

The Hullabaloo of Writing a Journal— WET, WILD, and Provocatively Honest

Objectives

Students will:

- Write a series of journal entries related to wetland topics
- Share journal entries as time permits

Background/Setting the Stage:

Scientists and engineers are required to communicate their ideas, plans and experiments to a variety of audiences. Being able to effectively transfer information is an important job of any researcher. Wetland experts often connect with people through writing and correspondence. Being able to effectively exchange a few words may be one of the scientific investigator's most important jobs. By journaling, scientists gain worthy practice at writing while investing in the future.

It is important to learn how to write a journal for science. Besides serving as a way to organize thoughts, a journal provides a well-documented and detailed approach to understanding a problem or project. Journals also provide a way for people to share information, insight, and ideas. Journals foster learning in a variety of ways; a journal may be used to facilitate critical thinking, create a focused argument, or to assist in a reflection. Science and engineering writers who are actively engaged in a subject have an opportunity to clarify or to expose things they have been thinking about or ideas that may have been presented to them. Journals help scientists generate new ideas in a safe and secure environment. Journals may be used as a place to record procedures and/or observations. Journals can even be used throughout the day, at different times during the same day, or for different purposes. Journals are used to write about a variety of topics and help scientists improve their writing skills. But the most important part about keeping a journal is that any information that is written down may be useful or relevant in the future! A journal should be thought of as a savings account—a place to keep ideas and help them grow.

English

Materials

- ***Turning the Tide* film**—A documentary of the Louisiana Public Broadcasting
http://beta.lpb.org/index.php?/site/programs/turning_the_tide
- Land Area Change in Coastal Louisiana Map from 1932 to 2010
<http://pubs.usgs.gov/sim/3164/>
- Access to the Internet to view “What is CWPPRA?”
<http://lacoast.gov/new/default.aspx>
- Student Worksheets



Procedure

1. Prior to assigning the journal topics, watch the Louisiana Public Broadcasting documentary “*Turning the Tide*” found online at
<http://www.lpb.org/turningthetide>



2. Each day, for 4 days, provide the students with about 8 minutes to write their thoughts about the given wetlands journal topics.
3. Share journal entries as time permits on the 5th day.
4. Read the journal entries and make comments as time allows. Comment on students’ journal writings but do not grade for grammar. Offer suggestions, remarks or questions

while encouraging creative thinking. Remember, a journal should provide the student a safe place to think and write about science and engineering.

activity

Journal Topics

Day 1

What is your immediate reaction to the film *Turning the Tide*?

Do you think the Louisiana coastline is important to the United States? If so, why? If not, why not?

What harmful things have we done in the past, related to wetlands, that we could do differently now?

When you become a voting citizen, how will environmental issues such as the vanishing Louisiana coast and the urgent need to rebuild it affect your voting record?

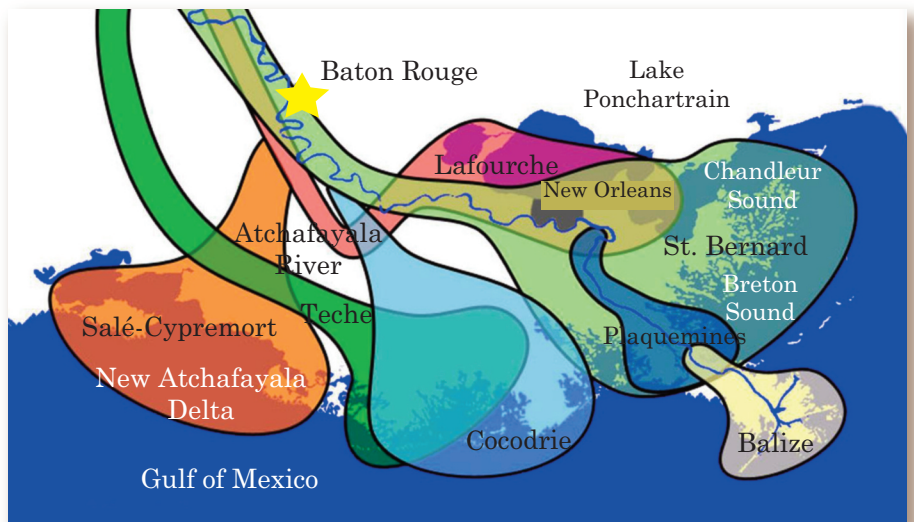
What do you think people don't know about Louisiana's coastal zone that would help them make better decisions?

