et.al*. (2015) gave an example of Mexico to exemplify that even after being a being a signatory to CITES to control illegal wildlife trade in Mexico, it still could not control the wildlife trade of its native species (Arroyo-Quiroz, Ramón, & Leader-Williams, 2005).

Sheikh & Corn (2016) stated that each Party that is a signatory to CITES is mandated to decree and implement legislation to forbid illegal wildlife trade that violates the agreement of CITES (Sheikh & Corn, 2016). The implementation of CITES legislation should incorporate fines for confiscation, violations and the return of specimens to its native countries that were traded illegally (Sheikh & Corn, 2016).

Most Category 2 and 3 countries depend on the forests, wildlife and customs legislations, to govern CITES-listed specimens with T&T being a perfect example of such a country (COP12, 2002). Most of these non-CITES legislations are restricted in future vision and limited to some products or transactions and categories of species (COP12, 2002). The most recent document guiding countries trying to implement and develop its CITES legislation was derived from CITES CoP 17 in Johannesburg, South Africa. The CITES Secretariat following CoP 17 created the document which establishes a guide for countries seeking to legislate CITES into their domestic legislations (CITES, 2016). Some countries listed in Categories 2 or 3 may delay in drafting CITES legislation into their laws because they believe their local wildlife laws are more adequate presently until certain aspects of CITES are corrected (Challender *et al*, 2015).

Challender *et al*. (2015) criticized how CITES operates, and the authors advocated an intelligence-led enforcement approach for improving enforcement. This includes actual analysis of the crime problems (i.e., the nature of demand and price), data management (i.e., an illegal trade database), impact evaluation and emphasised that a wildlife enforcement network (WEN) is one way to do this (Challender, Harrop, & MacMillan, 2015). Challender *et al*. (2015) claims that the "CITES approach" is ineffective because it "fails to accurately monitor supply, particularly where trade is illegal, it fails to consider the impact of trade controls in realistic terms and it does little to consider the complex nature of demand or contend with changing market dynamics" (Challender, Harrop, & MacMillan, 2015, p. 256). The paper states the CITES approach needs to be reformed to have "improved monitoring of supply (by accounting for illegal and legal trade) and demand and prices for wildlife through national wildlife consumption surveys and producing information for evaluation of the performance of trade controls, and could inform decision-making and the implementation of interventions" (Challender, Harrop, &

MacMillan, 2015, p. 257). Fuchs (2008), sharing the same views of Challender *et al*. (2015), reviews a debate in CITES on preservation as opposed to sustainable use and critiques CITES for perhaps ceding domestic legislative power to an international authority which the author suggests violates legality principles (Fuchs, 2008). Chan *et al*. (2015) propose a need for international scheme for coding traded wildlife specimens to improve customs systems and monitor global wildlife trade (Chan, Zhang, Yang, & Feng, 2015). These suggestions made can be used to offset some of the negative CITES issues highlighted by Fuchs (2008) and Challender *et al*. (2015). Abensperg-Traun (2009) advocates for a community co-management and/or enforcement for effective CITES implementation using Southern Africa as a successful example (Abensperg-Traun, 2009).

### 2.3.2 Institutional framework for the implementation of CITES in T&T.

The Wildlife Section of the Forestry Division is the institution that is mandated to issue CITES permits in T&T. The Wildlife Section although manages T&T fauna also collects all data concerning trade of CITES-listed flora. The T&T CITES Management Authority is managed by the Conservator of Forests (Head of Forestry Division) and the Scientific Authority is managed by the Head of the Wildlife Section as illustrated in

Figure 5. The Management Authority which is at present not fully functional was previously the T&T Wildlife Conservation Committee (WLCC) sanctioned by the GoRTT. The WLCC comprised of at least one member to represent Forestry Division (Chairperson), amateur hunters in T&T, field naturalists in T&T, the T&T Police Service, the Agricultural Society of T&T, the Zoological Society of T&T, interests of cage birds' fanciers, a qualified Ornithologist, a qualified Zoologist and the Minister of the Ministry of Agriculture, land and Fisheries. The T&T CITES Scientific Authority whose roles and responsibilities includes conducting research on

species and non-detrimental findings (NDF) is limited in these duties mostly because of financial constraints. Initially, the Scientific Authority conducted NDFs which were carried out by the Wildlife Biologist, Foresters, Forest Rangers, Game Wardens and on the job trainees within the Wildlife Section, Forestry Division.

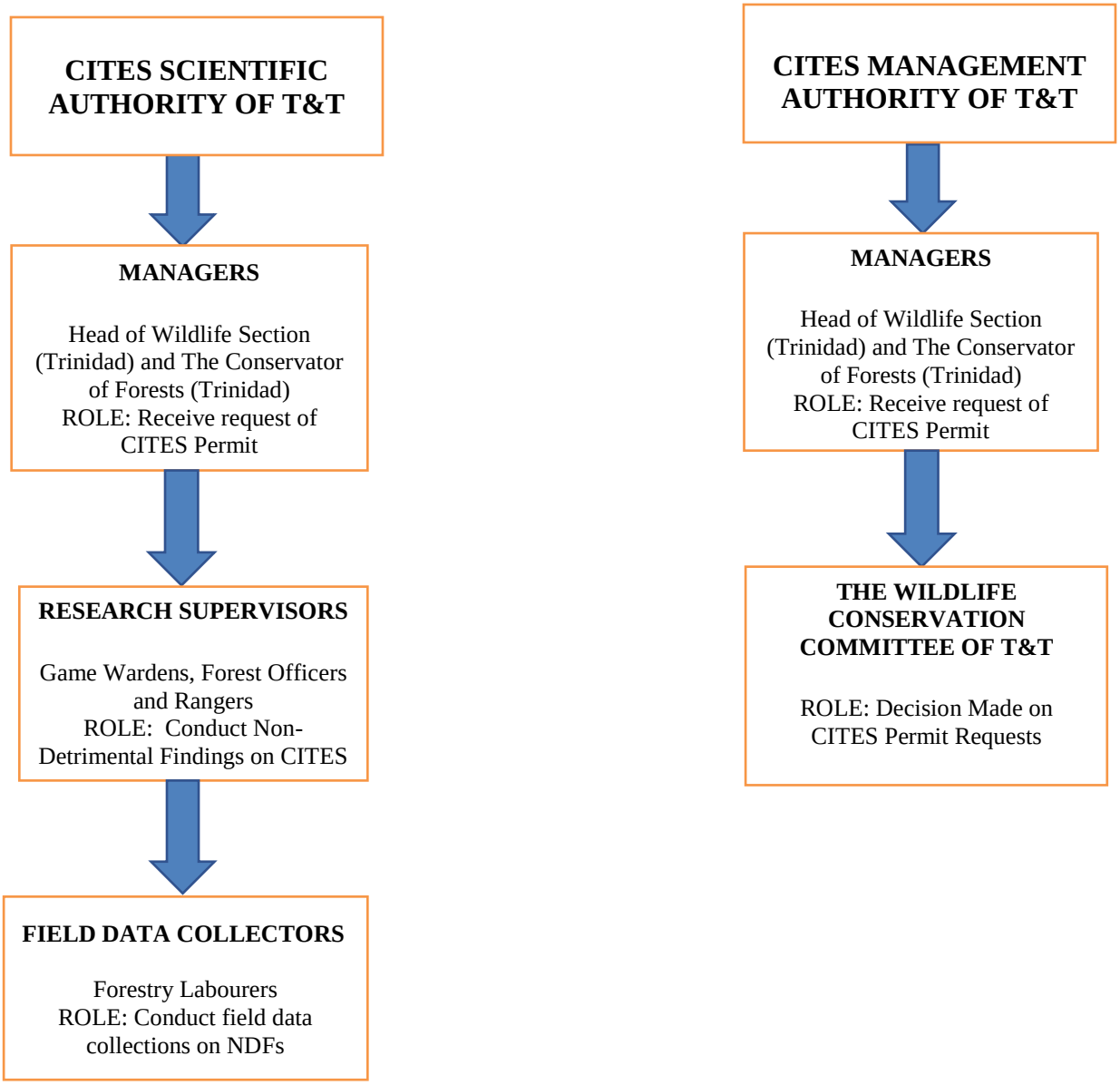


*Figure 5: Showing a flow chart of the roles and responsibilities of the CITES Management and Scientific Authority of T&T*

### 2.3.3 CITES implementation in the Caribbean.

The Caribbean is made up of over 7,000 islands which are part of 26 countries. The region covers an area of 1,063,000 square miles (2,754,000 $km^2$) and has a population of nearly 38 million people (2017 estimate) (CIA, 2019). The Caribbean is most known for its warm, tropical climate, natural beauty and is considered a biodiversity hotspot (CIA, 2019). Illegal trading of flora and fauna is ubiquitous throughout the Caribbean because of its rich biodiversity and relaxed laws governing trade. The Caribbean is one of the top locations in the world that tourists flock to and when some tourists leave the islands, they take with them treasured memories from their stay (CITES, 2016). These treasured memories sometimes knowingly and unknowingly to the tourists are CITES-listed species. Some of the products tourists leave the Caribbean with are queen conch, corals, orchids, mahogany handicrafts, turtle shells, parrots, macaws and many others (CITES, 2016).

In June 2013, the Secretariat of CITES undertook a series of consecutive legislative succour missions to T&T, Dominica, Grenada, St Lucia, St Vincent and the Grenadines. During the missions, emphasis was placed on (i) the urgent need to enact legislation for effective implementation of the Convention, (ii) the potential for court challenges if the regulation of CITES trade is not based on proper legal authority and (iii) the potential for a Standing Committee (SC) recommendation to suspend commercial trade if Countries which have been Party to the Convention for 20 years or more do not enact CITES legislation into their domestic laws by SC66 (June/July 2015) (CITES, 2019). Each of the five above-mentioned Parties renewed its commitment to enacting legislation and/or subsidiary regulations for effective implementation of the Convention (CITES, 2019). The missions were followed by formal letters from the Secretary General to visited countries summarizing the conclusions that were reached and the action points

that were identified (CITES, 2019). Subject to the availability of resources, the Secretariat invited any requests for technical or financial assistance to the relevant countries in relation to improving their CITES legislation, electronic permitting, capacity building for enforcement authorities and other implementation needs (CITES, 2019). Unfortunately, at present (Six Years after) all the Caribbean islands listed above that agreed to the Secretariat requests still remain as either a Categories 2 or 3 status country.

### 2.4 The Use of Social Science in Conservation

Heinen (2010) provided examples of how social science can be successfully used for biodiversity conservation. Heinen (2010) argued that a policy gap analysis is not used to create legislation, but rather to determine how new or existing legislation can be drafted or amended to address lapses in policies (Heinen, 2010). Heinen (2010) argues that a successful analysis and data collection system can only occur by using one or a combination of policy gap analysis/analyses or structured and semi-structured surveys. A structured questionnaire typically contains mostly closed-ended questions (Kabir, 2016). A semi-structured questionnaire was used to collect data for this research in which it contained both open-ended and closed-ended questions (Kabir, 2016). Therefore, this can successfully be used to identify the gaps in the legislations and aid in making recommendations to create a new legislation such as a CITES legislation (Heinen, 2010). Dongol (2011) in his paper used key informants' interviews to learn opinions of experts while using the grounded theory approach. Najman (1995) stated that using a policy implementation analysis framework can be used to explain gaps in CITES implementation (Dongol, 2011; Najman, 1995). Dongol (2011) argues that to avoid an increase risks of non-compliance, one needs to expand the use of buffer zones in protected areas by redistributing policies to continuously benefit the locals

and employ conservation organizations to general public and political support (Dongol, 2011, p.183).

### 2.4.1 A review of the different social science methods used to collect data.

Interviews are extensively used to study a broad variety of issues by those in humanities, behavioural and technical studies (Libakova & Sertakova, 2015). In a journal article by Tashakhori & Teddlie (1998), it was stated that using mixed methods in one study allows the analysis of the research problem to be more comprehensive because both qualitative and quantitative when used together compliments each other (Tashakkori & Teddlie, 1998). Creswell (2013) in his journal article identified that the main assumption is once a researcher combines quantitative and qualitative strategies, it provides a better understanding of the matter than using either methods alone. Creswell (2003) went on further to explain that this research technique is likened to pragmatism and he explained that researchers using mixed methods use several strategies to examine and gather data instead of pledging to only one method. McKim (2017) agreed that it is understood that the use of mixed methods of both quantitative and qualitative would justify the query of determining the professed notion that it adds more value using mixed methods study as compared with using either qualitative or quantitative research (McKim, 2017). The major difficulties endured by using mixed methods were due to the enormous amount of time used to collect and analyse data from two different types of methods (Creswell & Plano Clark, 2011). Creswell (2003) stated that by using both quantitative and qualitative methods one can produce the most effective understanding of a research problem (Creswell, 2003, p. 12). This is the reason why Creswell (2009) found that the use of a mixed method analysis eliminates prejudices inherent of using one method and would provide profound results and a better understanding of any study (Creswell J. W., 2009).

A dissertation done in the Caribbean by C. Lyndon John (2012) conducted a study which presents challenges facing Saint Lucia's wildlife enforcement and proposes a number of possible actions to assist Saint Lucia. The author identified the challenges similar to the findings of this research, which included a lack of interagency coordination and lack of resources (John, 2012).

One of the effective methods of studying law enforcement personnel involved in ecological law enforcement is the expert interview method (John, Keane, Jones, & Milner-Gulland, 2014). Triandis & Marin (1983) made an important observation by stating the one idiosyncrasy of expert method interviewing is that it can give the researcher an insight into the person's own point of view (Triandis & Marin, 1983). Libakova & Sertakova (2015) shared similar views to Triandis & Marin (1983) by explaining that sociological methods are used to gain scientific knowledge through interviews but its' purview is far outside the confines of the theory of society (Libakova & Sertakova, 2015). Libakova & Sertakova (2015) continued by stating, unlike a regular individual, this type of respondent is known to be a carrier of profound information of the topic being reviewed (Libakova & Sertakova, 2015). Dorussen, Lenz, & Blavoukos (2005) in their paper made mention of the significant advantages of using the expert interview method over other methods for the gathering of data. Dorussen, Lenz, & Blavoukos (2005) explained that one of the main advantages of using the expert interview method is the individuals being interviewed are highly knowledgeable and qualified in the specific topic (Dorussen, Lenz, & Blavoukos, 2005). Therefore, this eradicates the necessity to use supplementary screening and expounding questions in order to achieve the individual's true response (Dorussen, Lenz, & Blavoukos, 2005). Libakova & Sertakova, (2015) categorized the expert interview method as interdisciplinary, in which the use can be determined only by using it on the foundation where the expert is skilful in the research topic being analysed (Libakova & Sertakova, 2015). The expert interview method which was used

for this research was described by Dorussen, Lenz, & Blavoukos (2005) as distinctly designed at achieving reliable information because the respondents' aptitude is very high and familiar with the environment surrounding the topic being researched (Dorussen, Lenz, & Blavoukos, 2005).

# 3.0 Methodology

## 3.1 Research Questions

The research questions were generated in order to obtain the answers to support the objective of this research project. The research questions below forms the fundamental core of this research project. The research questions aided in keeping the study focused, determining the most appropriate methodology while guiding all the stages in reporting, analysing and reviewing (Miles, Hubberman, & Saldana, 2014).

Objective: Improve CITES implementation in T&T.

Research Question 1: How do the personnel responsible for CITES implementation understand their roles and responsibilities?

Research Question 2: To what extent do personnel vary in their training experience, knowledge of CITES and organizational mandates to implement CITES?

Research Question 3: What traded species required increased attention to ensure their proper management under CITES?

Research Question 4: What policy changes and trainings are perceived as necessary to improve CITES implementation?

## 3.2 Data Collection

This study was conducted using an expert interviewing/interview method, which is a qualitative research method that can provide limited quantitative data (Libakova & Sertakova, 2015). Expert interviews were conducted with 22 experts who are part of the law enforcement and implementation group mandated by the GoRTT to manage, conserve and protect T&T's flora and fauna. The number of persons one aims to interview per group should be between 15 and 35 (USAID, 1996), and for this research, 22 expert personnel were interviewed. The persons were selected based on their professional relationship to wildlife law enforcement particularly as it

relates to CITES implementation. To gain an insight into their work ethics, duties and responsibilities, many literature papers were reviewed to get the best interview practice. A semi-structured interview was chosen using the guide from Newling (2010) and USAID Center for Development Information and Evaluation (1996).

In a semi-structured interview, not all of the questions are pre-determined; it mostly contains questions with open-ended answers (Newing, 2010). The interviews were conducted face to face in-person between September 2018 and March 2019. The 22 expert personnel were selected from the Forestry Division of the Ministry of Agriculture, Land and Fisheries, Environmental Police of the Environment Management Authority, Customs and Excise Division of the Ministry of Finance, and Forestry and Wildlife personnel from the Department of Natural Resources and the Environment in Tobago. The researcher attempted to get all of the personnel in the group of flora and fauna law enforcement interviewed but only 22 out of the 33 known experts in this field were available to be interviewed. The remaining 11 personnel who were not interviewed were either on leave or extremely busy between September 2018 and March 2019. Each participant was briefed on the purpose of the study, potential risks involved and benefits of their responses to the research. They were also informed that their participation was voluntary and they would not incur special benefits or penalties from their organization, and that all the information they provided would be presented anonymously. All participants selected agreed to take part in the study (participation rate=100%). Each person was asked a series of 56 questions. Interviews lasted 60 minutes on average and were recorded through the use of field notes and a digital recording device.

The semi-structured questionnaire (Appendix A) was designed to gather information on specific aspects of the law enforcers' duties as it relates to CITES in general, which is in keeping with best-practice for action-oriented crime research (Clarke, 2009). Some of the questions from

the questionnaire were matrix questions, which were constructed using the guide from Miles and Huberman (2014). Matrix questions consist of closed-ended questions that asks respondents to evaluate one or more row items using the same set of column choices (Miles, Hubberman, & Saldana, 2014). The focus of the interviews was directed to CITES and wildlife implementation. Interviews were also directed to understanding the participants' perceptions on their knowledge of CITES and how they think CITES can be best implemented, see Table 3. The questions queried were primarily open-ended and included a follow-up with enquiries, which explored responses in greater depth and detail and helped to maintain interview focus (Rubin & Rubin, 2012).

