



The Evolution of Shrimping Vessels

Focus on Inquiry

Students will:

- explore the history of shrimping vessels due to the increased demand from the seafood industry.
- examine the changes that include the shape, the construction material, the engine, navigation equipment, and other aspects.

Lesson Content Overview

This lesson will explore how shrimping vessels changed over time to meet the needs of shrimping production and how technology played a role in the changes. Throughout this lesson, students will discuss what changes have occurred over time and how these changes have impacted shrimp production. Lastly, students will analyze how these changes have affected the environment and the role they will continue to play.

Duration: Two to three 90 minutes classes (or three to four 45 minutes classes)

Setting: Classroom

Grouping: Various grouping throughout the lesson

Grade Level: Middle School (Grades 6-8)

Louisiana Social Studies Standards – Middle School

Standard	Description
6.1.4	Identify and compare measurements of time in order to understand historical chronology.
7.1.4	Interpret and construct timelines of key events, people, and ideas.
8.1.2	Construct and interpret a timeline of key events in Louisiana history and describe how they connect to U.S. and world events.
8.10.3	Describe historical factors including the economic growth, interdependence, and development of Louisiana.

Louisiana Science Standards -- Middle School

Standard	Description
6-MS-ESS3-4	Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.
7-MS-LS2-4	Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.

8-MS-ESS3-3	Apply scientific principles to design a method for monitoring and minimizing human impact on the environment.
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Louisiana English Language Arts Standards -- Middle School

Standard	Description
Writing 6.1, 7.1, 8.1	Write arguments to support claims with clear reasons and relevant evidence.
Speaking and Listening 6.1, 7.1, 8.1	Engage effectively in a range of collaborative discussions with diverse partners on grade-level topics, texts, and issues, building on other's ideas and expressing their own clearly.

Louisiana Math Standards -- Middle School

Standard	Description
6.RP.A.3	Use ratios and rate reasoning to solve real-world and mathematical problems.
7.RP.A.1	Compute unit rates associated with ratios of fractions, including ratios of lengths, areas, and other quantities measured in like or different units.

Prior Knowledge Needed by Students

- Analyzing nonfiction text
- Calculating percentages

Materials

- Vocabulary (provided)
- Coffee filters, pipe cleaners, string, mesh bags, pantyhose/stockings, etc.
- Five large rubber bouncy balls, ten marbles (two different colors), three golf balls, four pairs of dice, and ten very small pebbles (smaller than the marbles), etc.
- Buckets or deep trays to hold water
- Paper towels
- Number of Shrimp Caught Data Chart (provided)
- Shrimping net images (provided)
- Video: History of Shrimp Fishery of the Southeastern US (https://youtu.be/igU6_2f32nl)
- Evolution of Shrimping Vessels Images (provided)
- Evolution of Shrimping Vessels documents (pre-1920s, the 1920s-1930s, 1940s to 1950s, 1960s to 1970s, and 1980s to 2020s) (provided)
- Shrimping Locations Images (provided)
- Venn Diagram (provided)

Background Information for Teachers

Shrimping has a long history in Louisiana. The shrimping industry is one of the largest fisheries in the United States. According to ArcGIS (2021), over 70% of all domestic shrimp are harvested in the Gulf of Mexico. Since the earliest settlements, fishermen took advantage of Louisiana's marshes and estuaries. In the late 1700s, fishermen used fishing nets and small skiffs to catch shrimp in shallow waters of coastal lakes and bays. These shrimp were mainly sold fresh to local markets due to the lack of refrigeration and ice. The earliest boats used for shrimping resembled the vessels used in the Mediterranean. These boats were fitted with a centerboard and could operate in shallow waters. The larger offshore boats were introduced in 1938 by Florida

fishermen. These vessels are typically 50 to 65 feet long with deep drafts and refrigeration, which was necessary as fleets went further offshore. These large shrimp boats are frequently equipped with two tow nets. A third boat type is the Lafitte skiff and is used for shrimping on the Louisiana coast. These vessels use a semi-V hull with a more sheer and flared bow section than a traditional skiff. These boats can operate efficiently in lakes and bays of inland coastal waters and are equipped with small otter trawls or wing nets. Boats commonly used today evolved from these early boats.

In the late 1800s, the haul seine net was used on shrimp boats. Crews of eight to twenty men would man the vessel and use smaller skiffs to set the 1,800-foot nets. In 1917 the otter trawl, which is still used today, was introduced to Gulf Coast shrimpers. This trawl expanded the fisherman's range by enabling deeper fishing and decreasing the manpower needed to two or three. Around 1933, shrimpers in the bayous of Terrebonne Parish started using the night trawl or butterfly nets. This net was used in shallow water at night when shrimp are near the surface of the water. These nets are typically found on small luggers, Lafitte skiffs, or attached to docks along the waterway banks.

Engage (45-55 minutes)

- 1) Begin by introducing (or reviewing) the different components of a shrimping vessel (Shrimping Vessel Vocabulary provided).
- 2) Create a trawl:
 - Using what they know so far about a trawl, students will create their own using the supplies provided. The supplies can include coffee filters, pipe cleaners, string, mesh bags, pantyhose/stockings, etc. Students will create a trawl that will catch the “shrimp” but not other creatures like sea turtles, sharks, and fish.
 - Have students brainstorm ideas and sketch concepts for net designs prior to construction. Students will collect the materials provided by the teacher and construct their net.
 - After the students have constructed their nets, students will be divided into groups of four. The teacher will place various different items in a tray/buckets full of water (each group will get one). These items can include five large rubber bouncy balls, ten marbles (two different colors), three golf balls, four pairs of dice, and ten very small pebbles (smaller than the marbles), etc.
 - Students will create a chart in their notebooks or the teacher will provide students with the data chart.
 - Each student will close their eyes and will attempt to capture their “shrimp” in their net. Students only get two sweeps to collect their “shrimp”. After the second sweep, students will record the number of each item collected in their net. The items will then be placed back into the water. Each student will catch their “shrimp” and record their data. When each student in the group completes the activity, there should be four sets of data points.
 - Optional (based on grade level): Each group will combine their data points and calculate the percentage of each item caught in their nets.