Day 1

Using the maps below, explain how the land along the coast in Louisiana looked in the past.

Using the maps below, explain how the land along the coast in Louisiana looks today?

What do you think were the major causes for change?



activity

Journal Topics

Day 2

Do humans have any influence on land loss?



Fisherman (Photo Credit: USFWS)

How do humans have an affect on the land and water?

What have we done in the past related to wetlands that we could do differently now?

Day 2

Nature also has an influence on land loss. How does nature affect the estuary and land loss or land gain?



Fragile wetlands are readily damaged, directly and indirectly, by canals dredged for navigation and energy exploration. (Photo credit: USGS)

What can be done in the future to protect and preserve wetlands?



Volunteer helps to plant new marsh grass in the newly created wetlands. (Photo Credit: USFWS)



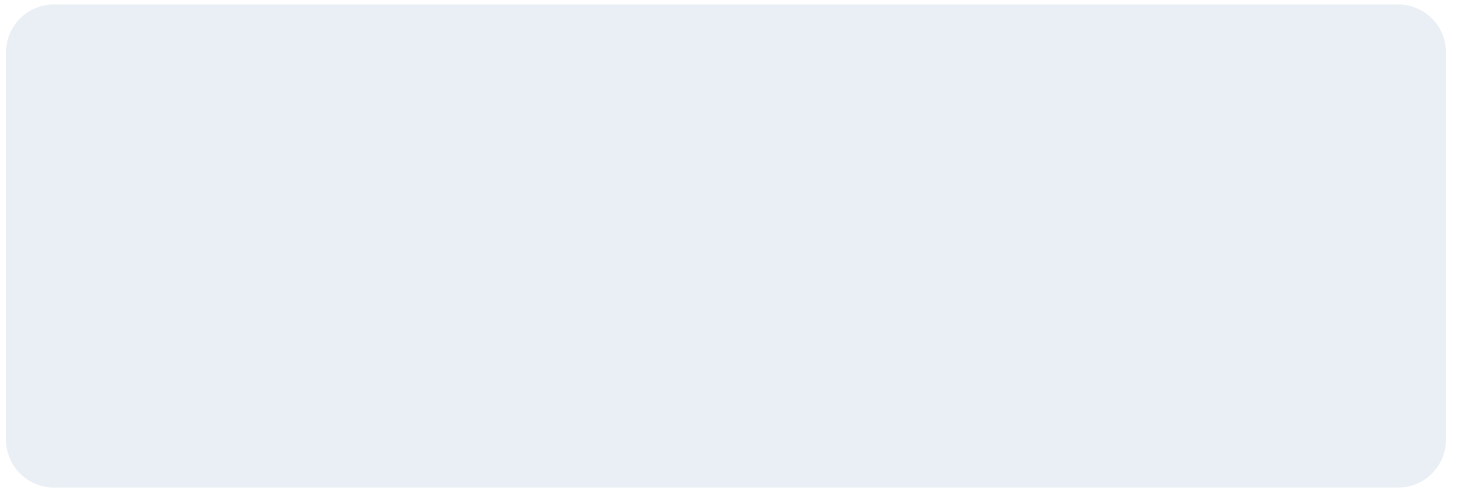
Levees along the Mississippi River (Photo Credit CWPPRA)

