The Pelican Post

Weeks Bay Reserve Foundation
Newsletter
September 1994

Welcome to the official newsletter of the Weeks Bay Reserve Foundation. Articles of interest to bay watchers, wetland watchers, and others interested in the coast and in nature will be featured.

Weeks Bay Foundation Annual Membership Meeting October 15, 1994 • 9:30 a.m.

The annual meeting of the Weeks Bay Foundation will be on Saturday, October 15, at 9:30 a.m. The agenda items will include:

- Financial reports
- Review of the past year's activities and objectives for the coming year
- Election of officers and directors
- Change of date of annual meeting
- Revision of by-laws
- Other business

Refreshments will be served. Please come!

Guest Lecture Series

The Weeks Bay Reserve lecture series has been developed to explore the rich natural history of the Alabama Gulf Coast. Lectures are held at 7 p.m. on the second Thursday of each month at the Interpretive Center, 11300 U.S. Highway 98, Fairhope, Alabama. Come and enjoy refreshments, relax, and meet the evening's featured speaker. For more information, call 928-9792.

October 13, 1994	"Hurricanes" *Dr. Morgan C. Ballard*
November 10, 1994	"Jubilees" *Dr. John Pennock*
December 8, 1994	"Marine Conservation Enforcement" *Captain Dan Hughes*
January 12, 1995	"Sharks of the Gulf of Mexico" *Dr. Glenn Parsons*

Advisory Committee Update

The Weeks Bay Advisory Committee has completed a successful year under the leadership of Mr. Lloyd Scott. Some accomplishments during his term as chairman include the planning for the grand opening ceremony, securing media coverage, and helping obtain display specimens. He will continue to serve as a member of the Advisory Committee and add his dedication and special understanding of the coastal area to the group.

Mr. Steve Heath became chairman in July. He has been an active member for five years. We look forward to continued progress under his leadership.

The Advisory Committee meets quarterly and functions to provide assistance and guidance to the Reserve. Members are:

Mr. Steve Baker	Baldwin County Commission
Dr. John Borom	Faulkner State Community College
Dr. George Crozier	Marine Environmental Science Consortium
Mr. Lynn Greer	ADECA
Mr. Steve Heath	Marine Resources Division ADCNR
Dr. Don Hines	Weeks Bay Reserve Foundation
Dr. Bill Hoskings	Auburn Marine Extension Research Center
Mrs. Myrt Jones	Mobile Bay Audubon Society
Sen. Albert Lipscomb	Senate District 32
Rep. Walter Penry	House District 94
Mrs. Pat Powell	Baldwin County Board of Education
Mr. Lloyd Scott	Mobile County Environmental Studies Center
Mrs. Hattie Smith	South Baldwin Chamber of Commerce
Mr. Skipper Tonsmeire	Tonsmeire Corporation
Dr. Jesus Topaz	Mississippi-Alabama Sea Grant Consortium
Mr. Bill Tucker	Game and Fish Division ADCNR
Mr. John Williford	ADEM

"To care for the living earth is to care for ourselves."

Native Plant Sale

Everyone is asking, "Where can I buy these plants that you have in the butterfly/hummingbird garden?"

We say, "Come to the Weeks Bay Plant Sale!"

Place: Weeks Bay National Estuarine Research Reserve 11300 U.S. Highway 98 (west of Fish River Bridge) Fairhope, Alabama

Time: 8 a.m.—5 p.m., Saturday, September 17, 1994

A selection of native trees, shrubs, and perennials will be for sale, as well as some very nice butterfly- and hummingbird-attracting plants. Proceeds will be used to purchase native azaleas for the reserve.

If you would like to help with the plant sale or if you would like to purchase a particular plant, call MAUREEN NATION at 626-6816

Watershed Coordinator

The position of Weeks Bay Watershed Coordinator is available at the reserve. This is a professional position that will have the responsibility of coordinating the development and implementation of a long-term project management plan for the Weeks Bay watershed.

Responsibilities include educating the local population in watershed management. This employee will provide technical and financial assistance regarding non-point-source problems and assist in improving water quality by implementing education programs and best management practices.

