

First Grade



- **Knowing the Essential Elements of a Habitat**
- **Protecting the Critical Habitat of the Manatee and Loggerhead Turtle**
- **How Do Jaguars and Howler Monkeys in Belize Depend on Us?**
- **Who Takes Care of the Maya Forest Corridor?**

Lesson 1

1

Knowing the Essential Elements of a Habitat

Maya Mountain Marine Corridor, Belize

Concept

Children will become acquainted with the landscape characteristics of their play space, their neighborhood and their classroom in order to better relate to the Belize landscape.

Essential Question

What sounds does your neighborhood make?

Step 1: Connect (the concept to prior knowledge)

Challenge

Students will capture the essence of the landscape surrounding their school on a map that identifies sensory and landscape information.

Materials

- 8.5" x 11" outline/map of the area around the school (1 per student; prepared by teacher)
- one larger replica of school area map
- art supplies

Procedure

1. Students will be handed a rough outline of the area around their school. They will be oriented to the map by discussing experiences different students might have had walking or playing in those spaces.
2. Students will take the maps outside and add descriptive information to the rough outline. These observations should include plants (drawings), rocks, dirt areas, random items in the landscape, smells, sounds and temperature changes. Each child will fill in what they think is important.
3. Inside the classroom on a large replica of the map of the schoolyard, the teacher will collect and transfer the observations using symbols for common landscape elements, drawings cut from maps and words to describe sensory elements. The class will decorate this map so that it represents their school landscape.



Step 2: Literature/Discuss (give expert information book; ask questions)

Challenge

Students will begin to see their play space and school as a multi-textured landscape.

Materials

- book: *Welcome to the Green House* by Jane Yolen

Procedure

Visualization: Ask the children to close their eyes and listen as you read *Welcome to the Green House* by Jane Yolen. Ask them to pay special attention to the sounds and visual pictures that are created in their minds by this book.

Lesson 1

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Knowing the Essential Elements of a Habitat

Step 3A: Practice (math and learning centers)

Challenge

Students will compare and contrast the map of their schoolyard with different maps that slowly move out in distance encompassing a greater area.

Materials

- local, national and world maps

Procedure

1. As in the Powers of Ten (www.powersof10.com), introduce students to maps that locate their schoolyard within different geographies that are local first and gradually geographically further away.
2. Students carry out a variety of interesting calculations in order to establish the area/dimensions of their playspace/schoolyard in relationship to the city/state they are in.
3. Looking at their own map of the schoolyard, ask students to guess how to measure their schoolyard and relate how large it is in comparison to their neighborhood, city/town, state and /or country.

Step 3B: Create (performance tasks related to standard indicators)

Challenge

Students will write a short "impression" poem (this can be a haiku that captures the essences of the "sitting" place).

Materials

- paper, pencils
- maps from Step 1

Procedure

1. Students return to a place that interested them outside around the building. Students write a short poem about this place that uses sensory images, landmarks, weather observations, sounds, etc.
2. The poems will be transferred to the map corresponding to the location in the schoolyard.

Step 4: Present (edit work/students orally present projects)

Challenge

Students read their poetry aloud to the class.

Lesson 1

Assessment Rubric

Teacher observations of performance tasks with rubrics as listed below, as well as collected work samples.

Assessment Guidelines	3=P (Proficient)	2=S (Satisfactory)	1 = NW (Needs Work)
Student understands the procedure for mapping a defined area and the differences in scale of a drawing and the actual schoolyard.			
Student discusses the sensory elements of the schoolyard and how these help define its character.			
Student compares and contrasts the scale drawing of the schoolyard with maps that represent different geographical areas, gradually increasing the scale of the mapped area.			
Student captures the character of their schoolyard using poetry or other descriptive narrative.			
Student prepares and delivers an oral presentation of their descriptive narrative for their peers.			

Lesson 2

1

Protecting the Critical Habitat of the Manatee and Loggerhead Turtle

Maya Mountain Marine Corridor, Belize

Concept

Regardless of the natural surrounding or the day-to-day conditions in any given place, plants and animals rely on their environment to provide them with the raw materials they need for life and the conditions to live safely and without stress. To protect manatees and loggerheads, we need to protect their homes.