*Table 3: Showing Data Types Collected and the Number of Questions for Each Data Type.*

| **Data Type** | **Number of Questions** |
|---|---|
| CITES Knowledge | 7 |
| Agency Cooperation | 1 |
| Human Resource | 17 |
| Implementation Procedures | 13 |
| Problem Perceptions | 10 |
| Trade Information | 6 |
| Improving Implementation | 2 |

### 3.3 Data Analysis

The questionnaires provided qualitative data that can be coded and qualitatively and quantitatively analysed. Therefore, the research will require both types of data analysis. Figure 6 shows the Creswell (2009) model which was used as a guide for the data analysis.

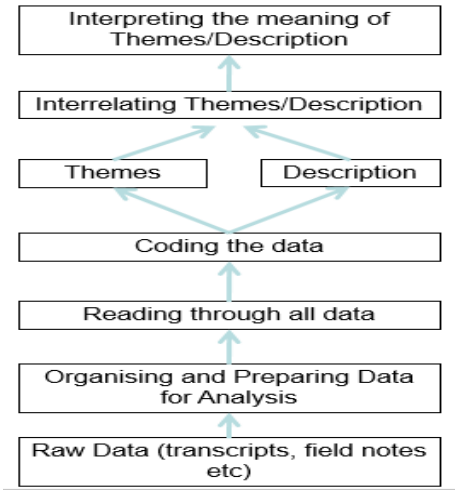


*Figure 6: Creswell (2009) Model used for research project data analysis.*

### 3.3.1 Quantitative analysis.

The questionnaires, recorded field notes and audio files were secondarily processed, respectively, into detailed interview summaries and interview transcripts (Creswel, 2009). These documents were then subject to content analysis using Microsoft Excel and SPSS. SPSS is a software package used for statistical and interactive, or batched analysis. Two rounds of coding were conducted to first develop a code book and then systematically apply the code book to all interview summaries and transcripts.

### 3.3.2 Qualitative analysis.

The qualitative analysis involved reviewing the most common themes and interpreting them based on the interview questions posed to the expert personnel and the interview summaries (Bowen, 2009). Also, in-depth interviews and a thorough review of local policy documents were also completed. Conversations with the CITES Management and Scientific Authority of T&T were conducted to get an insight into their roles and functions. A participation observation was done by presenting a power point presentation about CITES knowledge, roles and functions which was

presented to the forest management and wildlife protection officers after interviews with them were long completed (See Picture 2).

*Picture 2 : Showing participants attentively listening to presentation on CITES knowledge, roles and functions*

After the presentation, a question and answer session was conducted and recorded. This session had three purposes: i) to conceptualise what the personnel understood from the presentation, ii) to record their experiences and recommendations for CITES implementation, and iii) to understand if CITES was fully implemented and how this might impact their daily work load and programs. The data were then compiled and analysed using the Miles and Hubberman (1994) qualitative data analysis as a guide (See Figure 7 for a summary of the process). This method was used because it helps organize data for later and deeper analyses.

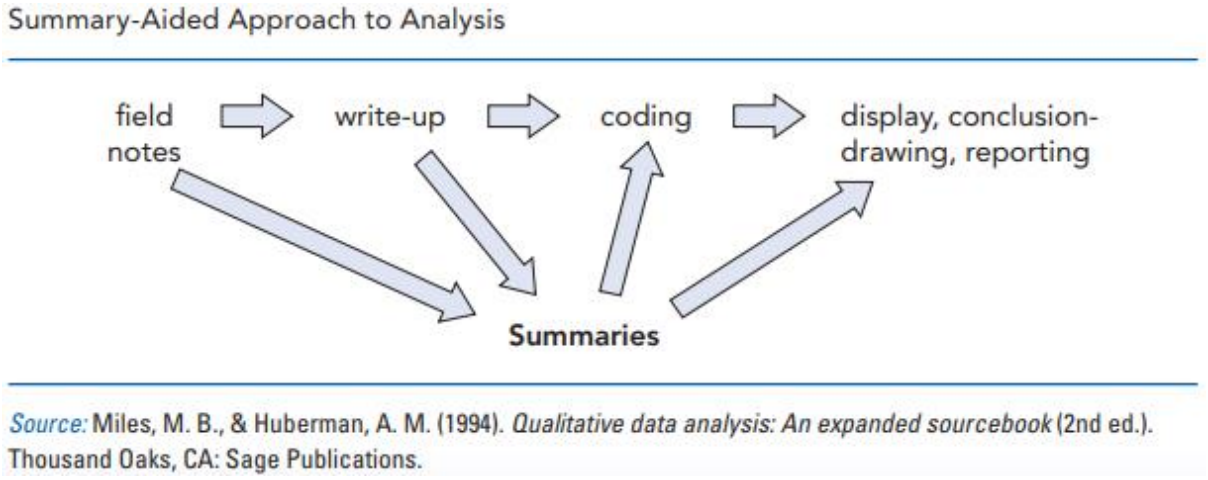


*Figure 7: Showing the approach taken to summarise the qualitative data collected.*

# 4.0 Results

## 4.1 Profile of Respondents

For the expert interviews, there were a total of 22 respondents who were asked to respond to 56 semi structured questions.

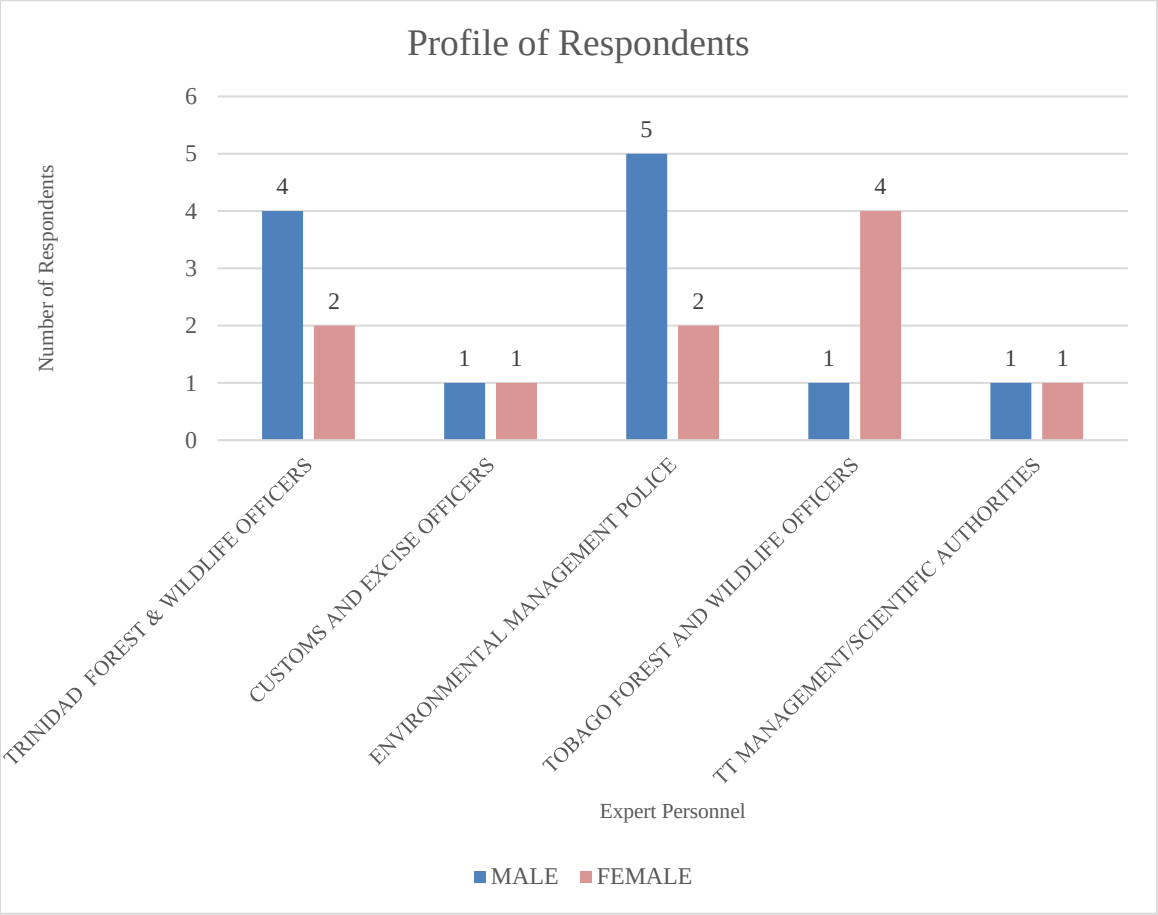


*Figure 8 : Bar chart showing the profile of the respondents interviewed.*

### 4.1.1 Gender.

There were almost even number of male and female respondents with 45% of the respondents being females and 55% being males (See Figure 8). There were fewer females

working in the various wildlife enforcement units in Trinidad whereas in Tobago there were more female enforcement officers than males.

### 4.1.2 Ratio of enforcement officers interviewed according to work place.

During the interview process, it was learned that Customs and Excise officers do not directly interact with wild flora and fauna unless it is found during an inspection of cargo or otherwise. If during their inspections, wild flora and fauna were found that is believed to be protected, the officers will call the Wildlife Section of the Forestry Division to investigate and prosecute if necessary. Therefore, only 2 expert personnel were selected to understand their role in wild flora and fauna implementation and their knowledge of CITES.

The expert personnel from the CITES Management and Scientific Authority of T&T are also trained and work in flora and fauna law enforcement. There is one person working for the CITES Scientific and Management Authorities in Tobago. In Trinidad there is one person working for the CITES Management Authority and one person for the Scientific Authority. Two CITES officials (one from Trinidad and one from Tobago) were interviewed. A total of 6 expert personnel from the Forestry Division (Wildlife Section) and 7 from the Environmental Management Police were interviewed. The greatest number of interviews per agency came from these two agencies because of the abundance of expert personnel working there.

### 4.1.3 Service years of respondents.

Two personnel interviewed, one male and one female both from the Wildlife Section of the Forestry Division, had less than 5 years of service. All the other respondents had over 10 years of service in their same working environment.

### 4.2 Knowledge of CITES

A total of 7 direct questions were asked about CITES knowledge to quantify the understanding and knowledge of CITES from each respondent, which are summarized in Figures 9, 10 and 11. When asked about knowledge of the Scientific and Management Authorities an astounding 91% of the respondents did not have any knowledge of the Authorities. A total of 68% of the respondents have some knowledge in CITES of which 87% of those respondents with knowledge of CITES, work within the Forestry Division of T&T. When probed further to understand how the Forestry and Wildlife staff acquired their CITES knowledge, 85% said they obtained this knowledge from their attendance in forestry school while pursuing their Forestry Diploma in Trinidad (which is a pre-requirement to become a Forest Officer in the Forestry Division of T&T).

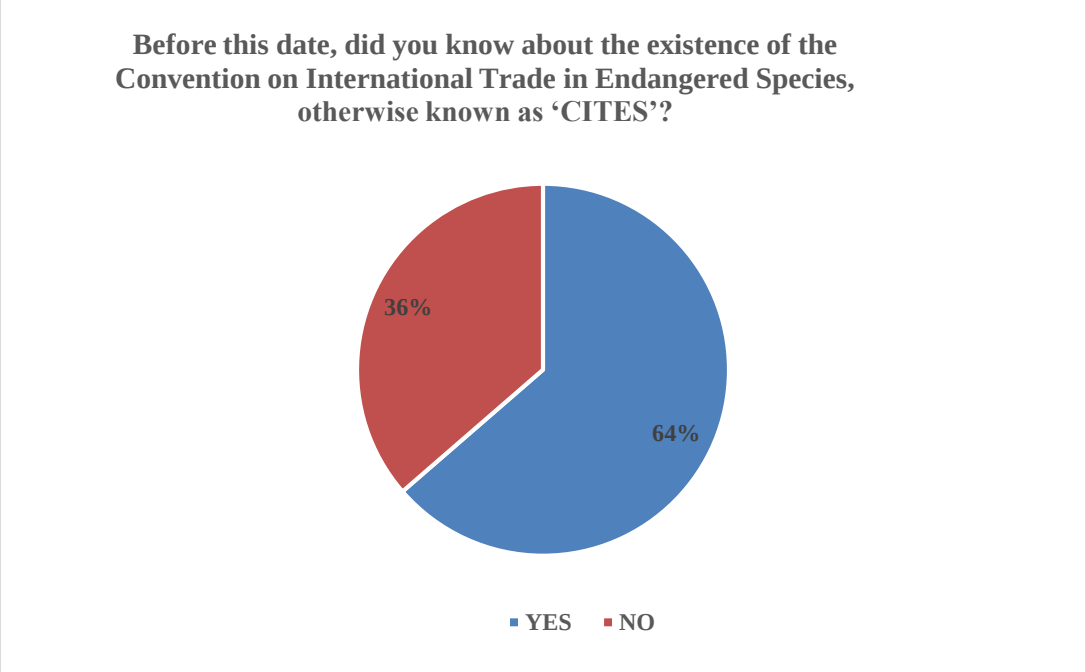


*Figure 9. Pie Chart showing respondents knowledge of CITES existence before the day of the interview.*

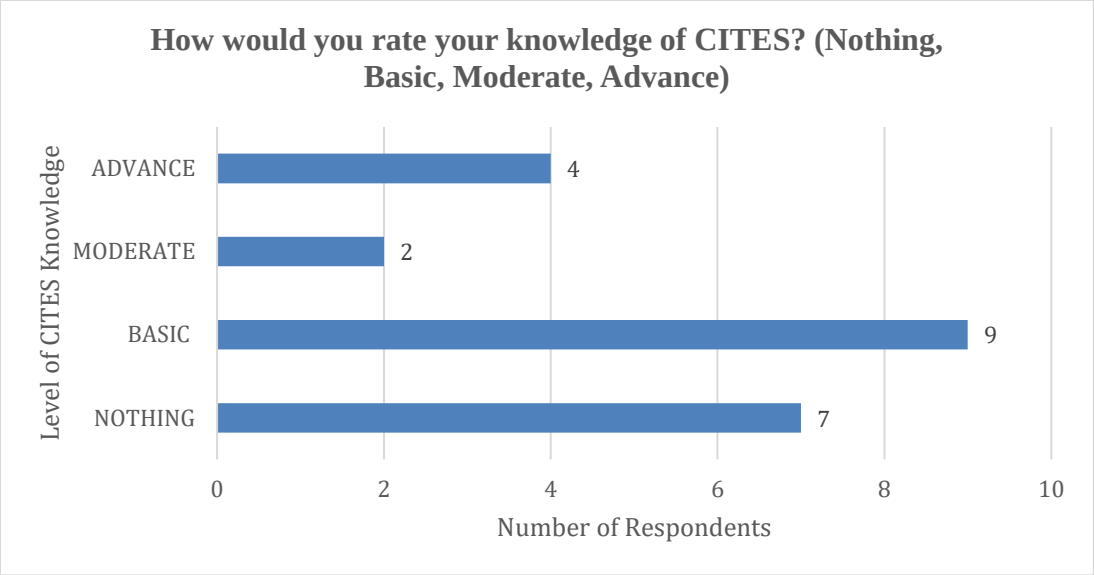


*Figure 10: Bar chart illustrating the number of respondents level of CITES knowledge.*


*Figure 11: Pie chart showing the number of personnel received professional training in CITES.*

### 4.3 Agency Cooperation

Only one direct question was asked about agency cooperation because throughout the questionnaire, the interviewer enquired of the respondents their connections with other agencies. A total of 21 out of the 22 respondents answered yes to cooperating with scientists (Veterinarians, Zoologists, Agriculturalist, Foresters, Biologists and Botanists). Most of the respondents who answered yes and asked to name other scientists not listed on the questionnaire identified professors from the University of the West Indies and University of Trinidad and Tobago. When probed further to understanding the connection, 100% of these respondents said the Universities worked closely with their organization when conducting research projects for safety and guidance. Therefore, in return, the Universities used their facilities to examine and identify specimens for the expert personnel.

### 4.4 Human Resources

Expert personnel were asked 17 questions on their roles and responsibilities for wildlife conservation and law enforcement; some of the human resource related questions were indirectly linked to the expert personnel knowledge of the CITES Authorities and agency cooperation. While enquiring the expert personnel during the interview process, some made suggestions to improve CITES implementation in the future. They also provided details of their current workload and working conditions as seen in Figures 12, 13, 14, 15, 16 and 17. The information collected from this data type section can help inform law and policy makers when developing CITES legislation. For instance, the information can be used to determine if a separate CITES implementation unit should be created or if the present work staff can handle the extra responsibilities if and when CITES is legislated in T&T laws.

