Electric eels are native to the middle and lower Amazon River Basin in South America, and the Orinoco River . They can grow to about 80 inches in length and weigh 44 lbs.

ELECTRIC EEL

SNAKEHEAD (*Channa spp.)*

This fish is a bottom dwelling, ambush predator that feeds primarily on small fish and crayfish, but occasionally eats a wide variety of prey including turtles, toads, lizards, snakes, and insects. Can reach a length of 39 inches and weigh more than 44 lbs. The native range is Tropical Asia and Southeast Asia including India. The US government is spending millions of dollars to fight invasive Snakehead species. Alarmingly a female can produce over 75,000 eggs in a year. Additional concerns of the snakehead are the transfer of pathogens and diseases.

SNAKEHEAD

AIRSAC CATFISH (*Heteropneustes spp.*)

In their natural range the Airsac catfish are dreaded by local fisherman in India, Pakistan, Nepal, Sri Lanka, Thailand, and Myanmar due to the sharp poisonous spine in each pectoral fin that can inflict a painful sting to any person wading in its territory. The Airsac catfish is an omnivore that feeds during the night. It forms loose schools of about ten individuals . Some are raised in aquaculture for food and medicinal value. The Airsac Catfish can grow to 12 inches in length .

AIRSAC CATFISH

RED EARED SLIDER TURTLE (*Trachemys scripta elegans*)

Red-eared sliders get their name from the small red stripe over their ears. The "slider" part comes from their ability to slide off rocks and logs. The red-eared slider is on the list of the world's 100 most invasive species published by the International Union for the Conservation of Nature. Native to southern United States and northern Mexico the average length is 8 inches and weighs up to 160 g. The species can easily be mistaken for one of our native species of freshwater turtles, *Rhinoclemmys punctularia*, commonly known as the "Galap", which has a moderately domed black carapace, lighter under-trim & a smoky black plastron with lighter patches. The head is black with a fairly bold red stripe. It is yellowish on the underside and the rest of the body yellowish with a black-specking. Both species are Omnivorous.

RED EARED SLIDER TURTLE

GALAP

PIRANHAS (Catoprion spp., Megapiranha spp., *Pristobrycon spp., Pygocentrus spp., Pygopristis spp. and Serrasalmus spp.*)

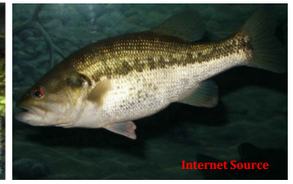
Piranhas, are native to South America. These schooling fish are highly predatory and have numerous sharp teeth. Some species can exceed 20 inches and weigh up to 8 lbs. Piranhas are usually able to breed by the time they are one year old. Female piranhas will lay several thousand eggs near water plants. The males then fertilize the eggs. After just two to three days the eggs will hatch . Reproduction is con-

BALCK AND RED BELLY PIRANHAS

BASSES (Centrarchidae Family)

Basses are often the dominant top-level predators in the diverse fish communities found in North American warm water lakes and rivers. The family's 37 species all are native only to North America. Can grow to a size of 18 inches with a weight up to 7 lbs. Basses have been introduced into many other countries due to their popularity as a sport fish. However, they cause the decline, displacement or extinction of species in their new habitat .

SMALL MOUTH BASS



LARGE MOUTH BASS

Trading Freshwater Species

Regulations for the trade of aquatic species.

- The trade of live aquatic species must be done through a permit approved by the Fisheries Division and a license issued by the Ministry of Trade.
- On approval of an import permit, the importer must inform an officer from the from the Aquaculture Unit of Fisheries Division, 24 to 48 hours before the scheduled arrival or export of goods, so that the consignments can be inspected at the port of entry or exit.

Ministry of Agriculture, Land & Fisheries

Fisheries Division

Aquaculture Demonstration Centre ,Bamboo Settlement #2, Churchill-Roosevelt Highway, Valsayn.
TEL: **462-4337, 462-4344, 462-4348**

Ministry of Agriculture, Land & Fisheries
Fisheries Division

RESTRICTING THE TRADE OF FRESHWATER INVASIVE ALIEN SPECIES

Restricting the Trade of Freshwater Invasive Alien Species in Trinidad and Tobago

The need to restrict some freshwater fish species from being imported into Trinidad and Tobago is necessary to reduce the risk of intentional and unintentional introduction of species which exhibit invasive tendencies into our aquatic ecosystems. This measure will greatly assist in the preservation of local biodiversity and prevent deleterious economic and social effects as a result of invasive alien freshwater species.

Invasive Alien Species (IAS) are organisms introduced intentionally or unintentionally outside their naturally occurring habitats that present a potential threat to biodiversity, agriculture, human health, the economy and/ or quality of life. If left unmanaged, IAS may lead to the progressive degradation of naturally occurring communities.