Essential Question

What do manatees and loggerhead turtles have in common with you and your neighborhood?

Step 1: Connect (the concept to prior knowledge)

Challenge

Students will identify the characteristics of the manatee and the loggerhead turtle and give evidence of similarities and differences between these species and humans. Students will describe the kinds of homes (and playspaces) each species needs to survive (ex: manatee needs clean and deep water).

Materials

- maps of schoolyard from Lesson 1, Step 1
- species profiles: manatee and loggerhead turtle
- story: *Manny the Manatee and the Mystery of the Murky Water*, an original Rainforest Alliance story
- map that includes coastal ecosystem of Belize

Procedure

1. Students will identify places where they feel most comfortable, safe and healthy on the map of their schoolyard/playspace.
2. Students are acquainted with the manatee and the loggerhead turtle using the species profiles from the Rainforest Alliance.
3. Students will be acquainted with a map of the coastal ecosystem of Belize and the river system discussed in *Manny the Manatee and the Mystery of the Murky Water*, a Rainforest Alliance story.



4. Discuss with students what is different in this landscape compared to their own neighborhoods.

Step 2: Literature/Discuss (give expert information book; ask questions)

Challenge

Students learn about the Belize environment through a story and hear about changes in land practices that may threaten comfort, safety and health, like those faced by the manatee and loggerhead turtle in Belize.

Lesson 2

Protecting the Critical Habitat of the Manatee and Loggerhead Turtle

Materials

- story: *Manny the Manatee and the Mystery of the Murky Water*, an original Rainforest Alliance story

Procedure

1. Students listen to *Manny the Manatee and the Mystery of the Murky Water*.
2. Students discuss the changes in Manny's environment that make life uncomfortable.
3. Students discuss things that have changed in their own neighborhoods that may have changed the way that they play or walk to school or threatened their comfort and safety in these places.

Step 3A: Practice (math and learning centers)

Challenge

Students understand the landscape that Manny lives in by looking at maps that scale sequentially closer to the coastal ecosystem from a map that includes North America.

Materials

- maps of the world, Central America and Belize

Procedure

1. Place the sequentially scaled maps on the floor in a random order and have students order them so that they begin to focus on the coastal Belize area.
2. The last map in the sequence should be the one that contains Manny's home.

Step 3B: Create (performance tasks related to standard indicators)

Challenge

Students will create a map similar to their schoolyard map that represents the area where the manatee and loggerhead turtles live.

Materials

- paper, pencils

Procedure

On another roughly outlined map, students draw their conception of the place where the manatee and loggerhead live, based on what they know about the animals from different resources like the slideshow, book and species profile.

Step 4: Present (edit work/students orally present projects)

Challenge

To connect their own sense of place with the place where the manatee and turtle live.

Materials

- map of Belize from Step 3B

Procedure

Students will describe to others what they think the manatee and the loggerhead need to be comfortable, healthy and safe. They will use the Belize map they have created as reference.

Lesson 2

Assessment Rubric

Teacher observations of performance tasks with rubrics as listed below, as well as collected work samples.

Assessment Guidelines	3=P (Proficient)	2=S (Satisfactory)	1 = NW (Needs Work)
Through the comparison of the schoolyard and coastal Belize, student compares and contrasts the habitats of humans, the manatee and the loggerhead turtle based on characteristics that provide comfort, health and safety.			
Student identifies aspects of each environment that have changed over the last five years and discusses which changes caused threats to health, comfort and safety.			
Student identifies the distance between the rainforest and their North American home. Student locates coastal Belize on a map and understands the physical relationship between his/her home and the home of the loggerhead turtle.			
Student identifies the differences between North America and Belize according to their locations on the globe.			

Lesson 3

1

How Do Jaguars and Howler Monkeys in Belize Depend on Us?

Maya Mountain Marine Corridor, Belize

Concept

Forests that line the rivers within a watershed play an important role in keeping waterways healthy, safe and comfortable for animals and people.

Essential Question

How does the weather (particularly the amount of rain) link the jaguar and howler monkey with the manatee and the loggerhead turtle?