activity

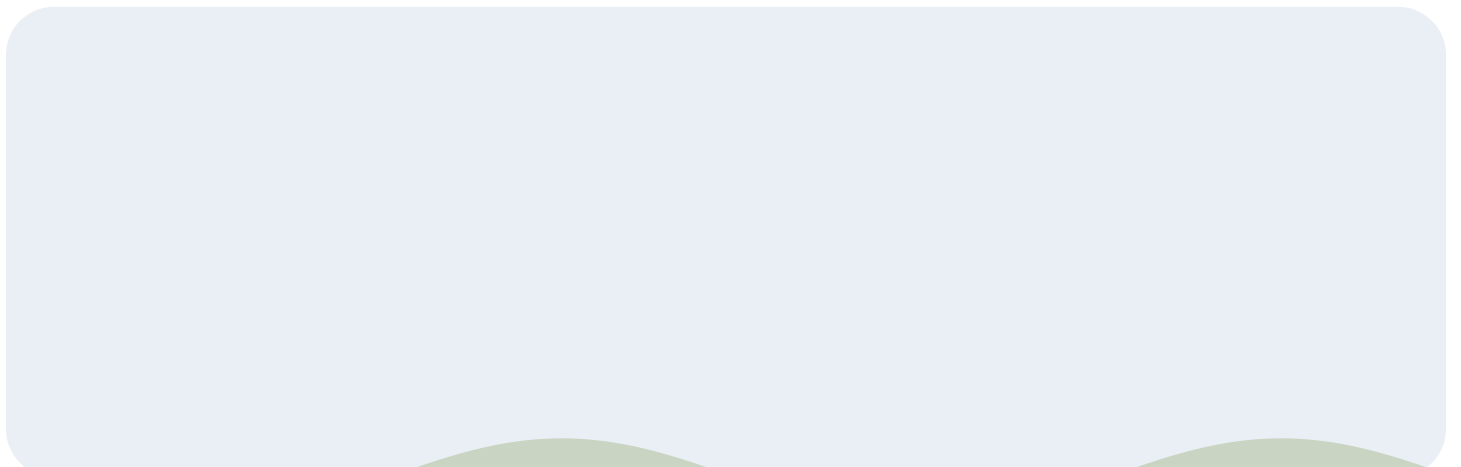
Journal Topics

Day 3

Using the map and data below, has coastal land loss happened in YOUR lifetime? What have you observed about land loss from your personal experience?

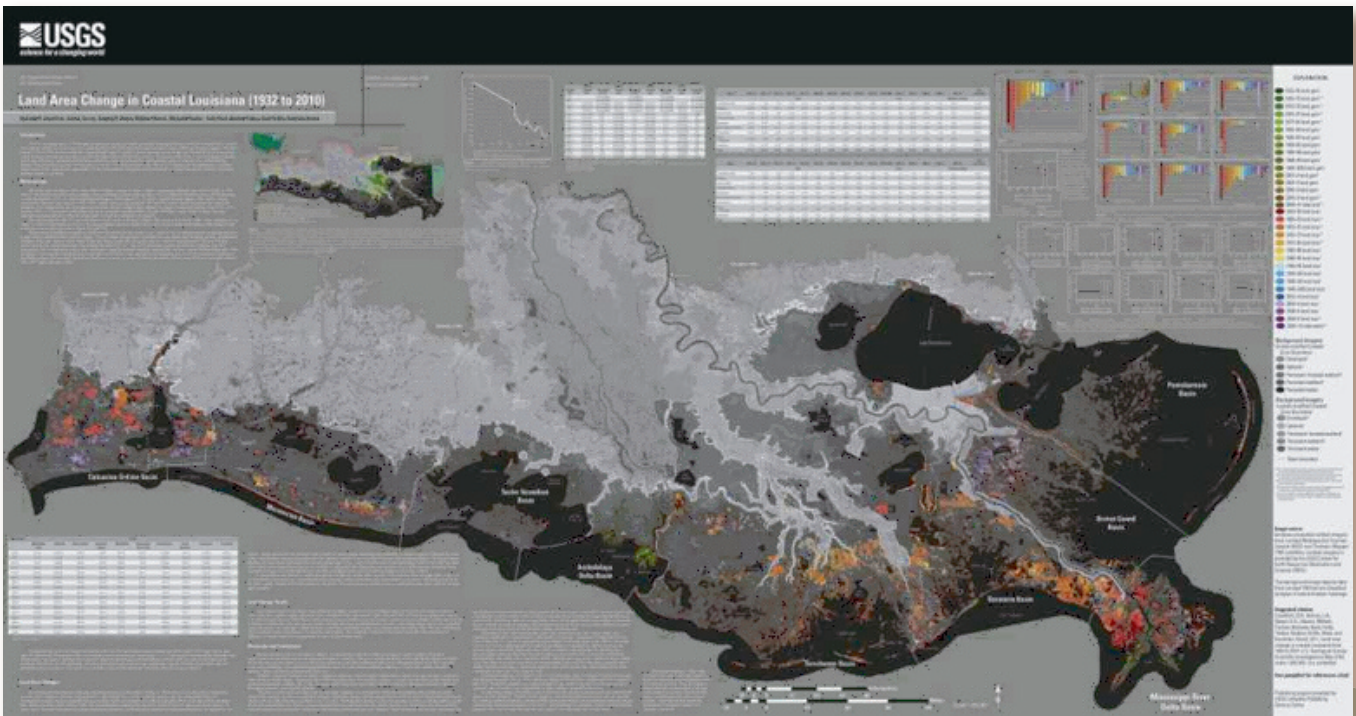


Using the map below, has coastal land loss happened in your PARENTS' generation? How much? How do you know?



