



# The RIP Program

## (Recycling Invasive Plants)

### Teacher Packet

Sponsored by a grant from the Tampa Bay Estuary Program



# The RIP (Recycling Invasive Plants) Program

## Teacher Pre and Post Visit Packet

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# The RIP Program

## Teacher Pre and Post Visit Packet

### Program Overview and Background

This package is designed to be an overview of **The RIP Program**, which can be used both pre- and post visit to Tampa's Lowry Park Zoo. It provides a preview of the activities the students will undertake while offering further classroom enrichment ideas to help students gain the most from their experience. **The RIP Program** encourages students to learn about the West Indian Manatee, while participating in a hands-on learning experience focusing on the impact of invasive plants on Florida's waterways.

During the Zoo visit, not only learn about the West Indian Manatee, but also travel with Zoo educators and an Animal Keeper to a local approved pond to collect Hydrilla and Water Hyacinth, invasive plants that can block Florida waterway, as well as, supplement the manatee diet. Upon returning to the Zoo, students help distribute the collected diet to the manatees, tour the Manatee Hospital, and participate in a behind-the-scenes tour of the Florida Mammal Department.

The packet's pre-visit activities focus on vocabulary used during the RIP Program and Zoo visit, basic knowledge about West Indian Manatees, invasive plants and Florida Waterways. The post-visit activities combine the information gained from the pre-visit activities and the Zoo visit to provide students an opportunity to help make a difference in their community and the health of the West Indian Manatees.

### Tampa's Lowry Park Zoo:

#### David A. Straz, Jr. Manatee Hospital and Rehabilitation Center

The Manatee Hospital at Tampa's Lowry Park Zoo is one of three (Tampa's Lowry Park Zoo, Sea World Orlando, and Miami Seaquarium) critical care facilities in Florida and the only private non-profit center that provides rehabilitation to sick, injured, and orphaned manatees. The facility opened in 1991, and since opening has treated about 199 manatees, and released about 117 back into the wild. Operating funds primarily come from gate admissions, donations, and fund-raisers. The hospital has an 85% survival rate of the manatees that survive the first 48 hours. It usually has six to eight recuperating manatees at a time. However, the capacity is fifteen to seventeen manatees in an emergency. The goal for the Manatee Hospital is not to have any manatee in the pools. If there were no manatees in the pools, then this would mean people are listening and becoming more knowledgeable about ways to protect the animals and the environment. Most manatee deaths are directly related to human contact and encroachment. If we eliminate human-related health issues, we eliminate the primary need for the Manatee Hospital.

# The RIP Program

## Teacher Pre and Post Visit Packet

### Instructional Objectives and Sunshine State Standards Corollary

#### Objectives:

- Describe a manatee
- List at least three vital functions of a Florida Waterway.
- Learn the basic qualities that constitute a healthy Estuary and steps that can be taken to help clean Tampa Bay's waterways.
- Identify major causes of West Indian Manatee Endangered Status
- Know 3 or more ways to help protect the West Indian Manatees

#### Sunshine State Standards:

##### Science:

SC.7.E.6.In.e: Recognize that humans have had an impact on Earth, such as polluting the air and water and expanding urban areas and road systems.

SC.7.E.6.Pa.d: Distinguish between clean and dirty water.

SC.7.E.6.Su.e: Recognize that polluting the air and water can harm Earth

SC.7.L.15.3: Explore the scientific theory of evolution by relating how the inability of a species to adapt within a changing environment may contribute to the extinction of that species.

SC.7.L.17.3: Describe and investigate various limiting factors in the local ecosystem and their impact on native populations, including food, shelter, water, space, disease, parasitism, predation, and nesting sites.

SC.7.L.17.Pa.b: Recognize a mutual relationship between people and other living things

SC.7.L.17.Su.b: Recognize how living things affect each other in their habitat (ecosystem)

SC.8.N.4.1: Explain that science is one of the processes that can be used to inform decision making at the community, state, national, and international levels.

SC.8.N.4.2: Explain how political, social, and economic concerns can affect science, and vice versa.

##### Language Arts:

LA.7.3.1.2: The student will prewrite by making a plan for writing that addresses purpose, audience, main idea, and logical sequence; and

LA.7.4.3.1: The student will write persuasive text (e.g., advertisement, speech, essay, public service announcement) that establish and develop a controlling idea and supporting arguments for the validity of the proposed idea with detailed evidence; and

LA.7.4.3.2: The student will include persuasive techniques (e.g., word choice, repetition, emotional appeal, hyperbole, appeal to authority, celebrity endorsement, rhetorical question, irony).

