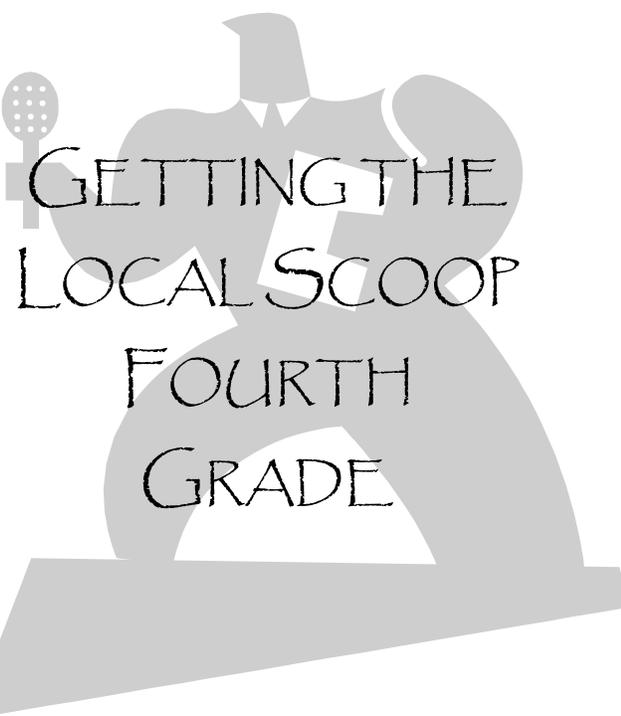


APALACHICOLA RIVER AND BAY WATERSHED EXPLORATIONS

Apalachicola National Estuarine Research Reserve



Apalachicola National Estuarine Research Reserve
Florida Department of Environmental Protection
261 7th Street
Apalachicola, FL 32320
850-653-8063

June 2004

ACKNOWLEDGMENTS

Apalachicola River and Bay Watershed Explorations is a cooperative project between the Friends of the Reserve, Inc. and the Apalachicola National Estuarine Research Reserve. Financial support for this publication was provided by the Florida Department of Environmental Protection and a grant under the Federal Coastal Zone Management Act, administered by the Office of Ocean and Coastal Resource Management, National Oceanic and Atmospheric Administration, Silver Spring, MD.

Project director: Erik Lovstrand, Education Coordinator, Apalachicola National Estuarine Research Reserve with assistance from Lisa Bailey, Reserve Education Specialist

Curriculum writing and design: Lauren Tyler, Christine Denny, and Susan Marynowski- Pandion Systems, Inc.

We appreciate the assistance of several Franklin and Gulf County, Florida teachers in planning this curriculum. Their input and feedback was an integral part of the design process.

Thank you to:

JoAnn Ardire, Polly Edmiston, Fay Henderson, Teresa Howard, Andrea Keuchel, Diane McGrath, LeeAnne Poloronis, Pam Schaffer, Gina Taranto, and Carol Weyrich

For more information or to obtain a copy of this curriculum contact:

Erik Lovstrand, Education Coordinator
Apalachicola National Estuarine Research Reserve

Erik.Lovstrand@dep.state.fl.us

261 7th Street
Apalachicola, FL 32320
850-653-8063





GETTING THE LOCAL SCOOP

CONCEPT

Students interview local professionals to learn how their jobs depend on the Apalachicola River watershed.

OBJECTIVES

1. Students will learn the process for writing a composition.
2. Students will be able to identify at least three jobs that depend on the watershed.
3. Students will be able to discuss the history of one type of job that depends on the watershed.

METHOD

Students will conduct interviews and write a composition about someone whose job is tied to the Apalachicola River watershed.

Grade level: 4th Grade

Subjects: Science, Social Studies, and Language Arts

Location: This activity is completed in the classroom and in the local community

Materials: Module components

Duration: Two class periods

Sunshine State Standards: Listed on p. 9 of the activity

PREPARATION ACTIVITIES:

Give students articles from the Module that are written about various people and their careers. Students will read the article and answer the following questions:

- WHO is this person?
- WHAT does this person do?
- WHERE do they do this job?
- WHEN do they do this job?
- HOW do they go about doing their job each day?
- WHY did they decide to pursue this line of work?