Day 3

Using the map below, has coastal land loss happened in your GRANDPARENTS' generation? How much? How do you know?



Day 3

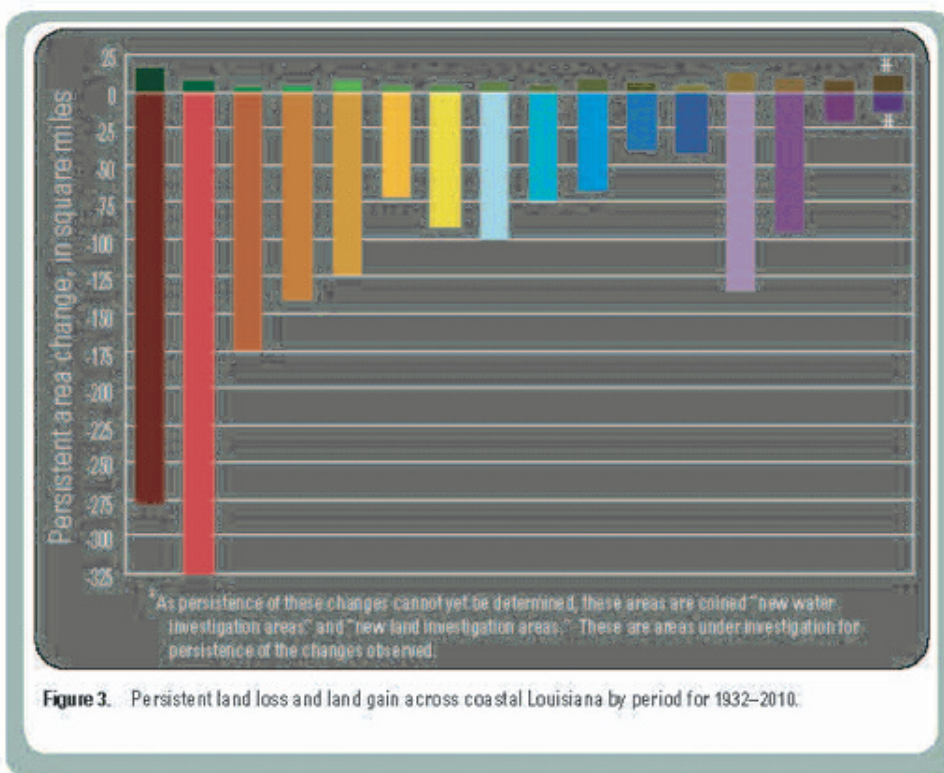


Figure 3. Persistent land loss and land gain across coastal Louisiana by period for 1932–2010.

EXPLANATION

- | | |
|------------------------------------|------------------------------------|
| ● 1932–56 land gain ¹ | ● 1932–56 land loss ² |
| ● 1956–73 land gain ^{1,4} | ● 1956–73 land loss ^{2,4} |
| ● 1973–75 land gain ^{1,4} | ● 1973–75 land loss ^{2,4} |
| ● 1975–77 land gain ^{1,4} | ● 1975–77 land loss ^{2,4} |
| ● 1977–85 land gain ^{1,4} | ● 1977–85 land loss ^{2,4} |
| ● 1985–88 land gain ¹ | ● 1985–88 land loss ² |
| ● 1988–90 land gain ¹ | ● 1988–90 land loss ² |
| ● 1990–95 land gain ¹ | ● 1990–95 land loss ² |
| ● 1995–98 land gain ¹ | ● 1995–98 land loss ² |
| ● 1998–99 land gain ¹ | ● 1998–99 land loss ² |
| ● 1999–2002 land gain ¹ | ● 1999–2002 land loss ² |
| ● 2002–4 land gain ¹ | ● 2002–4 land loss ² |
| ● 2004–6 land gain ¹ | ● 2004–6 land loss ² |
| ● 2006–8 land gain ¹ | ● 2006–8 land loss ² |
| ● 2008–9 land gain ^{1,3} | ● 2008–9 land loss ^{2,3} |
| ● 2009–10 new land ^{1,2} | ● 2009–10 new water ^{2,3} |