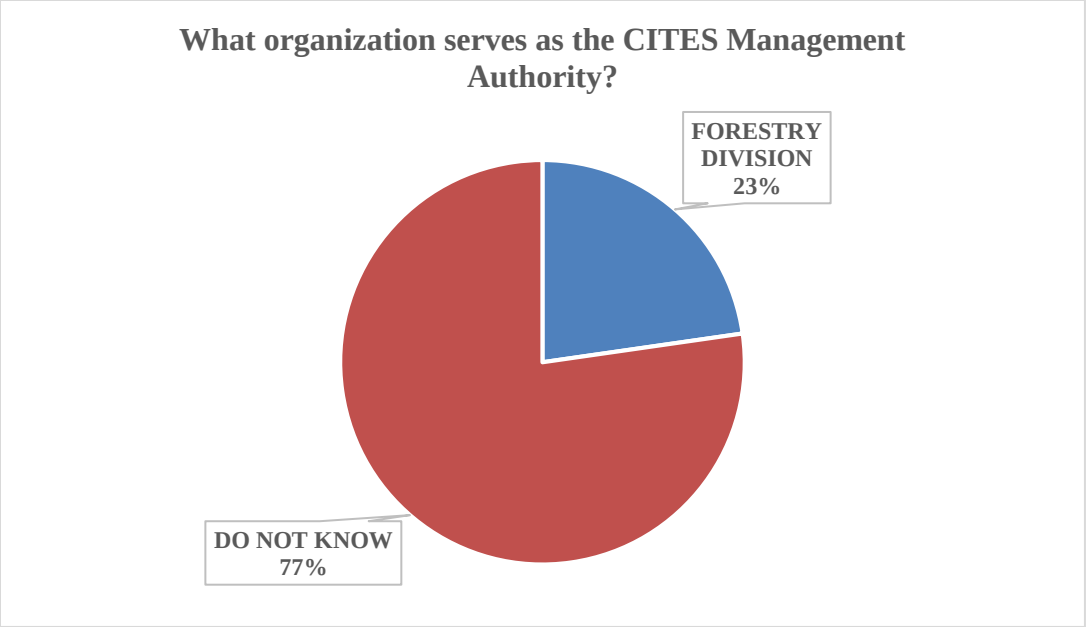


*Figure 12: Pie chart illustrating the respondents knowledge of the T&T CITES Management Authority.*

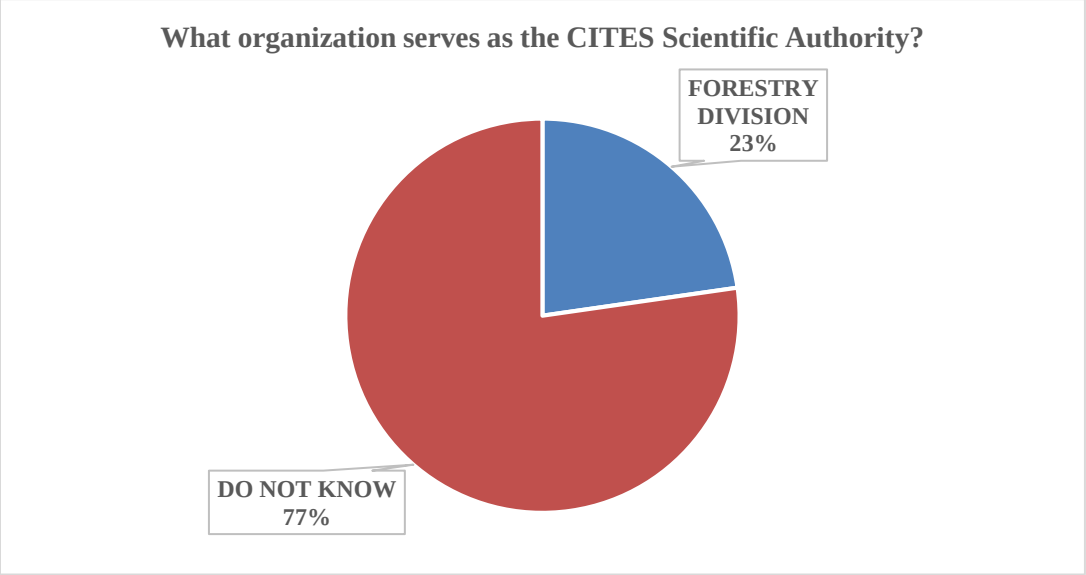


*Figure 13: Pie chart illustrating the respondents knowledge of the T&T CITES Scientific Authority.*

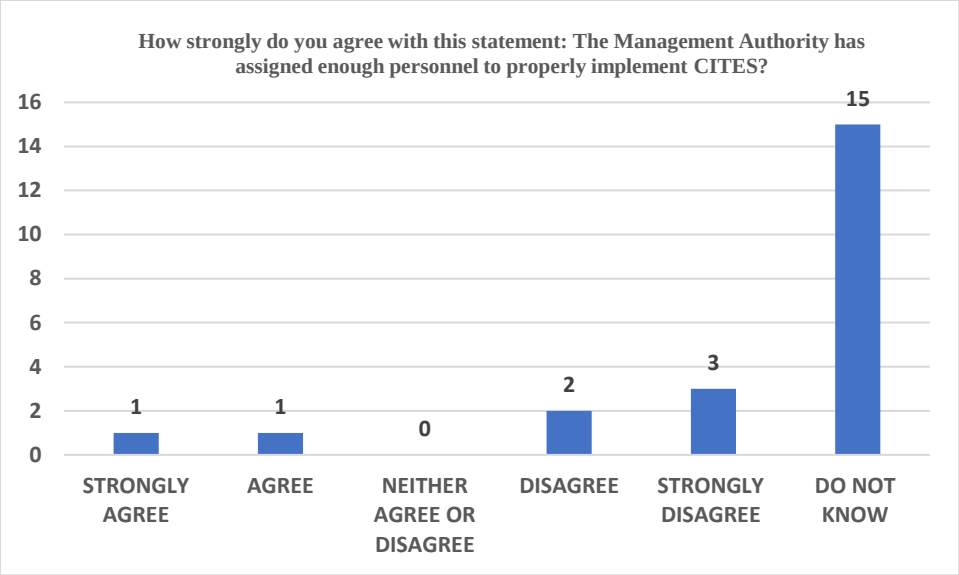


*Figure 14: Bar chart showing the respondents knowledge of T&T Management Authority personnel to implement CITES.*

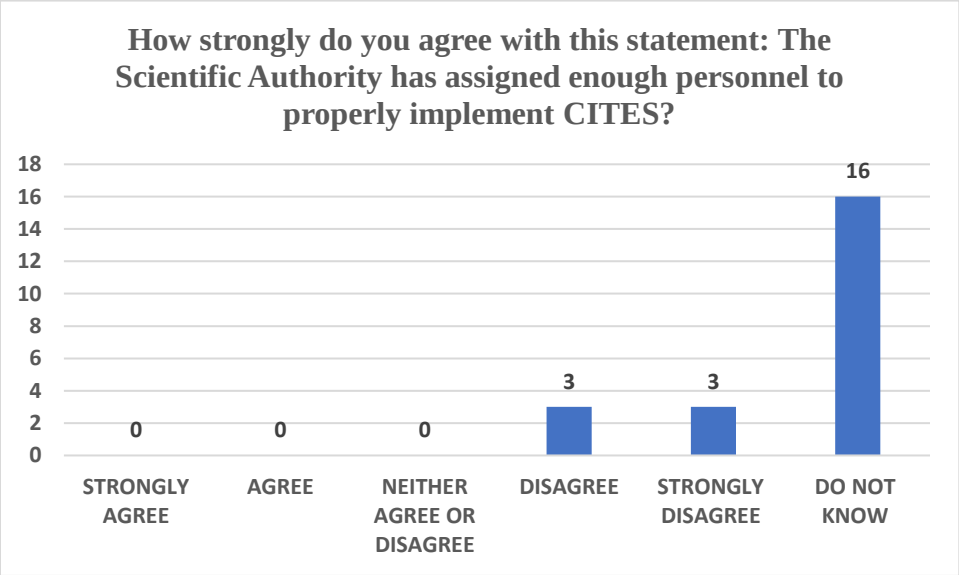


*Figure 15: Bar chart showing the respondents knowledge of T&T Scientific Authority personnel to implement CITES.*

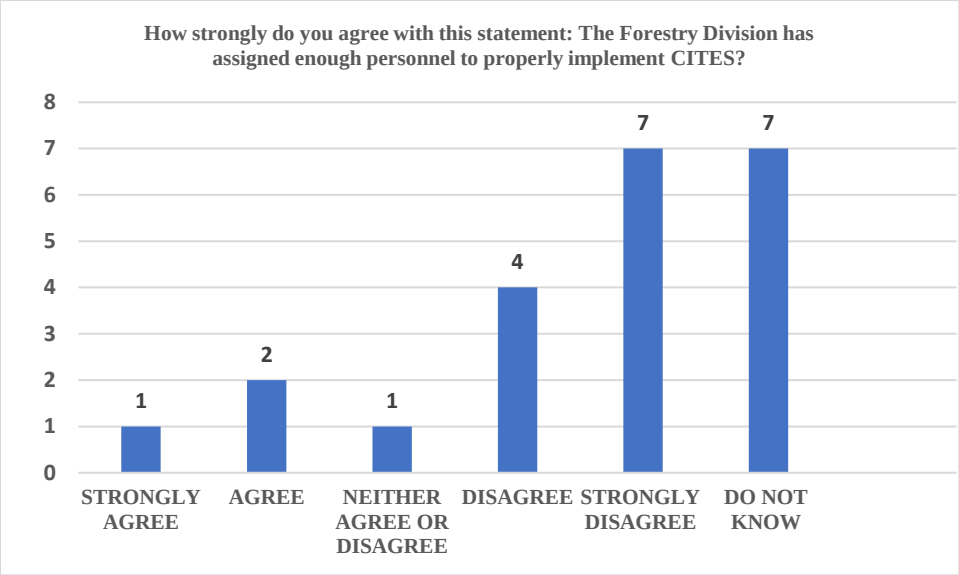


*Figure 16: Bar chart illustrating the respondents knowledge of Forestry Division's personnel to implement CITES.*

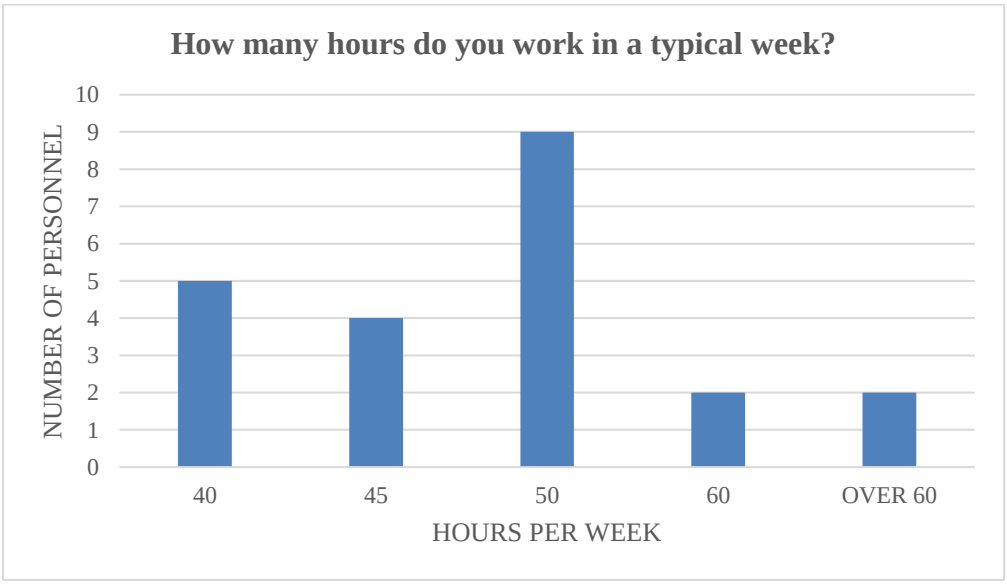


*Figure 17: Bar chart showing the average number of hours personnel work per week.*

### 4.5 Implementation Procedures

Expert personnel were asked 13 questions related to implementation procedures. Nineteen of the expert personnel responded that they do not work with or know how to identify CITES specimens (Figure 18). Seventeen expert personnel responded that they do not have a location to store confiscated animals (Figure 19). The high number of questions were asked to get a perception of the knowledge and understanding of the respondents on implementation knowledge and procedures.

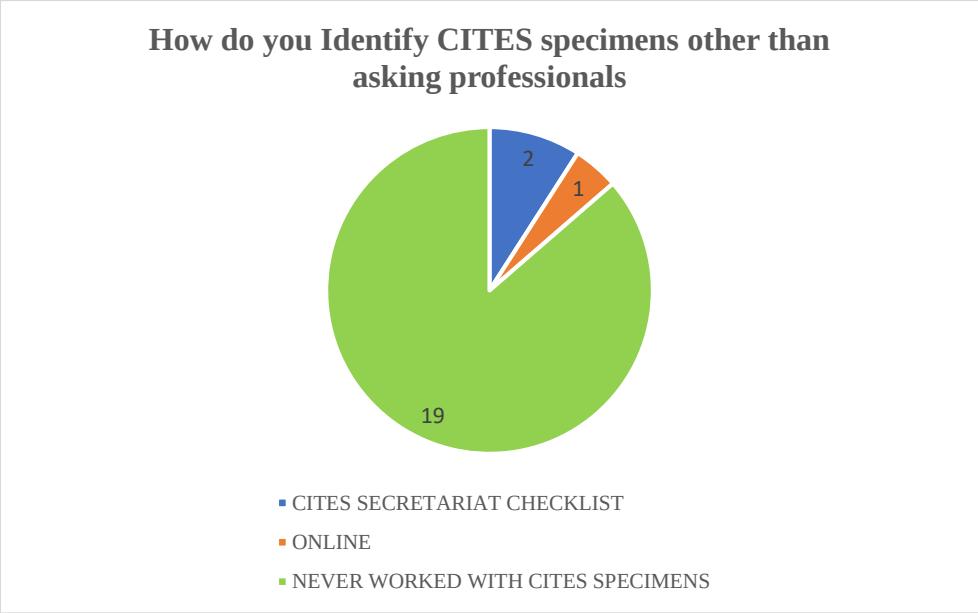


*Figure 18: Respondents response to identification of CITES specimens.*

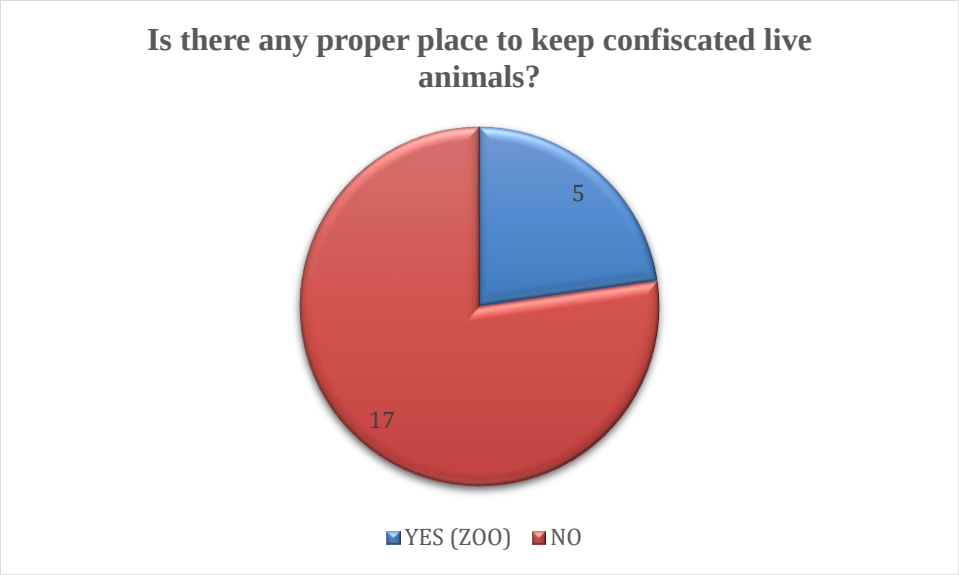


*Figure 19: Pie chart showing respondents answer to proper place to keep confiscated live animals.*

### 4.6 Problem Perceptions

Expert personnel were asked a total of 10 questions related to their perceptions of the agencies directly associated to CITES management and implementation in T&T. Over 75% of the respondents did not have an opinion on the agencies mandated to CITES management and implementation in T&T. The results showed that over 95.45% of the respondents were not satisfied with the temporary placement of confiscated flora and fauna. Also, 100% of the respondents admitted that they do not have the proper tools and equipment to handle confiscated plants and animals.

### 4.7 Trade Information

This section of the questionnaire focused on the opinion and knowledge of the expert personnel on trade of wild flora and fauna. The expert personnel called out plants and animals that they believe to be traded and if the species called are CITES-listed species they were recorded (See Figures 21 and 23). A total of 86.3% of the expert personnel were not able to identify which species were CITES-listed species. Some very important trade information only expert personnel

working with wild flora and fauna directly or indirectly would know and the information can be considered accurate is reflected in Figures 20, 22 and 24.

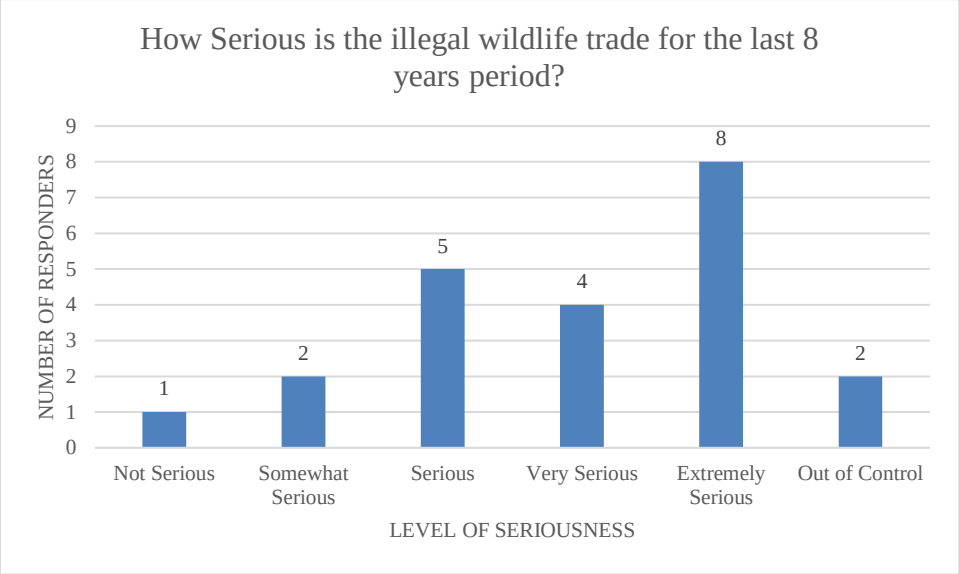


*Figure 20: Bar Chart reflecting the respondents opinion on the level of seriousness of the illegal wildlife trade in TT*

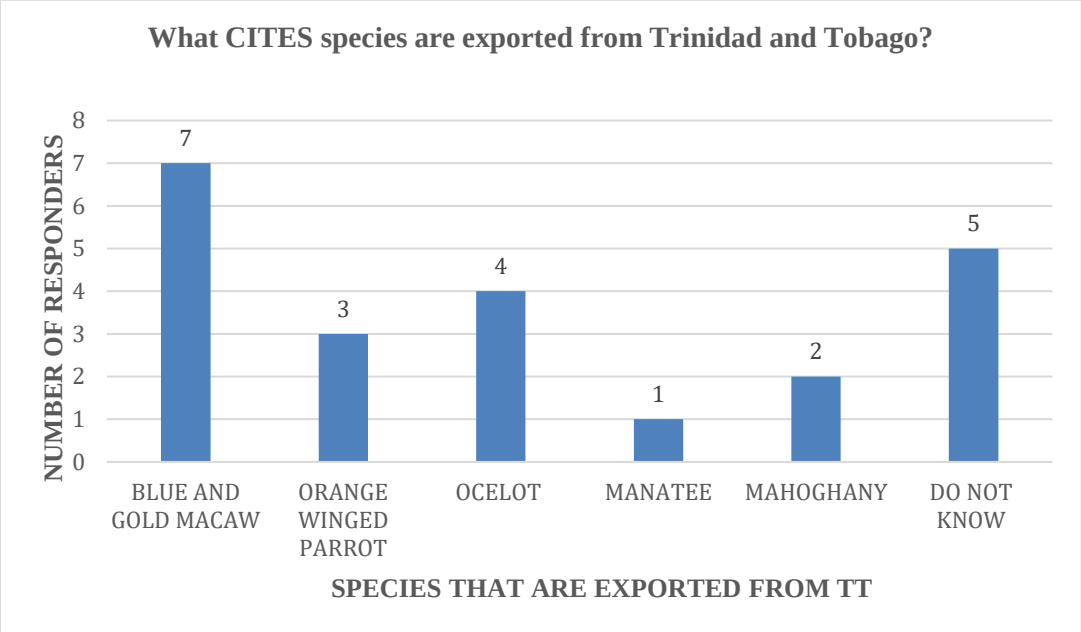


*Figure 21: Bar chart showing CITES species the respondents mentioned that are exported from T&T.*