LA.7.5.2.1: The student will use effective listening strategies for informal and formal discussions, connecting to and building on the ideas of a previous speaker and respecting the viewpoints of others when identifying bias or faulty logic;

LA.7.5.2.2: The student will analyze persuasive techniques in both formal and informal speech; and

LA.7.5.2.3: The student will organize and effectively deliver speeches to entertain, inform and persuade, demonstrating appropriate language choices, body language, eye contact, gestures, and the use of supporting graphics and technology.

**Social Studies:**

SS.7.C.2.2: Evaluate the obligations citizens have to obey laws, pay taxes, defend the nation, and serve on juries.

SS.7.C.2.3: Experience the responsibilities of citizens at the local, state, or federal levels.

SS.7.C.2.10: Examine the impact of media, individuals, and interest groups on monitoring and influencing government.

# The RIP Program

## Teacher Pre and Post Visit Packet

### How to use this Packet

Dear Educator,

Thank you for booking **The RIP Program** at Tampa's Lowry Park Zoo! We look forward to sharing this information with you, and have prepared this teacher packet to help you and your students make the most of your experience.

Please preview all of **The RIP Program** information before your visit, and be sure to go over the included vocabulary definitions and practice activities with your students. There are several pre-visit activities included that are both fun and informative. These activities serve to enhance your existing classroom curriculum by meeting multiple Sunshine State Standards.

We thank you in advance for your participation, and look forward to sharing our knowledge, enthusiasm, and natural resources with you. Together, we can promote our eco-friendly message: *Water Conservation through Education!*

Enjoy Learning,

Tampa's Lowry Park Zoo

Education Staff





## Manatees: Monsters or Mermaids?

Early explorers hacking their way across Florida’s bushy landscape sometimes returned with amazing stories of mermaids basking in sparkling waters — or hideous monsters patrolling the seas. As NATURE’s *Springs Eternal* reveals, however, these tall tales were inspired by one of the most remarkable inhabitants of Florida’s springs: the manatee, or sea cow.

Manatees are marine mammals, like dolphins and whales. But they don’t share a dolphin’s sleek shape. Instead, they are slow, bloated animals that look like a pig or hippopotamus set to sea. And like livestock, they graze on vegetation, such as sea grasses.

Around the world, there are four kinds of manatees, which are also known as dugongs or sirenians (after the “sirens,” or mermaids, of ancient lore). A fifth species, the Stellar’s sea cow, used to live off the coast of Alaska, but hunters drove it to extinction in 1768, less than 20 years after it was first described by shipwrecked Russian explorers.

The Stellar’s sea cow was easy to kill because it lived in shallow waters, and was slow and fearless — just like its modern-day Florida cousin. Indeed, people can often paddle right up to a manatee, especially when the creatures gather by the hundreds each winter in a few Florida springs, such as the Crystal River, featured on *Springs Eternal*. The manatees are drawn in from their ocean territories by the springs’ warm waters and bountiful crops of vegetation.

Unfortunately, the manatees, which like to swim just below the water’s surface, are vulnerable to fast-moving boaters, who often run over the animals without realizing what has happened. And the gentle creatures are also threatened by water pollution, which is causing Florida’s once transparent spring waters to become increasingly cloudy. Much of the pollution is in the form of excess nutrients, such as nitrogen fertilizer from lawns and farms, which can trigger unwanted blooms of algae and tiny toxic organisms. These blooms sometimes form a deadly event known as a “red tide.” In the winter of 1995, for instance, nearly 400 Florida manatees (about 20 percent of the population) died from exposure to red tide.

Luckily, people are taking steps to protect manatees. Florida is attempting to educate boaters to slow down in areas inhabited by manatees. And the federal government has established several manatee refuges, where the animals can winter without worry of disturbance. The refuges have also proved a boon to researchers. They have learned, for instance, that though manatees may look ungainly, they can sprint short distances at speeds of up to 15 miles per hour, though they usually paddle along at about 4 miles per hour. Scientists have also shown that manatees have well-developed eyes: in clear water, they can detect objects more than 50 feet away. And they have been able to collect data that suggests that manatees can live 60 or more years.

It’s too early to know if such information will help prevent the Florida manatee from following its Alaskan cousin into oblivion. For the moment, however, visitors to Florida’s remarkable springs can still see the gentle animals that gave rise to myths of monsters and mermaids.

Excerpt from: [www.pbs.org](http://www.pbs.org)

## The RIP Program: Vocabulary List

**Aquatic**-growing or living in the water.

**Aquifer**- an underground bed or layer of permeable rock, sand or gravel containing water.

**Asexual Reproduction**- as budding, fission, or spore formation, not involving the union of gametes.

**Bay**-an inlet of the sea or other body of water, usually smaller than a gulf.

**Brackish (water)**- a mixture of fresh and salt water.

**Carnivore**-a flesh-eating animal or plant.

**Conservation**- the care, protection or management of natural resources.

**Dugong**-a sirenian that is entirely marine. Dugongs have forked tails and tusks are found in males.

**Ecosystem**-the interacting system of a biological community and its non-living environment.

**Effluent**- a discharge of water, which may contain pollutants, into the environment.

**Endangered**- said of any species of wildlife whose prospect of survival is in jeopardy; in danger of extinction due to natural or human-made factors.