Introduction

Informational Introduction to the Teacher

The Maya Forest is the watershed for the coastal ecosystem of Belize. If the waterways that carry rainfall are degraded, the soil from the rainforest floor erodes into the rivers and travels down the coast. When roots of trees aren't present to hold back the soil, it floods the rivers, making them murky and muddy. When the habitat of the jaguar and howler monkey is deforested, it negatively affects the manatee and loggerhead at the other end of the watershed. Due to deforestation to meet the needs of rising consumer markets, erosion occurs because the roots of trees are needed to hold soil in place. This is true in the North American forests as well.



Step 1: Connect (the concept to prior knowledge)

Challenge

Identify the ways that weather can change landscapes. By simulating an upstream flood and resulting erosion, children will understand why rivers get muddy and murky in downstream coastal habitats. This will help them understand how Manny's home was affected by erosion.

Materials

- book: *The Magic School Bus: At the Waterworks* by Joanna Cole and Bruce Degen
- map of local watershed (available through the Environmental Protection Agency)

- simulated watershed system: 3" high baking pan, dirt and clean water

Procedure

1. Discuss where the water in the school faucets originates. Sources of water are often a great distance away from the faucet. The manatee and loggerhead swim in water that originates far from their home, which means that upstream activity around rivers can affect the health and safety of downstream water-dwelling species.
2. Read *The Magic School Bus: At the Waterworks* by Joanna Cole and Bruce Degen.

Lesson 3

1

How Do Jaguars and Howler Monkeys in Belize Depend on Us?

3. Show the students a map of their watershed. Trace the route your drinking water takes as it travels the course of the watershed and comes out in the school faucets.
4. Discuss how water picks up loose materials as it moves.
5. Show students how water picks up materials along the riverway by creating a simulated watershed in a classroom or play space. Fill a 3" high baking pan with dirt. Sculpt the dirt into a landscape that roughly simulates a downward incline to the ocean from the hills. Have students take a sample of the clean water at the start and compare it to the murky water that lands in a pool at the end of the waterway.
6. Discuss how the trees on a riverbank can affect changes in water quality with large amounts of moving water. (You could simulate another environment using pieces of sod to stabilize the riverbank.) This will show students how rooted plants lining a river hold in soil. Ask them to compare the results in water clarity to the previous experiment. Or, do both experiments outside using two different sites in the schoolyard and have students describe the differences.

Step 2: Literature/Discuss (give expert information book; ask questions)

Challenge

Students discover the habitat of the howler monkey and jaguar. They begin to conceptualize how life for the jaguar and monkey is tied to the manatee and loggerhead and ways that it is similar to their watershed.

Materials

- video: *A Walk in the Rainforest*, available from Bullfrog Films
- book: *At Home in the Rain Forest* by Diane Willow and Laura Jacques
- book: *Here is the Tropical Rain Forest* by Madeleine Dunphy
- species profiles: jaguar and howler monkey
- webpage: Adopt-A-Rainforest (www.rainforest-alliance.org/adopt-a-rainforest)

Procedure

1. Show students *A Walk in the Rainforest*, available from Bullfrog Films. In this video, an 8-year-old boy takes his friends on a tour of a rainforest in Belize. The video portrays a variety of plants and animals that live there.
2. Read *At Home in the Rain Forest* by Diane Willow and Laura Jacques. This story describes the sights and sounds of the rainforest, introducing the reader to the plants and animals that inhabit this precious ecosystem.
3. Read *Here is the Tropical Rain Forest* by Madeleine Dunphy. This story has a cumulative text, taking the reader on a journey through the rainforest from the mossy forest floor up to the emergent layer at the top.
4. Show students the species profiles of the jaguar and the howler monkey. Describe where they live in the rainforest (i.e., the canopy, understory, forest floor) and discuss their relationship with the river or watershed.
6. Make comparison to how these four species use and live within the Maya Mountain Marine Corridor. Remind students of how their watershed is similar. What effect would erosion have on the jaguar and monkey in the Maya Mountain Marine Corridor compared to the manatee and the loggerhead at the mouth of the river?
7. Look at the Rainforest Alliance Adopt-A-Rainforest pages about Belize that discuss threats to the environmentally important Maya Mountain Marine Corridor and efforts to protect it.