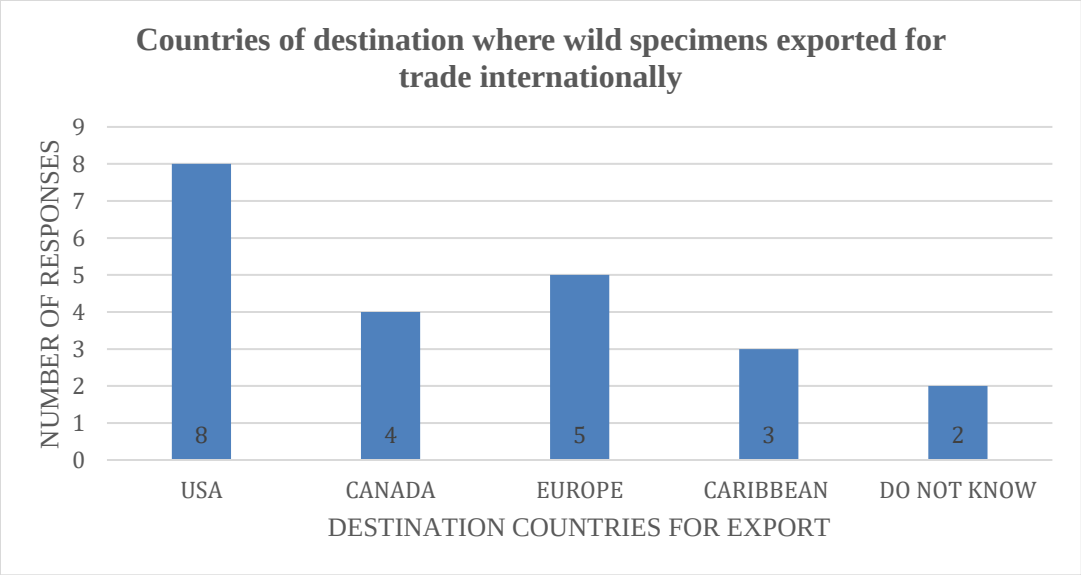


*Figure 22: Bar chart showing countries of destination the respondents mentioned where wild specimens are exported to.*

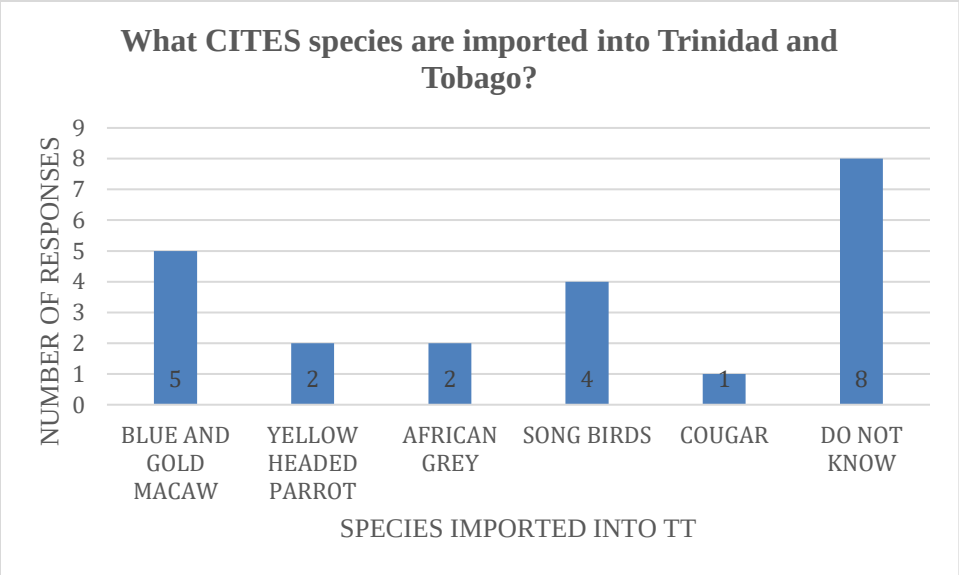


*Figure 23: Bar chart showing species the respondents mentioned that are imported into T&T.*

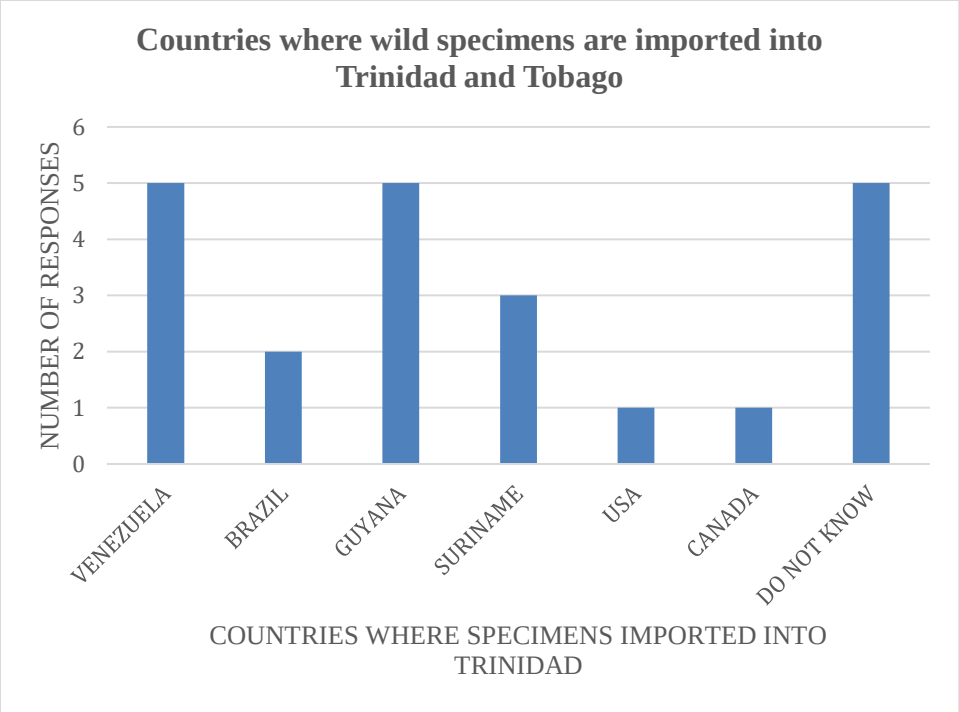


*Figure 24: Bar chart showing countries of destination the respondents mentioned where wild specimens are imported from.*

### 4.8 Improving Implementation

100% of the respondents strongly agreed that CITES need to be properly implemented, and that staff training in CITES implementation is urgently needed. When asked about confiscating CITES-listed species, specimen knowledge, issuing of CITES permits and inspections according to CITES procedures, only the two Management and Scientific Authorities expert personnel were able to give an answer. Also, 18 of the 22 expert personnel provided recommendations for how to improve international trade (See Figure 25).

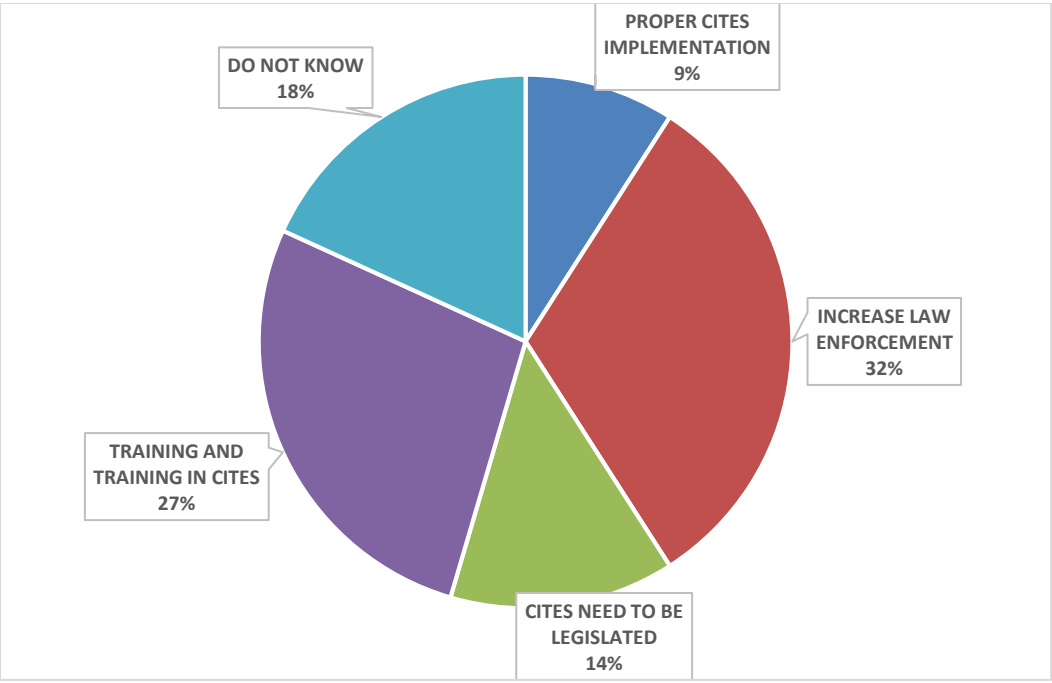


*Figure 25: Pie chart illustrating recommendations for an effective international trade.*

## 5.0 Discussion

Based on the analysis of the expert personnel interviews, the barriers to CITES implementation in T & T were able to be identified. The following four research questions were designed to help answer the objective of this thesis which is to Improve CITES implementation in T&T.

*Research Question 1: How do the personnel responsible for CITES implementation understand their roles and responsibilities?*

There are no CITES legislation in T&T to be implemented by law enforcement personnel. The only pieces of domestic legislation that protects some CITES-listed species are the Forest Act 66:01 of 1915, Conservation of Wildlife Act 67:01 of 1958 and Environmental Management Act 35:05 of 2000. There are pieces of regulations within the Conservation of Wildlife Act 67:01 that can protect some CITES-listed species these are and it states:

1. **"protected animal" means animals not specified or mentioned in the Second or Third Schedule; No person shall keep a protected animal in captivity unless he is authorised to do so by a permit issued under these Regulations.**
2. **No animal shall be exported** or carried coastwise without the written permission of the Chief Game Warden.
3. All provisions of the Customs Act relating to prohibited goods and proceedings for breaches of the law relating thereto, shall apply as fully and effectually to **animals prohibited to be exported or carried coastwise under and by virtue of that Act.**
4. **No person shall keep a protected animal in captivity** unless he is authorised so to do by permit issued under these Regulations. However, the legal personal representative of a deceased holder of a valid permit issued under these Regulations shall be deemed not to have committed an offence under these Regulations.

5. **No person shall sell or otherwise dispose of any protected animal kept in captivity** under the authority of these Regulations without the written permission of the Chief Game Warden. A Game Warden or Constable who finds a **protected animal** in captivity may, if the person in whose possession it is so found is not authorised under these Regulations to keep that animal in captivity— (a) require that person to release the animal immediately or to dispose of it to a person who holds a permit under these Regulations to keep such animal in captivity within two weeks of the date on which such Game Warden or Constable has so found the animal in captivity; and if he is unable so to dispose of it within the period of two weeks, to release it at the end of such period. Regulations and may be granted a permit under these Regulations to keep the animal in captivity; (b) make application to a Magistrate to determine whether the animal is wild or domesticated.

Therefore, the only personnel responsible for CITES implementation using the existing national legislations for the protection of flora and fauna are Forestry Division and Wildlife Section of T&T and Environmental Management Authority (Only listed Environmental Sensitive Species). The Customs and Excise, Police and Coast Guard personnel can only apprehend persons found breaking the law and confiscate the CITES-listed specimens, if they are listed in these three national legislations. The confiscated animals are then given to the Forestry Division and Wildlife Section of T&T.

After analysing the interviews, we learned that that 86.3% of the expert personnel from the different agencies do not understand what are CITES-listed species, as seen in Figure 18. Only one out of the 22 expert personnel had the knowledge to identify CITES-listed species of both plants and animals. The respondent mentioned the *Swietenia macrophylla* (Big Leaf Mahogany) as being a CITES-listed species because he works directly with this species.

All of the expert personnel interviewed have the responsibility to uphold the laws when it comes to the protection of flora and fauna in T&T. Every person interviewed enjoyed their job even though some of their tasks are primarily administrative in nature, and despite lacking the proper tools and equipment to perform their duties at 100%. Notwithstanding all those negative factors, all of the expert personnel work more than 40 hours a week as seen in Figure 17. The workload of 100% of the expert personnel was very overbearing but they love their job because it is mostly outdoors. This can explain when asked if they are willing to implement CITES outside of their working hours, 100% said they are willing to work outside of their working hours to implement CITES. It should be noted that those personnel who worked outside of their working hours have not been compensated for working overtime in more than 5 years. Willingness to work beyond one's required duties and time shows commitment and love for their jobs (Cantarow, 1979). However, not to deny that what is being said as true but one cannot judge the accuracy of the responses when asking someone their work time estimates because rarely someone would say they are under-worked.

They all sadly do not comprehend their roles and responsibilities when it comes to CITES implementation, besides the representative of the Management and Scientific Authority interviewed. It is understood that 100% of the expert personnel are not trained in the identification of CITES-listed species nor do they have any knowledge of implementation of the CITES-listed species protected under T&T national laws. Therefore, these are the reasons they are unable to perform their roles and responsibilities when it comes to CITES implementation, as they are able to do with respect to domestic flora and fauna protection legislations.

*Research Question 2: To what extent do personnel vary in their training experience, knowledge of CITES and organizational mandates to implement CITES? (E.g., training, work load, work hours, etc*

Each expert personnel kept highlighting that there is a need for CITES training in their agency (See Figure 11 for responses). They sounded quite eager to learn about CITES roles, functions, objectives and species identification. Their knowledge of CITES is quite limited as seen in Figure 9, showing their knowledge of CITES and Figure 10 Respondents Level of CITES Knowledge.

The expert personnel although working in different agencies, all acknowledged the Forestry Division and Wildlife Section as the agencies mandated to implement forest and wildlife management and enforcement. Over 77% of the expert personnel did not know the roles, functions and the agencies responsible for the Management and Scientific Authority as seen in Figure 12 and Figure 13. Also, when any illegal activities regarding flora and fauna are observed during the Customs and Excise and the Environmental Management Police duties, they would contact the Forestry Division and Wildlife Section for guidance in laying the prosecution if they can or allow Forestry Division to do the prosecution. This interconnection among the different agencies is very important because it shows that a good relationship among agencies already exists. While enquiring the non-forestry and wildlife agencies, they all had positive things to say about the staff at the Forestry Division and Wildlife Section. Working with different agencies, dispersing of information and giving power have always been difficult in many countries but not among these agencies (Chisangano, 2007).

After evaluating the responses, the main reason CITES knowledge is lacking among agencies is because of the lack of dispersal of CITES information by the T&T CITES Management

Authority. The Forestry Division and Wildlife Section of T&T are the Management Authority (Forestry Division of both T&T) and Scientific Authority (Head of the Wildlife Section of both T&T). The main functions of the Management Authority are preparation and circulation of official information on CITES to other government agencies (CITES, 2018). Also, they provide education and training in enforcement, species identification and update personnel on the updated CITES-listed species in the Appendices (CITES, 2019).

After evaluating and interviewing the representatives of the present Management and Scientific Authority if T&T, it was concluded that the roles and functions of the Authorities are not being assimilated to the other agencies. Also, after evaluating the present staff number and understanding their workload and working hours, it can be concluded that presently there isn't enough personnel to properly manage and protect T&T's flora and fauna. Therefore, if CITES legislation is to be implemented into T&T domestic laws, the present number of staff would not be enough to properly implement the new CITES legislation; this was also reflected by the respondents in Figure 14, Figure 15 and Figure 16. At present T&T has only 16 Game Wardens to manage the wildlife resources as compared to 42 which is the estimated number of Game Wardens given by the GoRTT in their Ministry Planning Report to properly manage and protect T&T's fauna population and protected areas. Also, there are only 76 forest officers presently employed to manage the forest resources. Most of T&T citizens live in or close proximity to forested areas, therefore in order to protect and manage T&T's forests it is estimated that 150 forest officers are needed to effectively do this task.

*RQ3: What traded species required increased attention to ensure their proper management under CITES?*

The shortfall in wildlife law enforcers is detrimental to the protection and management of T&T's wildlife resources. This shortfall of enforcers creates difficulties for the proper management and patrolling of protected areas, resulting in an increase in the illegal wildlife trade. From 2010 to 2017, a total of 903 CITES-listed species that are coincidentally protected under the Conservation of Wildlife Act 68:01 was seized by Game Wardens (Wildlife Section, 2018) which can be seen in Table 2. In Figure 20, 95.4% or 21 of the 22 expert personnel believe there is illegal wildlife trade taking place in T&T. When questioned further 19 or 86.3% of the respondents recommend that the law and policy makers need to implement the CITES legislation immediately to control this perilous issue. The CITES-listed species the expert personnel believed to be exported out of T&T can be seen in Figure 21 and imported into T&T can be seen in Figure 23. The *Ara ararauna* (Blue and Gold Macaw) was named by most of the expert personnel as the most exported and also imported CITES-listed animal. This species also ranked as the top legally exported animal species out of T&T in the CITES trade data seen in Appendix B. The exportation of the *Ara ararauna* needs to be properly monitored because in the 1960's this species was extirpated, then re-introduced between 1999-2004 and the population is now beginning to thrive (Plair, Lal, Ramadhar , & Ramsubhag, 2008). In the Forestry Division, Wildlife Section records the Ara *ararauna* did not rank as number 1 imported animal as the respondents thought but the *Psittacus erithacus* (African Grey Parrot) was ranked number 1 imported animal into T&T. A total of 49 *Psittacus erithacus* were imported into T&T during the period 2013-2017 from Barbados and USA, it is an Appendix 1 CITES-listed species. It is quite interesting to learn that most of the imported animals brought into T&T are captive. According to the findings of Harfoot (2018) there

is now a shift in the trade of CITES-listed species from wild caught to captive bred. It is estimated that presently over 50% of CITES-listed species trade are from captive-bred (Hewitt, 2002). Therefore, the shift from wild caught to captive-bred has created even more challenges for the proper implementation of CITES for trade of these animals (Hewitt, 2002).

