

# GREEN LEAF

## National Strategy and Action Plan for Biodiversity Developed for Guyana

### Inside this issue:

- ◆ National Strategy and Action Plan for Biodiversity Developed for Guyana *Pg 1*
- ◆ EPA Focuses on Solid Waste Management *Pg 2*
- ◆ From Trash to Fashion *Pg 3*
- ◆ Environmental Authorisations *Pg 4*
- ◆ Complaints Management and Response *Pg 4*
- ◆ EPA Celebrates WED 2015 with Seawall Cleanup *Pg 5*
- ◆ It's Our Turn to Lead—Earth Day 2015 *Pg 5*
- ◆ EPA Staff Capacity Building *Pg 6*
- ◆ Upcoming Events *Pg 6*
- ◆ Kids Corner *Pg 7*
- ◆ Wildlife Spotlight *Pg 8*

Guyana is richly endowed with natural resources which are dominated by rainforests, covering over seventy-five percent (75%) of the country's 215,000 km<sup>2</sup>. Guyana's rainforests constitute significant resources that not only benefit itself but also the rest of the world. These rainforests form part of the Amazon Basin, an area of exceptional biological wealth and diversity that includes unique wildlife species such as the Jaguar, Harpy Eagle, Capybara and Anaconda to name just a few.

The importance of biodiversity and services of healthy ecosystems like Guyana's is globally recognised. Countries around the world show their recognition and commitment to taking steps to protect and conserve the world's biodiversity by signing on to the United Nations Convention on Biological Diversity (UNCBD). In fact, Guyana, became a signatory to this important Convention as early as 1994.

Parties to the UNCBD commit to taking

actions to support international biodiversity conservation efforts by developing and implementing various national measures. One such measure is the development of National Biodiversity Strategy and Action Plans. The EPA as National Focal Point for the UNCBD has

led the process in the development and implementation of National Biodiversity Strategies and Action Plans (NBSAPs) in Guyana. In May this year, the third NBSAP was developed in to

further advance the conservation and sustainable use of our natural wealth. This NBSAP will guide national efforts in biodiversity conservation for the period 2012-2020. The document which was developed through extensive stakeholders' consultations and feedback has been officially approved.

The NBSAP (2012-2020) sets out the vision, roles, duties and obligations of the state and its citizens to protect, conserve, use sustainably and share equitably the benefits arising from biodiversity. It provides the guidance and support actions for biodiversity and sets out the national priorities and the strategic objectives to be achieved. It also allows for partners at all levels to better identify how they can contribute and support Guyana in meeting its national biodiversity vision whilst at the same time, meeting its obligations to the UNCBD.

The NBSAP (2012-2020) has nine strategic objectives that seek to, among other issues, effect mainstreaming of biodiversity in priority sectors such as agriculture, mining and ecotourism, and *in situ* and *ex situ* conservation of biodiversity. Several priority areas for action during the period 2012-2020 are identified in the Plan.

*(cont'd on page 2)*

### Editorial Note

The second quarter of 2015 was a very challenging and eventful period for the Agency. Like a teenager about to transition into adulthood, the EPA embraced the challenges of its teenage years as it turned 19 years on June 05 but stand resolute to grasp the opportunities of adulthood. On the brink of this transition, there were several factors which stymied the work of the Agency, however, the ardent and dedicated staff worked assiduously to overcome these constraints and propel the Agency forward. Notable achievements for this quarter were the development of the Agency's Facebook page to keep abreast with the exponential growth in social media audiences, the finalization of a National Biodiversity Strategy and Action Plan (NBSAP) for 2012-2020 and the Compliance and Enforcement Regulations.

The Agency will like to congratulate the New Administration (APNU-AFC coalition) and commend their efforts in providing impetus for national involvement for Environmental Management. The EPA also applauds those individuals, groups and organisations that are engaged in the country-wide cleanup campaign. This attests to the transforming power of collective effort. With the release of the 2015 budget in the next quarter, the Agency intends to make significant strides in the latter half of the year to ensure that the goals set for 2015 are accomplished. The Agency implores all Guyanese to play a more meaningful role as we unite our efforts to find plausible solutions to many of the pervasive environmental issues plaguing our society.