**Environment**-all the conditions, circumstances and influences surrounding and affecting the development of an organism or group of organisms.

**Estuary**-an area where fresh water meets and mixes with salt water.

**Evolution**- the development of species, from its original or primitive ancestor to its present, specialized state.

**Exotic Species**-plants or animals that are not native to an area; introduced from another place.

**Extinct**-said of a plant or animal species that no longer exists.

**Groundwater**-water below the surface of the ground, often deep below.

**Habitat**-the three-dimensional space a species inhabits that includes all of the features needed for survival.

**Harassment**-persistent bothering of annoying of an animal, so as to change its natural behavior.

**Herbivore**-an animal that feeds on plants.

**Hydrologic Cycle**- the circulation of water in a cycle where water evaporates from the ocean and land and returns to the Earth as precipitation. This water then flows over the surface, through the ground, or is used by plants before evaporating or transpiring and starting the cycle again.

**Idle Speed**-minimum speed that will maintain the steerage of a vessel.

**Invasive**- a plant or animal that invades a habitat and harms native species

**Lagoon**-a shallow, marine water body separated from the sea by sand bars or a barrier island.

**Mammals**-animals that breathe air, nurse their young, have backbones, are warm

blooded and have body hair at some stage of their development.

**Manatee Protection Area-** any area with regulations aimed at protecting manatees.

**Marine-**inhabiting the sea.

**Native-** originating naturally in a particular place.

**Necropsy-**a postmortem examination performed on an animal.

**Non-invasive-** a plant or animal that does not harm other natural species.

**Omnivore-**an animal that eats both plants and other animals.

**Predator-**an animal that obtains food primarily by kills and consuming animals.

**Prey-**an animal killed by a predator as food.

**Rehabilitation-**bringing or restoring to a normal or optimal state of health by medical treatment.

**River-**a natural stream of water of considerable volume.

**Sanctuary-**a place of refuge or protection.

**Sexual Reproduction** – involving the union of gametes.

**Sirenia-**the taxonomic order to which manatees and dugongs belong.

**Slow Speed-**the speed at which a boat is operation off-plane and settled into the water.

**Spring-** a place where water seeps or bubbles form the ground.

**Surface Water-**water on the surface of the ground, such as lakes, rivers, puddles and the water in the topsoil.

**Surface Water Runoff-**the portion of rainfall or irrigation water that eventually is returned to bodies of water.

**Taxonomy-**a system of arranging animals and plants into natural, related groups based on factors common to each other.

**Threatened-**said of any species of wildlife that may not be in immediate danger of extinction by exists in such small populations that in may become endangered if subjected to increased stress from changes in its environment.

**Turion-** plant buds

**Toxic-**acting as a poison.

**Vandalism-**destruction of public or private property, including the deliberate harming of a manatee, other wild creature or natural resource.

**Wetlands-**land where water is the dominant factor determining the natural of soil and the types of plant and animal communities living in the soil or on its surface.



## The RIP Program: Fill In the Blank

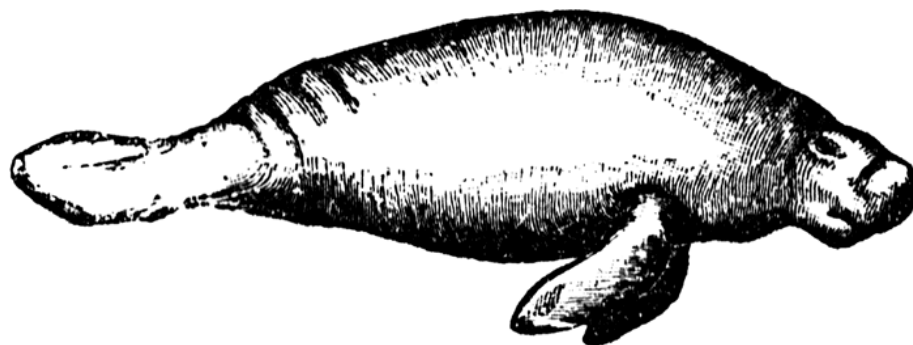
Using the following informal definitions, find out how much you know by filling in the blanks, choosing from the words listed below:

1. Adjective having to do with water \_\_\_\_\_ or \_\_\_\_\_
2. A species "in danger" of becoming extinct \_\_\_\_\_
3. A natural underground area that stores water \_\_\_\_\_
4. A species introduced into a non-native habitat \_\_\_\_\_
5. Water found in the aquifer \_\_\_\_\_
6. Four elements of this are: food, water, shelter and space \_\_\_\_\_
7. Manatees can live in an \_\_\_\_\_, a place where salt and fresh water meets.
8. Picked up from \_\_\_\_\_, Pesticides and fertilizers from people's yards follow into the waterways and act as a \_\_\_\_\_ to native aquatic plants and animals.
9. Manatees hit by boats going too fast in a \_\_\_\_\_ zone are taken to a Hospital and \_\_\_\_\_ Center before healing and returning back into their natural environment.
10. During cold weather, West Indian Manatees will swim up \_\_\_\_\_ and sometimes live near a \_\_\_\_\_ for a few months at a time.

**Aquatic**  
**Aquifer**  
**Conservation**  
**Endangered Species**  
**Estuary**  
**Exotic**

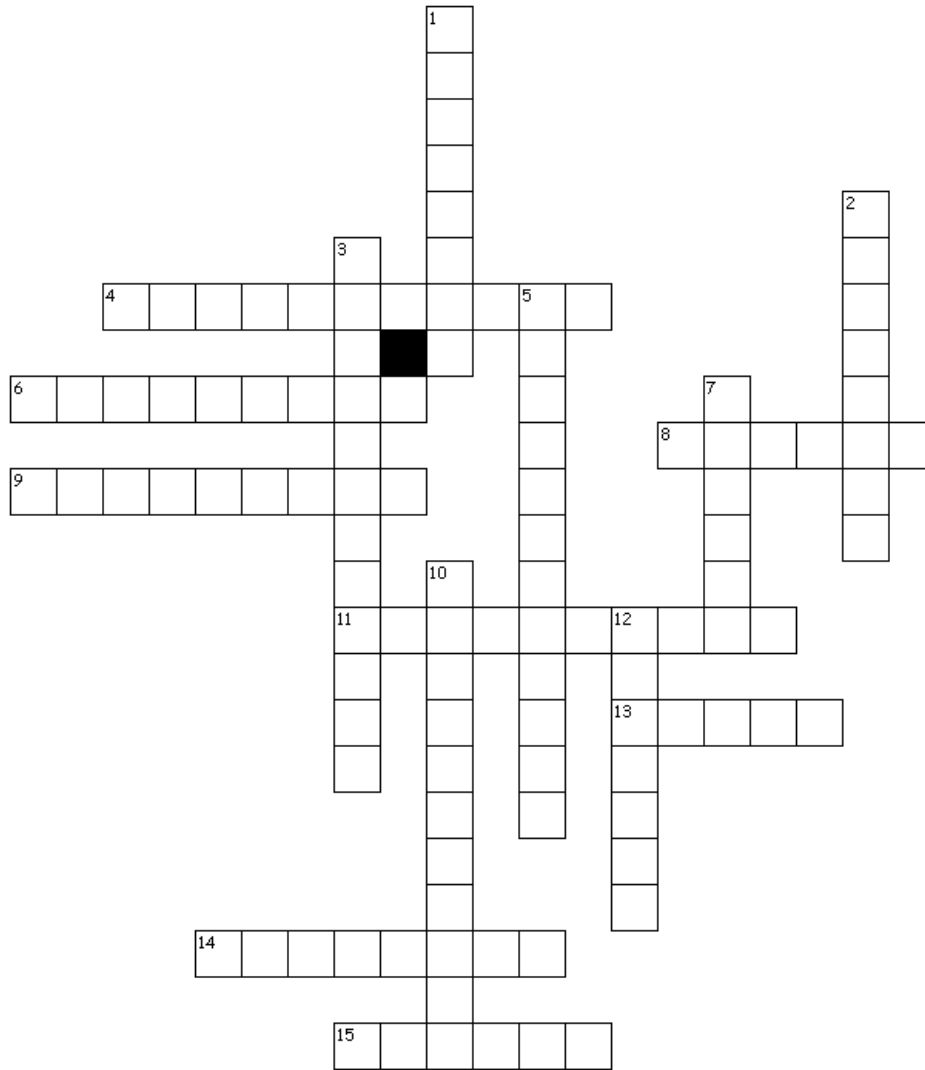
**Ground Water**  
**Habitat**  
**Hydric**  
**Rehabilitation**  
**River**  
**Slow Speed**

**Spring**  
**Surface Water Runoff**  
**Toxin**  
**Watershed**





## The RIP Program: Crossword Puzzle



**Across**

- 4. All the conditions, circumstances and influences surrounding and affecting the development of an organism or group of organisms
- 6. Destruction of public or private property, including the deliberate harming of a manatee, other wild creature or natural resource
- 8. Inhabiting the sea
- 9. A place of refuge or protection
- 11. Said of any species of wildlife that may not be in immediate danger of extinction by exists in such small populations that in may become endangered if subjected to increased stress from changes in it
- 13. Acting as a poison

