



The Pelican Post

Weeks Bay Reserve Foundation
Newsletter
August 1995

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.

Legislative Update

A tremendous THANK YOU goes to **Congressman Sonny Callahan** for his efforts to keep federal funding for all 22 National Reserves. In recent months, many concerned citizens have been vocal in their calls to Montgomery and Washington about the valuable resource found at Weeks Bay Reserve. This effort has been both successful and greatly appreciated. Funding for the Reserve System has not only been provided but an increase was recommended by the appropriations committee.

Federal funding for the National Estuarine Research Reserve System has gone through some recent changes. In the past, funding for the 22 National Reserves around the country came from what has been referred to as 315 money. This was provided by legislation found within the Coastal Zone Management Act. As of this year, the funding has changed to a Coastal Zone Management Fund. What is different about this funding source is that instead of being fixed over the years (as 315 money was), funding for the Reserve System must be appropriated every year.

Federal funding has been providing 70% of the operating expenses at Weeks Bay. In order to continue quality programs and exhibit development, this level of funding is greatly needed. This appropriation for Weeks Bay through the Coastal Zone Management Fund now has to be approved by the Senate. Please write the following in support of continued funding for the Weeks Bay Reserve.

Howell Heflin

U. S. Senate
728 SHOB

Washington, D.C. 20510

Richard C. Shelby

U. S. Senate
313 SHOB

Washington, D. C. 20510

Volunteer Activities

Since her appointment as volunteer coordinator, **Maureen Nation** has been working hard to develop and promote volunteer activities for the Reserve.

Volunteers are crucial to the operation of the Weeks Bay Reserve. Many of the projects currently in progress are being conducted

by volunteers under the direction of the professional staff. Some of these include:

WATER QUALITY MONITORS - Ten volunteers are currently receiving training to gather and test water samples from areas throughout the Weeks Bay watershed. This very important, long-term project will establish a baseline of area water quality and will permit early warning and detection of pollution problems as they occur. (We need an additional ten volunteers for this project.)

TEACHING ASSISTANTS - Volunteers are involved in a variety of educational activities. They assist in the identification of specimens in the touch lab. They conduct educational games for younger children and provide assistance to resident and guest instructors.

SPECIAL PROJECTS REPRESENTATIVES - Volunteers are used to set up and staff many information booths for a variety of special events which occur throughout the area: Shrimp Festival, Sea Oats Festival, County Fair, Earth Day and others. These special events provide excellent opportunities to answer questions and promote public interest in the Reserve.

EXHIBIT AND AQUARIA MAINTENANCE - The aquaria and terraria will be maintained primarily by volunteers. Training will be provided by the professional staff.

LANDSCAPING AND GROUNDS MAINTENANCE - During the past year volunteers have been engaged in a massive project to landscape the grounds around the Interpretive Center. Butterfly gardens have been built, and adjacent areas have been planted with native shrubs and trees. These plantings enhance aesthetic appeal and provide opportunities for visitors to become more aware of our beautiful local native flora. We are especially grateful for the expertise and volunteer labor which was provided by **The Baldwin County Master Gardeners**. This highly trained and dedicated organization operates under the direction of **Ed Tunnell**, the Baldwin County Agricultural Extension Agent.

If you would like to become a volunteer, call 928-9792.

Share the Gift

of Membership in the Weeks Bay Reserve Foundation
Your friends, relatives and business associates will appreciate membership in the Weeks Bay Reserve Foundation for the same reasons you do. Every new member you bring into our organization helps us continue our vital mission to encourage resource protection, to support estuarine research and to educate the public about estuarine processes.



Weeks Bay Staff

Front Row: **Bob McCormack**, Interpretive Coordinator; **Brenda Spivey**, Administrator; **Tina Lynn**, Watershed Coordinator; **Maureen Nation**, Volunteer Coordinator. Back Row: **L. G. Adams**, Reserve Manager; **Betty Schulte**, Receptionist; **Sandra Milham**, Weekend Receptionist; **Mark Cooper**, Maintenance Supervisor.