There are many instances where introduced species have no significant negative ecological impacts. Consequently, some of these species have become economically important and is demonstrated by their use in biological control, agriculture and aquaculture.

However, there are also incidences where the introduction of alien species resulted in disastrous effects especially in the areas of agriculture and human health.

The impacts of IAS can be ecologically complex and are considered to be the second major cause of global biodiversity loss after habitat destruction.

There are four (4) types of freshwater fishes which are already restricted from entering Trinidad and Tobago except with a Minister's license:

Goldfish (*Carassius auratus*) and its varieties, which are restricted to protect local breeders against imports;

Koi (*Cyprinus carpio*) and its varieties, because of the same scientific name for the ornamental and common carp and for the invasive nature o f the common carp;

Basses (Centrarchidae family) due to invasive tendencies

Piranhas (Catoprion *spp*., Megapiranha *spp*., Pristobrycon *spp*., Pygocentrus spp., *Pygopristis spp*. and Serrasalmus spp.) because of their highly carnivorous nature.

The Importance of Restricting the Importation of Freshwater Invasive Alien Species

The risk of these species entering the country is primarily via the aquarium trade which has grown and hobbyists have expanded their preferences to include some of the more exotic and non-traditional aquarium species.

Aquatic invasive alien species can create a significant loss of biodiversity, associated loss of revenue and high costs for control and management measures.

An increase in the number of freshwater species restricted from entering Trinidad and Tobago will significantly reduce the risk of introductions of invasive species. This ensures the enhancement and benefits from sustainable fisheries and conservation of the inland fisheries ecosystems.

The International Union for Conservation of Nature (IUCN) identifies a number of species which display invasive tendencies. The Freshwater Working Group of the National Steering Committee to Mitigate Threats of Invasive Alien Species recommended restrictions on several species which are known to be invasive or pose other threats and have caused problems in other countries. The recommendations were approved by Cabinet.

The additional species which are restricted at this time include:

- Electric catfish (*Malapterus and Paradoxoglanis spp.*);
- African tigerfish (*Hydrocynus spp.*);
- Airbreathing catfish (*Clarias spp.*);
- Parasitic catfish, candiru (*Vandellia spp.*);
- Electric eel (*Electrophorus electriticus*);
- Snakehead (*Channa spp.*);
- Airsac catfish (*Heteropneustes spp.*)
- Red eared slider turtle (*Trachemys scripta elegans*)

ELECTRIC CATFISH (*Malapterus electricus*);

A large predator with a relatively unique feeding and defence mechanism utilizing electric currents which is produced by specialized organs in the head. The species could potentially spawn in our ecosystems and human safety concerns do exist. They are known in the wild and are caught for the aquarium industry. The entire family *Malapteruridae* is prohibited in Florida. The Electric Catfish reach sizes of up to 48 inches in length and up to 44 lbs in weight. The genus *Malapterurus* is found throughout western and central tropical Africa and the Nile River.

ELECTRIC CATFISH

AFRICAN TIGERFISH (*Hydrocynus spp.*);

A large, highly predatory fish that could potentially spawn in our river basins and create serious ecological problems. The genus *Hydrocynus spp.* is prohibited in Florida. The African Tiger fish is native to the Congo River basin, the Lualaba River, Lake Upemba and Lake Tanganyika in Africa and can grow to 60 inches and weigh 154 lbs. A number of incidents have been reported of this fish attacking humans and also diminishing native species. In some cases they render some species of fish to extinction.

AFRICAN TIGERFISH

AIRBREATHING CATFISH (*Clarias spp.)*

The entire family Clariidae is prohibited in Florida (except the walking catfish *Clarias batrachus)*. Typically found in transient waters where other fishes do not thrive. They are food fishes and are native to Southeast Asia, where their survival out of water allows them to be kept fresh for the market. Walking catfish has an elongated body shape, and reaches almost 67 inches in length and 132 lbs in weight .

AIR BREATHING CATFISH

PARASITIC CATFISH, Candiru (*Vandellia spp.*);

A parasitic fish which attaches to the gills of fishes. Once embedded under the gill cover, spiny protuberances lock the candiru in place and cause minor hemorrhaging, the blood is then consumed. The fish are also attracted to mammalian urine flows and can become painfully lodged in the urethra of persons who urinate in waters which the candiru inhabits. Their diminutive size and nearly transparent body makes them very hard to locate. They do not like the sun and tend to bury themselves in the mud and sand of the river bottom underneath logs and rocks. They are native to the Amazon River Basin .

PARASITC CATFISH

ELECTRIC EEL (*Electrophorus electriticus*);

Primarily inhabits slow moving water bodies and is an obligate air breather so can survive low oxygen conditions but must reach the surface to breathe. Uses the battery-like electric organs in their body to generate up to 600 volts. They also use their electricity generating abilities to locate and stun their prey. They also use it to defend themselves from predators. Some human concerns exists with regards to the persons being shocked by the fish as a means of its defense mechanism.