The person who fills this position is expected to start on November 1, 1994. In addition to this new position, some technical equipment will also be provided to support management of the watershed. This will be a GIS (Geographical Information Services) system, which will computerize various informational aspects of the watershed. Aerial photographs, roads, hydrology, soil type, land use, and wetland areas are some of the types of information that the GIS system can "layer" in a computerized display or hard-copy map.

NPS Pollution

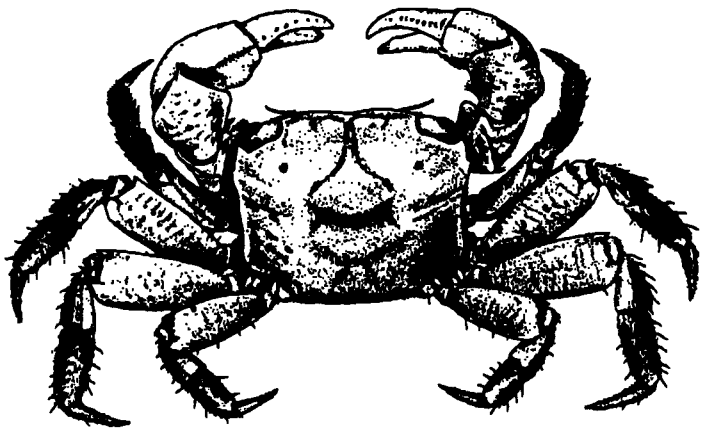
Many types of pollution would fall into the category of non-point-source pollution, but basically it would include everything other than "point-source pollution," that is, pollution coming out of a "pipe." NPS pollution would include runoff from large agricultural areas, construction sites, timber harvest areas, open dumps, mining, and urban areas. One type of pollution commonly seen in the Weeks Bay watershed is soil erosion, which muddies the water (turbidity), causing accelerated deposition of sediment and interfering with biological activity. There are many ways to slow or correct such a problem at the source. These methods are referred to as best management practices (BMP's) and might include low-till farming, grass strips along disturbed areas, or silt fences and hay bails at construction sites. Such BMP's are found in our watershed and are being incorporated into the educational programs at the Interpretive Center. Other, more unusual BMP's are being installed in some local areas; these would include "peat" septic systems and artificial "wetland" areas to treat waste.

Enviroscape

A hands-on demonstration model of NPS pollution is now available to Baldwin County teachers. This self-contained activity is currently being circulated to those teachers who have requested its use. The Enviroscape is a plastic molded three-dimensional model of a hypothetical city/rural area with various potential pollution problems. When it rains (spray water bottle), students can "see" fertilizer runoff (green Kool-Aid) and soil erosion (brown cocoa). After BMP's (such as carpet strips or clay berms) are put in place, students can see how management practices could work to reduce pollution and improve water quality.

What Is a Watershed?

A watershed can be defined as the land area from which water, sediment, and dissolved materials drain to a common watercourse. In a watershed, land and water are linked directly by the water cycle; thus watersheds represent a functional unit when considering how climate, plant cover, soil type, slope, geology, and human activity affect the quality and quantity of water runoff. Runoff and sedimentation come from a variety of sources, such as agriculture, urban construction, residential developments, and timber harvest. In this context, fertilizers, toxic materials, and animal wastes can be major non-point-source pollutants.



Purple Marsh Crab
Sesarma reticulatum

Purple Marsh Crab

The purple marsh crab *(Sesarma reticulatum)* is a small crab. The carapace (dorsal shell) is squarish, about one and one-eighth inch wide, with eyes close to the corners. Only adult males are purplish in color. It frequents the muddy bottoms of estuarine marshes and is especially common along the banks of tidal creeks. It constructs elaborate burrows with several openings, shallow interconnecting corridors, and vertical shafts that may reach over two feet in length. Burrows usually contain a male and several females. At low tide on sunny days, the crabs remain in or near the burrows but actively forage for food at high tide or on cloudy days. It feeds directly on living marsh plants and also eats fiddler crabs, algae, and detritus. Purple marsh crabs are consumed by some of the larger marsh predators, including rails, raccoons, and blue crabs.