Reserve Manager - L. G. Adams

This position manages all activities at Weeks Bay and interacts with other reserves in the system. It requires contact with various levels of federal, state, and county governments as well as with the local community relating to issues involving the Reserve with a strong focus on coordination of educational programs. L. G. Adams, a native of Mobile, moved to the Eastern Shore in 1986. He obtained his BS degree in Marine Biology from Auburn University and his MS degree in Biology from West Georgia College. Married with three sons, L. G. resides in Daphne with his wife Margee.

Educational Activities

The summer months are a time when school groups tend to slow down and the Reserve staff has a chance to recover from the spring surge of student flow. Small groups from summer camp and day care move through the self guided exhibits and venture down the boardwalk. Drop in visitors are quite frequent and tend to be large family groups as compared to those during the school year.

The staff has been involved in various workshops this summer. A teacher workshop for kindergarten through fifth grade teachers was held on June 26. This was a first-time workshop held for the purpose of preparing the teacher to handle small groups while visiting the Weeks Bay Reserve. This will help with the demand from so many school groups and allow our staff and volunteers to make contact with more classes.

Weeks Bay was host to a teacher workshop sponsored by Waste Management. This activity dealt with recycling and wise use of resources that need to be common household knowledge. The workshop was held on July 13 and was attended by teachers from various schools around Baldwin County.

Carol Saltz used the Reserve to provide an exciting day for 10 - 12 year olds on July 18. The exhibits provided the group an easy avenue for marine and environmental education. The group of about 25 spent time in the classroom, diorama area, aquarium room and on the boardwalk.

"All the flowers of all the tomorrows are in the seeds of today."

Unknown

Adopt an Aquarium

The Reserve's newly begun *Aquarium Adoption Program* has started with a bang! Two aquariums have been adopted, each with the donation of \$100. The Reserve staff and community greatly appreciate and thank **Dianne and Gregory McGhee** of Mobile, and the **Bon Secour Club of Telephone Pioneers of America** for their generosity and support. The *Aquarium Adoption Program* has been designed and initiated to create funds for an aquarium's maintenance, cleaning, feeding of animals, and general upkeep of one year. The Reserve has eight aquariums for adoption, six which can be sponsored for \$100 each, and two sponsored for \$200 each. Individuals, groups, school classes, and corporations are encouraged to "adopt an aquarium". The sponsor's name will be placed alongside the aquarium in appreciation of the donation. If you are interested in "adopting" an aquarium, please contact the Reserve at 928-9792. Thank you for your support!



Aquarium Adoption Program

Reserve Manager, **L. G. Adams** receives \$100 check from **Betty Etheredge** (left) and **Eileen Knapp** of the Bon Secour Club of Telephone Pioneers of America.

Summer Intern Program

This year the Weeks Bay Reserve Summer Internships are being filled by **Jessica McCawley** and **Troy Newton**. Jessica is a sophomore Marine Biology major at Spring Hill College and Troy is a senior Environmental Science major at Troy State University. Both are serving the Reserve in a multitude of duties, including work on the biological site characterization, water quality monitoring, aquarium maintenance, submerged vegetation survey, teacher training workshops, and referencing past research at Weeks Bay, just to name a few. The internships have been partially funded each summer through a grant from Exxon, whose sponsorship of this Internship Program is greatly appreciated.



Summer Interns

Jessica McCawley (left) of Fairhope and Springhill College; and **Troy Newton** of Magnolia Springs and Troy State University.

Cardinal Flower

Cardinal flower (*Lobelia cardinalis*) is a perennial herb 2 to 5 feet tall. The simple stems bear alternate, lanceolate, toothed leaves, 4 to 10 inches long. A slender spike of brilliant scarlet flowers is the outstanding feature that allows it to be recognized at considerable distance. Its common name alludes to the bright red robes worn by Roman Catholic cardinals.

Cardinal flower is abundant in marshes of saline and brackish bayous, generally concentrated in portions of lower and intermediate salinity. It also occurs in riverine marshes, but less abundantly than in tidal bayous. Cardinal flower is pollinated chiefly by hummingbirds since most insects find it difficult to navigate the long tubular flowers.

This and other *Lobelia* species have been used medicinally but are best considered poisonous. Overdoses of plants or extracts produce adverse symptoms and may cause death.