- 14. An animal that obtains food primarily by kills and consuming animals

- 15. A place where water seeps or bubbles form the ground

**Down**

- 1. A system of arranging animals and plants into natural, related groups based on factors common to each other
- 2. Land where water is the dominant factor determining the natural of soil and the types of plant and animal communities living in the soil or on its surface
- 3. The care, protection or management of natural resources
- 5. A plant or animal that does not harm other natural species
- 7. Originating naturally in a particular place
- 10. Water below the surface of the ground, often deep below
- 12. An area where fresh water meets and mixes with salt water

## Worksheet Keys

### Vocabulary Practice- Did you Know...? Key

1. Adjective having to do with water Aquatic or Hydric
2. A species “ in danger” of becoming extinct Endangered Species
3. A natural underground area that stores water Aquifer
4. A species introduced into a non-native habitat Exotic
5. “ Water found in the aquifer Ground Water
6. Four elements of this are: food, water, shelter and space Habitat
7. Manatees can live in an Estuary , a place where salt and fresh water meets.
8. Picked up from Surface Water Runoff Pesticides and fertilizers from people’s yards follow into the waterways and act as a Toxin to native aquatic plants and animals.
9. Manatees hit by boats going too fast in a Slow Speed zone are taken to a Hospital and Rehabilitation Center before healing and returning back into their natural environment.
10. During cold weather, West Indian Manatees will swim up River and sometimes live near a Spring for a few months at a time.

### Word Puzzle Key

- |               |               |                        |
|---------------|---------------|------------------------|
| 1. Aquatic    | 5. Endangered | 9. Pollution           |
| 2. Habitat    | 6. Native     | 10. Recycle            |
| 3. Herbivore  | 7. Invasive   | <b>Secret Message:</b> |
| 4. Idle Speed | 8. Mammals    | Protect Manatees!      |

### Crossword Puzzle Key

#### Across

4. **Environment:** All the conditions, circumstances and influences surrounding and affecting the development of an organism or group of organisms
6. **Vandalism-** Destruction of public or private property, including the deliberate harming of a manatee, other wild creature or natural resource
8. **Marine-**Inhabiting the sea
9. **Sanctuary-**A place of refuge or protection
11. **Threatened-**Said of any species of wildlife that may not be in immediate danger of extinction by exists in such small populations that in may become endangered if subjected to increased stress from changes in it
13. **Toxic-**Acting as a poison
14. **Predator-**An animal that obtains food primarily by kills and consuming animals

15. **Spring-**A place where water seeps or bubbles form the ground

#### Down

1. **Taxonomy-**A system of arranging animals and plants into natural, related groups based on factors common to each other
2. **Wetlands-**where water is the dominant factor determining the natural of soil and the types of plant and animal communities living in the soil or on its surface
3. **Conservation-**The care, protection or management of natural resources
5. **Non-Invasive** - A plant or animal that does not harm other natural species
7. **Native-**Originating naturally in a particular place
10. **Groundwater** - Water below the surface of the ground, often deep below
12. **Estuary-** An area where fresh water meets and mixes with salt water

## Creative Thinking Activities

### Historic Journal Entry



As mentioned in the first paragraph of the “Manatee Overview: Monsters or Mermaids,” throughout history sailors and explorers often thought they were seeing mermaids instead of manatees. “Sirenia,” the scientific order name of the manatees, comes from the ancient mythological words “siren,” a term used for monsters or sea nymphs who lured sailors and their ships to a ruin with their mesmerizing songs. Invite your students to work individually or in pairs to create a diary or journal entry from one of those early sailors. Ask them to describe what they are seeing, as though they have never seen a manatee until this moment, while walking along the water’s edge or floating along in their dingy exploring a Spring fed river.