The countries the expert personnel believe where species are exported to and imported from can be seen in Figure 22 and Figure 24. The questionnaire focused on general export and import countries of wildlife specimens because most of the expert personnel already stated in previous questions, they have never issued any CITES permits. Therefore, they may not have known the import, export or re-exporting countries if asked. The country that the expert personnel believed to be the top country T&T export species to was USA. The top countries that the expert personnel believe T&T import most of its wild specimen from were Venezuela and Guyana. These countries were also named by the Forestry Division, Wildlife Section records as the top countries where most of T&T illegal wildlife animals are brought from. Venezuela is presently in a financial crisis and because of this thousands of Venezuelans have migrated to T&T. Trinidad is less than 10 miles from Venezuela and with most of T&T borders being open most the times, many of wild life are smuggled into the country (Franklin, 2018). Over the past 5 years the crusade exodus of wildlife and humans to T&T waters has increased significantly. One fisherman described the animals brought to T&T for trade as a mini zoo on a boat in which animals are traded for toiletry, gas, food etc (Franklin, 2018).

*RQ4: What policy changes and trainings are perceived as necessary to improve CITES implementation?*

Conducive to the implementation of CITES, T&T needs to have CITES legislated into its laws (Hadziablahovic, Kasom, Miličković, & Saveljić, 2007). Once this happens, proper training of expert personnel already in the wildlife protection and enforcement should be initiated. A total of 18 out of the 22 expert personnel have never worked with CITES specimens, as seen in Figure 18. When the 18 expert personnel were questioned further, 100% of the expert personnel do not know how to identify a CITES specimen. Therefore, training in CITES such as, species identification, procedures, roles and functions of the Authorities, CITES implementation and enforcement procedures are all necessary training for the enforcement personnel (Hewitt, 2002). The agencies mandated to protect wildlife need to have working knowledge of the Conservation of Wildlife Act 67:01, the Forest Act of 66:01 and the Environmental Management Act 35:05. In addition, they need to learn the procedures in identifying CITES-listed species within these Acts and how to properly confiscate wildlife according to CITES procedures. Confiscation and placement of live animals and plants were major issues highlighted by 77% of the expert personnel as can be seen in Figure 19. Hence, it was recommended that policies need to be established in order to ensure the proper care and housing of confiscated animals and plants according to CITES procedures.

There was little information available in the literature evaluating CITES implementation but information on implementing other legislations were easy to find.

The major limitation to using the expert interview method is ensuring that all the relevant expert personnel were available for the interviews. It took a lot of time to schedule an interview with the expert personnel. In some cases, because of the expert personnel's hectic work schedule,

it took more than 4 months to schedule an interview. Most of the expert personnel remained after their interviews to learn more about CITES and some showed their enthusiasm at the idea that T&T could legislate CITES into its national laws.

## Conclusion

This research, produced an assessment of the implementation gaps in T&T's ability to implement CITES. CITES is a technical Convention and requires well-trained policy makers and enforcement staff to carry out its mandates (CITES, 2016). A lack of training, as is the case in T&T, can lead to a misinterpretation of laws, allowing species to be traded unsustainably and, perhaps, illegally. Additionally, the regulation of wildlife trade requires sustained financial resources to ensure that staffing needs are met. This includes a sufficient number of persons to conduct inspections, issue permits, and participate in CITES meetings, as well as, the availability of proper tools and equipment to carry out day to day CITES related activities.

There is a lack of communication and coordination between the T&T CITES Management Authority (MA) and other government agencies mostly due to insufficient experience and understanding of CITES knowledge, roles and functions of the Management Authority. Stakeholders such as Forest Officers, Forest Rangers, Game Wardens, Customs and Excise Officers, Environmental Police, Coast Guard, Agricultural Veterinarian Officers, Judiciary staff, Police Officers, Non-Governmental Organisations (NGO's), Community Based Organisations (CBO's) are given limited or no training in CITES knowledge, procedures, roles and functions. It seems there is a lack of knowledge that leads to ineffective implementation, while other barriers tend to lead to poor communication.

The country's domestic legislation for the protection of wildlife (Forest Act 66:01, the Conservation of Wildlife Act 67:01 and the Environmental Management Act 35:05) only partially protect some CITES-listed species. Therefore, it is imperative that T&T rapidly try to implement the CITES legislation into its domestic laws.

One of the primary objects of this research was to resurrect dialogue between the relevant Ministries for the redrafting of the proposed 2008 CITES Bill which was successful. The GoRTT promised that CITES legislation may possibly be brought into T&T's Parliament before the end of 2020. The results from interviewing the expert personnel would help managers, law and policy makers to take into consideration their present knowledge and level of implementation procedures. The technocrats would then be able to conceptualise the level of accurate and inaccurate implementation procedures presently being used. They can also make the recommendations to have the expert personnel trained in proper CITES implementation procedures if and when CITES legislation is implemented into T&T laws. This would lead to a positive step towards improved management of wildlife trade, with the potential to prevent thousands of wild plants and animals in the future from being illegally traded internationally.

## Recommendations

- Draft and approve CITES implementation legislation to acquire guidance in formulating the CITES legislation; it is advisable that T&T request the aid of the CITES Secretariat before enactment of CITES-implementation legislation (CITES, 2019). It is also advisable by the Secretariat that legal drafters should be participating during the legislation development procedure. Proper consultation with the personnel mandated to implement the proposed CITES legislation and the general public should be done before drafting the legislation (CITES, 2019). The CITES legislation should contain clear and simple legislative texts that can be understood by enforcers, international persons and the local people.
- The Caribbean islands should form a CITES committee in which those islands that are a Category 1 status can advise and guide the countries that are presently drafting their CITES legislation. This is recommended because all the Caribbean islands have some similar weather conditions, culture, financial stability, governance, local legislation, wild fauna and flora especially marine species.
- Training is needed for the staff of the Management and Scientific Authority with up to date CITES information and to understand their roles, functions and regulations. The outcome of this training can now give the Management and Scientific Authority the confidence and will to disperse the information to the other agencies in order to achieve co-operation among implementing agencies.
- Wild flora and fauna law enforcers and stakeholders such as judges, prosecutors, policy makers, agriculturalist, wildlife rehabilitation owners, veterinarians and customs officials need to be trained in the procedures of CITES enforcement, including the procedures in

preparing non-detriment findings. Training should also include information on laws governing CITES-listed species and other wildlife to ensure that law breakers are charged with the maximum penalties.

- T&T can approach the CITES Trust Fund which has been established to assist countries in the implementation of the Convention (CITES, 2019). If the CITES Trust Fund cannot fund T&T's request, in the future a fee can be attached to the CITES permitting process to gain revenue to fund CITES implementation. This can warrant a long-term viability but this suggestion needs additional investigation.
- T&T can approach CARICOM (Caribbean Community) with the idea of forming a joint regional CITES Scientific Authority and Wildlife Enforcement Network (WEN).
- T&T has no CITES representatives to attend standing committee workshops therefore one should be selected. The T&T CITES representative can facilitate communication on CITES issues including the dissemination of the outcomes of CoP and Standing Committee meetings, notifications to the Parties and information on implementation issues. Such a person could also provide policy, technical and administrative support to T&T Scientific and Management Authorities and CARICOM (Hewitt, 2002).
- T&T is still using the legislation developed during the British era therefore, they can follow the British CITES legislation because their legislation may have been derived from their legislations governed by the British empire.
- There is a need to have proper cooperation and enforcement among the various agencies mandated to implement wildlife laws in T&T. Each recommendation needs to be studied, tested and discussed before mandating it to the enforcing agencies.

- Non detriment findings should be conducted on all local and international species in T&T. To get an insight into the wildlife stocks of both terrestrial and marine species. The following is a list of plant species in which only one of its Genus is found in T&T and it is not protected for propagation under the Forest Act 66:01 or Environmental Management Act 35:05 of T&T. Therefore, these species need to be listed in the Forest Act 66:01 or Environmental Management Act 35:05 because if they are overly traded, it may become extirpated in T&T. These are *Eulophia alta, Hexisea reflexa, Ionopsis utriculoides, Koellenstenia graminea, Octomeria grandiflora, Otostylis brachystalix, Palmorchis pubescens, Paphinia cristata, Plectrophora iridifolia, Pogonia rosea, Scaphyglottis fusiformis, Schomburgkia weberbaurianum, Stenia pallida and Trizeuxis falcata.*
- T&T need to register captive-breeders of plants and animals and CITES-listed species traders in order to achieve accountability and control of trade.
- A review of the proper ways to record CITES-listed species in trade by the Management Authority need to be done. This would help in having order and accountability of species imported, exported and re-exported.
- An investigation should be done to identify all the points of entry into and out of T&T borders. This would aid Custom and Excise and other law enforcement agencies to know where the point of entries exists so they can effectively monitor and protect those points of entry into and out of T&T.

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## Appendix A
## Research Questionnaire

| Question Number | Data Type | Data Solicited | Question | Format |
|---|---|---|---|---|
| **1** | CITES Knowledge | Prior base CITES knowledge | Before this date, did you know about the existence of the Convention on International Trade in Endangered Species, otherwise known as 'CITES'? | Yes or No and explain your answ |
| **2** | CITES Knowledge | Age first learnt of CITES (when) | If answer is yes, indicate at what age you first heard of CITES | Year |
| **3** | CITES Knowledge | CITES how learned (how) | How did you to know about CITES? | Explain your answer |
| **4** | CITES Knowledge | Parts of CITES known (what) | How much of CITES do you know? (Nothing, Basic, Moderate, Advance). | Explain your answer |
| **5** | CITES Knowledge | Difference between the Scientific and Management Authority | Can you explain the difference between the Scientific and Management Authority | Explain your answer |

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| **6** | CITES Knowledge | Knowledge of CITES Management Authority organization | What organization serves as the CITES Management Authority? | Don't know, or _____ |
| **7** | CITES Knowledge | Knowledge of CITES Scientific Authority | What organization serves as the CITES Scientific Authority and what does it do? | Don't know, or _____ |
| **8** | Agency Cooperation | External Support | Do your Division co-operate with one or more of the following scientists or others not listed? | Veterinarians, Zoologists, Agricul Other relevant professions_____ |
| **9** | Human Resource | Having experts to identify CITES species | Do you have access to the necessary expertise to identify CITES-listed species? If Yes identify the professionals and if No list professionals you need access to. | Veterinarians, Zoologists, Agricul Biologists, Botanists, Other releva |
| **10** | Human Resource | Staffing at Management Authority | How strongly do you agree with this statement: The Management Authority has assigned enough personnel to properly implement CITES? | Strongly Agree, Agree, Neither A Don’t Know |

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| **11** | Human Resource | Staffing at Scientific Authority | How strongly do you agree with this statement: The Scientific Authority has assigned enough personnel to properly implement CITES? | Strongly Agree, Agree, Neither A Don't Know |
| **12** | Human Resource | Staffing at Forestry | How strongly do you agree with this statement: The Forestry Division has assigned enough personnel to properly implement CITES? | Strongly Agree, Agree, Neither A Don't Know |
| **13** | Human Resource | Staffing at Customs | How strongly do you agree with this statement: The Customs and Excise Division has assigned enough personnel to properly implement CITES? | Strongly Agree, Agree, Neither A Don't Know |
| **14** | Human Resource | CITES training stating when and by whom | Did you ever receive training in CITES? If Yes specify the year, trained by whom and what your learnt | Yes or No and explain your answ |

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| **15** | Human Resource | Skills needed | What skills are required in your position on a day-to-day basis? | Explain your answer |
| **16** | Human Resource | Positivity in the work environment | What do you find most enjoyable? | Explain your answer |
| **17** | Human Resource | Hours of work | How many hours do you work in a typical week? | Explain your answer |
| **18** | Human Resource | Availability during Nights and Weekends | Are you and your co-workers available outside of normal business hours to implement CITES? | Yes/No and explain |

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| **19** | Human Resource | Education needed for advancement in this field | What educational preparation would you recommend for someone who wants to advance in this field? | Explain your answer |
| **20** | Human Resource | Qualifications needed for CITES implementation | What qualifications do you need to have to implement CITES? | Explain your answer |
| **21** | Human Resource | Job security and its personal effects | How frequently do layoffs and or transfers occur? How does it affect employees' morale? | Explain your answer |

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| **22** | Human Resource | Most challenging aspects in work | What parts of your job do you find most challenging? | Explain your answer |
| **23** | Human Resource | Most difficult months at work | Which month/s of the year are toughest in your job? | Explain your answer |
| **24** | Human Resource | Reason for resigning | Why do people leave this field or company? | Explain your answer |
| **25** | Human Resource | Personal choices | If you could start all over again, would you change your career path in any way? Why? | Explain your answer |
| **26** | Implementation Procedures | Importance of CITES training for implementation | Do you consider the training of the CITES working personnel important for the implementation of the Convention? | Strongly Disagree, Disagree, No |

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| **27** | Implementation Procedures | Performance | Could you describe one of your typical workdays? | Explain your answer |
| **28** | Implementation Procedures | Distinguishing between a CITES species and other protected species | Are you able to distinguish between CITES listed Species and any other protected species? | Yes or No and explain your answ |
| **29** | Implementation Procedures | Import, export and re-export Wildlife specimens | Do you conduct import – (re) export wildlife specimens that are listed in the CITES Appendices? | Yes or No and explain your answ |
| **30** | Implementation Procedures | Inspections according to CITES procedures | Do you and/or CITES Officers conduct inspections according to CITES procedures? Explain your answer and give information how, who, where and why if possible. | Yes or No and explain your answ |

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| **31** | Implementation Procedures | Inspection of shipment procedures | Do you and/or CITES Officers conduct inspections of shipments of live wild flora and fauna according to CITES procedures | Yes or No and explain your answ |
| **32** | Implementation Procedures | Inspection of transported CITES specimens | Do you and/or CITES Officers conduct inspections of the conditions of the transport wild flora and fauna consignments according to CITES procedures? | Yes or No and explain your answ |
| **33** | Implementation Procedures | Inspection of sanitary conditions of CITES specimens | Do you and/or CITES officers conduct inspections of the sanitary conditions of CITES listed live flora and fauna? | Yes or No and explain your answ |

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| **34** | Implementation Procedures | Understanding how CITES Officers identify specimens | How do you Identify CITES specimens other than asking professionals (Marks, books, online, CITES Secretariat identification checklists etc)? | Yes or No and explain your answ |
| **35** | Implementation Procedures | Placement of confiscated specimens | Is there any proper place to keep confiscated live animals? Explain | Yes or No and explain your answ |
| **36** | Implementation Procedures | Specimen Knowledge | Category of CITES species under your protection (Forest/Fish/Animals) | Explain your answer |
| **37** | Implementation Procedures | Officer responsible for issuing CITES documents | Location and name of office responsible for the issuance of documents | Explain your answer |
| **38** | Implementation Procedures | Research on populations and species diversity | Do you undertake research on populations and species diversity? What criteria are | Yes or No and explain your answ |

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| | | | used to determine numbers/quotas for both local and international trade purposes? | |
| **39** | Problem Perceptions | Illegal Trade of CITES specimens | According to your point of view, is there any illegal trade of CITES specimens in T&T? | Yes or No and explain your answ |
| **40** | Problem Perceptions | Seriousness of illegal wildlife trade | If Yes, please give an estimation of the seriousness of the illegal wildlife trade for the last 8 years period? | Non-Serious 1 to 10 Serious |
| **41** | Problem Perceptions | Exported countries problems | If applicable to you please list the common problems you encounter during the exporting process and how do they relate to specific countries | List and explain |
| **42** | Problem Perceptions | Condition of confiscated specimens | How do you consider the condition level of temporary placement for wild animals and plant? | Very Dissatisfied, Dissatisfied, N Satisfied, Very Satisfied or don't |

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| **43** | Problem Perceptions | Health of confiscated specimens during transportation | Do you have the right tools and equipment to handle confiscated animals? | Yes or No and explain your answ |
| **44** | Problem Perceptions | Knowledge the CITES Management Authority | Do you think the CITES Management Authority is very knowledgeable in CITES identification and implementation? | Not knowledgeable about, Somev Very knowledgeable about or don |
| **45** | Problem Perceptions | Knowledge the CITES Scientific Authority | Do you think the CITES Scientific Authority is very knowledgeable in CITES identification and implementation? | Not knowledgeable about, Somev Very knowledgeable about or don |
| **46** | Problem Perceptions | Knowledge of Forestry Division about CITES | Do you think the Forestry Division is very knowledgeable in CITES identification and implementation? | Not knowledgeable about, Somev Very knowledgeable about or don |

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| **47** | Problem Perceptions | Knowledge Customs Department about CITES | Do you think the Customs and Excise Department is very knowledgeable in CITES identification and implementation? | Not knowledgeable about, Somev Very knowledgeable about or dor |
| **48** | Problem Perceptions | Recommendation | What particular areas of international trade do you recommend changes/improvements? | Explain your answer |
| **49** | Trade Information | Exported Species - List | What CITES species are exported from T&T? | List and explain |

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| **50** | Trade Information | Exported Species – Threatening | What are the most concerning exported CITES species from T&T when you consider their conservation status? | List and explain |
| **51** | Trade Information | Listing of exported countries | List countries of destination where wild specimens exported for trade internationally | List and explain |
| **52** | Trade Information | Imported Species – List | What CITES species are imported into T&T? | List and explain |
| **53** | Trade Information | Imported Species Threatening | What are the most concerning imported CITES species brought into T&T when you consider their conservation status? | List and explain |
| **54** | Trade Information | Listing of imported countries | List countries of destination where wild specimens are | List and explain |