Females with eggs attached to the abdomen are seen during the warmer months (April through September). The larval development involves three zoeal stages and one megalopal stage.

Water Quality Workshop

A water quality teacher training workshop was held at the reserve during the first week of August. Each teacher received a water quality test kit, which teachers will use with their classes to monitor creeks or bodies of water near their schools. Topics dealing with non-point-source (NPS) pollution and the Weeks Bay watershed were presented at the workshop, which served as the beginning of a program that will monitor water for many years to come.

Funding for the workshop was provided by a grant from the Environmental Protection Agency, being directed through the Alabama Department of Environmental Management (ADEM). The Auburn University Marine Extension and Research Center coordinated the cooperative agencies involved, which included Auburn's Department of Fisheries and Allied Aquacultures, as well as the Alabama Cooperative Extension Service, Alabama Department of Conservation and Natural Resources, Baldwin County Board of Education, Mobile County Board of Education, Environmental Studies Center (Mobile), Weeks Bay Reserve, and of course the Weeks Bay Foundation.

Charles Horn, Chief of ADEM's Water Division, defined his agency's role in dealing with the pollution problems of the state. Bill Davies and David Promis of Auburn Fisheries issued the water quality test kits and led the training session for the teachers. In addition, biological monitoring techniques were demonstrated, followed by interpretation of specimens as indicators of water quality. A watershed field trip was led by Ed Tunnell (County Extension Agent), giving participants a first-hand look at the areas that drain into Weeks Bay. This tour gave the teachers an understanding of the large size of the watershed and the diversity of land use in our area. Many of the sites visited were involved in agricultural use, but signs of other upcoming developments were noted.

Many other presentations and speakers helped to make this a most successful workshop. Participating teachers came from both public and private schools. All the teachers had favorable comments about the workshop, such as "This was the best workshop ever," "I enjoyed the hands-on activities that I can take back to the classroom," and "Thanks for all the materials, video, and test kit." Due to an overwhelming demand from teachers, a follow-up workshop has been planned for next year. This will involve more intensive field work, and it is hoped that such a workshop would result in training future trainers for water quality programs.

Monitoring Project

A water quality monitoring project is being initiated at the reserve which will include staff and volunteers. This project will be linked with the local "Baywatch" and statewide "Alabama Water Watch" programs. This project will involve both chemical and biological monitoring techniques. The goal of this project is to establish base data for the watershed. This will help in identifying trends that would be useful in making wise decisions for the future.

The chemical parameters selected are very basic and will provide information linked to various problems. The parameters tested for are temperature, turbidity, pH (acid level), dissolved oxygen, total alkalinity, and total hardness. Most tests are colorimetric; that is, they are based on adding chemical reagents to the water sample until a color change is produced. The amount of reagent used to produce the color change is then directly related to a quantitative measure of the parameter being tested for.

Biological assessment or bioassessment is the use of living organisms to tell us something about the environment. In the water quality project currently being initiated, the bioassessment will use a group of organisms that live on the bottom substrates of aquatic system called benthos

The Weeks Bay watershed is quite extensive, being drained by Fish and Magnolia Rivers. Many creeks and branches form subwatersheds that contribute to the overall functional unit. The Fish River drains water from as far north as Stapleton (approximately 18 miles north of Magnolia Springs). The average east-west width of the watershed extends approximately 10 miles (about the distance from Fairhope to Robertsdale). Of course there is no "regular" shape to the watershed, as it is determined by the natural sloping characteristics of the land. In some areas it is larger than other places; the largest east-west dimensions are found where the Magnolia River drains the Foley area to the east. A Weeks Bay watershed map is currently on display at the Interpretive Center.

Sweet Bay

Sweet bay *(Magnolia virginiana)* is common on sites that are poorly drained and occurs in the low, wet, swampy areas of the boardwalk nature trail. One tree about 60 feet in height can be seen about 100 yards from the telescope on the observation deck. Sweet bay holds its leaves over winter and sheds them just before new leaves appear in the spring. The leaves are four to six inches long, elliptical, dark green above and silvery white and silky below. The undersides are quite noticeable even at a distance when the wind blows. The leaves have an aromatic, spicy odor.