- The teacher will lead a discussion on which nets caught the most “shrimp” and the least “shrimp”. Students will analyze why certain nets caught more shrimp than others through an open forum/scientist circle.

3) The teacher will explain to the students that shrimping vessels and nets have adapted over time to meet the needs of the shrimpers. The lesson today will focus on the history of shrimping vessels and how they change over time. These changes have shaped the shrimp industry and the amount of shrimp that can be caught. Students will return to their seats and the teacher will play the History of Shrimp Fishery of the Southeastern US ([History of the Shrimp Fishery of the Southeastern US](#)) video for students (~4 minutes).

- Ask students to write down three things they noticed and one thing they wonder.

3) Replay the video and encourage students to pay attention to the changes that occurred to the boats and shrimp production. Teachers can stop the video after certain sections to ask students what they noticed in the video.

- What changes happened to the shrimping vessels over time, and how did these changes impact production?
- What were the ways that shrimp was packaged and distributed?
- How do you think these advances in shrimping have impacted the environment?

4) Think-Pair-Share: Think: The teachers show the images of the different shrimping vessels (Evolution of Shrimping Vessels provided) and ask students to notice differences between them. Students will be given 2 minutes to think about the differences. Share: Students will talk to their shoulder partner about what they observed. Partner A will share first while Partner B listens. Students will be given 1-2 minutes to share, and then the partners will swap roles. (Images below: Evolution of Shrimping Vessels)

5) Think-Write-Share: Students will look at the images of where brown and white shrimp are located (Shrimping Locations Handout provided). Prior to the round robin, students will study the maps and write down what they observe. Students will jot down the pros and cons of having different boats in these locations. (Which boats would serve each area and why? Why would a particular boat not work well in all areas?) The teachers should give students 3-5 minutes to jot down their thoughts. When the teacher calls “time”, students will share down one thing they wrote down. Students will have about five minutes to discuss what they noticed. Each student will continue to share one thing they wrote until the teacher calls “time”.

6) Discussion: The teacher will take about five minutes to discuss with students what they noticed about the different types of ships and where they would best catch their shrimp.

Explore (10-15 minutes)

1) Jigsaw: The teacher will inform students that today they will learn about the changes to shrimping vessels throughout time. Students will become an “expert” on the boat for their time period and teach the rest of the class about their shrimping craft. The teacher will divide the students into five groups. Each group will be given one shrimping vessel/time period (pre-1920s, the 1920s-1930s, 1940s to 1950s, 1960s to 1970s, and

1980s to 2020s handout provided). Each student in the group will become an “expert” of one component from the article (components are vessel description, construction material, engine, navigation equipment, voltage, length of trip, accommodations, and engine manufacturers). The teacher must note that some of these sections are smaller than others so students can do two or more components.

2) Students will take 10-15 minutes to read about their shrimping vessel component and write a well-crafted summary of the topic. These summaries should explain the feature and why each part is important.

Explain (20-25 minutes)

1) The group members will then take turns sharing their article pieces with the other members in their group.

2) Students will create a graphic organizer, Google Docs, or Google Slides showing who did which component and a brief summary of a few facts from each area. This item should be available to all group members (it will be needed in the next section of the lesson).

Expand (15-25 minutes)

1) Students will stand up from the seats and gather their notes on their shipping vessel. When the teacher says go, students will put their hands up in the air and find a partner (outside of their group) to partner with whom to share or discuss.

2) The students do a “high five” and put their hands down when partnered. The students take turns sharing about their shrimping vessel.

3) When the students have finished sharing, they place their hands back in the air and find an individual from a different group. Students cannot go back to their original group or a group that they have already paired with.

4) After students have learned about the other four shrimping vessels, the teacher will have the students freeze and return to their seats.

5) The teacher will have one “expert” from each group describe their shrimping vessel and give examples about how the vessels have changed over time.

6) The class then takes the information obtained from the think-pair-share and creates a timeline to visualize the evolution of shrimping vessels.

7) Revisit trawl (Reengineer)---Students will take the knowledge that they have learned throughout this lesson and reengineer their trawl. The teacher should have students think about what they could add (or remove) from their trawl to increase shrimp production? Reduce the number of unwanted creatures from being caught?

- After students have reengineered their trawls, they will repeat the shrimp catching lab from the Engage portion of the lesson. See below for instructions:

- Each student will close their eyes and will attempt to capture their “shrimp” in their net. Students only get two sweeps to collect their “shrimp”. After the second sweep, students will record the number of each item collected in their net. The items will then be placed back into the water. Each student will catch their “shrimp” and record their data. When each student in the group completes the activity, there should be four sets of data points. Data points should be collected in a chart in the student’s notebook or from the datasheet provided.
- Optional (based on grade level): Each group will combine their data points and calculate the percentage of each item caught in their nets.
- The teacher will lead a discussion on whether their improvements to their trawls increased their shrimp production.
 - Why did the trawl catch more (or less) shrimp?
 - What other improvements could be done to the trawl to increase the likelihood that only shrimp will be caught?
 - Do you think it’s possible to only catch shrimp in the nets?
- Students will analyze why certain nets caught more shrimp than others through an open forum/scientist circle.