Students should record their observations from the reading assignment. Afterwards, the whole class can come together and talk about the articles that they read. Ask the students to talk about what they liked and what they didn't like about the articles. Ask the students to write down any questions that were not answered in the article that a reader may have wanted to know. Have some of the students share their unanswered questions with the class and encourage the other students to take notes. This exercise will help students to identify the types of information that they will want to include in the articles that they are going to create during this activity.

GETTING READY:

Teachers may want to develop a list of people for students to interview, or teachers can work with the class to develop a list of potential subjects for the project. If possible the teacher may contact some of the people on the list to let them know that their students are working on this project. Some of the students may be able to interview their parents, family friends, or neighbors for the project.



The students' assignment is to go and interview someone whose job is dependent on the Apalachicola River watershed. Students should take notes during the interviews so they can refer back to them when they write their article. A tape recorder is also a good interview tool if available.

4. After they conduct their interview, the students will bring their notes back to class.

ACTIVITY:

CLASS 1

1. Discuss the activity with students.
Explain that they are going to be reporters and will be interviewing a member of their community who has a job that is dependent on the Apalachicola River watershed.
2. Have the class come up with a set of questions to ask their subjects based on what they learned from the article review activity. The teacher can guide this discussion to make sure that the questions will address the needs of the activity. The result will be a set of questions that is used by all students so that the interviews are consistent. Make sure that the students include some of the unanswered questions that they identified during the article review activity. See the "Suggested Questions" section in this activity for assistance.
3. Each student will take the list of questions and use them as a framework for their interviews.

CLASS 2

1. When the students bring their notes back to class, they will individually review their notes and assemble them into an outline for their article. If the subject has not yet been introduced, the teacher may want to discuss the form and structure of a basic news composition.
2. Students are then put in pairs to help each other transform their interviews into a rough draft news story. For the first half of the time, one student helps the other organize their story into a beginning, middle, and end and to ensure that all of the desired questions have been answered. In the second half of the time, they will work on the other student's composition.
3. Students will develop a final draft of their news article at home or during another class period.

FOLLOW-UP:

With the students' help, collect all of the news articles and assemble a newspaper or newsletter out of all or

some of the articles. Make copies for all of the students. You may also want to make copies for the students to share with the interview subjects or other community or school members. Ask the students to read the newspaper for homework and answer these questions:

1. Which jobs were you unfamiliar with before this class project? Pick one of these unfamiliar careers and write a few sentences about how that job depends on the Apalachicola River watershed.
2. What role does the health of the Apalachicola River watershed play in the job that you described in Question 1? If the watershed were to become unhealthy, what might happen to that job? What do you think can be done in the Apalachicola watershed to make both the job and the watershed more sustainable?
3. Do any of the jobs depend on other jobs? For example, an oyster harvester and a restaurant owner depend on each other. Pick a different example and describe the two jobs that depend on each other and describe how they work together. Do the two jobs benefit from each other?

ASSESSMENT:

The teacher will review the student articles to make sure they address the following:

1. The student writes a “who, what, where, when, how, why” description of the job and the person doing it.
2. The student writes about the historical aspect of the job.

3. The student writes about the current state of the industry/job.
4. The student writes at least three other interesting facts.

If necessary or beneficial, the teacher may want to return the articles to the students for corrections or changes, emphasizing that the process of editing and rewriting is a part of the process of developing a strong composition.

POST ACTIVITIES:

- *Water We Eating?* Aquatic Wild.

