

# Lesson Four:

## *Honk* — IF YOU LOVE THE WETLANDS

So ... what are wetlands? Although there are many definitions of wetlands, they are generally defined using three criteria:

### Setting The Stage



hydrology - the presence of water

hydric soil conditions

hydrophytic plant types

Wetlands are areas that are inundated or saturated by surface or ground water over a period of time sufficient to support vegetation adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas. Wetlands are dynamic ecosystems that offer an array of important economic, cultural, recreational and ecological benefits to Louisiana's citizens.

Unfortunately, while Louisiana accounts for 25% of the coastal wetlands and 40% of the salt marshes in the continental U.S., the state's coastal marshes are disappearing at an alarming rate of about "a football field every 40 minutes." The Barataria-Terrebonne Estuary has the most severe wetland loss of the whole state. Indeed, it is disappearing at a faster rate than any other place in the world.

There are complex factors contributing to the loss of wetlands—some are natural geologic processes; others are human-induced causes. While some of the loss is due to natural processes like erosion, a significant amount of wetland loss is due to human impacts such as confinement of the Mississippi River between levees, oil exploration and dredging of navigation canals.

# Wetlands: Functions and Values



## WILDLIFE AND PLANT HABITAT

Wetlands support an enormous variety of plant and animal life, and provide essential habitat for mammals, birds, fish, reptiles and amphibians. ‘Habitat’ refers to areas that provide breeding, feeding and nesting grounds for animals and plants. Wetlands are important for migratory waterfowl, and they also are home to many endangered plants and animals. From a biological viewpoint, wetlands are production machines, out-producing most other ecosystems several times over.

## COMMERCIAL FISHING

Commercial fishing is a significant part of the Barataria-Terrebonne Estuary’s economy. The estuary provides valuable habitats for developing marine life such as blue crabs, oysters, shrimp, and over 60 fish species. In the U.S. alone, more than 70% of the commercial fishing market consists of species that use coastal wetland areas at some point during their lifecycle.

## WATER QUALITY

Water quality describes the chemical, physical, and biological characteristics of water. Water quality also describes whether water is drinkable, useable, harmful or toxic. Some waterways in the estuary do not meet water quality standards for primary recreational use (i.e. swimming and fishing). Wetlands help protect water quality by acting as a filter removing pollutants, metals and excess nutrients that might otherwise damage the aquatic ecosystem.

## HURRICANE/FLOOD PROTECTION

Wetlands have the natural ability to act like sponges and help to prevent flooding from heavy rains or storm surges associated with winter storms, tropical storms and hurricanes by absorbing excess water. Healthy coastal wetlands reduce the height of storm surge during hurricane events.

## GROUNDWATER RECHARGE

While wetlands play an important role in ensuring clean water, they also are critical in maintaining the quantity and volume of our water resources. Since they can hold large amounts of water, some wetlands help to recharge groundwater in the soil.



## AESTHETICS AND RECREATION

Wetlands support a variety of recreational activities, ranging from hunting and fishing to ecotourism. Recreational fishing, for example, is one of the fastest growing industries in Louisiana, much of which takes place in the Barataria-Terrebonne Estuary.

## CULTURAL VALUES

Wetlands are a major part of southeastern Louisiana's culture, and they have helped shape the region's history and lifestyles. Since the original settlers relied on the swamps and bayous for food, shelter, income, and other necessities, wetlands influenced the lifestyle and livelihood of the estuary's early communities.

### Wetland Loss: Causes and Probable Impacts

The Barataria and Terrebonne basins contain 33 % of the coastal area of Louisiana and experience the greatest land loss for the entire state. At the current rate, it is predicted that residents of coastal communities throughout Louisiana will be forced to move within the next 15 years as land under their home is replaced by water.