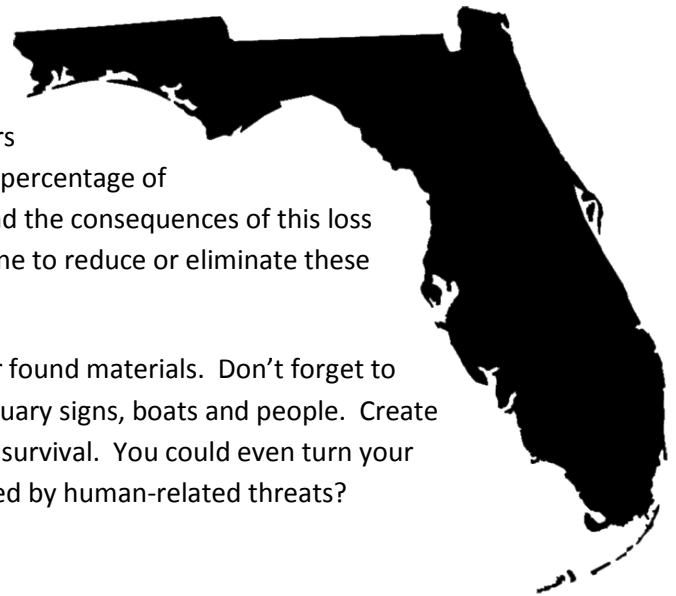
### Creative Writing

As a nice introduction or conclusion to an activity, invite students to write a Haiku poem about Manatees. Haiku poems are originally from the county of Japan. It is a simple form of poetry and can or cannot rhyme. A haiku poem has three lines with a syllable pattern of 5-7-5. Often, it is about nature. Students can write them individually, in pairs or as a class. The students can illustrate them, display them as a class or in a book.

### Create a Florida Natural Habitat

Ask students to research a specific area of Florida and compare how it has changed in the last 20, 50 or 100 years. Have them draw a picture representing the habitat of 20 years ago and then have them cross out a portion to represent the percentage of natural habitat loss. Discuss the causes of this habitat loss and the consequences of this loss for manatees and other native species. Also, what can be done to reduce or eliminate these threats?

Invite students to create a manatee habitat using recycled or found materials. Don’t forget to include aquatic vegetation, trees, fish, access to a river, sanctuary signs, boats and people. Create posters or murals showing manatees and the threats to their survival. You could even turn your classroom into a manatee habitat! How is this habitat affected by human-related threats?



## Manatee “Bingo” Game

The Fill In the Blank statements below and the activity Manatee “Bingo” Game sheet on the next page can be used to introduce students about basic manatee facts. Provide each student a copy of the Manatee “Bingo” Game sheet and ask them to fill in each square with one bulleted word or phrase. After students have completed their game board, mention to the class that this is now a handmade Bingo Board. Determine what Bingo winner rules you would like to use and then randomly read the statements below. Invite the students to determine the missing word or phrase from the list on their worksheet. When needed, discuss as a class, any specific facts that seem interesting.

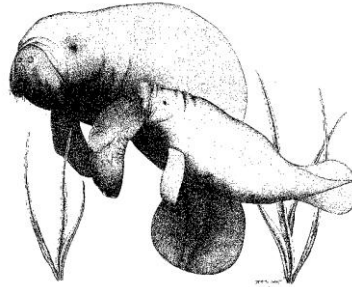
### Manatee Fill In the Blank Statements:

1. Manatees can grow to \_\_\_\_\_ feet long. **(13 feet)**
2. Manatees can weigh over \_\_\_\_\_ lbs? **(3000 lbs)**
3. Manatees spend most of their time \_\_\_\_\_, \_\_\_\_\_ and in \_\_\_\_\_. **(Eating, resting and in travel)**
4. Manatees do not have \_\_\_\_\_. **(eyelashes)**
5. Manatees are considered \_\_\_\_\_, because they only eat plants. (herbivores)
6. Manatees eat \_\_\_\_\_% of their body weight daily. **(10 to 15%)**
7. Manatees eat vegetation found in shallow bays, \_\_\_\_\_ and \_\_\_\_\_. **(rivers and Springs)**
8. Manatees love to eat \_\_\_\_\_, a non-native invasive aquatic plant. **(hydrilla)**
9. Within the US, Manatees are concentrated in Florida during the \_\_\_\_\_ months. **(winter)**
10. During the summer months, Manatees can be found as far west as \_\_\_\_\_ and as far north as Virginia and the Carolinas. **(Louisiana)**
11. Manatees are believed to have evolved from wading, plant-eating animals and share a common ancestor with the \_\_\_\_\_ and aardvark. **(elephant)**
12. The official name of manatees found in Florida is \_\_\_\_\_. **(West Indian Manatee)**
13. Manatees belong to the order \_\_\_\_\_. **(Sirenia)**
14. A female manatee gives birth to a calf every \_\_\_\_\_ years **(2 to 5)**
15. When a calf or baby manatee is born, it ways between \_\_\_\_\_ and \_\_\_\_\_ pounds. **(45 and 60)**
16. At two years old, a manatee may have increased its weight by as much as \_\_\_\_\_%. **(400%)**
17. Captive manatees have been reported to live more than \_\_\_\_\_ years old. **(30)**
18. Manatees’ only known enemy is \_\_\_\_\_. **(humans)**
19. A significant number of manatees are injured or killed by \_\_\_\_\_ of fast moving motor-powered boats. **(Propellers)**
20. Manatee protection can be gained through \_\_\_\_\_ and educational campaigns. **(regulation)**
21. Fishing hooks, lures, crab-trap lines and hoop nets cause deaths of the manatees by \_\_\_\_\_ and ingestion. **(entanglement)**
22. Cold weather makes the manatee more susceptible to diseases such as \_\_\_\_\_. **(pneumonia)**
23. Common household items, like pesticides and herbicides, end up in \_\_\_\_\_, which flows into waterways and poisons aquatic plant and animal life. **(surface water runoff)**
24. Litter in waterways, such as \_\_\_\_\_ and \_\_\_\_\_, are dangerous to manatees and other forms of wildlife. **(plastic bags and fishing line)**
25. Manatees have 38 \_\_\_\_\_. **(Ribs)**