## National Strategy... *continued from page 1*

Some of these areas include:

- ◆ Expansion of Protected Areas to meet the goal of seventeen percent (17%) of terrestrial area *in-situ* conservation in legal protection by 2020. The Plan further highlights that measures should be taken to ensure that these Protected Areas are effectively managed and capacity built for their planning, establishment and management. The recently established National Protected Areas Trust Fund is expected to contribute significantly to the financial sustainability of these Protected Areas.
- ◆ Rehabilitation and restoration of Mangrove belts and degraded mined-out areas.
- ◆ Development of the European Union Forest Law Enforcement, Governance and Trade (FLEGT) timber legality assurance system for Guyana to ensure that all timber for export to the EU will be verified legal and granted a FLEGT license.
- ◆ Restructuring and reorienting the National Zoological Park’s representativeness of ecosystems in Guyana with a view to increasing and expanding awareness of biodiversity particularly among children, increasing learning outdoors, and increasing schools’ abilities to teach outdoors.
- ◆ Review of existing legislation and outcomes of Environmental Impact Assessments (EIAs) and their roles in protecting biodiversity.

In its role as National Focal Point for the UNCBD, the EPA would embark on a process of promoting the NBSAP (2012-2020) among the various sectors and to coordinate as necessary measures towards its implementation.

## EPA focuses on Solid Waste Management

In the second quarter of the year, the EPA continued to place needed emphasis on the issue of Solid Waste Management. As such, the EPA responded positively to the invitation extended by the GUY-Enterprise to aid in the facilitation of two Solid Waste Management Awareness Workshops. The Workshops were held at the Georgetown Club on May 06 and 08, 2015, targeting a total of 40 students from selected schools in Region 4, as part of a pilot project in partnership with the Clean and Green for a better Guyana campaign. Officers of the Agency conducted both theoretical and practical sessions with the students and teachers, highlighting the use of waste newspapers to make creative items. The



Participants at the workshop learning origami technique



Students of the Beterverwagting Secondary School intrigued by the presentation

participants showed much appreciation and participated well in the activity.

A session was also conducted with students of the Beterverwagting Secondary on the need and importance of proper Waste Management practices. This session was not just informative but interactive, since student participation was fostered through the various presentations, games, and question and answer segments. Students and teachers were quite pleased and indicated the timeliness of the session and extended an open invitation to the Agency at anytime.

# from Trash to Fashion



## EPA partners with Japan International Cooperation Agency in 'Trash to Fashion' Workshops

As a follow-up exercise to the Guyenterprise led Solid Waste Management Workshop, EPA partnered with the Japan International Cooperation Agency (JICA) to host 'Trash to Fashion' workshops with secondary schools in Region Four.

During June 08 – 30, 2015, more than 200 students were introduced to simple techniques, for example, Paper Mache, and other techniques which can be used to make fashionable items from waste materials such as newspapers, plastic bags and snack wrappers. Ms. Naoko Kanda, a JICA representative currently volunteering with the Agency as an Environmental Education Advisor, played a pivotal role in the workshops. She created several samples for demonstration during the workshops and trained staff in-house to guide the students. Students got a practical experience to take their ideas of "**reusing**" to another dimension. The students were all intrigued by the fashion forward designs and willingly modeled the samples.