### HABITAT LOSS: PROBABLE IMPACTS, CAUSES, AND SOLUTIONS

PROBABLE IMPACTS	PROBABLE CAUSES	PROBABLE SOLUTIONS
Decreases in sport and commercial fish and shellfish populations	Hydrologic modification and wetland subsidence; saltwater intrusion	Return to more natural hydrologic flow
Changes in furbearing and waterfowl populations with sport and commercial value	Spoil banks and diking/leveeing of wetlands; isolation, submergence and mortality of wetlands; wetland erosion and internal fragmentation	Return to more natural hydrologic flow
Reduced recreation and commercial value of wetlands and estuaries	Shoreline erosion by commercial and recreational boat wakes	Protect the shoreline
Decreased acreage available to treat pollution inputs; increased levels of eutrophication, pathogen contamination and toxic substances	Filling of wetlands for agriculture and other development	Engage in cooperative conservation activities with farmers
Decreased capacity to buffer storm energy	Hydrologic modification and wetland subsidence; saltwater intrusion	Restore wetlands with various techniques
Decreased habitat for birds and other species such as the black bear	Human overpopulation, urbanization of wetlands	Save wetlands habitats through participation and preservation
Elevated rates of subsidence, flooding and wetland loss	Hydrologic modification such as levees and man-made canals, saltwater intrusion, hurricanes, nutria herbivory	Call or write legislative representatives about restoration. Use fencing and other devices to stop nutria feedings, continue funding for nutria tails



# Objectives

## STUDENTS WILL

- **list and describe the functions and values of wetlands.**
- **discuss the importance of wetlands.**
- **design and share a communication strategy to make others aware of the importance of wetlands.**

## GETTING READY

1. Either download pertinent information on wetlands from Internet Sites or assure Internet access for students.
2. Contact BTNEP for pertinent posters, videos, CDs.
3. Review “Background” information.
4. Duplicate the Handouts:  
*Wetlands: Function and Values* (p.6)  
*Wetlands Loss: Causes and Impacts* (p.7).

## PROCESS

1. Administer the pre-test, *Wetlands: Function and Values*, individually or in small groups to determine prior knowledge. Ask students to complete the chart, describing the specific functions and values. You may choose to put these charts up in your classroom and have students put “stickers” in the appropriate spots. That way, students would have access to material throughout the lesson.
2. Form research groups of two or three students. The groups will now complete the chart *Wetlands: Function and Values*, using printed materials, Internet sites, videos, and CDs.
3. Each research group will share its findings with the class.
4. Ask individuals or groups to compare their pre-tests with their researched charts, verifying and correcting responses.
5. Administer a second pre-test, *Wetlands Loss: Causes and Impacts*, individually or in small groups to access prior knowledge. Ask students to complete the graphic organizer, listing the

causes and describing the impacts of habitat loss. Directions: *In the center rectangle, identify the event that has occurred. In the rectangles to the left of center, list the causes of the event. In the rectangles to the right of center, describe the impacts/consequences of the event.*

6. Form research groups. The groups will now complete the same graphic organizer worksheet, using printed materials, Internet sites, videos, and CDs.
7. Each research group will share its findings with the class.
8. Ask individuals or groups to compare their pre-tests with their researched graphic organizers, verifying and correcting responses.

## ASSESSMENT

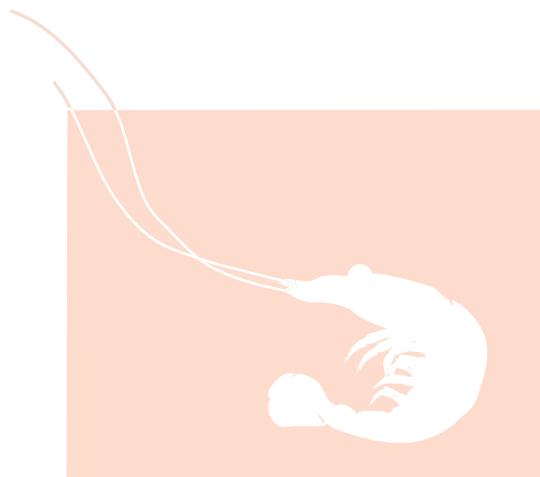
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The handouts *Wetlands: Function and Values* and *Wetlands Loss: Causes and Impacts* may be administered as a post-test.

## EXTENSIONS

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Judge the creation of a communication strategy. Determine 1st, 2nd, & 3rd place winners.