7) Optional: Students will create a Venn diagram comparing two different shrimping vessels.

Evaluate (5-10 minutes)

Exit Ticket

- 1) Analyze how the changes to the shrimping vessels over time have impacted the shrimping industry? What about the environment?
- 2) What do you anticipate would be some benefits/consequences of these changes to how shrimp are caught?
- 3) How could shrimp vessels be further modified to improve production?

Optional: Have students create their own shrimping vessel based on the information they have learned. They can construct an older vessel or what they believe it will look like in the future. This can be done digitally or with physical materials.

References

ArcGIS. *Story map Journal*. arcgis.com. (n.d.).

<https://www.arcgis.com/apps/MapJournal/index.html?appid=2331b22022e14c70a31b7c2c2aadce>.

Tunnel, Jr., J. (2017). *Shellfish of the Gulf of Mexico*. doi: 10.1007/978-1-4939-3447-8_8.

Shrimping Vessel Vocabulary

- Otter Trawl: The type of net that fishermen pull behind the boats to catch fish.
- Head Rope: A line that runs along the front and top of the net, attached with floats to keep the net open.
- Foot Rope: The line at the front and bottom of the net. The foot rope has weights on it to keep the net on the bottom.
- Tickler Chain: A chain that is attached in front of the foot rope. The tickler chain drags along the seafloor and forces the shrimp to jump up in front of the net and get caught.
- Doors: The large wooden panels force the net to spread open as it is pulled through the water.
- Wings: The front sides of the net where the doors are attached.
- Cod End: The bag at the end of a net where shrimp are caught.
- Lazy Line: A rope attached around the cod end of the net that helps the fishermen bring the net aboard the boat when it is full.
- Try Net: This is a small net (12-16 feet in width) that is towed during regular trawling operations and occasionally lifted to determine the amount of shrimp in the catch.
- TED: is a grid of bars with an opening either at the top or the bottom of a trawl net. The TED allows small animals like shrimp to pass through the bars and are caught at the end of the trawl. When larger animals, like sea turtles and sharks, are caught in the trawl, they hit the grid bars and are released through the opening.

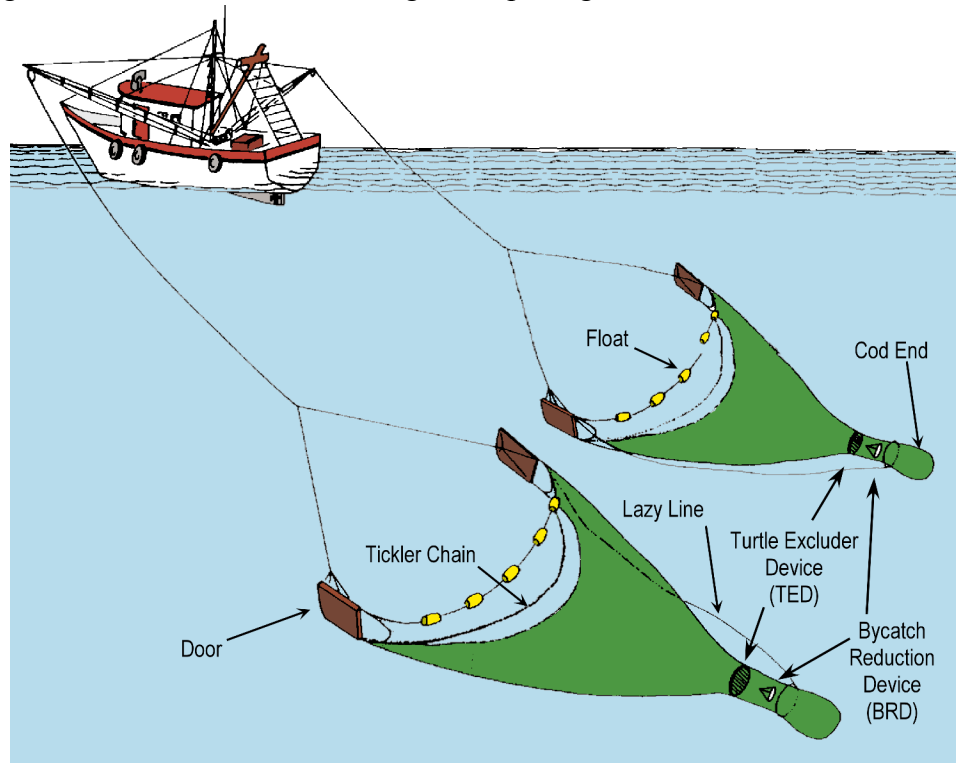


Image from: [Gulf of Mexico Shrimp Fishery](#)