Additional references: Nature's Green Umbrella by Gail Gibbons

Step 3A: Practice (math and learning centers)

Challenge

Students carry out a number of comparisons to judge how muddy the water at the end of their simulated watershed is when lined with sod or just dirt.

Lesson 3

How Do Jaguars and Howler Monkeys in Belize Depend on Us?

Materials

- simulated watershed system from Step 1
- sod
- dirt

Procedure

1. Using the simulated watershed system, one with sod and the other bare dirt, create a chart that gives indicators of muddiness. Have students name the various gradations and align them with the health of the water for living species, including the manatee and the turtle.
2. Collect water samples from each "watershed" after a bucket of water has been poured down. Match the samples with the chart of muddiness.
3. Annotate the samples with gradations of "healthy for land animals" or "healthy for water animals."

Step 3B: Create (performance tasks related to standard indicators)

Challenge

Students are challenged to research the four different species highlighted in this unit and write a story from

the perspective of each one regarding the watershed and how important it is to their livelihood.

Materials

- paper, art supplies

Procedure

1. Students draw pictures of themselves using water and write one or two sentences about how important water is to their lives.
2. Students draw pictures of the different species using the water source and write one or two sentences on how important the water is to their lives.

Step 4: Present (edit work/students orally present projects)

Challenge

Students will each begin to compile a book called *The Rainforest and Me*. In this will go their maps of local places and Belize as well as the new information on water sources.

Lesson 3

Assessment Rubric

Teacher observations of performance tasks with rubrics as listed below, as well as collected work samples.

Assessment Guidelines	3=P (Proficient)	2=S (Satisfactory)	1 = NW (Needs Work)
Student identifies how weather impacts a landscape, particularly rain/erosion through the watershed simulation task.			
Student begins to understand the concept of a watershed through the mapping activity. Student will understand how different animals living in a watershed depend on its health and services.			
Student collects data from the watershed simulation and shows how erosion impacts the health of a watershed.			
Student represents through pictures the relationship different animals have to watershed and the importance of maintaining the health and function of watersheds for their welfare.			

Lesson 4

1

Who Takes Care of the Maya Forest Corridor?

Maya Mountain Marine Corridor, Belize

Concept

The work of conservationists is tireless. It demands a knowledge of the ecological dynamics and the relationship that humans have in each region. A ranger is responsible for balancing human use with the health of the environment.

Essential Question

Making sure animals and people are safe in their habitats is a big job. Who makes sure we are safe, healthy and comfortable?

Step 1: Connect (the concept to prior knowledge)

Challenge

Students identify the rules, laws, jobs and people who help them feel safe, keep them healthy and make them comfortable and happy. They identify the rules, laws, jobs and people who look after the livelihood of animals, particularly those in the Maya Forest Reserve.

Materials

- paper, pencils
- art supplies

Procedure

1. Students make a list of all the rules, laws, jobs and people who make their playground and school safe. They extend this list to include their homes.
2. Students identify changes that have been made to their playgrounds or homes to increase safety or comfort.
3. Students may draw a picture to show one incident/person who helps them feel safe in their neighborhood or play space.

Step 2: Literature/Discuss (give expert information book; ask questions)

Challenge

Students identify the people who are trying to keep the rainforest safe for the four focus species.



Materials

- book: *The Great Kapok Tree* by Lynne Cherry
- story: *My Dad the Ranger*, a Rainforest Alliance story

Procedure

1. Read *The Great Kapok Tree* by Lynne Cherry. Identify the threats to the animals and the rainforest that are identified in this book. Discuss the reasons that people might be cutting down trees in the rainforest.
2. Read *My Dad the Ranger*, a Rainforest Alliance story. Talk about the ways that the ranger is protecting the four species of focus. Discuss people in the lives of the students who provide safety and

Lesson 4

1

Who Takes Care of the Maya Forest Corridor?

health. What do they do that is different than the ranger?