RESOURCES:

- “How to Write a News Article,” *Equality Today!*
<http://www.equalitytoday.org/editon7/newsart.html>
- *Lesson Plan: Writing a Newspaper Article*, Media Awareness Network
http://www.media-awareness.ca/english/resources/educational/lessons/secondary/broadcast_news/writing_newspaper_article.cfm
- *Teachers Guide to News Writing*, Scholastic, Inc.
<http://teacher.scholastic.com/writewit/news/tguide.htm>
- *How to Interview*, Scholastic, Inc.
<http://teacher.scholastic.com/activities/wwii/memory/interview.htm>
This site focuses on WWII, but gives a great description of the interview process.
- County Profiles at Enterprise Florida: Click on “Florida’s Regions” and “County Data” to view profiles of industries, jobs, and other facts for individual counties in Florida:
<http://www.eflorida.com/>



BACKGROUND READING FOR GETTING THE LOCAL SCOOP

The Apalachicola River **watershed** provides people with a place to live, recreation opportunities, plentiful natural resources, and jobs. Many of these jobs depend on the natural resources of the Apalachicola River **watershed** and **estuary**. In this story, when we say “the Apalachicola coastal region,” we mean Gulf, Franklin, Liberty, and Wakulla Counties.

Much like the Florida economy, the largest **industry** sectors in the Apalachicola coastal region are manufacturing, services, finance, government, and construction. **Industry** is another way of saying “business.” Industry is an important part of the community because it provides opportunities for people to have satisfying jobs and earn money to support their families.

The Apalachicola coastal region is special because it has a higher proportion of jobs in industries related to fisheries and tourism, both of which are based on **natural resources**.

For example, oyster and shrimp harvesting operations in the Apalachicola coastal region are estimated to land an average of 7.3 million pounds of seafood each year, with an average annual value of \$12.2 million dollars. The majority of Florida oyster production (96%) occurs in the Apalachicola coastal region. The industry of harvesting, processing, and selling seafood is an important economic activity in the region.



A Shrimp Trawler

Recreation is also an important activity in the region. It is estimated that 154,000 people visit the Apalachicola coastal region each year for fishing, hunting, or wildlife viewing. Some local recreation and tourism industries include hotels, restaurants, campgrounds, parks, hunting areas, and water sports. Saltwater fishing is the most important activity, accounting for 86% of recreational dollars.

Recreational activities generate over \$370 million in retail trade and economic output and support over 3,360 jobs in the trade and services sectors in the region. All of these retail trade and services jobs depend on the natural resources of the Apalachicola River watershed.



BACKGROUND READING CONTINUED

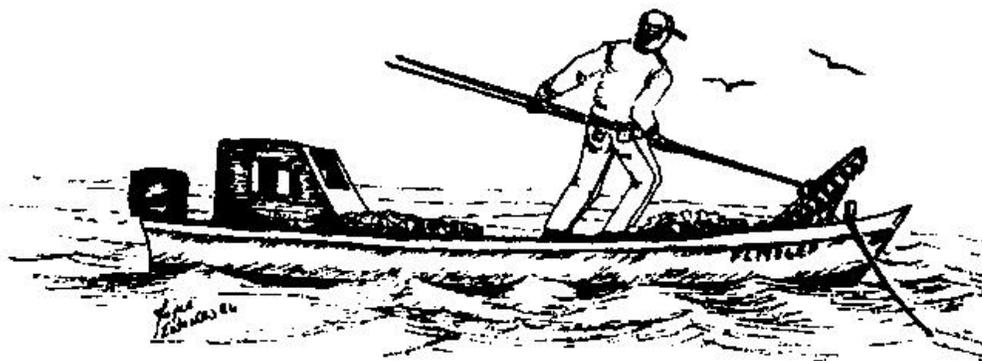
GETTING THE LOCAL SCOOP

In order for these jobs related to fisheries and recreation to continue, human and environmental needs must be managed in a **sustainable** manner to protect the natural resources for future use. If the natural resources get used up or damaged, it can have bad effects on the environment and on the future economy of the Apalachicola coastal region. In other words, if the natural resources get used up, there will be fewer jobs in the future for the people of the Apalachicola coastal region.

When people live, work, and play in the outdoors, there is the possibility of impacts or damage to the natural resources. Scientists study human impacts on the Apalachicola River watershed and work to maintain a balance between human and environmental needs. Scientists are tasked with the job of monitoring the environment and alerting people when they see a potential problem from human impacts.

One potential human impact in the Apalachicola River watershed is over harvesting of oysters or shrimp or over fishing of saltwater fish. Fisheries operations must be careful to take enough shellfish or fish to earn money, but not so many shellfish or fish that the populations are depleted. Some shellfish and fish must be left to reproduce for future years.