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| | | | imported for trade internationally | |
| **55** | Improving Implementation | Better CITES implementation | Does CITES need to be better implemented in T&T? If yes explain how this can be done. | Don't know, or _____ |
| **56** | Improving Implementation | Ranking of importance to better implement CITES | Rank from 1 to 10 with 1 being most necessary/important and 10 being least necessary/important.<br>CITES can be better implemented according to ranking if: a)training is provided regularly, b)proper tools and equipment are provided, c) easy access to the CITES scientific and management authorities, d) increase of salary to implement cites, e) easy access to specialists to identify species, f) proper housing of CITES specimens, g) create a unit only for CITES related issues, h) reduce corruption, i) educate the public, j) register captive bred animals and plants producers. | Rank 1 to 10<br>1.<br>2.<br>3.<br>4.<br>5.<br>6.<br>7.<br>8.<br>9.<br>10. |

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## Appendix B
## List of CITES-listed Species Traded Data for the Period 2013 to 2017

| COMMON NAME | SCIENTIFIC NAME | DISCRIPTION | QUANTITY | ORIGIN DESTINATION | PURPOSE |
|---|---|---|---|---|---|
| Parnell's mustached bat | *Pteronotus parnelli* | Brain tissue samples | 26 | USA | Scientific Research |
| Ghost Faced Bat | *Mormoops megalohylla* | Brain tissue samples | 8 | USA | Scientific Research |
| Common Vampire Bat | *Desmodus rotundus* | DNA samples | 90 | Scotland | Scientific Research |
| Dung Beatles | *NA* | NA | 1029 | | Scientific Research |
| Canary | *Serinus canaria* | Live | 660 | Hamilton, Canada | Breeding |
| Fruit Fly | *Blepharoneura sp* | NA | 385 | USA | Scientific Research |
| Queen Conch | *Strombus gigas* | live | 300 | USA | Trade |
| Harvest Man | *Opiliones (Family)* | Live | 200 | France | Scientific Research |
| Harvest Man | *Ricinolei (Family)* | Live | 200 | France | Scientific Research |
| Canary | *Serinus canaria* | Live | 175 | Toronto, Canada | Breeding |
| Canary | *Serinus canaria* | Live | 164 | Canada | Education/Display |
| Indian Peafowl | *Pavo cristatus* | live | 150 | USA | Breeding/Trade |
| Red Palm Mite | *Raoiella indica* | NA | 112 | UK | Scientific Research |
| Domestic Canary | *Serinus canaria domestica* | live | 100 | Canada | Pet Trade |
| Shortnose fruit bat | *Corollia perspicitiata* | Live | 100 | USA | Scientific Research |
| Tungara Frog | *Engystomops pustulosus* | Tadpoles (Live) | 100 | Scotland | Scientific Research |
| Eemrald-eyed Tree Frog | *Hypsiboas crepitans* | NA | 100 | Scotland | Scientific Research |
| Monkey Frog | *Phyllomeduso trinitatus* | NA | 100 | Scotland | Scientific Research |
| Monkey Frog | *Phyllomedusa trinitatus* | NA | 100 | Scotland | Scientific Research |
| Paradoxal Frog | *Pseudes paradoxa* | NA | 100 | Scotland | Scientific Research |
| Stream Frog | *Manuophryne trinitates* | NA | 100 | Scotland | Scientific Research |
| Tangaro Frog | *Engystomops postulosus* | NA | 100 | Scotland | Scientific Research |
| Tungara Frog | *Engystomops postulosus* | NA | 100 | Scotland | Scientific Research |
| Urich's Frog | *Pristiniant urichi* | NA | 100 | Scotland | Scientific Research |
| Katydids | *Tettingoniidae (Family)* | Live | 100 | USA | Lab Testing |
| Jack Spaniards | *Polistes spp* | Colonies | 100 | UK | Personal |
| Leaf Cuttiing Ants | *Atta acromyrax* | Live | 100 | Scotland | Scientific Research |
| Vampire Bat | *Desmodus spp* | live | 86 | USA | Scientific Research |
| Parasitoid Wasp | *Braconidae* | Live | 85 | USA | Scientific Research |
| Sea Anemone | *Artesia pallida* | Live | 80 | Germany | Scientific Research |
| Bat Flies | *Nycteribiidae* | Whole Fly | 78 | USA | Scientific Research |

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| Dometic Canary | *Serinus canaria domestica* | live | 75 | Canada | Pet Trade |
| Fungus growing ant | *Atta cephalotes* | Live | 75 | Scotland | Scientific Research |
| Leaf Cuttiing Ants | *Acromyrmex octospinosis* | Live | 75 | Scotland | Scientific Research |
| Orchids | *Cattleya Hybrid* | Live | 75 | Martinique | Personal/ Breeding |
| Orchids | *Guttleya (HYBRID)* | Plant | 75 | Martinique | Scientific Research |
| Short tail Fruit Bat | *Corollia perspicitiata* | Plant | 71 | USA | Scientific Research |
| Leaf Cuttiing Ants | *Altq acromyrmux* | Colonies | 70 | | Scientific Research |
| Short Tailed Fruit Bat | *Carollia spp* | live | 62 | USA | Scientific Research |
| Domestic Canary | *Serinus canaria domestica* | live | 60 | Canada | Breeding/Trade |
| Leaf Cuttiing Ants | *Atta spp* | Live | 60 | UK | Scientific Research |
| Cane Frog | *Rhinella marina* | Tadpoles | 60 | UK | Exhibition |
| Butterflies | *NA* | NA | 60 | | Scientific Research |
| Domestic Canary | *Serinus canaria domestica* | live | 50 | Canada | Breeding/Trade |
| Domestic Canary | *Serinus canaria domestica* | live | 50 | Canada | Pet Trade |
| Canary | *Serinus canaria* | live | 50 | Canada | Pet Trade |
| Canary | *Serinus canaria* | live | 50 | Canada | Breeding/Trade |
| Fungus growing ant | *Atta spp* | NA | 50 | Scotland | Scientific Research |
| Leaf Cuttiing Ants | *Atta cephalotes* | Live | 50 | Scotland | Scientific Research |
| Leaf Cuttiing Ants | *Acromyrmex octospinosis* | Live | 50 | Scotland | Scientific Research |
| Wasps | *Polistas (family)* | Colonies | 50 | | Scientific Research |
| Leaf Cuttiing Ants | *Unknown* | Colonies | 50 | | Scientific Research |
| Common Vampire Bat | *Desmodus rotundus* | live | 48 | USA | Scientific Research |
| Canary | *SerinUSA canaria* | Live | 41 | USA | Display/Breeding |
| Domestic Canary | *Serinus canaria domestica* | live | 40 | Canada | Pet Trade |
| Cockatiel | *Nymphicus hollandicus* | Live | 40 | California, U.S.A | Breeding/Trade |
| Indian Ringneck Parakeet | *Psittacula krameri* | Live | 40 | California, U.S.A | Breeding/Trade |
| Yellow-throated Frog | *Mannophiyna trinitatis* | Live | 40 | Scotland | Lab Testing |
| Red-rumped parrot | Psephotus haematonotus | LIVE | 40 | Canada, ON | Trade |
| Jamaican Fruit bat | *Artibeus spp* | live | 39 | USA | Scientific Research |
| Eastern Rosella | *PlatycercUSA eximIUSA* | Live | 35 | USA | Personal |
| Queen Conch | *Strombus gigas* | Live | 30 | California, U.S.A | Scientific Research |
| Queen Conch | *Stromus gigas* | NA | 30 | USA | Scientific Research |
| Hover flies | *NA* | NA | 30 | | Scientific Research |
| leaf- Nosed Bat | *Glossophaga spp* | live | 26 | USA | Scientific Research |

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| Cockatiels | *NymphicUSA hollondicUSA* | Live | 25 | USA | Exhibition |
| Ostrich | *Struthio camelus* | Live | 24 | New Jersey, U.S.A | Exhibition/ Breeding |
| Geoffroy's Tailess Bat | *Anoura geoffroyi* | Live | 24 | USA | Scientific Research |
| Sun Conures | *Aratinga solsitialis* | Live | 24 | USA | Personal |
| Fruit bat | *Carollia pericillata* | Live | 22 | USA | Scientific Research |
| Eastern rosella | Platycercus eximius | LIVE | 22 | USA | Breeding |
| Ringneck Parakeet | *Psittacula krameri* | live | 21 | Barbados | Breeding/Trade |
| Tungara Frog | *Engystomops pystulosus* | nests + tadpoles | 20 | Scotland | Scientific Research |
| Ringneck Parakeet | *Psittacula Krameri* | Live | 20 | Barbados | Sale/Breeding |
| Sun Conure | *Aratinga solstitialis* | Live | 20 | Ontario, Canada | Personal |
| Yellow-crowned Parakeet | *Cyanoramphus auriceps* | Live | 20 | Ontario, Canada | Personal |
| Eastern Rosella | *Platycercus eximus* | Live | 20 | Ontario, Canada | Trade |
| Eastern Rosella | *Platycercus eximius* | Live | 20 | California, U.S.A | Trade |
| Black/Yellow Mud Dauber | *Sceliphron sp* | Live | 20 | UK | Lab Testing |
| Epiphyte | *Aechmea aquilegia* | Plant | 20 | UK | Scientific Research |
| Leaf nesting frog | *Phyllomedusa trinitatus* | Pres Tadpoles | 20 | UK | Scientific Research |
| Cane Toad | *Rhinella marina* | Tadpoles | 20 | Scotland | Exhibition |
| Ants | *Aha cephalites* | Colonies | 20 | USA | Scientific Research |
| Paper Wasp | *Mischocyttarus* | Colonies | 20 | UK | Scientific Research |
| Scclipohoron spp | *Metapolybia spp* | Colonies | 20 | UK | Scientific Research |
| Zethus App | *Polybea spp* | Colonies | 20 | UK | Scientific Research |
| Old English Game Fowl | *Gallus gallus domesticus* | Live | 20 | Juana Diaz, Puerto Rico | Personal |
| Wasps | *Mischocyttarus (family)* | NA | 20 | | Scientific Research |
| Eastern Rosella | Psittacus eximius | LIVE | 20 | USA | Trade |
| Den. Jairak Splash | Den. Jairak Splash | LIVE | 20 | Thailand | Breeding |
| Den. Jaq Concert Samut Songkran | Den. Jaq Concert Samut Songkran | LIVE | 20 | Thailand | Breeding |
| Parnell's mustached bat | *Pteronotus parnelli* | Serum Samples | 26 | USA | Scientific Research |
| Ghost Faced Bat | *Mormoops megalohylla* | Serum Samples | 8 | USA | Scientific Research |
| Fruit Bat | *Artibeus spp* | tissue samples | 14 | USA | Scientific Research |
| Fruit Bat | *Carollia spp* | tissue samples | 20 | USA | Scientific Research |
| Vampire Bat | *Desmodus spp* | tissue samples | 9 | USA | Scientific Research |
| Velvety Free Tailed Bat | *Molossus spp* | tissue samples | 2 | USA | Scientific Research |

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| Ghost Faced Bat | *Mormoops spp* | tissue samples | 11 | USA | Scientific Research |
| Fisherman Bat | *Noctilio Spp* | tissue samples | 3 | USA | Scientific Research |
| Pailas' Long-Tongued Bat | *Glossophaga soricina* | tissue samples | 28 | USA | Scientific Research |
| Davy's Naked-Backed Bat | *Pteronotus sp* | tissue samples | 7 | USA | Scientific Research |
| Yellow Souldered Bat | *Sturnira spp* | tissue samples | 2 | USA | Scientific Research |
| Tent Making Bat | *Uroderma spp* | tissue samples | 2 | USA | Scientific Research |
| Fruit Bat | *Artibeus spp* | tissue samples | 14 | USA | Scientific Research |
| Fruit Bat | *Carollia spp* | tissue samples | 20 | USA | Scientific Research |
| Vampire Bat | *Desmodus diaemus* | tissue samples | 9 | USA | Scientific Research |
| Velvety Free Tailed Bat | *Molossus spp* | tissue samples | 2 | USA | Scientific Research |
| Ghost Faced Bat | *Mormoops spp* | tissue samples | 11 | USA | Scientific Research |
| Fruit Bat | *Artibeus spp* | tissue samples | 14 | USA | Scientific Research |
| Fruit Bat | *Carollia spp* | tissue samples | 20 | USA | Scientific Research |
| Vampire Bat | *Desmodus/Diaemus spp* | tissue samples | 9 | USA | Scientific Research |
| Velvety Free Tailed Bat | *Molossus spp* | tissue samples | 2 | USA | Scientific Research |
| Ghost Faced Bat | *Mormoops spp* | tissue samples | 11 | USA | Scientific Research |
| Pallass Long-Tongued Bat | *Glossophaga soricina* | tissue samples | 28 | USA | Scientific Research |
| Fisherman Bat | *Noctilio spp* | tissue samples | 3 | USA | Scientific Research |
| Davy's Naked-Backed Bat | *Pteronotus spp* | tissue samples | 7 | USA | Scientific Research |
| Yellow Souldered Bat | *Sturnira spp* | tissue samples | 2 | USA | Scientific Research |
| Tent Making Bat | *Uroderma spp* | tissue samples | 2 | USA | Scientific Research |
| Common Long-tongued bat | *Glossophaga soricina* | Carc. (Ad.)/Emb Tiss | 20 | USA | Scientific Research |
| Den. Sonia Danang | Den. Sonia Danang | LIVE | 20 | Thailand | Breeding |
| Den. Burana Green Star | Den. Burana Green Star | LIVE | 20 | Thailand | Breeding |
| Den. Emma White Mutration | Den. Emma White Mutration | LIVE | 20 | Thailand | Breeding |
| Monkey Tree Frog | *Phyllomedusa trinitatus* | DNA Swabs | 100 | UK | Scientific Research |
| Tungara Frog | *Engystomops pustulosus* | DNA Swabs | 200 | Spain | Scientific Research |
| Ostrich | *Struthio camelus* | Egg | 12 | New Jersey, U.S.A | Zoological Exhibit |
| Trinidad Stream Frog | *Mannophryne trinitatis* | Eggs | 10 | UK | Scientific Research |
| Common-mustached bat | *Pteronotus parnelli* | Emb Tiss. | 6 | USA | Scientific Research |
| Ghost-faced bat | *Mormoons megalophalla* | Emb Tiss. | 5 | USA | Scientific Research |

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|---|---|---|---|---|---|
| Jamaican fruit bat | *Artibeus jamaicensis* | Emb Tiss. (Adult) | 4 | USA | Scientific Research |
| Short tailed Fruit bat | *Corollia perspicitiata* | Emb Tiss. (Adult) | 21 | USA | Scientific Research |
| Den. Compactum White | Den. Compactum White | LIVE | 20 | Thailand | Breeding |
| Den. Supernova | Den. Supernova | LIVE | 20 | Thailand | Breeding |
| Den. Nopporn Green Star | Den. Nopporn Green Star | LIVE | 20 | Thailand | Breeding |
| Den. Rainbow Fantasy | Den. Rainbow Fantasy | LIVE | 20 | Thailand | Breeding |
| Jamaican Fruit bat | *Artibeus jamaicensis* | live | 18 | USA | Scientific Research |
| Bourke's parrot | Neopsephorus bourkAPP II | LIVE | 18 | USA | Trade |
| Seba's Short-tailed Bat | *Carollia perspiculata* | live | 17 | USA | Scientific Research |
| Eastern Rosella | *Platycercus eximIus* | Live | 16 | Canada | Personal |
| Hammer Coral | *Euphyllia parancora* | live | 15 | USA | Breeding/Trade |
| Parasitic Wasp | *Encyrtidae* | Colony | 15 | UK | Scientific Research |
| Timneh Parrot | *Psittacus timneh* | Live | 15 | St. John Barbados | Trade |
| Epiphyte | *Tallandsia bulbosa* | Plant | 15 | UK | Scientific Research |
| Nector bats | *Abssoposa soricing* | Live | 15 | USA | Scientific Research |
| African Grey Parrot | *Psittacus erithacus* | Live | 14 | Barbados | Trade |
| Crimson rosella | Platycercus elegans | LIVE | 14 | USA | Trade |
| Pallass mastiff bat | *Molossus spp* | live | 13 | USA | Scientific Research |
| Insect bats | *Mormoons megalophalla* | Live | 13 | USA | Scientific Research |
| Red-Rumped Parrot | *Psephotus haematonotus* | Live | 12 | Ontario, Canada | Trade |
| Ring neck Parakeet | *Psittacula krameri* | Live | 12 | California, U.S.A | Trade |
| Red-rumped parrot | Psephotus haematonotus | LIVE | 12 | USA | Trade |
| Yellow throated Frog | *Mannophyne trinitatus* | Pres Tadpoles | 11 | UK | Personal |
| Short tailed fruit bats | *Carollia perspicillata* | NA | 11 | | Scientific Research |
| Chalice Coral | *Echinophyllia sp.* | live | 10 | USA | Breeding/Trade |
| Duncan Coral | *Duncanopsammia axifuga* | live | 10 | USA | Breeding/Trade |
| Plum Head Parakeet | *Psittacula cyanocephala* | live | 10 | Barbados | Breeding/Trade |
| Canary | *Serinus canaria* | live | 10 | Germany | Personal/Pet |
| Canary Hybrid | *Serinus canaria x cucullatus* | live | 10 | Germany | Personal/Pet |
| Canary Hybrid | *Serinus canaria x Carduelis carduelis* | live | 10 | Canada | Pet Trade |
| Yellow Shouldered Parrot | *Amazona barbadensis* | live | 10 | Anguila | Personal/Pet |