3. Visit the Adopt-A-Rainforest pages about Belize for a discussion of threats to the environmentally important Maya Mountain Marine Corridor and efforts to protect it.
4. Give a short overview of Belize and the Maya rainforest: Belize's tropical rainforests are home to more than 220 tree species and 350 species of birds. Forest areas include the largest true subtropical rainforest in Belize, with a great diversity of rare and endangered plants, birds, insects and animals, including five species of wild cats. Cover information about what the Toledo Institute for Development and the Environment (TIDE) is doing to protect Belize's rainforests. Due to its tremendous natural diversity, TIDE, with the support of The Nature Conservancy and the Rainforest Alliance, is working to conserve the "Ridges to Reef" conservation corridor in southern Belize.

Step 3A: Practice (math and learning centers)

Challenge

Students carry out a variety of interesting comparisons between the two environments: their neighborhoods and the marine corridor. Students create a column graph that compares the threats to the safety of humans and animals within both environments.

Materials

- paper, pencils

Procedure

1. Have students brainstorm the kinds of things that might threaten the integrity of their playground, school or home.
2. List those things in columns labeled respectively. Then list the things that might threaten the Maya

Mountain Marine Corridor (both the forest and the watershed).

3. Compare and contrast the sources of threats and the results of the threats.

Step 3B: Create (performance tasks related to standard indicators)

Challenge

Using the materials they have studied, students will translate what they know into a symbolic representation.

Materials

- paper, art supplies

Procedure

1. Students will create a 3D model of the two environments in small groups. This might be in the form of a diorama or a flat cookie sheet-sized model.
2. Students will talk about the ways the two environments are the same and what threats they face in the future to their safety, health and comfort.

Step 4: Present (edit work/students orally present projects)

Challenge

Students will write stories that use the two different 3D representations as a background for a personal exploration of the rainforest or of an exploration of their playground from the perspective of a jaguar, howler monkey, manatee or loggerhead turtle. The stories will highlight where animals feel safe, where they can get what they need to survive and whether they feel comfortable.

Lesson 4

Assessment Rubric

Teacher observations of performance tasks with rubrics as listed below, as well as collected work samples.

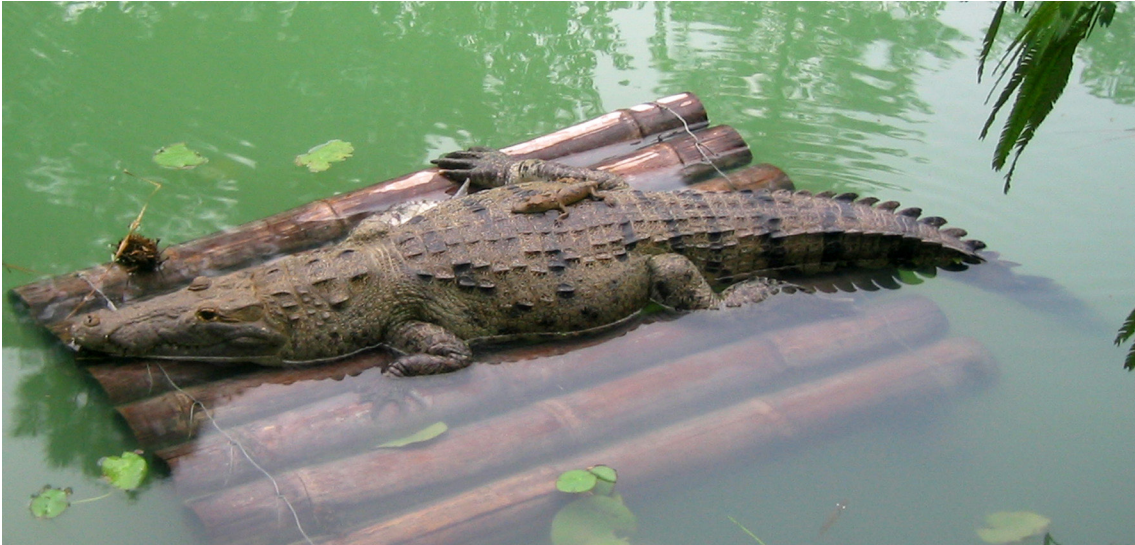
Assessment Guidelines	3=P (Proficient)	2=S (Satisfactory)	1 = NW (Needs Work)
Student identifies what he/she needs to know to help keep watersheds healthy.			
Student names the different ways that people can protect environments, making them safe and healthy.			
Student lists the threats to the health of the rainforest.			
Student creates a column graph that compares and contrasts the things that threaten both his/her own home environment and those of animals in the rainforest.			
Student uses written narratives to describe the environment from the perspectives of a jaguar, monkey, manatee or loggerhead turtle, highlighting what animals need to feel safe, healthy and comfortable.			