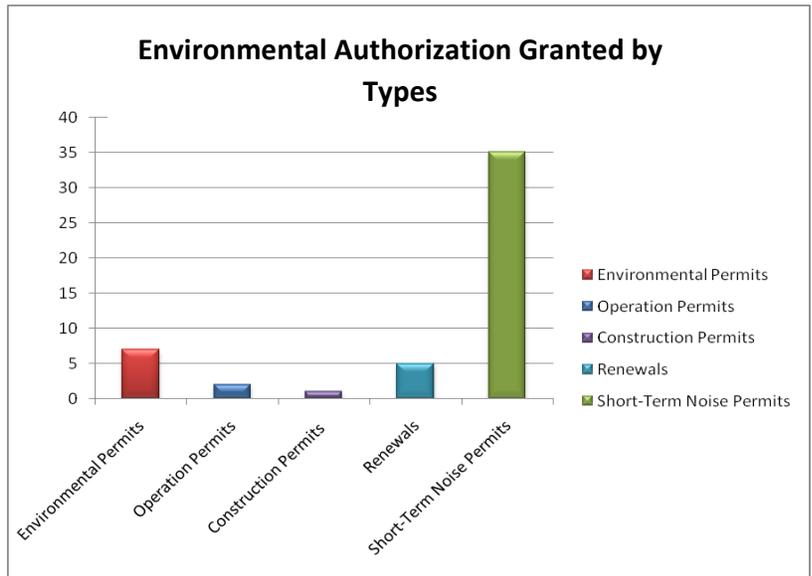
The underlying objective is to host a fashion show in the near future which will feature items created by the students and provide scope for creativity in waste management within the schools.



## Environmental Authorizations

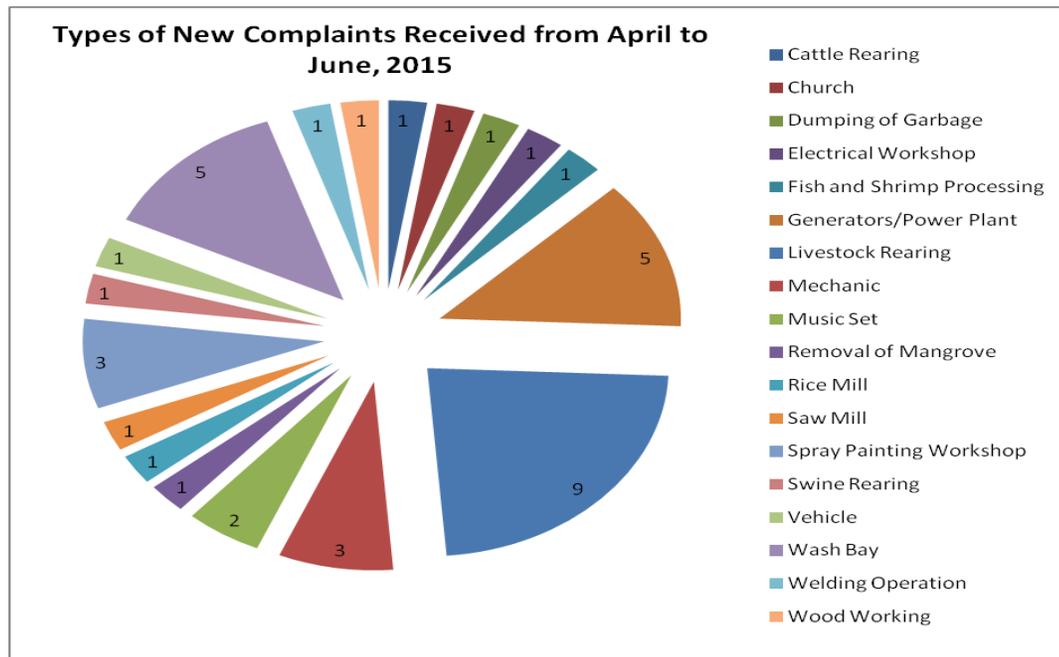
Eighty-seven (87) Applications for Environmental Authorization were received for the period April to June, 2015. Twenty-two (22) of these Applications were for Industry, Infrastructure and Energy (IIE) Unit, twenty-two (22) Applications for the Mining and Forestry (M&F) Unit and eight (8) for Agriculture, Fisheries and Tourism (AF&T). Thirty-five (35) Applications for Short-Term Noise Permits were also received for this period. Additionally, five (5) Applications for Registration of Consultants were processed and finalised by the Division.