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|---|---|---|---|---|---|
| Parasitoid Wasp | *Figitidae* | NA | 10 | USA | Scientific Research |
| Blue and Gold Macaw | *Ara ararauna* | Live | Unknown | Barbados | Breeding |
| Green-winged Macaw | *Ara chloropterus* | Live | Unknown | Barbados | Breeding |
| Green-winged Macaw | *Ara chloroterus* | Live | Unknown | Antigua | Temporary Migrati |
| Yellow-crowned Parrot | *Amazona ochrocephala* | Live | Unknown | Barbados | Breeding |
| Senegal Parrot | *Poicephalus senegalus* | Live | 10 | St. John Barbados | Trade |
| Moustached Parakeet | *Psittacula alexandri* | Live | 10 | St. John Barbados | Trade |
| Budgerigars | *Melopsittacus undulatus* | Live | Unknown | St. Kitts | Personal |
| Alexandrine Parrot | *Psittacula eupatria* | Live | 10 | St. John Barbados | Trade |
| Budgerigar | *Melopsittacus undulates* | Live | 10 | California, U.S.A | Breeding/Trade |
| English Game Fowl | *Gallus gallus domesticus* | Live | 10 | Castries, | Sport/Trade |
| Boring Weevil | *Cycas fornicarius* | Live | 10 | UK | Lab Testing |
| Paper Wasp | *Polistes spp* | Live | 10 | UK | Scientific Research |
| Paper Wasp | *Mischocyttarus sp* | Live | 10 | UK | Scientific Research |
| Paper Wasp | *Metapolybia sp* | Live | 10 | UK | Scientific Research |
| Paper Wasp | *Polistes spp* | Live | 10 | UK | Scientific Research |
| Tungara Frog | *Engystomops postulosus* | Nests | 20 | Scotland | Scientific Research |
| Fungus growing ant | *Atta cephalotes* | Nests | 60 | Scotland | Scientific Research |
| Leaf Cuttiing Ants | *Acromyrmex octospinosis* | Nests | 60 | Scotland | Scientific Research |
| Rana picuda frog | *Leptodactylus fuscus* | Nests | 20 | Scotland | Scientific Research |
| Greater Spear-nosed bat | *Phyllostomus hastatus* | Post Emb. Tiss (Ad) | 3 | USA | Scientific Research |
| Common Vampire bat | *Desmodus rotundus* | Rectal Swabs | 76 | USA | Scientific Research |
| Fruit bat | *Artibeus spp* | Rectal Swabs | 7 | USA | Scientific Research |
| Great stripe-faced bat | *Vampyrodes spp* | Rectal Swabs | 1 | USA | Scientific Research |
| Parnell's mustached bat | *Pteronotus parnelli* | Rectal Swabs | 2 | USA | Scientific Research |
| Sac-winged bat | *Saccopteryx spp* | Rectal Swabs | 3 | USA | Scientific Research |
| Seba's Short-tailed bat | *Corollia perspicitiata* | Rectal Swabs | 8 | USA | Scientific Research |
| Pallas Mastiff bat | *Molossus molossus* | Rectal Swabs | 3 | USA | Scientific Research |
| Paper Wasp | *Mischocyttarus sp* | Live | 10 | UK | Scientific Research |
| Common Vampire bat | *Desmodus rotundus* | Tiss (Fetal) | 1 | USA | Scientific Research |
| Queen Conch | *Strombus gigas* | Tissue (cu cm) | 25 | Belize | Scientific Research |
| Queen Conch | *Strombus gigas* | Tissue (cu cm) | 50 | Kingston, Jamaica | Scientific Research |

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|---|---|---|---|---|---|
| Queen Conch | *Strombus gigas* | Tissue (cu cm) | 50 | Caribbean Netherlands | Scientific Research |
| Queen Conch | *Strombus gigas* | Tissue (cu cm) | 25 | St. Michael Barbados | Scientific Research |
| Paper Wasp | *Metapolybia sp* | Live | 10 | UK | Scientific Research |
| Black-headed Caique | *Piontes melonocephala* | Live | Unknown | Barbados | Breeding |
| Festive Parrot | *Amazona festiva bodini* | Live | Unknown | Barbados | Breeding |
| Orange-winged Amazon | *Amazona amazonica* | Live | Unknown | Barbados | Breeding |
| Yellow-crowned Parrot | *Amazona ochrocephala* | Live | Unknown | Barbados | Breeding |
| Crimson Rosella | *Platycercus elegans* | Live | 10 | Ontario, Canada | Personal |
| Northern Rosella | *Platycercus venustus* | Live | 10 | Canada | Personal |
| Western Rosella | *Platycercus icterotis* | Live | 10 | Canada | Personal |
| Redhead Duck | *Aythya americana* | Live | 10 | USA | Personal |
| Ringed Teal Duck | *Callonetta leucophrys* | Live | 10 | USA | Personal |
| Meerkat | *Suricata suricatta* | Live | 10 | USA | Personal/ Breeding |
| Zebra | *Equua burchellii* | Live | 10 | USA | Personal/Breeding |
| Short Tailed Bat | *Carollia perspicillata* | NA | 10 | | Scientific Research |
| Long Tongued Bat | *Glossophaga soriana* | NA | 10 | | Scientific Research |
| Wasps | *Metopolybia (family)* | NA | 10 | | Scientific Research |
| Red-rumped parrot | Pseophotus haematonotus | LIVE | 10 | USA | Breeding |
| Grey parrot | Psittacus erithacus | LIVE | 10 | USA | Trade |
| Sun conure | Arantinga solstitialis | LIVE | 10 | USA | Trade |
| Pallas' Long-Tongued Bat | *Glossophaga soricina* | live | 9 | USA | Scientific Research |
| Rana Frog | *Leptodatylus fuscus* | Foam Nest | 20 | Scotland | Scientific Research |
| Tungara Frog | *Engystomops pustulosus* | Foam Nest | 20 | Scotland | Lab Testing |
| Tungara Frog | *Engystomops pustulosus* | Foam Nest | 20 | UK | Scientific Research |
| Whistling Frog | *Leptodactylus fuscus* | Foam Nest | 10 | UK | Scientific Research |
| Leaf Cuttiing Ants | *Atta cephalides* | Colonies | 9 | USA | Scientific Research |
| African Grey Parrot | *PsittacUSA ArithacUSA* | Live | 9 | USA | Breeding/Personal |
| Jamican Fruit Bat | *Antibrun jamaicres* | NA | 9 | | Scientific Research |
| Verigated Lizard | *Gonatodes ceciliae* | LIVE | 9 | | Research |
| Mustache Parakeet | *Psittacula alexandri* | live | 8 | Barbados | Breeding/Trade |
| Stony Coral | *Acanthastrea sp* | live | 8 | USA | Breeding/Trade |
| Bullseye Coral | *Caulastrea sp.* | live | 8 | USA | Breeding/Trade |
| Anchor Coral | *Euphyllia ancora* | live | 8 | USA | Breeding/Trade |
| Blue and Gold Macaw | *Ara ararauna* | live | 8 | Barbados | Breeding/Pet Trade |
| Canary | *Serinus canaria* | Live | 8 | Florida, U.S.A | Breeding/Trade |

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|---|---|---|---|---|---|
| Rose Ring Parakeet | *Psittacula krameri* | Live | 8 | St Michael Barbados | Personal |
| Common Tongued Bat | *Glossophaga soriana* | NA | 8 | | Scientific Research |
| Funnel eared Bat | *Nalalus Lusmidirostis* | NA | 8 | | Scientific Research |
| Grey parrot | Psittacus erithacus | LIVE | 8 | USA | Breeding |
| Galah | Eolophus roseicapilla | LIVE | 8 | USA | Breeding |
| Crimson rosella | Platycercus elegans | LIVE | 8 | USA | Breeding |
| Galah | Eolophus roseicapilla | LIVE | 8 | USA | Trade |
| Sengal Parrot | *Poicephalus senegalus* | live | 7 | Barbados | Breeding/Trade |
| Greater Spear-Nosed Bat | *Phyllostomus spp* | live | 7 | USA | Scientific Research |
| Western Rosella | *PlatycercUSA icterotis* | Live | 7 | USA | Personal |
| African Grey Parrot | *Psittacus Arithacus* | Live | 7 | St. John, Barbados | Breeding |
| Common Mustached Bat | *Pleronotus parrelii* | NA | 7 | | Scientific Research |
| Frogspawn Coral | *Euphyllia yaeyamaensis* | live | 6 | USA | Breeding/Trade |
| Reef Building Stony Coral | *Favia sp.* | live | 6 | USA | Breeding/Trade |
| Larger Star Coral | *Favites pentagona* | live | 6 | USA | Breeding/Trade |
| Open Brain Coral | *Trachyphllia geoffroyi* | live | 6 | USA | Breeding/Trade |
| Torch Coral | *euphyllia glabrescens* | live | 6 | USA | Breeding/Trade |
| Parnell's mustached bat | *Pteronotus spp* | live | 6 | USA | Scientific Research |
| Chimpanzee | *Pan troglodytes* | Live | 6 | Republic of South Africa | Exhibition/Breedin |
| Moustached Parakeet | *Psittacula alexandri* | Live | 6 | Barbados | Sale/Breeding |
| Llama | *Lama glama* | Live | 6 | Texas, U.S.A | Exhibition/ Breeding |
| Chimpanzee | *Pan troglobytes* | Live | 6 | Virginia, U.S.A | Exhibition/ Breeding |
| Quaker Parakeet | *Myiopsitta monachus* | Live | 6 | Florida, U.S.A | Personal |
| Green Cheeked Conure | *Pyrrhura molinae* | Live | 6 | Florida, U.S.A | Personal |
| Red-Footed Tortoise | *Chelonoidis cardonaria* | Live | 6 | St. Michael, Barbados | Personal |
| Sun Conure | *Aratinga solstitialis* | Live | 6 | California, U.S.A | Trade |
| Llama | *Lama Glama* | Live | 6 | Canada | Breeding |
| Corn Snake | *Pantherophis gutttus* | Live | 6 | Florida, U.S.A | Pet Industry |
| Alexandrine Parrot | *Psittacula eupatria* | Live | 6 | St Michael Barbados | Display |
| Moustached Parakeet | *Psittacula alexandri* | Live | 6 | St Michael Barbados | Personal |
| Senegal Parrot | *Piocephalus senegalus* | Live | 6 | Canada | Personal |

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|---|---|---|---|---|---|
| Emu (chicks) | *Dornaius novaehollandiea* | Live | 6 | Netherlands Antilles | Personal |
| Chimpanzee | *Pan troglobytes* | Live | 6 | USA | Personal/ Breeding |
| Ostrich | *Struthio camelUSA* | Live | 6 | USA | Personal |
| Ghost. Faced Bat | *Morosos megalophylls* | NA | 6 | | Scientific Research |
| Ruby- topaz Humming bird | *Chrysolompis mosquitas* | NA | 6 | | Scientific Research |
| Eclectus parrot | Eclectus roratus | LIVE | 6 | USA | Breeding |
| Grey parrot | Psittacus erithacus | LIVE | 6 | USA | Breeding |
| Bourke's parrot | Neopsephotus bourkAPP II | LIVE | 6 | USA | Breeding |
| Western rosella | Platycercus icterotis | LIVE | 6 | USA | Trade |
| Plum-headed parakeet | Psittacula cyanocephala | LIVE | 6 | USA | Trade |
| Australian ringneck | Barnardius zonarius | LIVE | 6 | USA | Trade |
| Eclectus parrot | Eclectus roratus | LIVE | 6 | USA | Trade |
| Impala | *Aepyceros melampus* | live | 5 | USA | Exhibition/Breedin |
| Tent Making Bat | *Uroderma spp* | live | 5 | USA | Scientific Research |
| African Grey Parrot | *Psittacus erithacus* | Live | 5 | Barbados | Sale/Breeding |
| Eclectus Parrot | *Eclectus roratus* | Live | 5 | Barbados | Sale/Breeding |
| African Grey Parrot | *PsittacUSA erithacUSA* | Live | 5 | USA | Trade |
| Polybia Wasp | *Polybia sp* | Live | 5 | UK | Scientific Research |
| Polybia Wasp | *Polybia sp* | Live | 5 | UK | Scientific Research |
| Zethus Wasp | *Zethus sp* | Live | 5 | UK | Scientific Research |
| Zethus Wasp | *Zethus sp* | Live | 5 | UK | Scientific Research |
| Epiphyte | *Tallansia* | Plant | 5 | UK | Scientific Research |
| Epiphyte | *Hechmea tendai* | Plant | 5 | UK | Scientific Research |
| Plum Headed parakeet | *Pasittacula cyanocephala* | Live | 5 | USA | Personal |
| Lizards | *Cymnphthalmus underwoodi* | Live | 5 | Netherlands | Personal |
| Greater Whitelined Bat | *Saccopteryx biliroata* | NA | 5 | | Scientific Research |
| Greater Whitelined Bat | *Saccopteryx biliroata* | NA | 5 | | Scientific Research |
| Wasps | *Polybia (family)* | NA | 5 | | Scientific Research |
| Alexandrine Parakeet | *Psittacula eupatria* | live | 4 | Barbados | Breeding/Trade |
| Starry Cup Coral | *Acanthastrea echinata* | live | 4 | USA | Breeding/Trade |
| Pineapple Coral | *Blastomussa merleti* | live | 4 | USA | Breeding/Trade |
| Grape Coral | *Euphyllia cristata* | live | 4 | USA | Breeding/Trade |
| Domestic Canary | *Serinus canaria domestica* | live | 4 | USA | Pet Trade |
| Budgerigar | *Melopsittacus undulatus* | live | 4 | Grenada | Personal/Pet |
| Emerald-eye Tree Frog | *Hypsiboas crepitans* | Liver Tissue | 2 | UK | Exhibition |

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|---|---|---|---|---|---|
| Blue and Gold Macaw | *Ara ararauna* | Live | 4 | Barbados | Trading |
| Green-Winged Macaw | *Ara chloropterus* | Live | 4 | Barbados | Trading |
| Grant Zebra | *Equus quagga boehmi* | Live | 4 | Ohio, U.S.A | Exhibition |
| Yellow-fronted Canary | *Serinius mozambicus* | Live | 4 | New York U.S.A | Personal/ Pet |
| Ball Python | *Python regius* | Live | 4 | Florida, U.S.A | Pet Industry |
| Redheaded Duck | *Aythya Americana* | Live | 4 | Texas, U.S.A | Breeding/Public Display |
| Regent Parrot | *Polytelis anthopeplus* | Live | 4 | California, U.S.A | Trade |
| Ringed Teal Duck | *Callonetta leucophrys* | Live | 4 | Texas, U.S.A | Breeding/Public Display |
| Rhinella Cane Toad | *Rhinella marina* | Preserves | 100 | Scotland | Lab Testing |
| Rivero Toad | *Rhinella beebei* | Preserves | 100 | Scotland | Lab Testing |
| Tungara Frog | *Engystomops pustulosus* | Preserves | 100 | Scotland | Scientific Research |
| Pana Picuda | *Leptodactylus fuscus* | Preserves | 100 | Scotland | Scientific Research |
| Emerald-eye Tree Frog | *Hypsiboas crepitans* | Stomach Content | 2 | UK | Scientific Research |
| Senegal Parrot | *Poicephalus senegalus* | Live | 4 | California, U.S.A | Trade |
| Impala | *Aepyceros melampus* | Live | 4 | Texas, U.S.A | Exhibition/ Breeding |
| Rana Frog | *Leptodatylus fuscus* | Tissue samples | 12 | Scotland | Scientific Research |
| Tungara Frog | *Engystomops pustulosus* | Tissue samples | 12 | Scotland | Lab Testing |
| Tungara Frog | *Engystomops pustulosus* | Tissue samples | 20 | UK | Scientific Research |
| Whistling Frog | *Leptodactylus fuscus* | Tissue samples | 10 | UK | Scientific Research |
| Greater Spear-nosed bat | *Phyllostomus hastatus* | Tissue samples | 172 | USA | Scientific Research |
| Liverworth | *Marchantioceue* | Tissue samples | 200 cm3 | USA | Scientific Research |
| Liverworth | *Marchantioceue* | Tissue samples | 200 cm3 | USA | Scientific Research |
| Pallass Long-tongued | *Glossophaga soricina* | Tissues | 15 | | Scientific Research |
| Short tail Fruit Bat | *Carollia perspicittala* | Tissues | 50 | UWI | Scientific Research |
| Orchids | *Dendrobium Hybrid* | Live | 4 | Martinique | Personal/ Breeding |
| Quaker Parakeet | *Myiopsitta monachUSA* | Live | 4 | USA | Personal |
| Umbrella Cockatoo | *Cacatua alba* | Live | 4 | Rep of South Africa | Personal |
| Galah Cockatoo | *Eolophis rosiecapillUSA* | Live | 4 | USA | Personal |
| Regent Parrot | *Polytels anthopeplUSA* | Live | 4 | USA | Personal |
| Leaf Frog | *Phylbnedusa friritatis* | Eggs | 800 | Scotland | Scientific Research |
| Agouti | *Dasyprocta leporina* | Hair | 2 | Colombia | Scientific Research |
| Deer | *Americann* | Hair | 2 | Colombia | Scientific Research |
| Lappe | *Agouti paco* | Hair | 2 | Scotland | Scientific Research |

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|---|---|---|---|---|---|
| Peccary | *Tayassu tajacu* | Hair | 2 | Colombia | Scientific Research |
| African Grey Parrot | *Psittacus Arithacus* | Live | 4 | Canada | Breeding |
| African Grey Parrot | *Psittacus Arithacus* | Live | 4 | St Michael Barbados | Breeding |
| Orchids | *Dendrobium (HYBRID)* | plant | 4 | Martinique | Scientific Research |
| Black Mastiff Bat | *Mollostes rofus* | NA | 4 | | Scientific Research |
| Blue chirined Sapptire | *Chloroastibon notatus* | NA | 4 | | Scientific Research |
| White necked Jacobin | *Florisaga mellivora* | NA | 4 | | Scientific Research |
| Sun conure | Aratinga solstitialis | LIVE | 4 | USA | Breeding |
| Scarlet-chested parrot | Neophema splendida | LIVE | 4 | USA | Breeding |
| Australian ringneck | Barnardius zonarius | LIVE | 4 | USA | Breeding |
| Western rosella | Platycercus icterotis | LIVE | 4 | USA | Breeding |
| Northern rosella | Platycercus venustus | LIVE | 4 | USA | Breeding |
| Rosy-faced lovebird | Agapornis roseicollis | LIVE | 4 | Canada, ON | Personal |
| Northern rosella | Platycercus venustus | LIVE | 4 | USA | Trade |
| Red-breasted parakeet | Psittacula alexandri | LIVE | 4 | USA | Trade |
| Princess parrot | Polytelis alexandrae | LIVE | 4 | USA | Trade |
| Sulphur-crested cockatoo | Cacatua galerita | LIVE | 4 | USA | Trade |
| White cockatoo | Cacatus alba | LIVE | 4 | USA | Trade |
| Stripped Lizard | *Gonotodae vitattus* | Live | 4 | | NA |
| Little Yellow-Shouldered Bat | *Sturnia spp* | live | 3 | USA | Scientific Research |
| Ghost Faced Bat | *Mormoops megalohylla* | live | 3 | USA | Scientific Research |
| Greater Bulldog Bat | *Noctilio leporinus* | live | 3 | USA | Scientific Research |
| Geoffroy's Tailess Bat | *Anoura geoffroyi* | Carcass (Adult) | 3 | USA | Scientific Research |
| Black-Headed Caique | *Pionites melanocephalus* | Live | 3 | Barbados | Trading |
| Orange-Winged Parrot | *Amazona amazonica* | Live | 3 | Barbados | Trading |
| Palla's Long-tongued bat | *Glossophage soricina* | Live | 3 | USA | Scientific Research |
| Tailess Whip Scorpion | *Ambypligid* | Ind | 3 | USA | Scientific Research |
| Red Crimmson Conure | *Pyrrhura perlata* | Live | 3 | USA | Personal |
| Ball Python | *Python regiUSA* | Live | 3 | USA | Trade |
| Mandarin Duck | *Aix galericulata* | Live | 3 | USA | Personal |
| Lizards | *Plica caribena* | Live | 3 | Netherlands | Scientific Research |
| Common Mustached Bat | *Pleronotus parrelii* | NA | 3 | | Scientific Research |
| Diole winged bat | *Twymoptira luioaler* | NA | 3 | | Scientific Research |
| Bengal tiger | Panthera tigris tigris | LIVE | 3 | South Africa ZA | Exhibition |
| Perigrine falcon | *Falco peregrinus* | live | 2 | England | Education/Pest Control |