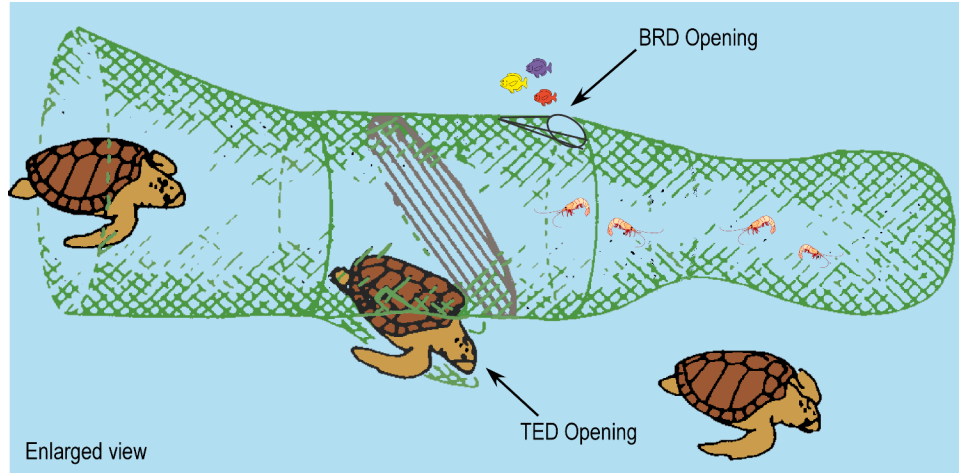
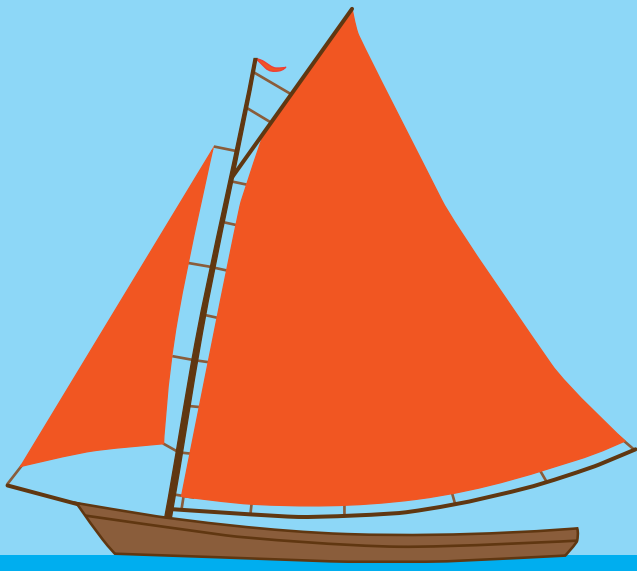


Image from: [Gulf of Mexico Shrimp Fishery](#)

Pre-1920s Luggers



Source: Long and Burke, 2015.
Art by Robert Ray, Louisiana Sea Grant.

Vessel: Built by hand, the eighteen to nearly fifty-foot-long, flat-bottom, shallow draft, rounded-hull Louisiana luggers (often called a canot from the French canottes) were designed for shallow inside waters. The vessel, which dates from Louisiana's colonial period, probably has antecedents in Mediterranean watercraft. The state's luggers are easily identified by a four-corned, asymmetrical, often red "lugsail," suspended from a wooden pole (commonly called a spar) – hence the name, lugger. The center space was open and unobstructed for cargo. Geographer Richard Campanella reports in the early 1800s, up to 200 luggers, operating from the Big Easy. Each boat was manned by three to six men. Following the establishment of industrial ice plants on the northern Gulf Coast, luggers often featured covered, zinc-lined iceboxes for their perishable cargo, typically consisting of oysters and shrimp. At the turn of the twentieth century, Italian and Sicilians owned and operated most of the boats and organized their vessels into "fleets" to maximize the number of loads transported to New Orleans' French Market. In the second decade of the twenty century these vessels were mechanized, with a makeshift "wheelhouse" in the stern. These early seine boats were adapted for trawling by adding a set of tow ropes and a trawl from the stern. Often the aft end was extended to provide additional room for the captain and deck hand to physically pull in the net.

Construction Material: Developed in the "Golden Age of Cypress," the wood eternal was utilized by local and regional boatbuilders for lugger construction. The hull design was typically a semi-rounded-shaped, carvel planking, and well adapted for trawling in the wetland's shallow estuarine waters.

Engine: In the first decade of the twentieth century, small gasoline, kerosene and naphtha engines, often one or two

cylinders rated under five horsepower, were mounted in the vessel's stern. The fish hold was located in the bow. Locally, these motorized watercrafts were often identified as "gas boats." Without a centerboard, the "new" lugger's speed improved the delivery time to canneries and other markets. Rigging: Before introduction of the otter trawl in 1917, sail-power luggers, the state's most common fishing type, contributed to the haul-seine fishery, that in the late nineteenth century annually produced more than 10,000,000 pounds of marketable seafood products. Luggers carried a seine crew of up to ten to a shallow water site. Often two luggers were required to meet the labor demands of the larger seines. Usually standing chest deep, the crew placed themselves between the catch and deep water. A seine 2,000 feet or longer was played out and slowly closed until the shrimp could be dipped out and placed in the lugger's hold. This process was repeated until the shrimp were depleted, or because of lack of ice, the boat had to sail to its home port.

With introduction of marine engines, and the otter trawl, the lugger could move without the aid of wind and became more efficient and operated with a two-man crew. For more than forty years luggers and seine crews dominated the industry; the boat was essentially a ferry. As advertising and marketing increased, the knowledge and availability of marine engines, along with the otter trawl, and ice, the lugger morphed into Louisiana's first mechanized shrimp boats.

Using a cast net, thrown ahead of the bow, the lugger captain looked for shrimp. When these evasive decapods were caught, the trawl was put overboard and dragged for up to two hours. Gradually, the rigging improved. Even so, up until the 1930's, few of these vessels were equipped with power-driven machinery. Hand operated gear was standard equipment.