The Division conducted fourteen (14) Environmental Authorization Inspections for the period; Nine (9) were for New projects, four (4) for existing operations and there was one (1) Renewal audit.



The Agency granted fifty (50) Environmental Authorizations during this period and continues to process the other Applications received during this period to determine whether these projects will be required to conduct Environmental Impact Assessment (EIA) or prepare an Environmental Management Plan (EMP).

## Complaints Management and Response



The Environmental Management Compliance and Enforcement Division (EMCD) received a total of thirty-nine (39) new complaints and ten (10) recurring complaints. The Division conducted six (6) compliance inspections; five (5) follow-up complaint inspections; issued one (1) Prohibition Notice; and closed two (2) complaint cases. The most prevalent complaints for this period related to livestock rearing and generators or power plants. Notably, there was a significant reduction in complaints related to dumping of garbage.

## Seawall Cleanup executed as EPA celebrates WED 2015

*'Seven billion dreams. One planet. Consume with care.'* The theme for World Environment Day (WED) this year focused on raising awareness about the need for responsible management of Earth's natural resources while meeting human needs. By now, it should be a well known fact that human wellbeing depends on the quality of our environment and the availability of natural resources. With the earth's population being over 7 billion, there is compelling evidence that people are consuming far more natural resources than the planet can sustainably provide.

To mark World Environment Day, staff of the Environmental Protection Agency (EPA) conducted a Clean-up along the Kitty Seawall between the Kitty Pump Station and Pere Street. The EPA's efforts were boosted by staff of other natural resource agencies such as the Guyana Geology and Mines Commission, Guyana Forestry Commission, Protected Areas Commission, etc. and the Guyana Marine Turtles Con-



A portion of the area before the cleanup



Officers of the Agency at work during the WED Cleanup

servation Society (GMTCS). The Clean-up was an initial exercise that is intended to lead to restoration of the area's beauty.

This Clean-up event sought to bring awareness to the WED theme, and with officers of the EPA leading by example, all citizens were encouraged to be mindful of the impact their actions have on the environment. The EPA encourages groups and individuals alike to conduct activities to raise awareness of the importance of our environment and to improve aesthetics.

## It's Our Turn to Lead— Earth Day 2015

Earth Day is observed annually on April 22 in more than one-hundred and ninety (190) countries around the world. This year, Earth Day was celebrated under the theme **"It's our turn to lead."** With the reality of global warming and the resulting climate change, it is becoming ever more important to rekindle public commitment and build community activism around the world for a safer Earth.

The Environmental Protection Agency (EPA), has been doing its part to bring awareness of environmental issues and to promote appropriate actions to address them. Outreach sessions were conducted with Regional Democratic Councils (RDCs) of Regions 3 and 4. These outreach sessions focused on highlighting the role that RDCs can play in ensuring a sustainable environment. The participants noted strengths and weaknesses of their by-laws and were informed of the support that the Environmental Protection Act (1996) and Regulations can provide. The sessions were attended by approximately thirty-nine (39) persons including Chairpersons, Overseers, Councilors and other senior officers from the Neighbourhood Democratic Councils (NDCs) in the two constituencies. The cooperation between the Local Government Organs. and EPA was reaffirmed through this activity.



Representatives of the Region 4 RDC engaged in the Session

## EPA Staff Capacity Building

The EPA continues to build the capacity of its staff. During the period April-June, 2015, the following staff benefitted from training:

**Mr. Ronald Sanichara**, attended a four (4) days training workshops on Principles of Human Resource Development Modules I and II which was organised by the Public Service Ministry during April 14 – 17, 2015 and June 09 - 12, 2015, respectively.

**Ms. Alisha Rambarran**, attended a four (4) days training course on Communication in the Office which was organised by the Ministry of Public Service Ministry during April 21 – 24, 2015.

**Ms. Jewell-Ann Harry**, attended a three (3) days training workshop on Personnel Practices and Policies which was organised by the Public Service Ministry during April 28 – 30, 2015.