¹Gain is determined by the last date a particular pixel transitioned from water to land and remained land throughout the period of observation.
²Loss is determined by the last date a particular pixel transitioned from land to water and remained water throughout the period of observation.
³Because this date range has only one ending dataset, some of these effects may be temporary phenomena.
⁴This date range contains at least one date in which the land/water data were created from Landsat Multipectral Scanner System (MSS).

activity

Journal Topics

Day 4

What is coastal restoration? (Visit <http://lacoast.gov/new/default.aspx> and read “What is CWPPRA?”)

Why is it needed?

Who participates in coastal restoration?

Activities

Day 4

What kinds of projects are in your area?

How much does it cost to do coastal restoration? Is it enough now or do we need more?

What would you like to see done for coastal restoration? How can your ideas for restoration be funded?

Day 4

The CWPPRA Legislation

The Coastal Wetlands Planning, Protection and Restoration Act, (CWPPRA pronounced kwip-ruh), is federal legislation enacted in 1990, that is designed to identify, prepare, and fund construction of coastal wetlands restoration projects. Since its inception, 151 coastal restoration or protection projects have been authorized, benefiting over 110,000 acres in Louisiana. The legislation (Public Law 101-646, Title III CWPPRA) was approved by the U.S. Congress and signed into law by former President George H. W. Bush.



The United States Capitol in Washington D.C.
Public Domain Image from the Architect of the Capitol

The annual budget for CWPPRA-funded restoration has varied through the nearly twenty-year life span of the Act. The budget has ranged between approximately \$30 million per year to nearly \$80 million per year. The funded Louisiana projects provide for the long-term conservation of wetlands and dependent fish and wildlife populations with cost-effective plans for creating, restoring, protecting, or enhancing coastal wetlands.

Visit LACoast.gov on the Web to learn more about Louisiana's coastal restoration efforts.

<http://lacoast.gov/new/default.aspx>

Day 4

CWPPRA Restoration Techniques

CWPPRA project managers, scientists, and engineers use a variety of techniques to protect, enhance, or restore wetlands. Each restoration project may use one or more techniques to repair delicate wetlands. These techniques include:

- marsh creation and restoration
- shoreline protection
- hydrologic restoration
- beneficial use of dredged material
- terracing
- sediment trapping
- vegetative planting
- barrier island restoration
- bank stabilization

Below is an example of the restoration technique known as the beneficial use of dredged material:

CWPPRA Project BA-39 Mississippi River Sediment Delivery—Bayou Dupont



Sediment is used from the Mississippi River to rebuild wetlands in a new location. The red boat near the levee is pumping sediment to the fragile wetlands in top left of the image. The sediment is then used to rebuild marsh that had turned to open water, creating new wetlands.

Since its inception, 148 coastal restoration or protection projects have been authorized, benefiting over 112,000 acres in Louisiana. To view the list of projects and learn more about individual projects visit our project page.



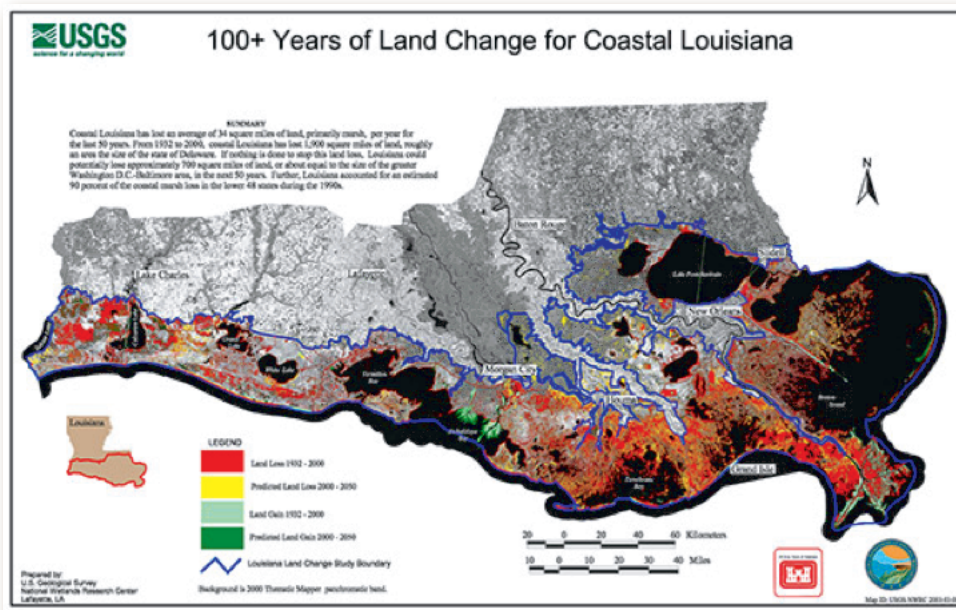
The sediment from the river is delivered from the river to then newly created marshlands.