First Grade



Supplementary Materials

- **Teacher Summary**
- **Resources**
- **National Standards**



Some of the richest bioregions in the Americas lie in the Toledo District of southern Belize. The Maya Mountains Massif is a wilderness area supporting one of the largest and most diverse forests in Central America. Healthy populations of many endangered species still roam here, including top predators. Rich **riparian forests** penetrate the **coastal plains** of pine **savanna** and broadleaf forest. Along the coast lies an embayment on a wide continental shelf called Port Honduras. It encompasses 29 of 78 vegetation types found in Belize and is home to numerous rare and endangered species, including jaguar (*Panthera onca*), ocelot (*Felis pardalis*), marguay (*Felis wiedii*), Baird's tapir (*Tapirus bairdii*), manatee (*Trichechus manatus*), Morelet's crocodile (*Crocodylus moreletii*), and scarlet macaw (*Ara macao*). Six watersheds empty into Port Honduras carrying nutrients to drive exceptionally high productivity along the coast. Intact mangrove forests and extensive seagrass beds support fisheries by providing both organic matter and habitat for juveniles; mangroves and sea grasses also filter upland waters before they reach the world's longest living barrier reef, the Belize Barrier Reef.

The Maya Mountain Marine Corridor is a million-acre slice of southern Belize connecting upland tropical rainforest and pine savannas with mangroves, offshore *cayes*

(pronounced "keys") and a coral reef second in total area only to Australia's Great Barrier Reef. The coastal area provides one of the richest and most critically important habitats in the Caribbean: a mangrove coast dotted with over 200 small coral *cayes* inside the reef, which serves as a habitat for manatees, crocodiles and abundant coral reef life. The United Nations proclaimed this portion of the reef a World Heritage Site in 1996.

The Toledo Institute for Development and the Environment (TIDE), the Rainforest Alliance partner in Belize, battled for seven years to get protected status for Port Honduras. The area was finally declared a Marine Reserve in the year 2000. TIDE now co-manages the Port Honduras Marine Reserve with the Fisheries Department of Belize. Working in partnership, TIDE and The Nature Conservancy have developed a comprehensive conservation program for the Maya Mountain Marine Corridor. Particularly important for species such as jaguars which have a large geographic range, wildlife corridors help connect habitats and species populations that are separated by roads, development or areas of deforestation. The Maya Mountain Marine Corridor covers nearly one million acres connecting the Maya Mountains with the Belize Barrier Reef through a series of small connective "biological hallways" that allow wildlife to travel between larger protected areas. These areas are vital to

riparian forests: forest adjacent to a body of water such as a river, stream, pond, lake, marshland, estuary or reservoir

coastal plain: flat, low-lying land adjacent to the coast

savanna: known as tropical grasslands, they are found in a wide band on either side of the equator on the edges of tropical rainforests

headwaters: source of a river

photo © Kevin Maypothor



the long-term health of the protected areas, because without them, wildlife populations dwindle from inbreeding and lack of habitat.

The Maya Mountain Marine Corridor is largely comprised of protected areas (nearly 62%), however this does not mean it is immune to threats. The Toledo District has a low population density (6.2 persons/square kilometer) and is a site prime with conservation potential. However, the government of Belize is in the process of upgrading the Southern Highway, a major thoroughfare connecting Southern Belize and Guatemala. This project will allow for more rapid development and population growth in the Toledo District, increasing the magnitude of threats to biodiversity conservation. Additionally, in the floodplains between the mountains and the sea, logging, human settlements and huge, single-owner banana plantations have led to extensive land clearing and consequent erosion (*for more information on banana farming in Belize, see the sidebar*).