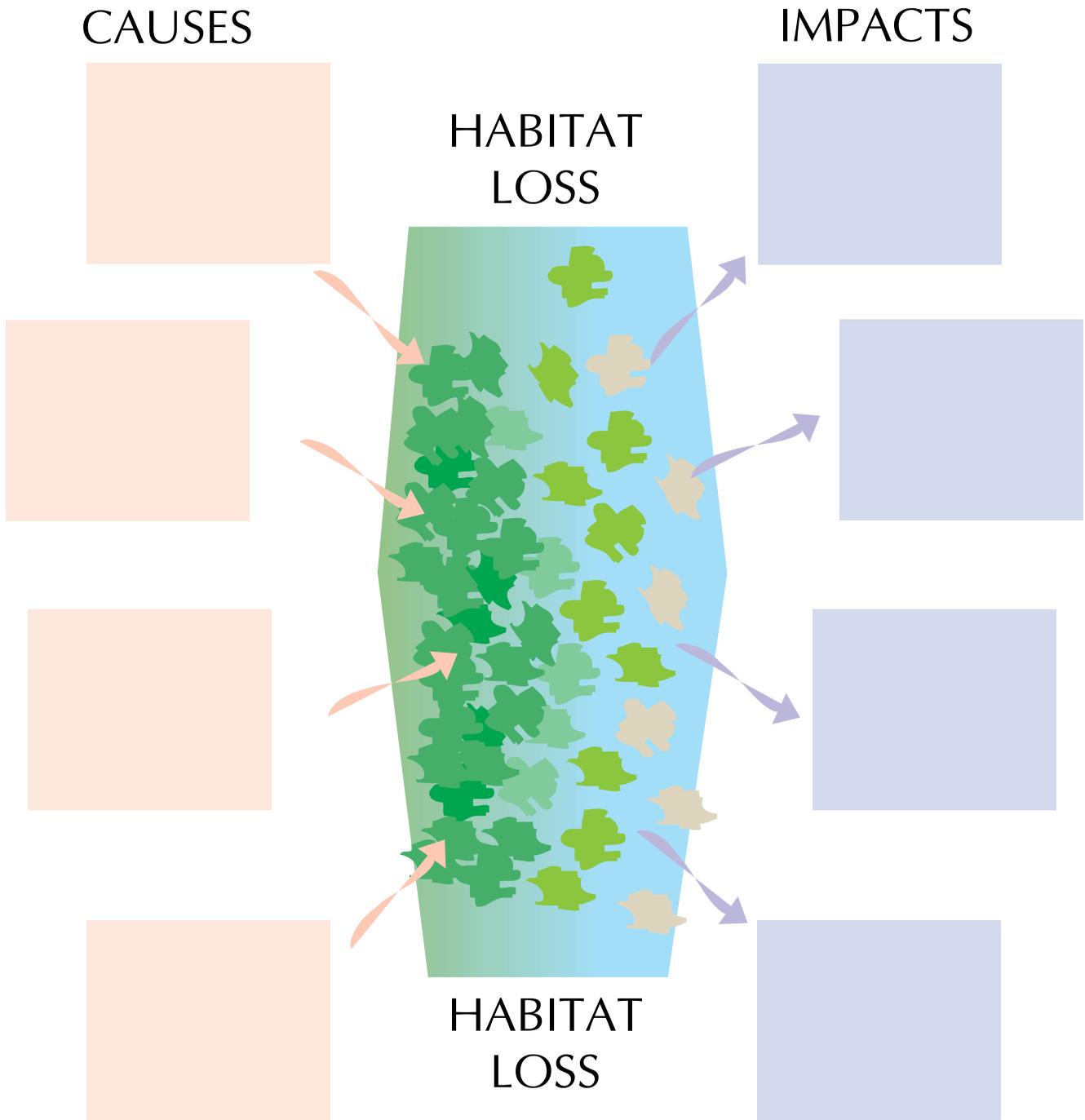
# HANDOUT:

## WETLANDS: FUNCTIONS AND VALUES

FUNCTION	DESCRIPTION OF FUNCTION	VALUE
Wildlife and Plant Habitat		
Commercial Fishing		
Water Quality		
Hurricane/Flood Protection		
Groundwater Recharge		
Aesthetics and Recreation		
Cultural Values		

HANDOUT:

WETLANDS LOSS: CAUSES AND IMPACTS



# RESOURCES

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## WEB SITES

America's Wetland Campaign  
[www.americaswetland.com](http://www.americaswetland.com)

Lake Pontchartrain Basin Foundation  
[www.saveourlake.org](http://www.saveourlake.org)

BTNEP Materials: All materials are free of charge. Some items have digital versions that you can download directly from BTNEP Estuary Education Resources.