**Ms. Shivon Caesar**, attended a four (4) days training for Module II on Principles of Supervisory Management which was organised by the Public Service Ministry during May 19 – 22, 2015.

**Mr. Sean Mendonca**, attended the Regional Workshop on Sustainable Use of Biodiversity and Bio-Trade which was held in Tena, Ecuador, during June 04 – 05, 2015.

Additionally, the Agency is pleased to welcome Ms Naoka Kanda, a volunteer from the Japan International Cooperation Agency (JICA), who is at the EPA for a six-month stint, and who will definitely boost the knowledge and skills of the staff.

## Upcoming Activities

Despite the challenges faced this quarter, the dedicated EPA staff continues to plan activities for the next quarter in keeping with the Agency's mandate to bring awareness of environmental issues and to promote appropriate actions for environmental management. These activities include the following:

Activity	Target Group	Date
Mural Painting	Art Students	August 26-27
Coastal Cleanup	Clubs, Students, NGO	September 7-26
Ozone Day	Region 3 Students	September 16
Fashion Show	Secondary School Students in Region 4	September 24

# Kids Corner

## Reusing of Waste Materials

Tons of newspaper and plastic bottles are thrown away every day, but you may want to think twice before you do that again; especially if you're into *Arts* and *Crafts*.



Reuse and turn that excess paper and bottles into hours of craft fun for kids and adults.

### How to Make A Colourful Bracelet

- Sketch your design.
- Think about the materials and the techniques (plastic bottles/strips of newspaper/colourful plastic bags/stapler/glue).



1. Cut the plastic bottle to the width of your choice.

2. Put strips of newspaper along the plastic ring so that it has enough thickness and form, then wind strips of newspaper around the ring to create a smooth rounded edge.



3. After completing step 2, make long strips from colourful plastic packets (snacks, chowmein, macaroni, potato chips, etc.).



4. Wind the colourful strips around the newspaper coated ring. Remember to staple or glue your loose ends to keep your materials in place.



5. Your bracelet should look like this when finished. Congrats you are a jewellery designer.

## Paper mâché

Paper mâché is an easy to make, hard material that can be used to cover various surfaces. It is often used in arts and crafts to make various sculptures, fruit bowls, etc. The surface is easy to paint, allowing you to add patterns, bright colors, and interesting designs to your finished product.



### How to make paper mâché?

**Clear an area.** Paper mâché can get a bit messy, lay down a few sheets of newspaper to keep cleanup at a minimum. While you are grabbing newspaper, also get a hold of: a bowl or large container, flour or white glue, water, your base structure (a balloon, clay model, etc.), paintbrush, newspaper (for your project— not for cleanup duty).

**Tear the newspaper into long strips.** The ideal width would be around one inch (2.5 cm) thick, but each project requires different shapes and sizes. In addition, you will want to go around your project three times, so tear quite a pile. Don't opt for the scissors -- a torn edge blends better than a cut edge.

**Choose your method to make paper mâché.** A few slight variations will result in the same product. Use what you have at your disposal. *Flour mixture:* Combine 1 cup flour with 5 cups water. Easy as pie! For super large and intense projects, you may want to substitute white glue for the water.

**Blend your choice of mixture.** Do this using a paintbrush, a mixing spoon or mixing stick. Blend until it forms a smooth consistency.

**Find a surface you want to paper mâché.** Examples include a balloon, cardboard or a molded figure. In addition, you can paper mâché two objects together to form a creation! The mixture will take to anything.

**Dip a strip of newspaper into the mixture.** You're going to get your fingers messy! The messier you get, the better job you're doing.

**Remove any excess mixture.** Do this by lightly sliding two fingers from the top to the bottom of the strip of paper. Hold it over the bowl so it drips back into the container.

**Lay the strip over the surface or figure.** Smooth it out, using either your fingers or a paintbrush. Be sure to get as many of the creases and bumps out as you can. You are aiming to get a very smooth surface for painting and decorating.

**Repeat laying strips.** Do this until the entire surface or figure is covered three times over. This is especially important if you're removing the base when it's dry -- it needs to be sturdy and hold its own. Criss-cross each of your layers to help show you where you have been and helps to strengthen the piece.