The species is found from Canada, southward to the Gulf of Mexico, and westward to Louisiana. Overpicking has resulted in its scarcity in some areas. This strikingly beautiful plant can be seen in the marshes along Weeks Bay from July until frost.



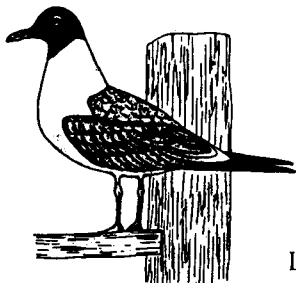
Cardinal Flower
Lobelia cardinalis

Laughing Gull

The Laughing Gull (*Larus atricilla*) nests abundantly on the Louisiana islands and after the breeding season visits the Alabama coast in numbers to feed. The species is common in Mississippi Sound and Mobile Bay both in summer and winter. In the spring of 1995, 1,000 nests were observed on Gilliard Island in Mobile Bay.

This medium-sized gull is easily recognized in its summer plumage by its black head; young birds and adults in winter, however, have the head white and are less easy to distinguish. It is a gentle and curious bird, often allowing an observer excellent opportunities to study it at close range as it flies just above head height and peers down. This species breeds either in grassy marshes or on sandy beaches. It feeds not only along the shores and on the marshes, but sometimes visits ploughed fields to feed upon insects and their larvae. It is also commonly seen around parking lots seeking scraps of food and insects. Laughing gulls frequently follow shrimp boats feeding on fish around the trawl. They delight in taking fish away from brown pelicans. They land on the pelicans head and, during the brief moment when the pelican allows the water to drain from its open pouch, the gulls snatch their snare.

These gulls get their name from their cry which might be imitated by the syllables "Hah-ha-ha-ha-ha-ha-ha-hah" resembling a loud laugh.



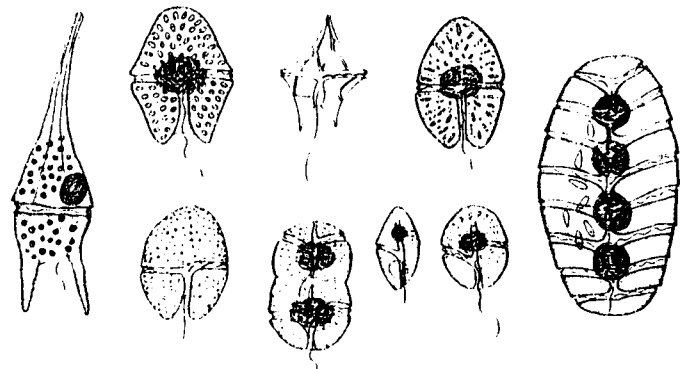
Laughing Gull
Larus atricilla

Phytoplankton Blooms

Microscopic algal-like organisms called dinoflagellates, which are an abundant and important element inhabiting estuaries often undergo enormous spurts of growth, coloring the water burgundy, brown or green depending on the variety of phytoplankton present. The dramatic increases in population density are called blooms. Often, the exact conditions triggering a bloom are unknown; however, dinoflagellates flourish on the nutrients that are swept into estuaries from the natural, seasonal cycle of nutrients and from human activities such as agricultural runoff, poor septic systems and factory outfalls. These nutrients act just like the lawn and plant fertilizers most people use at home on their lawns or in their gardens.

Several species of dinoflagellates can cause a bloom known as red tide. During blooms of certain species of dinoflagellates, the water begins to look discolored at concentrations of 200,000 to 500,000 cells per liter. At the peak of a red tide, bloom cell concentrations may reach 50,000,000 cells per liter. Some of these are harmless; others produce toxins that injure or kill invertebrates and fishes. Massive fish deaths have occurred along the Gulf Coast during severe red tides. Others have toxins that are not injurious to marine life but when focused through the food chain can cause illness and death to humans. In many cases where excessive blooms cause no animal mortality, they may produce an obnoxious sliming of the water or unpleasant odors.