Navigation Equipment: No navigation equipment was available. Fisherman sailed to a sight that often-produced shrimp. Local knowledge was the key to finding shrimp and considerable luck. Dead reckoning, that depended on estimating the direction and distance traveled, without astronomical observations or electronic navigation methods, was the rule.

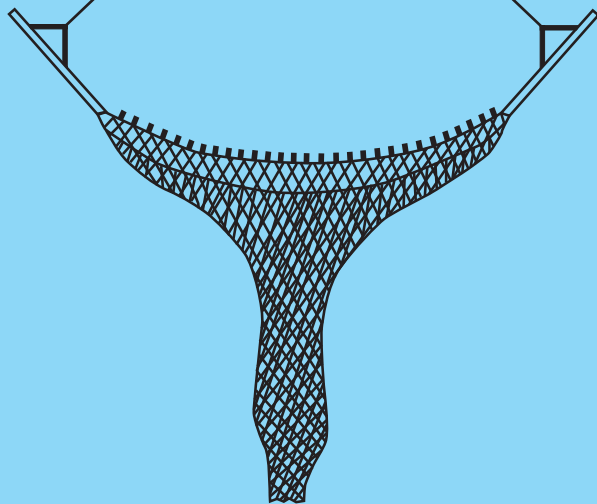
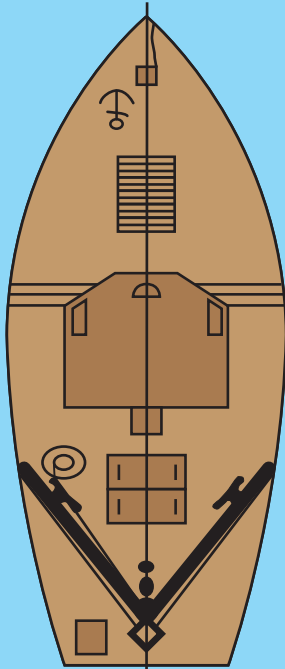
Voltage: Not available.

Length of Trip: For nearly a half century, these boats made daily trips. Marine engines improved their efficiency, but the trips were still rarely longer than one day.

Accommodations: There were no beds or other amenities aboard these day boats. (Sleep was limited to quick naps.) A canvas covering provided shade.

Engine Manufacturers: Marine engines began to appear in the early 1900's in the region's hardware stores and New Orleans' chandleries. By 1917, Nadler, Fairbanks Morse, Globe Fairbanks-Morse and other motors were in use. Consequently, Louisiana's sail-boat-fishing fleet was rapidly replaced by powerboats that exploited expanded shrimping grounds. This transition constituted a fundamental first step toward expansion into deep water.

1920s – 1930s Trawling Vessel



Artwork not drawn to scale.
Source: Long and Burke, 2015.
Art modified by Robert Ray, Louisiana Sea Grant.

1920s – 1930s Trawling Vessel

Vessel: These vessels utilized in this time period were converted sail-powered luggers or Biloxi-type boats (also known as bow draggers), where the wheelhouse is in the back of the boat's aft section and the hold is in the foredeck. They are from eighteen to thirty-five feet in length. Unlike the flat-bottom lugger built in the first two decades of the nineteenth century, Biloxi watercraft had more of a V-bottom and greater freeboard than their later cousin, the Floridien. This boat looked like a standard lugger, but was larger. They were reputedly designed by Mississippi shipyard owner, J.D. "Jackie Jack" Covacevich, and widely used in the shrimping industry, as they were more seaworthy than the traditional lugger. The engine closer to the propeller reduced strain on the propeller shaft and improved their efficiency.

The inshore lugger fleet was enlarged by the Lafitte skiff, designed by Schiro Perez or Emile Dufrene of Lafitte, Louisiana in the late 1930s. The indigenous eighteen to thirty-five-foot-long, smooth, flat hulled Lafitte skiff evolved into a sleek, fast, and shallow-draft folk boat, largely found between Vermilion Bay and the west bank of the Mississippi River.

Construction Material: Local boat builders preferred cypress planking, when it was available. If kept moist, cypress would last nearly indefinitely. Although the building material of choice, cypress was expensive; consequently, in the late 1930s, regional boat builders turned to marine plywood. The original relatively flat-bottom luggers partially modeled after the felucca, introduced into this country by Italian immigrants. There were few shipyards, and these traditional boats were built without blueprints in backyards or small boatyards scattered throughout the coastal zone and are an important element in Louisiana's folk landscape.

The Lafitte skiff, made largely of marine plywood or cypress planks, had a semi-flat hull and great sheer and flare in the bow section.

Engine: Gasoline engines, rated from ten-to-fifty horsepower, were commonplace. In the transition period, kerosene and naphtha engines were the pioneer powerplants used in the industry.

In the Lafitte skiff, small marine or modified water-cooled automobile engines provided propulsion. As automobile engines became more powerful, these engines, up to 400 horsepower, were adapted for marine use. As a result, a Lafitte skiff can "get on the step" and do at least thirty miles per hour.

Rigging: On a Biloxi trawler, nets were towed from a gallows-like structure, near the deckhouse, that supported a single 100-foot-wide net attached to six-foot otter doors. The otter doors were designed to drag the net downward and pull it outward as it descended into the coastal waters. Through time, the "gallows" supported two booms. Few winches were available. The two-man crew retrieved the net by hand using a $\frac{3}{4}$ to one-inch manilla tow rope. A drum of gasoline was on deck. If the boat was out for more than two days, a barrel to catch rainwater was also on deck.