**Place the object on a covered surface to dry.** It will need a day or so to completely dry, depending on the size of your piece. Leave it untouched until tomorrow, then see if it's ready for painting.

**Start coloring.** Paint or decorate as desired. Enjoy! (And be sure to tell everyone you did it yourself.)



# WILDLIFE SPOTLIGHT

## Did you know?

### *The Spectacled Caiman (Caiman crocodilus)*

The Spectacled Caiman (*Caiman crocodilus*) commonly referred to in Guyana as the Common caiman, belongs to the family *Alligatoridae* under the genus *Caiman*.

#### Appearance

The Spectacled Caiman is a small to mid-sized crocodylian. Males of the species are generally 1.8 to 2 m (5.9 to 6.6 ft), while females are smaller, usually around 1.2–1.4 m (3.9–4.6 ft). The body mass of most adults is between 7 and 40 kg (15 and 88 lb). The maximum reported size for the species is 2.5 m (8.2 ft), with a body mass of 58 kg (128 lb). The species' common name comes from a bony ridge between the eyes, which give the appearance of a pair of spectacles. Overall a typical crocodylian gray-green colouration, this species has been known to change colour. During colder weather, the black pigment, found within their skin cells, will expand, making them appear darker. Juveniles are yellow in colour with black spots and bands on the body and tail.



#### Habitat

Common Caimans are very adaptable and can thrive in many habitats including rivers and all lowland wetlands, preferring areas with still waters and can tolerate salt water as well as fresh; due in part to this adaptability, it is the most common of all crocodylian species. If their environment becomes too harsh and food sources too low, the spectacled caiman will burrow into the mud and hibernate. The spectacled caiman expanded much of its range due to the decrease in larger crocodylian species in the early 1900s. This species of caiman is native to Central and South America but has been introduced to the northern boundaries.

#### Diet

These reptiles eat just about anything they can get their large, strong jaws around, including birds, fishes, amphibians, insects and small mammals. As juveniles, spectacled caimans eat aquatic insects, small fish, crustaceans and mollusks.

#### Reproduction and nesting

The spectacled caiman reaches sexual maturity from four to seven years old. They gather and mate during the dry season. After mating season ends, the females build nests out of dense vegetation. Each female can lay up to 40 eggs. Most caimans nest during the wet season. It is very unusual to see a caiman nest during any winter months; the temperature is too low for the eggs. Temperature is important to the developing eggs, so females build their nests in a way that insulates them from extreme temperature changes, as the vegetation decays, the nests produce heat which can keep the eggs about 5°C warmer than if they were insulated by mud alone. Heat not only incubates the eggs, but also determines the sex of the developing caimans. When the temperature inside the nest is about 31°C or lower, the eggs will develop into males; however, when the temperature in the nest is about 32°C or higher, the eggs develop into females. Spectacled caimans have strongly protective maternal behavior; they raise their young in crèches, one female taking care of her own offspring, as well as that of several other caimans. The young is taken care of for the first two to four months after the eggs hatch and typically the time it takes for the floods of the wet season to subside.

#### Fact

The Common Caiman is not wanted for leather production because it contains osteoderms. The only skin on their bodies which does not contain osteoderms is on their sides. Therefore, hunting of this species is relatively low.

## THE GREEN LEAF

The Green Leaf is published quarterly by the Environmental Protection Agency, Guyana.

This publication is intended to promote awareness on the work of the Environmental Protection Agency.

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#### About Our Logo...

Our logo is the Passion Fruit leaf. Yellow Passion Fruit (*Passiflora edulis flavicarpa*) is native to the Amazon. The passion fruit plant produces beautiful flowers and a sweet – tart fruit. It was named by the Spanish missionaries in South America. Passion Fruit is widely grown throughout the tropics and subtropics. The leaves are used in traditional medicine to settle edgy nerves. They are also used for colic, diarrhea, dysentery and insomnia.