## Manatee “Bingo” Game

**Directions:** Fill in each square with one bulleted word or phrase from below.

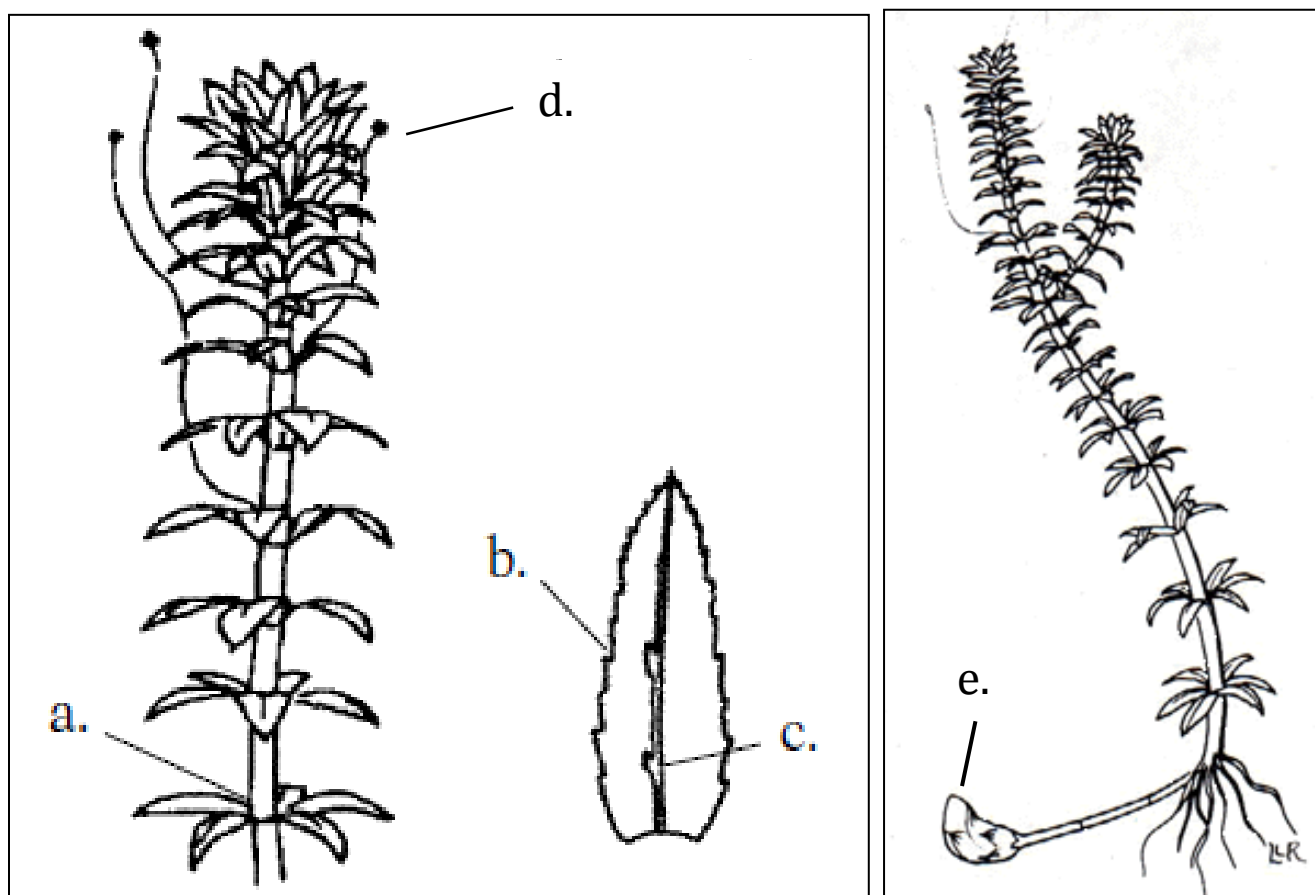
- 10 to 15%
- 13 feet
- 2 to 5
- 30
- 3000 lbs.
- 400%
- 45 to 60
- Eating, Resting and in Travel
- Elephant
- Entanglement
- Eyelashes
- Herbivores



- Humans
- Hydrilla
- Louisiana
- Plastic bags and Fishing Lines
- Pneumonia
- Propellers
- Regulations
- Ribs
- Rivers and Springs
- Surface Water Runoff
- Winter

### “Bingo” Game Board


## Hydrilla Plant Identification



Please identify the following parts of the Hydrilla plant.