<http://www.btnep.org/home.asp>

Other items may be obtained by contacting:

Barataria-Terrebonne National Estuary Program Office

Nicholls State University Campus

P.O. Box 2663

Thibodaux, LA 70310

1-800-259-0869

BTNEP Priority Problem Poster One: *Hydrologic Modification*

BTNEP Priority Problem Poster Two: *Sediment Availability*

BTNEP Priority Problem Poster Three: *Habitat Loss and Modification*

BTNEP Priority Problem Poster Four: *Changes in Living Resources*

Satellite image of the Barataria-Terrebonne Estuary

Video: *Rescuing the Treasure*

## BOOKS

Moore, D.M., & Rivers, R.D. (1996). *The Estuary Compact: A public-private promise to work together to save the Barataria-Terrebonne Basins*, CCMP-Part 2. Thibodaux, La: Barataria-Terrebonne National Estuary Program



# PRESERVING OUR WETLANDS: HOW TO DESIGN A BUMPER STICKER



## Setting The Stage

Look closely in front of you as you sit in a traffic jam. What do you see? You probably see a lot of messages on the bumpers of vehicles. Bumper stickers are everywhere! Whether the messages intend to inform, persuade, entertain, or complain, people read them.

This “how to” lesson on designing bumper stickers will give your students a purpose for using the information they have learned about the wetlands. It will challenge them to use their creative, divergent, and productive thinking skills as they research, brainstorm, analyze and create. But, most importantly, it will serve as a catalyst for students to remind themselves and others of the need to preserve our wetlands.

## MATERIALS

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- paper and pencil
  - crayons
  - permanent markers
  - contact paper (white)
  - scissors
  - reproducible worksheets, Handouts (pp.12-17)
- \*Optional:
    - stencils
    - solid colored contact paper

## GETTING READY

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1. Review all the reproducible worksheets for this lesson.  
(The worksheets are designed to guide you through the lesson.)  
Handout: *You're the Artist!* (p.12)  
Handout: *Bumper Research* (p.13)  
Handout: *Bumper Brainstorm* (p.14)  
Handout: *Bumper Decision Making* (p.15)  
Handout: *Bumper Message* (p.16)  
Handout: *Time to Design* (p. 17)



2. Duplicate the reproducible worksheets.
3. Have all materials/supplies readily available.
4. Display a collection of commercial art books in your classroom.
5. Collect samples/photographs of bumper stickers.

## PROCESS

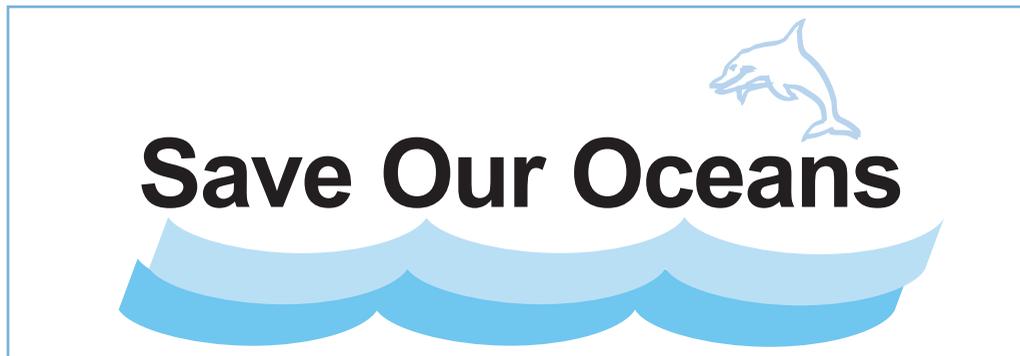
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1. Bring in samples or photographs of bumper stickers to share with your students. Discuss the intent of each bumper sticker. Discuss the use of color, type of font, size of message and use of images. Allow students to critique the stickers and rank order them from the ones they like the most to the ones they like the least.
2. Ask students to share messages they have read on bumper stickers. (Billboard messages are like giant bumper stickers. You can discuss them, too.)
3. Conduct a class or school-wide survey to find out how many people have bumper stickers on their cars.
4. Ask students to research the topic of “commercial art,” using printed materials as well as the Internet. Invite a commercial artist to speak to your students about his/her job.
5. Determine if someone needs to teach special skills such as calligraphy.
6. Review each worksheet with your students. Lead them through the activities. Some worksheets can be assigned for homework. (It should take approximately one week to complete this lesson.)
7. Have a design contest. Ask a school business partner to help you to print the winning bumper sticker(s).
8. Distribute to all students and members of the community.