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|---|---|---|---|---|---|
| Harris's Hawk | *Parabuteo unicinctus* | live | 2 | England | Education/Pest Control |
| Eurasian eagle-owl | *Bubo bubo* | live | 2 | England | Education/Pest Control |
| Ball Python | *Python regius* | live | 2 | USA | Personal/Pet |
| Red Tail Boa Constrictor | *Boa constrictor constrictor* | live | 2 | USA | Personal/Pet |
| Harris's Hawk | *Parabuteo unicinctus* | live | 2 | Canada | Education/Pest Control |
| Zebra | *Equus quagga* | live | 2 | USA | Exhibition |
| Red Kangaroo | *Macropus rufus* | live | 2 | Canada | Exhibition |
| Red Kangaroo | *Macropus rufus* | live | 2 | Canada | Exhibition |
| Green-Rumped Parrotlet | *Forpus passerinus* | live | 2 | USA | Personal/Pet |
| Orange-Winged Parrot | *Amazona amazonica* | live | 2 | USA | Personal/Pet |
| Geoffroy's tailless bat | *Anoura spp* | live | 2 | USA | Scientific Research |
| Parnell's mustached bat | *Pteronotus parnelli* | live | 2 | USA | Scientific Research |
| Tent Making Bat | *Uroderma bilobatum* | live | 2 | USA | Scientific Research |
| Bullfinch | *Oryzoborous angloensis* | live | 2 | USA | Personal/Pet |
| Timneh Parrot | *Psittacus timneh* | Live | 2 | Barbados | Sale/Breeding |
| Eastern Rosella | *Platycercus eximius* | Live | 2 | Ontario, Canada | Breeding |
| Golden Mantle | *Platyoercus eximius elecica* | Live | 2 | Ontario, Canada | Breeding |
| Red Tail Boa Constrictor | *Boa constrictor* | Live | 2 | Florida, U.S.A | Educational Display |
| Black-Throated Canary | *Crithagra atrogularis* | Live | 2 | New York U.S.A | Personal/ Pet |
| Brimstone Canary | *Crithagra sulphuratus* | Live | 2 | New York, U.S.A. | Personal/Pet |
| Bactrain camel | *Camelus bactrianus* | Live | 2 | Ohio, U.S.A | Exhibition |
| Dromendry Camel | *Camelus dromendarus* | Live | 2 | Ohio, U.S.A | Exhibition |
| Red Kangaroo | *Macropus rufus* | Live | 2 | Ontario, Canada | Display |
| Yellow-Crowned Parrot | *Amazona ochrocephala* | Live | 2 | Barbados | Trading |
| Festive Parrot | *Amazona festiva bodini* | Live | 2 | Barbados | Trading |
| Harvestman | *Opillioues sp* | Ind | 2 | USA | Lab Testing |
| Jandaya Conure | *Aratinga jandaya* | Live | 2 | St. Michael, Barbados | Personal |
| Sulphur-crested Cockatoo | *Cacatua galerita* | Live | 2 | St. John Barbados | Breeding/Trade |
| Black Capped Conure | *Pyrrhura rupicola* | Live | 2 | Florida, U.S.A | Personal |
| Blood Python | *Python brongersmai* | Live | 2 | Florida, U.S.A | Pet Industry |
| Carpet Python | *Morelia spilota* | Live | 2 | Florida, U.S.A | Pet Industry |

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|---|---|---|---|---|---|
| Monocled Cobra | *Naja kaouthia* | Live | 2 | Florida, U.S.A | Pet Industry |
| Leaf Frog | *Phylbnedusa friritatis* | Nests | 2 | Scotland | Personal |
| Whistling Frog | *Leptodactus fusous* | Nests | 5 | Scotland | Scientific Research |
| Veiled Chameleon | *Chamaeleo calyptratus* | Live | 2 | Florida, U.S.A | Pet Industry |
| Chestnut-bellied Seed Finch | *Oryzoborus angolensis* | Live | 2 | New York, U.S.A | Personal |
| Ornate Horned Frog | *Ceratophys ornata* | Live | 2 | Florida, U.S.A | Pet Industry |
| Red Kangaroo | *Macropus rufus* | Live | 2 | Ontario, Canada | Display |
| King Snake | *Lampropeltis spp.* | Live | 2 | Florida, U.S.A | Pet Industry |
| Forest Cobra | *Naja melanoleuca* | Live | 2 | Florida, U.S.A | Pet Industry |
| Short tail Fruit Bat | *Corollia perspicitiata* | Tissue samples | 100 | USA | Scientific Research |
| Liverworth | *Marcharita inflexia* | Tissue samples | 100 | USA | |
| Spider | *Unknown* | NA | NA | NA | Scientific Research |
| Red-eared slider | *Trachemys scripta elegans* | Live | 2 | Canada | Scientific Research |
| Epiphyte | *Catapsir sessiliflora* | Plant | 2 | UK | Scientific Research |
| Orchids | *Cymbidium Hybrids* | Live | 2 | Martinique | Personal/ Breeding |
| Orchids | *Vandas Hybrids* | Live | 2 | Martinique | Personal/ Breeding |
| Birds | *Thamnophilidae thraupidae* | Dead specimen | 68 | | Scientific Research |
| Short tailed fruit bats | *Carollia perspicillata* | Tissues samples | 100 | | Scientific Research |
| Green Cheeked Conure | *Pyrrhura molinae* | Live | 2 | USA | Personal |
| Port Lincoln Parakeets | *BarnardiUSA zonariUSA* | Live | 2 | USA | Personal |
| Birds | *Thamiophilidae thraypidae* | tissue samples | 440 | | Scientific Research |
| Hairy-Legged Bat | *Aroura gooffrogi* | Tissues | 4 | | Scientific Research |
| Littlle Mastiff Bat | *Molossus molossus* | Tissues | 5 | | Scientific Research |
| Little Hermit | *Phaethornis longuemareus* | Vials | 310 | | Scientific Research |
| Rubina Gold Mantle Rosella | *PlatycercUSA eximiUSA* | Live | 2 | USA | Personal |
| Sulphur Crested Cockatoo | *Cacatua galerita* | Live | 2 | St. John Barbados | Personal |
| Ball Phyton | *Python regius* | Live | 2 | Canada | Returning Resident pet |
| AUSAtralian King Parrot | *AlisterUSA scalularis* | Live | 2 | USA | Display/Breeding |
| Budgerigar | *MelopsittacUSA undulates* | Live | 2 | USA | Display/Breeding |
| Budgerigar | *Melopsittacus undulates* | Live | 2 | Canada | Display/Breeding |
| Lady Amherst Pheasant | *ChrysolohUSA amherstiae* | Live | 2 | USA | Personal |

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|---|---|---|---|---|---|
| Rose-Breasted Cockatoo | *EolophUSA rosiecapillUSA* | Live | 2 | USA | Personal |
| Woodland Duck | *Aix sponsa* | Live | 2 | USA | Personal/ Breeding |
| Yellow and Red Pheasant | *ChrysolophUSA pictUSA* | Live | 2 | USA | Personal/ Breeding |
| Spectacled Caimen | *Crocadilus crocodilus* | Live | 2 | Bahamas | Trade |
| Cheetah | *Acinonyx jubatUSA* | Live | 2 | USA | Exhibition/ Breeding |
| Spectacled caiman | *Caiman crocodilus* | Live | 2 | Bahamas | Scientific Research |
| Lizards | *Polychrus mormoratus* | Live | 2 | Netherlands | Personal |
| Monkey Tree Frog | *Phyllorneduoa trinitatis* | Nests (Live) | 2 | Scotland | Scientific Research |
| Monkey Tree Frog | *Phyllorneduoa trinitatis* | Nests (Live) | 2 | Scotland | Scientific Research |
| Orchids | *Cymbidum (HYBRID)* | Plant | 2 | Martinique | Scientific Research |
| Orchids | *Vanda (HYBRID)* | Plant | 2 | Martinique | Scientific Research |
| Tayra | *Eira barbara* | Male and Females | 2 | | Zoo |
| Charmal billed Toucan | *Ramphastos vitellinus* | Male and Females | 2 | | Zoo |
| Bullfinch | *Oryzoborus angolensis* | NA | 2 | | Personal |
| Grey parrot | Psittacus erithacus | LIVE | 2 | USA | Breeding |
| Galah | Eolophus roseicapilla | LIVE | 2 | USA | Breeding |
| Superb parrot | Polytelis swainsonAPP II | LIVE | 2 | USA | Breeding |
| Sulphur-crested cockatoo | Cacatua galerita | LIVE | 2 | USA | Breeding |
| White cockatoo | Cacatua alba | LIVE | 2 | USA | Breeding |
| Grey parrot | Psittacus erithacus | LIVE | 2 | Canada, ON | Breeding |
| Superb parrot | Polytelis swainsonAPP II | LIVE | 2 | USA | Trade |
| Slender-billed parakeet | Enicognathus leptrohynchus | LIVE | 2 | USA | Trade |
| Lion | Panthera leo | LIVE | 2 | South Africa ZA | Exhibition |
| Double-Headed Amazon Parrot | *Amazona oratrix* | live | 1 | USA | Personal/Pet |
| Salmon-crested Cockatoo | *Cacatua moluccensis* | live | 1 | USA | Personal/Pet |
| Giant Brazilian Otter | *Pteronura brasiliensis* | live | 1 | USA | Exhibition |
| Common Black Hawk | *Buteogallus anthracinus* | live | 1 | Barbados | Education/Pest Control |
| White Hawk | *Leucopternis albicollis* | live | 1 | Barbados | Education/Pest Control |
| Green-Cheeked Conure | *Pyrrhura molinae* | live | 1 | USA | Personal/Pet |
| Sun Conure | *Aratinga solstitialis* | live | 1 | USA | Personal/Pet |

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| Red Eared Slider | *Trachemys scripta elegans* | live | 1 | USA | Personal/Pet |
| Blue and Gold Macaw | *Ara ararauna* | live | 1 | USA | Personal/Pet |
| Tropical Screech Owl | *Megascops choliba* | live | 1 | USA | Personal/Pet |
| Common Black Hawk | *Buteogallus anthracinus* | live | 1 | Barbados | Pest Control |
| White Hawk | *Leurasternis albicollis* | live | 1 | Barbados | Pest Control |
| White-Lined Bat | *Platyrrhinus spp* | live | 1 | USA | Scientific Research |
| Ghost Faced Bat | *Mormoops spp* | live | 1 | USA | Scientific Research |
| Sword-Nosed Bat | *Lonchorhina spp* | live | 1 | USA | Scientific Research |
| White Winged Vampire Bat | *Diaemus youngi* | live | 1 | USA | Scientific Research |
| Brown-Bellied Broad-Nosed Bat | *Platyrrhinus fuseiventis* | live | 1 | USA | Scientific Research |
| Little Yellow-Shouldered Bat | *Sturnira lilium* | live | 1 | USA | Scientific Research |
| Tilda's Yellow-Shoulders Bat | *Sturnira tildae* | live | 1 | USA | Scientific Research |
| Orange-Winged Parrot | *Amazona amazonica* | live | 1 | Grenada | Personal/Pet |
| Pale spear-nosed bat | *Phyllostomus discolor* | Carcass (Adult) | 1 | USA | Scientific Research |
| Common tent making bat | *Uroderma bilobatum* | Carcass (Adult) | 1 | USA | Scientific Research |
| Black Rhinoceros | *Diceros bicornis* | Live | 1 | Texas, U.S.A | Exhibition |
| Cackatoo | *Cacatua alba* | Live | 1 | Florida, U.S.A | Personal/Pet |
| Senegal Parrot | *Poicephalus senegalus* | Live | 1 | Barbados | Sale/Breeding |
| Chestnut-bellied Seed Finch | *Oryzoborus angolensis* | Live | 1 | Ontario, Canada | Personal/Pet |
| Domestic Canary | *Serinus canaria domestica* | Live | 1 | Florida, U.S.A | Personal/Pet |
| African Grey Parrot | *Psittacus erithacus* | Live | 1 | New Jersey. U.S.A | Personal/Pet |
| Umbrella Cockatoo | *Cacatua alba* | Live | 1 | Florida, U.S.A | Personal |
| Ostrich | *Struthio camelus* | Live | 1 | Manitoba, Canada | Egg Farming |
| Black Rhinoceros | *Diceros bicornis* | Live | 1 | Texas, U.S.A | Exhibition |
| Blue and Gold Macaw | *Ara ararauna* | Live | 1 | Pennsylvania, U.S.A | Personal |
| Miligold Macaw (Hybrid) | *Ara militaris X Ara ararauna* | Live | 1 | New York, U.S.A | Personal/Pet |
| Common Hill Myna | *Gracula religiosa* | Live | 1 | St. John Barbados | Breeding/Trade |
| Golden-Collared Macaw | *Primolius auricollis* | Live | 1 | Ontario, Canada | Personal/Pet |
| Red Tailed Boa Constrictor | *Boa constrictor* | Live | 1 | Florida, U.S.A | Pet Industry |

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| Eastern Diamondback Rattle Snake | *Crotalus adamanteus* | Live | 1 | Florida, U.S.A | Pet Industry |
| Gaboon Viper | *Bitis gabaonica* | Live | 1 | Florida, U.S.A | Pet Industry |
| Orange-winged Amazon | *Amazona amazonica* | Live | 1 | Barbados | Scientific Research |
| Green Anaconda | *Eunectes murinus* | Live | 1 | Grenada | Personal |
| Lutina Gold Mantle Rosella | *PlatycercUSA eximiUSA* | Live | 1 | USA | Personal |
| White Cockatoo | *Cacatua alba* | Live | 1 | USA | Personal |
| Budgerigar | *MelopsittacUSA undulates* | Live | 1 | USA | Display/Breeding |
| Harlequin Macaw | *Ara choropterUSA x ararauna* | Live | 1 | USA | Personal |
| Black Rhinoceros | *Diceros bicornis* | Live | 1 | USA | Exhibition/ Breeding |
| Yellow- crusted Cockatoo | *Cacatua sulphurca* | NA | 1 | | Personal |
| Grecter Specr. Nosed Bat | *Phylostomus hostatus* | NA | 1 | | Scientific Research |
| Hairy-Legged Bat | *Aroura gooffrogi* | NA | 1 | | Scientific Research |
| Black Mastiff Bat | *Mollostes rofus* | NA | 1 | | Scientific Research |
| Tree Porcupine | *Coentatu prehemsilis* | NA | 1 | | Scientific Research |
| Tree Porcupine | *Coentatu prehemsilis* | NA | 1 | | Zoo |
| Semp | *Violacucous euphoria* | NA | 1 | | Personal |
| Green-cheeked parakeet | Pyrrhura molinae | LIVE | 1 | USA | Personal |
| Senegal parrot | Poicephalus senegalus | LIVE | 1 | Canada, ON | Personal |
| Chestnut-fronted macaw | Ara severus | LIVE | 1 | USA | Personal |
| Grey parrot | Psittacus erithacus | LIVE | 1 | Barbados | Personal |
| Green iguana | *Iguana iguana* | Yiak Tissues | 2 | | NA |
| Grey parrot | Psittacus erithacus | LIVE | 1 | Barbados | Personal |
| Eclectus parrot | Amazona aestiva | LIVE | 1 | USA | Personal |

# Curriculum Vitae

**DAVID MAHABIR**
**ADDRESS: LP 101 Stuart Drive, Chin Chin Road**
**Cunupia, Trinidad W.I**
**CONTACT NUMBER: 1-868-361-1367**
**EMAIL: trinidavid@yahoo.com**

## Employment History

***Research Officer/Forest Range Manager - Forest Officer I***
Ministry of Agriculture, land and Fisheries, Forestry Division, Trinidad
February 2004 to present.

## Education

**University of Andalucía, Baeza Spain.** April 2018 to April 2019
***Master's Degree in Management and Conservation of Species in Trade: The International Framework***

**University of Trinidad and Tobago, Marine Sciences Campus, Chaguaramas.**
September 2014 to August 2016
***Masters of Science in Integrated Coastal and Ocean Management***

**U.S. Fish and Wildlife Service (USFWS) and The International Fund for Animal Welfare (IFAW), United States of America.** February 2012 to April 2014
***The Caribbean Emerging Wildlife Conservation Leaders (C-EWCL) training program***

**Lakehead University, Thunder Bay Ontario, Canada.** September 2008 to April 2010
***Bachelor of Science Degree in Environmental Science, Forest Conservation***

**Eastern Caribbean Institute of Agriculture and Forestry.**
**Caroni South Bank Road, Centeno.** October 1999 – August 2001
***Diploma in Forestry***

**The Institute of Commercial Management, High Street, San Fernando.**
April 1999 to February 2000
***Diploma in Business Management Administration***

**Institute of Management, Social Sciences & Manpower Development**
**Fredrick Street, Port- of - Spain.** February 1999 to November 1999
***Diploma in Principles of Banking***.

## Personal

Date of Birth: September 11th, 1980.
Civil Status: Single