The Lafitte skiff pulled a small trawl off the stern. Around 1983, a few Barataria fishermen outfitted their skiffs with

“skimmers,” “bay sweepers,” or “butterfly” nets. These nets, supported by a large rectangular steel frame attached to the boat’s bow, were lowered from their horizontal position slightly above the deck into the water. In this position, the net was perpendicular to the port and starboard sides of the vessel, but slightly above the waterline to prevent the shrimp from escaping by jumping over the net. Skimmers are primarily used in the white shrimp fishery.

Navigation Equipment: Throughout this time period, limited availability of electronic navigation aids meant the wheelhouse had a small compass, a radio, and a few navigation maps.

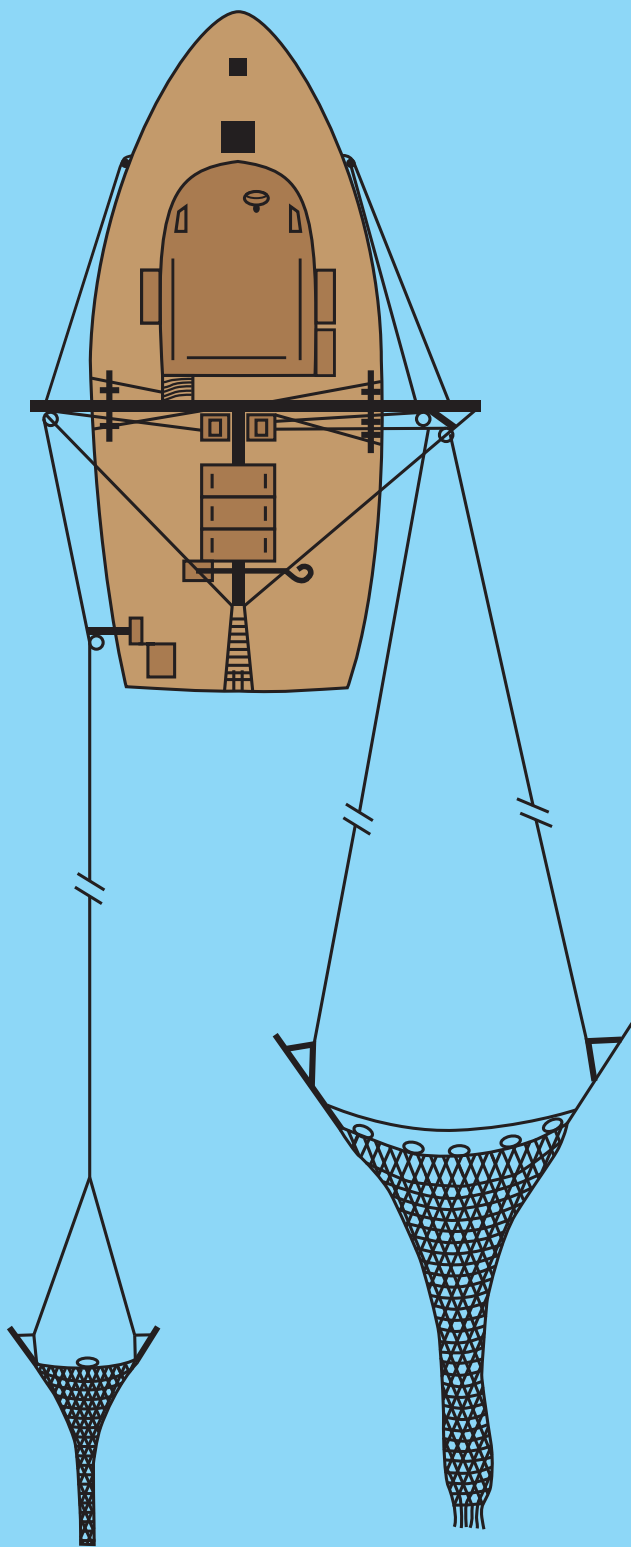
Voltage: Six-volt systems were available; most engines were hand cranked.

Length of Trip: These boats made daily trips, unless they were working with an ice boat that could resupply them, then the trips could be up to a week in length.

Accommodations: On the Biloxi boats, rudimentary accommodations were available, with a bunk in the wheelhouse or the forward extremity of the hold. A half-cabin on the aft section of a Lafitte skiff, with a tarpaulin covering the deck provided shade; there were no bunks on the boat.

Engine Manufacturers: By the 1930s, North America had more than 800 manufacturers of small marine engines. The companies most frequently mentioned in contemporary advertisements were Lathrop, Wolverine, Fairbanks Morse, Atlas, Globe, Palmer, Lockwood Ash, and hand-cranked, automobile engines repurposed for marine use.

1940s – 1950s Trawling Vessel



Artwork not drawn to scale.
Source: Long and Burke, 2015.
Art modified by Robert Ray, Louisiana Sea Grant.

1940s – 1950s Trawling Vessel

Vessel Size: By the early 1940s, Biloxi-type watercraft was being rapidly replaced by Florida-type, or in the local vernacular, Floridians, where the wheelhouse is in the boat's bow. The engine room is under the deckhouse and fish the hold is aft. The cabin-forward design allowed the captain far greater visibility than the Biloxi boats. These deep-hull trawlers are in the range of fifty to seventy feet in length. A few are up to eighty-five feet long and were often outfitted with refrigeration equipment or insulated holds; all permanently transformed the Louisiana shrimp industry from a "folk" occupation to a business. The hull has more of a round, or semi-V, shape and well adapted for trawling in the often-turbulent waters of the Gulf of Mexico. The boats are distinguished by their maneuverability.