## EXTENSIONS

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1. Take a walk with your family down your street to see the bumper stickers on cars. Read them and discuss their intent.
2. Visit the local library and check out books about commercial art.
3. Have the whole family design bumper stickers about the wetlands for their bicycles, cars, trucks or other mobile vehicles.
4. Subscribe to The Izaak Walton League of America's newsletter *Wetland Sights and Sounds* by e-mailing: [join-friends@list.iwla.org](mailto:join-friends@list.iwla.org)





## HANDOUT:

## YOU'RE THE ARTIST!

### Scenario:

You are a commercial artist at one of the most prestigious advertising firms in the city. You have designed award-winning billboards and bumper stickers. Your avocation, however, is environmental education. You are deeply concerned over reports such as the one from the U. S. Fish & Wildlife Service indicating a loss of over 60 acres of wetlands an hour in the United States between the 1780s and the 1980s. Therefore you volunteer to spearhead a campaign to notify the public through the use of bumper sticker messages why they need to preserve the wetlands. You have one week to complete this task.

Use the spaces below to illustrate your two best ideas. You might want to check out some books about commercial art for ideas.

### BUMPER STICKER PICTURE IDEAS:





# HANDOUT:

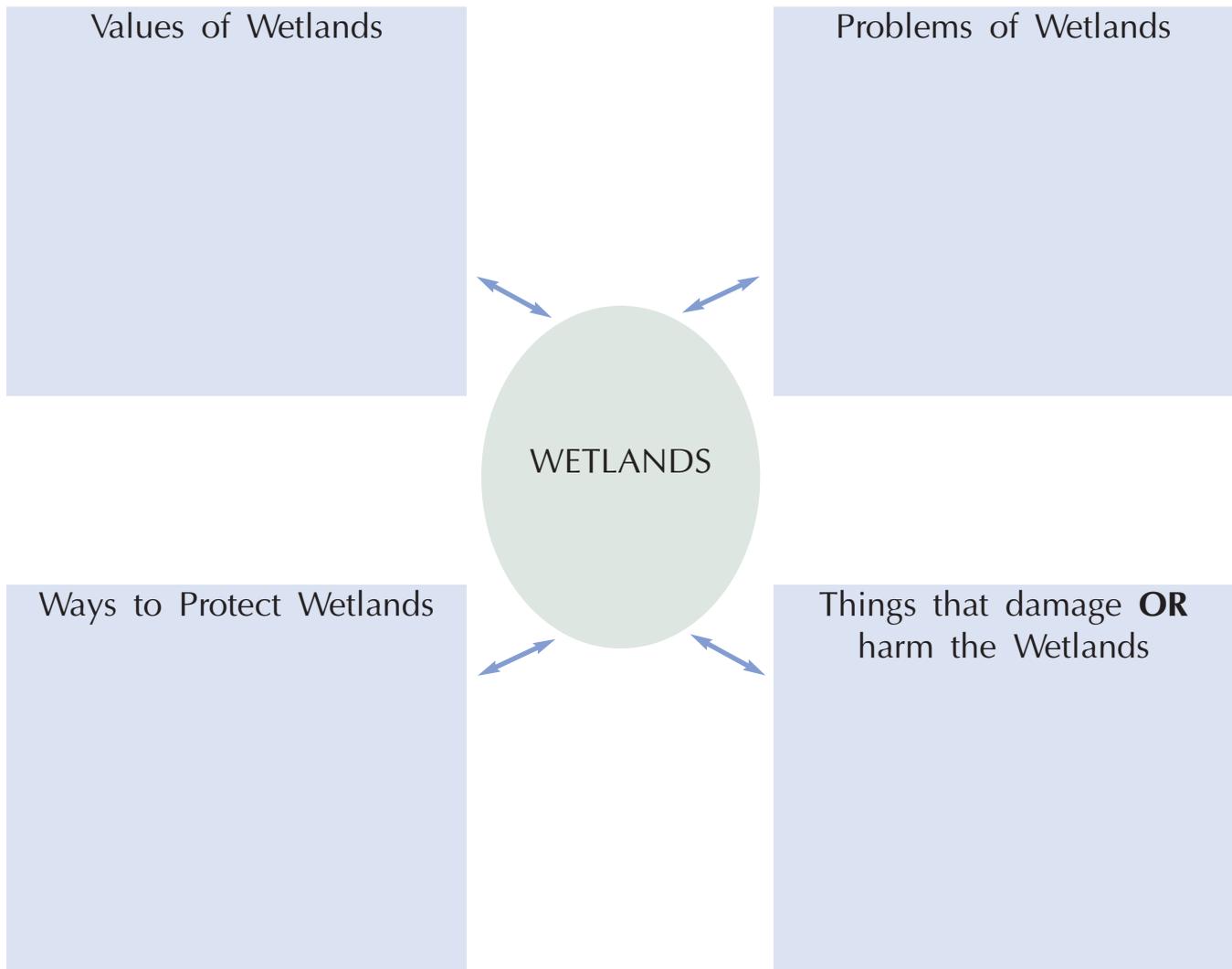
## BUMPER BRAINSTORM

Brainstorming is an important step in stimulating your creativity. Brainstorming means generating many ideas. In your small group, you must think quickly and come up with as many ideas as you can. For example, if you were to brainstorm a list of “sweet things,” you might think of sugar, candy, perfume, strawberries, Aunt Betsy, and so on.

The rules of brainstorming are:

1. Write down all responses.
2. Generate as many ideas as possible. Every idea is accepted and recorded.
3. Withhold judgment—both positive and negative.
4. Hitchhike or build upon the ideas of others.
5. Encourage “far out” or “wild” ideas.

Brainstorm key words and phrases around each of the following topics. Let your creativity flow!





## HANDOUT:

## BUMPER DECISION MAKING

Now is the time to make some decisions about your bumper sticker. First, read each question on this page. Spend some time thinking, allowing your ideas to “incubate.” Refer to your brainstorming worksheets for ideas. When you are ready, write your responses.