White flowers are produced between April and July. They are about three inches wide and very fragrant. Flowers open about 3 p.m. and close about 10 p.m. on the first day. They reopen the next day and stay open until they form fruit. The fruit cluster, or "cone," is oval in shape, dark red when mature, smooth, about two inches long, and contains flattened scarlet seeds about one quarter of an inch long.

The bark is thin, grayish, smooth to irregularly furrowed, and superficially scaly. It is fragrant when crushed.

Sweet bay is an important tree for wildlife. The leaves and twigs are browsed all year by deer. Squirrels, mice, and songbirds eat the seeds. It is often used by beavers for building dams. In fact, early colonists called it "beavertree" because they used the fleshy roots to bait their beaver traps.

Sweet Bay
Magnolia virginiana

It is of little economic importance for timber products because it is usually too small, but when large enough to harvest, it is used for the same purpose as other magnolias. Its persistent leaves, fragrant white flowers, and decorative fruit make sweet bay attractive to gardeners, and the species was introduced into European gardens as early as 1688.

Swamp Bay

Swamp bay *(Persea palustris)* occurs in low, wet areas along the boardwalk nature trail. One tree with overhanging limbs can be seen about 56 yards from the telescope on the observation deck. It is a handsome, aromatic evergreen shrub or small tree up to about 45 feet in height. The short-stalked, lance-shaped leaves are thick and leathery, with the edges slightly rolled under. The leaves are three to six inches long, 3/4 to 11/2 inches wide, and shiny dark green above with short, rust-colored soft hairs on the lower surface. The stems near the leaves are also covered with minute rust-colored hairs. The bark is dark or reddish brown and furrowed into broad, scaly ridges.

Swamp Bay
Persea palustris

Light yellow flowers about 3/16 inch wide are produced in stalked clusters in the spring. Shiny dark blue-black, nearly round fruit about half an inch long mature in autumn.

Swamp bay is an important tree for wildlife. The bitter fruit is eaten by songbirds and quail. In the fall and winter, the leaves are valuable for deer forage. The red-colored wood takes a beautiful polish and is used for fine cabinetwork, interior finishing, and furniture. The spicy leaves are used to flavor soups, gumbo, and meat dishes.

Visit the Weeks Bay Reserve Interpretive Center and Nature Trails

Office hours are: 8 a.m. to 5 p.m. Monday through Friday and Saturday 9 a.m. to 5 p.m. If you are interested in scheduling a special group activity, call 928-9792.

Continued on other side

(meaning "living on the bottom") or, more specifically, benthic macroinvertebrates.

The community of benthic macroinvertebrates being sampled is made up of animals such as aquatic insects, snails, clams, crayfish, and aquatic worms. Three reasons why aquatic "bugs" are useful in bioassessment are that they are usually abundant, diverse, and sedentary. In addition, certain types or taxa are known to be pollution intolerant (present only in streams of good water quality) and others are known to be pollution tolerant (present even in streams with poor water quality). Thus, a sampling of these organisms can give an indication of water quality, and, as this technique is used more and more, reference streams will be identified and a water quality comparative system developed.

Thanks!

The Weeks Bay Reserve Foundation would like to express its thanks to Exxon Corporation for a $2,000 donation as well as for providing a $1,500 summer internship grant to inventory and catalog pitcher plant bog flora and fauna.