Red tides are a natural phenomenon. They can, however, cause considerable damage to estuarine resources. When the nutrients that cause the bloom are depleted, the dinoflagellates die. Bacteria decompose the dead organisms and use up much or all of the dissolved oxygen in the water. The resulting hypoxia, or anoxia, will kill the shellfish or fish that are unable to escape the oxygen depleted waters. Even where a phytoplankton bloom has marked harmful effects, it may indirectly result in an increase of productivity of the water, though the harmful effects may outweigh the beneficial. Increases in zooplankton following blooms of phytoplankton have been observed. The increased zooplankton ultimately would favorably affect the oncoming generation of fish and other animals that survived a disastrous mortality that accompanied the red tide. In fact, it is probable that the majority of phytoplankton blooms, even those that are excessive, are beneficial rather than harmful. Measures to control red tides are aimed at reducing nitrogen and phosphate loads entering estuaries.



Dinoflagellates

"It is a monstrous abuse of the science of biology to teach it only in the laboratory. . . . Life belongs in the fields, in the ponds, on the mountains and by the seashore."

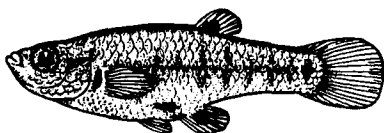
James G. Needham

Least Killifish

The least killifish (*Heterandria formosa*) is the smallest North American fish and one of the smallest vertebrates in the animal kingdom. Maximum size for females is one inch and one half inch for males. The basic color is olive-brown with a darker stripe down each side and traces of vertical bars superimposed on the dark lateral stripe. There is a dark spot on the dorsal fin of males and on the dorsal and anal fin of females. It is found in swamps, ditches and quiet water with trash or vegetation from South Carolina southward and along the Gulf Coast to New Orleans. The species is rare in Alabama but does occur in Baldwin and Mobile counties.

Unlike most livebearers which produce their young in batches, this species produces the young singly or in twos and threes over a long period, because of the unusual way in which the young develop inside the females.

These tiny fish can be seen in the new aquarium and terrarium room at the Interpretive Center.



Least Killifish
Heterandria formosa

Alligator Gar

The alligator gar (*Lepisosteus spatula*) is one of the largest of coastal fishes, often exceeding 150 pounds. Maximum weight may be as much as 300 pounds or more with a length of ten feet. Six foot specimens are fairly common. It is a relic of a large group of primitive fishes, and is distinguished from other fishes by very hard, interlocking, diamond-shaped scales covering the body which is long and cylindrical. (Scales resemble Indian arrowheads and it is claimed that Indians made good use of them. Today, gar scales are made into attractive costume jewelry and various kinds of trinkets and souvenirs.) The broad snout is a beak-like structure lined with two rows of sharp fangs.

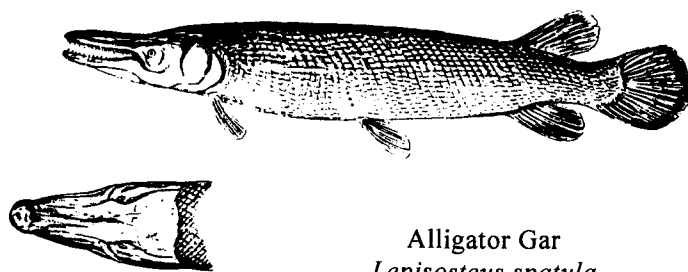
The species ranges from the Florida panhandle at about Apalachicola to Vera Cruz, Mexico. Although they are considered a fresh water fish and travel to the continental heartland by major rivers, they seem at home in bays and bayous. It is probably in brackish estuaries and coastal swamps where they reach their greatest abundance.

Gars not only take oxygen from the water through their gills, but are also capable of breathing air. In warm weather, when the need arises, they will surface and gulp air. The air is transpired to the swimbladder, where the oxygen diffuses into the blood stream. A surfacing alligator gar makes a loud very distinctive splashing noise. They can survive in stagnant water that would support few other species.

Although alligator gars live in brackish water and are sometimes found in completely salt water, they are permanently limited to fresh water by their spawning habits. Adults move in schools into running water, if available, to spawn. Otherwise, the eggs are deposited in shallow water in early spring. Females lose body weight during this period. The large eggs are greenish in color and are reported to be toxic. Young gars feed at first on water fleas and insect larvae, but when less than two inches long they have already learned to catch small fish. They grow rapidly as they continue to satisfy their ravenous appetite by preying upon whatever fish or fowl inhabit the same waters.