Another potential human impact is on the water quality in the Apalachicola River watershed. Stormwater runoff often includes silt from agricultural or forestry activities, wastes or pesticides from farming operations, chemical wastes from manufacturing operations, or fertilizers and cleansers from your yard and home. If excessive wastes and fertilizers get into the watershed, they can result in **eutrophication**. Eutrophication can result in cloudy water and dead fish, as algae grow and use up the oxygen in the water.



An Oysterman

Boating can also cause problems for river and marine life, boaters who aren't careful can damage **submerged aquatic vegetation**, like sea grasses. Anchors and boat propellers damage these grasses by causing **prop scars**. Sea grass beds are like underwater forests; they provide food and homes for many other organisms. Scientists monitor all of these systems to try to find a balance of **sustainable** human use of the Apalachicola watershed.

See if you can find the fisheries, trade, and services sectors on the accompanying table. For a comparison, look at the percent of jobs in fisheries in the Apalachicola region as compared to the entire state of Florida. Here you can see some of the differences that make the Apalachicola region unique.

Table 1 Employment by Industry Group for the Apalachicola Region (Gulf, Franklin, Liberty, and Wakulla Counties) in 1999

Industry Group	Total Jobs in Apalachicola Region, 1999	Percent of Jobs in Apalachicola Region, 1999	Percent of Jobs in Florida, 2002
Agriculture, Forestry & Fisheries	1,244	7.2 %	1.5 %
Construction	1,668	9.6 %	6.2 %
Manufacturing	963	5.6 %	5.7 %
Transportation, Communications Public Utilities	638	3.7 %	7.9 %
Trade (Wholesale, Retail)	3,321	19.2 %	28.1 %
Finance, Insurance, Real Estate	1,175	6.8 %	6.5 %
Services (Education, Healthcare, Tourism)	4,198	24.2 %	28.2 %
Government	3,936	22.7 %	6.1 %
Other	192	1.0 %	N/A
Total Number of Jobs	17,335		7,163,458

VOCABULARY

Watershed: The land area that drains water into a river system or other body of water. The Apalachicola watershed extends up into the states of Georgia and Alabama. See the Apalachicola watershed map to see the extent of the watershed.

Estuary: The wide part of a river where it meets the sea, where tidal action and river flow create a mixing of fresh and salt water. The Apalachicola Bay is the estuary where the Apalachicola River meets the Gulf of Mexico.

Industry: Any category of business activity or commercial enterprise, such as fisheries, manufacturing, trade, services, government, or construction.

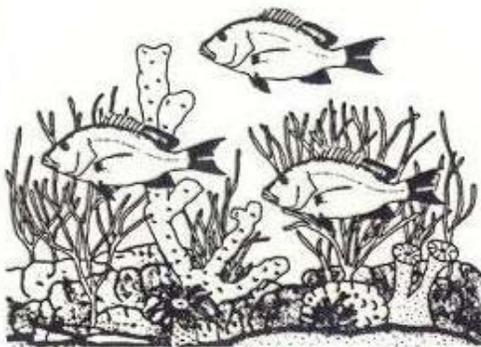
Natural Resources: Materials that occur in nature and are essential or useful to humans, such as water, air, land, forests, fish and wildlife, soil, and minerals.

Sustainable: A method of using or harvesting a resource so that the resource is not depleted or damaged. When talking about human activities, “sustainable” refers to a human activity that can be maintained over the long term, without negatively affecting the environmental conditions (soil conditions, water quality, climate) necessary to support the same activity in the future.

Eutrophication: The collection of nutrients in rivers and other water bodies, causing rapid algae growth, which uses up oxygen in the water.

Submerged aquatic vegetation: Plants that live and reproduce completely underwater.

Prop scar: A short phrase for “propeller scar,” it is areas in lakes, rivers, or saltwater communities that have bare sediment exposed due to boat propellers damaging submerged aquatic vegetation (sea grasses).