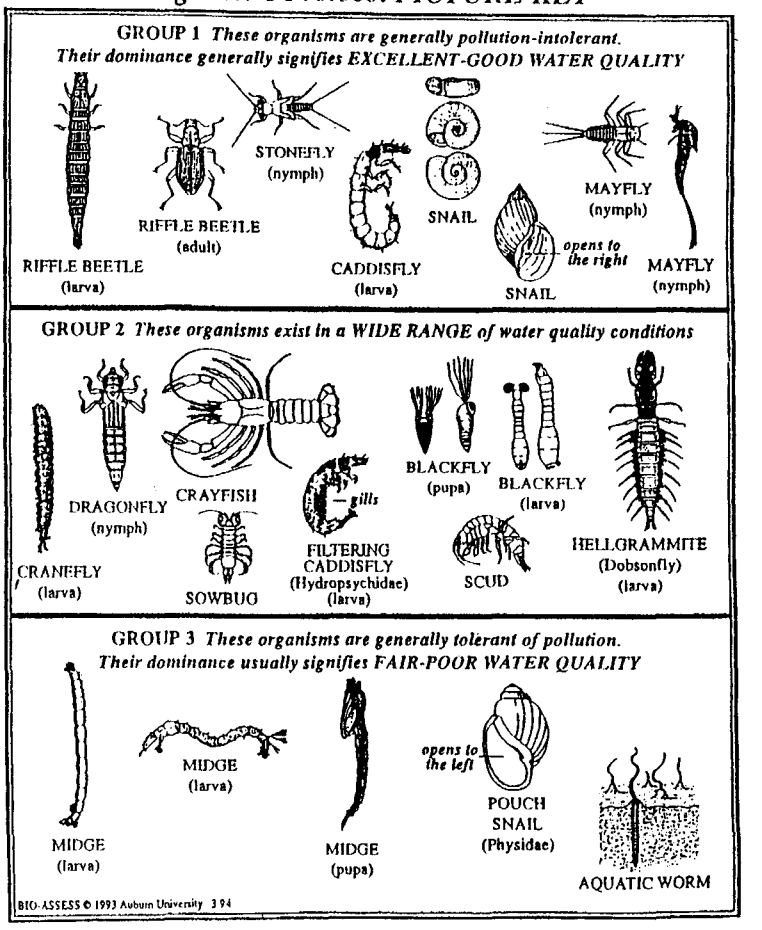
Internships

The Summer Internships Program at the reserve is now in its second year. This program, which is funded by Exxon, provides an opportunity for individuals, usually students, to work at the reserve as interns. The work they are involved in may vary from day to day, depending on need. We are fortunate to have had two interns for 1994, Alexandra Leigh and Nathan Thompson. Alex is a native of Baldwin County from Montrose. She attends St. Paul's School in Concord, New Hampshire. Nathan is a recent graduate in marine biology from the University of New Hampshire. While the reserve had benefited from their presence, we believe that the experience gained from this internship will be both personally and professionally rewarding to Alex and Nate.

Coastal Cleanup on Estuaries Day

Weeks Bay Interpretive Center will serve as a contact for those volunteers wanting to help "GET THE TRASH OUT OF THE SPLASH" on Saturday, September 17. Those interested in helping should call the Reserve (928-9792) or just show up Saturday morning at 8:00. Trash pickup will be from 8 to 12, with lunch provided from 12 to 1, and the facilities will be available for touring until 3 in the afternoon. Estuaries Day and Alabama Coastal Cleanup are coordinated with National Coastweek 1994, which has expanded in recent years to an international effort to clean up our coastal resources around the globe.

MACROINVERTEBRATE GROUPS
Beginner's Protocol PICTURE KEY



The Weeks Bay Reserve Foundation is a nonprofit membership organization incorporated in 1990. Its purpose is to support the Weeks Bay National Estuarine Research Reserve with financial and volunteer assistance.

Join Us!

If you are a member, please tell a friend about the Weeks Bay Reserve Foundation. If you are not a member and would like to join, please send your tax-deductible donation to:

Weeks Bay National Reserve
11300 U.S. Highway 98 • Fairhope, AL 36532

Membership categories are as follows:

Student $5.00
Individual $25.00
Family $35.00
Commercial $100.00
Corporate $250.00

Funds for publication of this newsletter are provided by members of the Weeks Bay Reserve Foundation.

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Suggestions and comments from readers on future topics of interest are welcomed by the editors. If you know of others who would be interested in receiving this newsletter, please have them send requests to be included on the mailing list to the return address shown on the panel below.

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