Day 4

Why Protect Louisiana Wetlands?

Louisiana wetlands are unique and vital ecological assets worth saving. Wetlands act as a storm buffer against hurricanes and storms. They act as flood control devices: holding excess floodwaters during high rainfall (much like a sponge). Wetlands replenish aquifers, and they purify water by filtering out pollutants and absorbing nutrients. CWPPRA funds have been instrumental in helping to restore Louisiana's vanishing wetlands.

Approximately 40 percent of the coastal wetlands of the lower forty-eight states are located in Louisiana. Unfortunately, this fragile environment is disappearing at an alarming rate. Louisiana has lost up to 40 square miles of marsh per year for several decades—that's 80 percent of the nation's annual coastal wetland loss. To date, Louisiana has already lost coastal land area equal to the size of the state of Delaware. This loss is at an average rate of an acre every 38 minutes. If the current rate of loss is not slowed by the year 2040, an additional 800,000 acres of wetlands will disappear, and the Louisiana shoreline will advance inland as much as 33 miles in some areas.



Wetlands also provide habitat for a variety of wildlife. Coastal Louisiana lands are the breeding grounds and nurseries for thousands of species of aquatic life, land animals, and birds of all kinds—including our national symbol, the bald eagle. This ecosystem also provides a migratory habitat for over five million waterfowl each year.

Day 4

People also benefit from Louisiana's coastal lands. Louisiana is responsible for a major part of our nation's oil and gas production, shipping commerce, fisheries industry, fur harvesting, and oyster production, accounting for over 55,000 jobs and billions of dollars in revenues. Additionally, wetlands are wonderful recreational resources and are part of Louisiana's growing ecotourism business. To learn more about the economic value of our wetlands, read *"The Cost of Doing Nothing"* in WaterMarks (Summer 1999).



Example of a shrimp harvest (Photo courtesy of BTNEP)

Although current funding levels do not support all of the necessary restoration required for a sustainable ecosystem, CWPPRA continues to address immediate restoration needs while establishing a foundation of strong science, public participation, and agency cooperation that will continue to serve as the cornerstone of future programs.

Assessments

Comment on students' journal writings but do not grade for grammar. Offer suggestions, remarks or questions while encouraging creative thinking.

GLE's

Resources and Resource Management

Identify the factors that affect sustainable development (SEH- B6)

Personal Choices and Responsible Actions

Analyze the risk-benefit ratio for selected environmental situations (SE-H-C4)

Environmental Awareness and Protection

Describe how accountability toward the environment affects sustainability (SE-H-D5)

Resources

The Coastal Wetlands Planning, Protection and Restoration Act Web Resources
www.LAcoast.gov

The U.S. Geological Survey National Wetlands Research Center
www.nwrc.usgs.gov/

Land Area Change in Coastal Louisiana from 1932 to 2010 (June 2011) The analyses of landscape change presented in this report use historical surveys, aerial data, and satellite data to track landscape changes. Summary data are presented for 1932–2010; trend data are presented for 1985–2010.

<http://pubs.usgs.gov/sim/3164/>

Lesson Source

CWPPRA Public Outreach Committee

Extension Activity

Use the BTNEP lesson from *Spirit of the Estuary* Section 3
Lesson Six:

Estuary Extra—**PRODUCING YOUR OWN ENVIRONMENTAL NEWSPAPER**