SUNSHINE STATE STANDARDS ACTIVITY CORRELATIONS

Science

How Living Things Interact with Their Environment

Standard 1: The student understands the competitive, interdependent, cyclic nature of living things in the environment. (SC.G.1.2)

- SC.G.1.2.1 knows ways that plants, animals, and protists interact.
- SC.G.1.2.2 knows that living things compete in a climatic region with other living things and that structural adaptations make them fit for an environment.
- SC.G.1.2.3 knows that green plants use carbon dioxide, water, and sunlight energy to turn minerals and nutrients into food for growth, maintenance, and reproduction.

Social Studies

Time, Continuity, and Change [History]

Standard 6: the student understands the history of Florida and its people. (SS.A.6.2)

- SS.A.6.2.3 knows the significant individuals, events, and social, political, and economic characteristics of different periods in Florida's history.
- SS.A.6.2.4 understands the perspectives of diverse cultural, ethnic, and economic groups with regard to past and current events in Florida's history.
- SS.A.6.2.5 knows how various cultures contributed to the unique social, cultural, economic, and political features of Florida.

People, Places, and Environments [Geography]

Standard 2: The student understands the interactions of people and the physical environment. (SS.B.2.2)

- SS.B.2.2.1 understands why certain areas of the world are more densely populated than others.
- SS.B.2.2.2 understands how the physical environment supports and constrains human activities.
- SS.B.2.2.3 understands how human activity affects the physical environment.
- SS.B.2.2.4 understands how factors such as population growth, human migration, improved methods of transportation and communication, and economic development affect the use and conservation of natural resources.



Economics

Standard 1: The student understands how scarcity requires individuals and institutions to make choices about how to use resources. (SS.D.1.2)

- SS.D.1.2.1 understands that all decisions involve opportunity costs and that making effective decisions involves considering the costs and the benefits associated with alternative choices.
- SS.D.1.2.2 understands that scarcity of resources requires choices on many levels, from individual to societal.
- SS.D.1.2.4 understands that any consumer (e.g., an individual, household, or a government) has certain rights.

Language Arts

Writing

Standard 1: The student uses writing processes effectively. (LA.B.1.2.)

- LA.B.1.2.1 prepares for writing by recording thoughts, focusing on central idea, grouping related ideas, and identifying the purpose for writing.
- LA.B.1.2.2 Drafts and revises writing in cursive that: focuses on the topic; has logical organizational pattern, including a beginning, middle, conclusion, and transitional devices; has ample development of supporting ideas; demonstrates a sense of supporting ideas; demonstrates a sense of completeness or wholeness; demonstrates a command of language including precision in word choice; generally has correct subject/verb agreement; generally has correct verb and noun forms; with few exception, has sentences that are complete, expect when fragments are used purposefully; uses a variety of sentence structures; and generally follows the conventions of punctuation, capitalization, and spelling.
- LA.B.1.2.3 produces final documents that have been edited for: correct spelling; correct use of punctuation, including commas in series, dates, and addresses, correct capitalization of proper nouns; correct paragraph indentation; correct usage of subject/verb agreement, verb and noun forms, and sentence structure; and correct formatting according to instructions.

Standard 2” The student writes to communicate ideas and information effectively. (LA.B.2.2)

- LA.B.2.2.1 writes notes, comments, and observations that reflect comprehension of content and experiences from a variety of media.
- LA.B.2.2.2 organizes information using alphabetical and numerical systems.
- LA.B.2.2.3 writes for a variety of occasions, audiences, and purposes.



- LA.B.2.2.4 uses electronic technology, including word-processing software and electronic encyclopedias, to create, revise, retrieve, and verify information.
- LA.B.2.2.5 creates narratives in which ideas, details, and events are in logical order and are relevant to the story line.
- LA.B.2.2.6 creates expository responses in which ideas and details follow an organizational pattern and are relevant to the purpose.

Listening, Viewing, and Speaking

Standard 1: The student uses listening strategies effectively. (LA.C.1.2)

- LA.C.1.2.1 listens and responds to a variety of oral presentations, such as stories, poems, skits, songs, personal accounts, and informational speeches.
- LA.C.1.2.4 listens attentively to the speaker, including making eye contact and facing the speaker.
- LA.C.1.2.5 responds to speakers by asking questions, making contributions, and paraphrasing what is said.