1. Who will be your primary audience? (Whom do you really want to read your bumper sticker?)

2. What aspect of the wetlands will you focus on?  
(Specific value or problem; what harms; what helps)

3. What is the reason for your bumper sticker?  
(Is it to inform someone about the wetlands or to persuade someone to do something about the wetlands? Is it to complain to someone about what is happening to the wetlands?)

4. What size bumper sticker do you want to design, and what size font will you use?

5. What colors will you use? (Three colors or less)

6. Will you use an image? If so, what image(s) will you incorporate into your design?



## HANDOUT:

## BUMPER MESSAGE

One of the most important steps in designing a bumper sticker is creating a simple and clever message. Your message should not be too long. You might want to write a command. You may choose to use rhyming words. Have fun with this step. Be creative! Write as many messages as you can.

Here are some examples:

**“Don’t trash the wetlands!”** (command)

**“For the wetlands: Be a Go Gitter. Don’t Litter.”** (rhyme)



(one word message)

### MAKE IT SPECIAL

After choosing your favorite wetlands message, you will need to consider a style of font (letter style). You can find samples of fonts in commercial art books in your public library or in your computer word processing program. You can draw your letters freehand or you may use stencils. Practice writing your message using different styles of letters. For example:

**Don't trash the wetlands!**

***DON'T TRASH THE WETLANDS!***

**DON'T TRASH THE WETLANDS!**

**Don't trash the wetlands!**

*Don't trash the wetlands!*

**DON'T TRASH THE WETLANDS!**

**Don't trash the wetlands!**



## HANDOUT:

## TIME TO DESIGN

After you decide upon your message and the font:

1. Practice drawing your bumper sticker message, using a rectangular shape. Use a ruler and draw the outline carefully.
2. If you decide to add graphics (images) to your bumper sticker, remember to keep them simple so that they do not compete with your message.
3. Think about the color of the background. Decide on the color(s) of your letters. Compare and contrast different combinations of colors before making a final decision. Use crayons to color your “practice” sticker.
4. When you are satisfied with your “practice” sticker, reproduce it on contact paper. Cut the contact paper to the size you need. Use permanent markers to color it.
5. Enter your bumper sticker into the contest! *Bonne Chance!*