Alligator gars are lethargic and slow moving. Sometimes they are scavengers, but most of the time they are predators. They feed on fish, blue crabs and birds. During hot summer months, they spend most of their time nearly motionless near the surface. When preying, they move stealthily, gradually approaching their prey, until they are close enough for a quick lateral strike accomplished by a quick sideways jerk of the head. At night they swim close to the bottom looking for food. During winter, they retire to deeper water, become inactive and do not feed for extended periods. Gars may be beneficial as predators in helping to keep down populations of forage fish.

Although the flesh is known to be palatable when smoked and made into fish balls, or when cut into steaks and broiled, it is generally not popular. It is true that many eat it and find it very tasty. It is a matter of individual taste and the way in which is prepared.



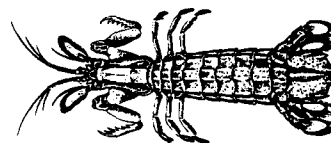
Alligator Gar
Lepisosteus spatula

Nature's Calendar

The first modern Alabama breeding record for the Brown Pelican (*Pelecanus occidentalis*) occurred in 1983 when four nests produced two young pelicans on an isolated dredge-spoil island in Mobile Bay. Prior to this date the species had not bred in the state since before 1900. In 1995, 3,000 nests produced more than 6,000 young pelicans.

In addition to pelicans, the following nests were counted on the island by **Roger Clay**, a non-game wildlife biologist who works for the Game and Fish Division of the Alabama Department of Conservation and Natural Resources.

Laughing Gull (<i>Larus atricilla</i>)	1,000	nests
Royal Tern (<i>Sterna maxima</i>)	300	nests
Caspian Tern (<i>Sterna caspia</i>)	100	nests
Sandwich Tern (<i>Sterna sandvicensis</i>)	100	nests
Gull-billed Tern (<i>Sterna nilotica</i>)	50	nests
Mottled Duck (<i>Anas fulvigula</i>)	50	nests
Black-necked Stilt (<i>Himantopus mexicanus</i>)	30	nests
Canada Goose (<i>Branta canadensis</i>)	1	nest



Mantis Shrimp
Squilla empusa

Estuarine Queen

Starting last Winter at the Weeks Bay Christmas Party, a name suggestion box was started to select the best name for the 32 foot pontoon boat used for education and water quality programs at Weeks Bay. After several months of collecting names, a selection committee reviewed the nominations. The review turned up a unanimous selection nominated by Bob and Danna Murphy. The Weeks Bay Reserve staff is proud to now refer to our boat as the . . . **ESTUARINE QUEEN**.

Reserve Educates Public on Weeks Bay Water Quality Monitoring

The Weeks Bay Watershed Project monitors water quality in Weeks Bay as well as the rivers and streams in the watershed. Through an EPA funded project, the Reserve offers the public an opportunity to participate in water quality monitoring activities. Individuals and small groups can learn sampling procedures and ways that the monitoring data will be used to address water quality concerns in Weeks Bay.

Volunteers and Reserve staff sample three sites in Weeks Bay: Camp Beckwith Pier, the mouth of Fish River, and the mouth of Magnolia River. Dissolved oxygen, turbidity, salinity, and pH are among the parameters tested. These sites are among 23 sites in the Weeks Bay watershed that are monitored by trained citizen volunteers.

Small groups can schedule trips aboard the *Estuarine Queen*, which sets sail for its water quality voyage on alternate Friday mornings. Training is available for new volunteer monitors at the Reserve. Please call for information on the sampling schedule and reservations as space is limited.

In the next and subsequent issues, the Newsletter will furnish results from current water quality monitoring projects.

Volunteer Spotlight

A special thanks to **Bryan Moore**, a junior at the University of Alabama. Bryan is pursuing a Geology Degree with a dual minor in Biology/Marine Science and has worked with the Alabama Department of Environmental Management. He is assisting with water quality monitoring activities and among other things, is developing a land-use map for the watershed. His experience and dedication are greatly appreciated

VOLUNTEER AND MAKE A DIFFERENCE!
Many rewarding job descriptions are available at
Weeks Bay National Estuarine Research Reserve
Call 928-9792.