There are two types: the inshore version was less than fifty feet in length and had a flat-bottom design and is often called a South Lafourche trawler; the offshore Floridians length varied from fifty to eighty feet.

Construction Material: Cypress planking was being used; marine plywood was readily available and steel hulls were being built at local shipyards. A Greek immigrant, Stathis Klonais, in Fernandina Beach Florida, designed and built these boats based on similar Mediterranean vessels. The boat, known as an "Atlantic Supertrawler" was introduced in coastal Louisiana in the late 1930s by Felice Golino who relocated his trawlers to the Morgan City-Patterson area and was rapidly followed by other opportunistic Floridians. The boat was adapted and copied by local fishermen and shipwrights. Immediately after World War II, fifty-five to sixty-five-foot all-steel trawlers were being introduced into the industry.

Engines: Gasoline engines, rated from eighty up to nearly 200 horsepower, were common and diesel-powered marine engines were expanding their market share. After World War II, fuel-efficient, diesel engines were being installed in the inshore and offshore trawler fleet and gasoline engines survived in some of the inshore folk boats.

Rigging: On the Floridians, a wooden mast and boom outfitted with massive steel pipe outriggers, or towing booms, pulled a single 120-foot-wide net and the associated six- to eight-foot otter doors; however, by the late 1950's the trawler fleet was converting from a single-trawl to two-trawl rigs. Typically, winches, located behind the wheelhouse, powered from the main engines pulled cables connected to drum hoists were common. These power hoists were installed to make retrieving the net easier. In some cases, the boat's design begins with the proper placement of the winch. A small "try net," operated from an outrigger with a steel cable running to a drum hoist, was an efficient and time-saving tool. Operated from the vessel's stern, the try net was used to find shrimp before the larger net was employed.

Navigation Equipment: In the post-World War II era, fishermen learned quickly how to reconfigure surplus military long-range navigation (LORAN) systems for their use, as Loran grid lines are appearing on nautical charts in the 1950s.

Citizen band, or locally called come-back radios are readily available, as are depth finders and improved compasses.

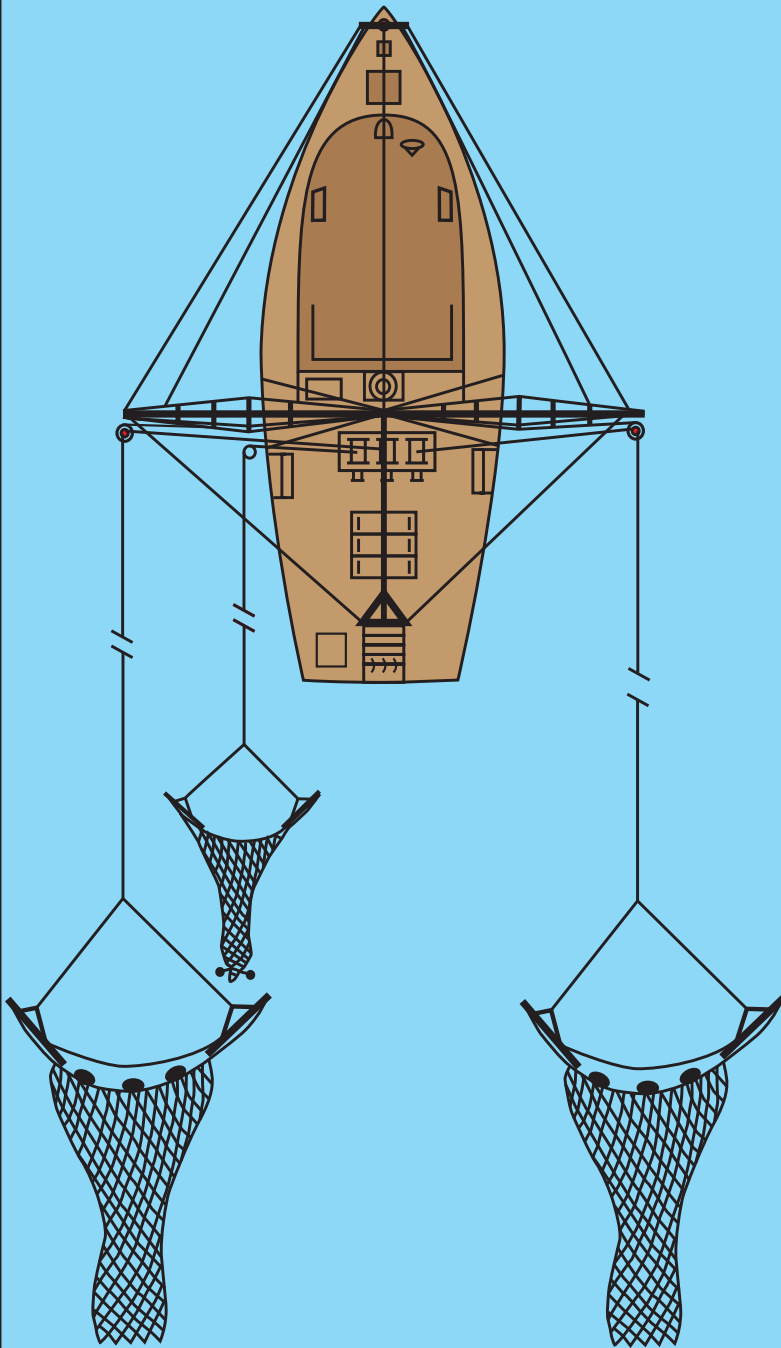
Voltage: The new boats and engine configurations depended on six or twelve-volt electrical systems.