The conservation priorities defined for the Corridor are eight watersheds and ecosystems within the park: the upland forests, coastal plain pine savannas, coastal plain broadleaf forests, riparian forests, aquatic communities, estuaries and coral reefs. Upland forests are high-altitude rainforests found along the mountainous regions of the Corridor and encompass nearly 988,425

acres (400,000 hectares) of protected areas. These forests in Belize form part of the *Selva Maya* (Mayan forest), the single largest area of remaining forest in Central America and a key part of the Mesoamerican Biological Corridor. The entire area is so rugged that it has suffered little human disturbance. The eastern coastal plains (flat and below 30m above sea level), account for about 105,020 acres (42,500 hectares) and are Pine Savanna—grasslands and pine forest with patches of oak and palmetto that has been heavily logged. The rest of the coastal plain, about 315,060 acres (127,500 hectares), was formerly Broadleaf Forest and is now heavily exploited. This area has the highest concentration of human activity with more than 90% of population living here.

Six watersheds define the Maya Mountain Marine Corridor. Most of the **headwaters** are fully protected as part of the upland forests. Due to agricultural activities and human settlements, the rivers are subject to heavy pressure in the Monkey River and Rio Grande watersheds. Rich riparian forests stripe the waterways. These riparian forests are crucial corridors to wildlife that migrate between lowland and upland forests, such as jaguars. The estuaries and near shore regions of the area are a processing center for nutrient-rich upland waters and a transition zone for fresh and marine waters. The coastal embayment Port Honduras receives

Additional information on bananas

Along the Bladen and Swazey branches of the Monkey River, the most economically important agricultural crop is bananas, farmed on large, single-owner plantations and harvested largely by migrant workers, many from Honduras. In fact, 76% of bananas grown in Belize are grown in the Monkey River watershed. The banana industry is known for its use of herbicides, pesticides and fertilizers. The heavy rainfall in southern Belize causes soil erosion and pesticides, herbicides, fungicides and fertilizers are delivered directly into natural watercourses and drained into the sea. New preferential trade agreements have eased quota restrictions on production, and many farms are undergoing expansion. There are better ways to grow bananas. The Rainforest Alliance and its partners have developed comprehensive guidelines for rainforest-friendly banana farming.

photo © Bernt Rostad

discharge from six watersheds. This water is crucial to aquatic wildlife that depends on the crystal clean waters in the estuary. It is lined with expansive and crucial mangrove forests. The mangroves and seagrass beds filter and clean the river water and protect the coral reefs that make up the Belize Barrier Reef, which are extremely sensitive to changes in the environment. They underwent a terrible bleaching event in 1998, with the Snake Caye reefs particularly hard hit, losing up to 40% of coral cover. The Sapodilla Cayes Marine Reserve, located on the southernmost part of the Barrier Reef, has been heavily fished for commercial species.

TIDE is working closely with local communities to ensure that they benefit from the conservation of the area. As a result, TIDE is training local people to act as guides who can take visitors on low-impact fly-fishing excursions or nature-walks. Their intimate knowledge of the area is very valuable as they bring tourists paddling through jungle lined creeks or snorkeling in the turquoise blue water of a healthy coral reef. With increased understanding from TIDE's training programs, guides are knowledgeable

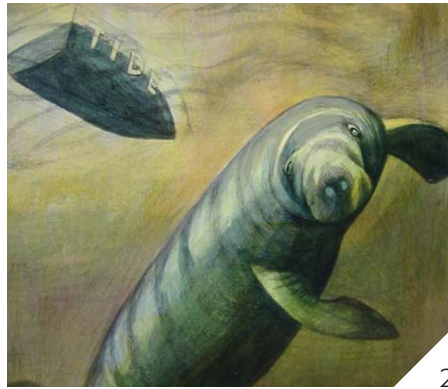
naturalists and very safety conscious. In addition, this provides a legitimate income for former illegal fisherman, whose activities were threatening the health of the estuary. TIDE is also planning for and managing protected areas along a series of corridors that link the priority areas.

In addition to this, TIDE carries out anti-poaching patrols in the Port Honduras reserve to reduce illegal fishing activities and prevent damage to the areas manatees. These beautiful gentle giants roam throughout the coastal waters and estuary in search of seagrass. They are sometimes poached, but more often unintentionally injured by illegal fishing vessels.

Recognizing the increasing threat of development, logging and unsustainable agriculture, TIDE has embarked on a land purchase and preservation program to protect Toledo's wild lands and waters. Money raised through the Adopt-A-Rainforest program of the Rainforest Alliance will be used to add strategically important land to the Corridor, and to pay for guards and community education.