Serrated Leaf Edge

a. \_\_\_\_\_

5 Leaves at Each Plant Node

b. \_\_\_\_\_

Leaf Vein with Spikes

c. \_\_\_\_\_

Tuber

d. \_\_\_\_\_

Tiny White Flowers

e. \_\_\_\_\_

## Civic Engagement Activities

### Discuss Threats to Manatees

Discuss the major human-related threats to manatees today. Loss of habitat (due to pollution and other causes), water craft collisions or speeding, litter, (such as fishing line or plastic bags), harassment and flood gate/canal lock structures. Which is the most serious and why?

### Brainstorm Ways to Protect Manatees

Ask each to student to think of idea people could do to help protect manatees. Have them divide their activities into two groups, "On Land" and "In the Water," and come up with ten ideas for each group.

Ask students to research ways that manatees are protected and identify how they might get involved.

### Create a Speech or Public Service Announcement

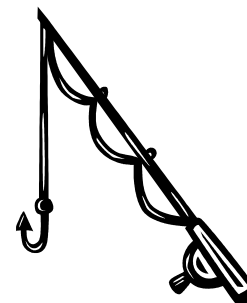
Manatees are sometimes unintentionally killed or injured by fishing activities. They get injured from speeding boats, caught in fishing nets, or by entanglement from crab trap lines, monofilament fishing line or hooks. In Florida, it is a second-degree misdemeanor to intentionally discard any monofilament fishing line or monofilament netting into or onto the water of the state.

1. Have students write a public service announcement (PSA) appropriate for television or radio to educate the general public regarding the threats that discarded monofilament can cause to wildlife. Students may create a video or audiotape or they could perform the PSA "live" in front of the class. The recommended length of the PSA is 30 seconds. Ask a TV or radio station to broadcast the PSA or play it over the school's morning news.
2. Suggest that students create educational posters or an ad for a magazine or newspaper about the threats that discarded monofilament line creates for wildlife. Have students cut out or draw pictures, write the copy and make the advertisement appealing to the general public. Students could vote privately and award a group "winner." Submit the ad for publication in an actual newspaper or magazine or publish it in the school newspaper.
3. Invite the students to create a short phrase to help protect manatees from monofilament lines. Use this phrase to design a bumper sticker to inform people the negative affects leaving your line behind can have.

#### Did you know....??

Did you know that it takes over 500 years for monofilament line to biodegrade?

List ways we can reuse this material.



## Get Involved and Take Action!

Students need to know that, as individuals, they have a voice in governmental processes. When they make their wants and needs known, they can improve the world. When they remain silent, they give their power away to others. No one is too young to get involved! Students can participate by researching issues at the local level. They can write letters, send emails and attend county commission or city council meetings. They can help their community make wise choices between pressures for growth and needs for strong environmental protection.

Suggest to students that they become agents of change and brainstorm ways to help better manatee habitats. Now, encourage them to take action and let their voices be heard where it counts the most! Students can write a letter or send an e-mail to Florida's governor to show strong support for manatee protection in the state of Florida. Next, they can write their state senator and representative to tell them how important manatees are, ask them to support protection for manatees and their habitat, as well as, to keep current environmental laws strong. To find a list of current elected officials and various current issues affecting manatees, see the "Take Action" page of the [www.SaveTheManatees.org](http://www.SaveTheManatees.org).

## Organize Recycling and Clean Up Efforts

The best way to get your students involved in recycling at home is to show them how it's done and why it is important. Start a recycling program in your classroom and then increase it to your whole school, making it a student organized project with them in charge! Have them find out what products are made from recycled materials and what materials are recyclable. Students could also start a monofilament line recycling program in their community.

In addition, students can organize a cleanup effort of local waterways or participate in organized cleanups. To find out more about how to organize a cleanup or participate in one, contact your local city or county environmental resources department or contact the following organizations:

### **Keep Hillsborough County Beautiful, Inc.**

Web Site: <http://www.khcbonline.org>  
Phone: 813.960.5121

### **The Ocean Conservancy**

Website: [www.oceanconservancy.org](http://www.oceanconservancy.org)

### **Keep America Beautiful**

#### **Headquarters Office**

Web site: <http://www.kab.org>  
General Questions: [info@kab.org](mailto:info@kab.org)

### **Tampa Bay Estuary**

Website: <http://www.tbep.org/>