Bog Development

Good News From the Bog! A 600 foot boardwalk is being constructed in the Pitcher Plant Bog on Highway 17 just north of Inspiration Oak Park. This area promises to be an exciting educational attraction for both school groups and casual visitors. **Tom Granger** of the Baldwin County Public Works Department has assisted with the construction of a parking area. With the assistance of **Baldwin County Commissioners Wendy Allen and Don Koontz**, the 10,000 square foot parking area will be surfaced with crushed limestone. It will handle several school buses at a time. This project is in Phase I of three phases which include upland and lowland trails, a pavilion and picnic area.

Educational Evaluation

Weeks Bay is fortunate to have **Mallory McDuff** evaluating the educational programs at the Interpretive Center. She is enrolled in programs evaluation at the University of South Alabama and has selected the Reserve as her test site. This will be very helpful in providing information on our programs and the successes (and failures) in trying to achieve our educational goals. Mallory starts a doctorate program in environmental education in the fall at the University of Florida.

Birding Trip for Volunteers

Many persons have contributed valuable time as volunteers at the Interpretive Center. Educators working with school groups, monitors doing water quality tests, librarians organizing a computer file, and gardeners landscaping with native plants are just some of the positions held by the volunteer staff at Weeks Bay Reserve. In appreciation for their valuable time, a special birding trip has been organized for August 16th. This will be an excursion aboard the *Estuarine Queen* to Gilliard Island in Mobile Bay. Gilliard Island is one of the largest bird rookeries (nesting sites) on the northern Gulf Coast. **Roger Clay** from Game and Fish will be the birding expert to accompany this voyage which promises to be both exciting and rewarding to our volunteer staff.

Schedule of Events at the Weeks Bay Reserve

September

- 13 - 14 EPA Planners Workshop
- 16 Coastal Cleanup
National Volunteer Cleanup Day. To participate contact Bob McCormack at the Reserve 928-9792.
- 20 Septic Tank Workshop
- 30 - Oct 1 Native Plant Sale
Trees, shrubs, perennials for butterfly and hummingbird gardens. Sat. 8 - 5 & Sun 1 - 5.

October

- 14 - 21 NERRA National Conference
Annual Conference, Great Bay, NH
- 19 - 20 ADEM Watershed Tour
For details contact Tina Lynn at the Reserve, 928-9792

Did You Know?

*The Weeks Bay drainage area encompasses 126,000 acres in Baldwin County.

*It has been estimated that 22,500 tons of sediment are annually transported through the watershed to Weeks Bay.

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

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L. G. Adams

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

WEEKS BAY RESERVE FOUNDATION

11300 U. S. Highway 98
Fairhope, AL 36532

Things You Can Do To Keep Your Bay Clean

1. Control Soil Erosion
2. Maintain Your Septic Tank
3. Control Run-Off from Your Yard
4. Use Lawn-Care Chemicals Properly
5. Dispose of Household Products Properly
6. Conserve Water
7. Use Car Care Products Wisely
8. Get Involved!

Membership Application Weeks Bay Reserve Foundation

Weeks Bay Reserve Foundation is a non-profit organization whose members provide assistance and support to the Weeks Bay National Estuarine Research Reserve's goals and programs.

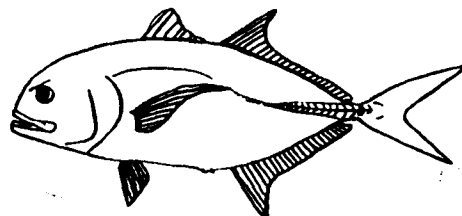
As a member, you will be joining a group of people with similar interests and concerns for natural resources. You can become directly involved with the Reserve's research and educational programs by volunteering to help with field trips, seminars, cultural events, newsletters and special projects.

You will be regularly informed of Reserve activities through newsletters, special mailings and meetings. The opportunities for involvement are unlimited. Whatever your talents or interests, the Reserve can use your support. You, the environment, and your community will benefit as a result of your membership. If you are not a member and would like to join, please mail this form, along with your tax-deductible donation to:

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

NAME _____ STUDENT \$5/YR
ADDRESS _____ INDIVIDUAL \$10/YR
CITY _____ FAMILY \$35/YR
STATE _____ ZIP _____ COMMERCIAL \$100/YR
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CREVALLE JACK
Caranx hippos