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3

Resource Index

Check out this page for additional supplemental materials that complement these dynamic units and to access many of the resources listed below.

www.rainforest-alliance.org/curricula/resources

Slideshow (1)

The Curriculum site provides a slideshow and script about Belize that includes background information about the animals, people and landscape of this region. The slideshow can be downloaded for viewing in the classroom, printed out and read as a story, or viewed online with the students.

www.rainforest-alliance.org/pictures/mystical-mayan-forests-belize

Unit-Specific Stories (2)

The Rainforest Alliance has developed two original stories for use with these units, available in English, Spanish and Portuguese. The stories are available to download and print or can be viewed on-screen.

- *Manny Manatee and the Mystery of the Murky Water*
www.rainforest-alliance.org/pictures/manny-manatee-and-the-murky-water
- *My Dad the Ranger*
www.rainforest-alliance.org/pictures/my-dad-the-ranger

Species Profiles (3)

The species profiles include photos, habitat, foraging behavior, group relationships, threats and many more facts.

- ocellated turkey
- jaguar
- howler monkey
- manatee
- scarlet macaw

www.rainforest-alliance.org/species

Ranger Rick Article

Download "Rick and the Gang Visit Costa Rica and Go Bananas," a colorful article about bananas and coastal wildlife from the National Wildlife Federation's *Ranger Rick* magazine.

www.rainforest-alliance.org/sites/default/files/uploads/pdfs/curricula/ranger-rick-banana.pdf

Rainforest Poster

Download and print out this colorful two-page poster, which is available for you to use in explaining the layers of the rainforest, its products and the environmental threats facing many rainforests around the world.

Inside the Canopy – structure and species of the rainforest

www.rainforest-alliance.org/publications/inside-the-rainforest-canopy

Rainforest Products

Check out a summary of products that we use in our everyday lives that originate in rainforests. Both teachers and students will find information on the products found in their homes and supermarkets that either originated in tropical forests or are currently produced there.

www.rainforest-alliance.org/articles/tropical-forests-in-our-daily-lives

Toledo Institute for Development and the Environment (TIDE)

Check out these online resources for more information about the Rainforest Alliance's partner group in Belize:

www.rainforest-alliance.org/adopt-a-rainforest/belize
www.tidebelize.org

Certificate of Accomplishment

Print out colorful rainforest certificates for your students to commemorate their completion of these units.

www.rainforest-alliance.org/curricula/certificate-of-participation

Writing

Standard 3

Level 1: Grade K–2

- Generates questions about topics of personal interest
- Uses a variety of sources to gather information

Reading

Standard 7

Level 1: Grade K–2

- Uses reading skills and strategies to understand a variety of informational texts
- Relates new information to prior knowledge and experiences

Listening and Speaking

Standard 8

Level 1: Grade K–2

- Listens and responds to a variety of media

Thinking and Reasoning

Standard 1

Level 1: Grade K–2

- Understands and applies the basic principles of presenting an argument

Standard 5

Level 1: Grade K–2

- Identifies simple problems and possible solutions

Mathematics

Standard 1

Level 1: Grade K–2

- Uses a variety of strategies in the problem-solving
- Draws pictures to represent problems
- Makes organized lists or tables of information necessary for solving a problem

Life Sciences

Standard 4

Level 1: Grade K–2

- Knows that differences exist among individuals of the same kind of plant or animal

Standard 5

Level 1: Grade K–2

- Knows the basic needs of plants and animals (air, water, nutrients, light or food, shelter)
- Knows that plants and animals have features that help them live in different environments

Standard 6

Level 1: Grade K–2

- Knows that plants and animals need certain resources for energy and growth
- Know that living things are found almost everywhere in the world and that distinct environments support the life of different types of plants and animals

Standard 7

Level 1: Grade K–2

- Knows that there are similarities and differences in the appearance and behavior of plants and animals

Standard 12

Level 1: Grade K–2

- Knows that learning can come from careful observations and simple experiments

Standard 13

Level 1: Grade K–2

- Understands that in science it is helpful to work with a team and share the findings with others