Length of Trip: The Floridianes became the industry's workhorse and was designed for day, a week or up to a month's use.

Accommodations: The cabin-forward wheelhouse was enlarged to accommodate a galley, small crew quarters, a liquid-petroleum-gas store and a twelve-volt efficiency refrigerator.

Engine Manufacturers: By the 1950s, Caterpillar, Gray Marine, Cummins, and Lathrop diesels are in use throughout the shrimp fleet.

1960s – 1970s Trawling Vessel



1960s – 1970s Trawling Vessel

Vessel Size: Floridianes typically extended from forty to eighty feet in length, with a width of from twelve to twenty-four feet.

Construction Material: A few boats were built from cypress planking, but steel and, to a lesser extent, fiberglass were the primary construction materials. Large boats were fabricated in shipyards, while their smaller cousins were built in a shipwright's bayou-side yard. Other than size, Vietnam War-era boats differed little from the vessels constructed during the two previous decades.

Engines: Gasoline engines were available and used, but diesel power dominated the industry. During this period, diesel engines rated up to nearly 400 horsepower.

Rigging: Wooden masts and booms were no longer commonplace, having been replaced by steel counterparts. Dual outriggers were usually twenty-four feet long, each boom being outfitted to pull two forty to forty-two-foot nets and the associated six-to-nine-foot otter doors. (The horsepower of a vessel's power plant ultimately determined the trawl net and door size.) The two smaller nets configuration was considered more efficient over an uneven bottom. Further, the smaller nets caused less total towing resistance, and trawlers could therefore use faster towing speeds. Improved winches and cables were incorporated in deck designs. The try net was commonplace throughout the industry.

Navigation Equipment: By the mid-1960s, shrimp boats utilized more powerful commercial radios with broad band widths. LORAN-C (which was permanently discontinued in 2010), autopilots, depth finders, radar and air conditioning were added to the assembly of electronics that now dominated the wheelhouse.

Voltage: The new boats and engine configurations utilized twelve, thirty-two- and 110-volt systems to power the boat's electronics.

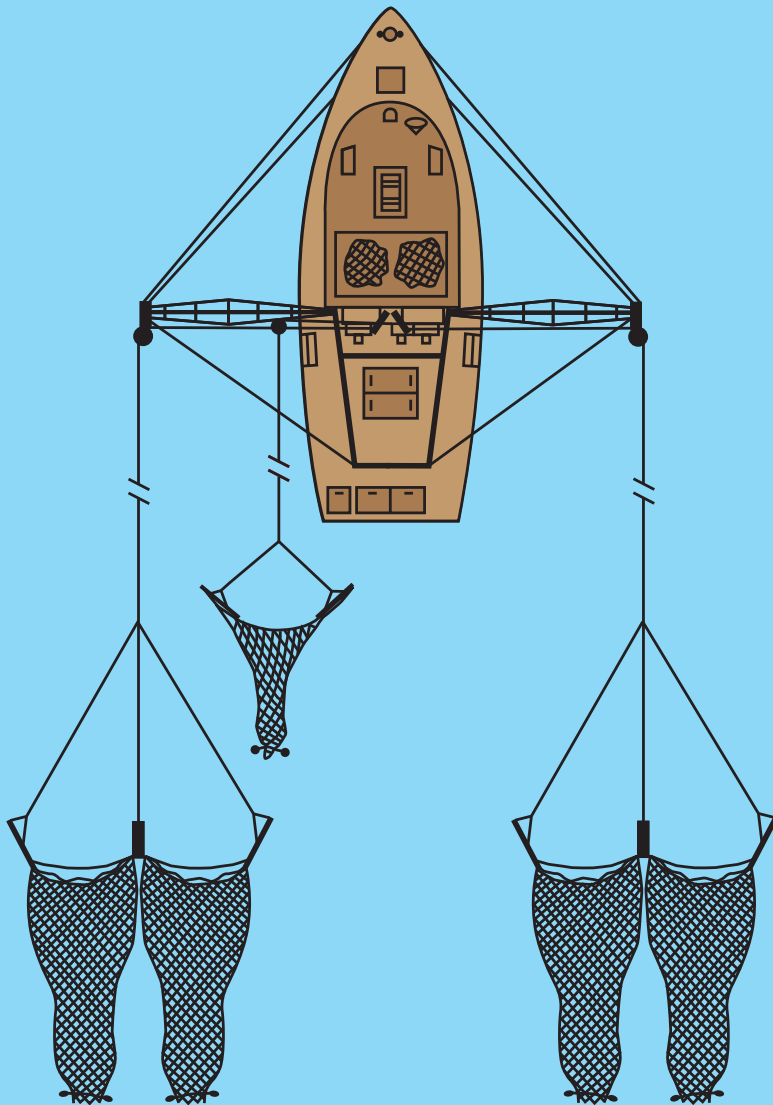
Length of Trip: Boats constructed in this period were designed for deployments of a week to a month in length.

Accommodations: The wheelhouse was enlarged to accommodate a captain's stateroom, crew quarters, a galley with freezer, television, heating and air conditioning units, and ice makers.

Engine Manufacturers: Caterpillar and Cummins diesels powered the fleet.

*Artwork not drawn to scale.
Source: Long and Burke, 2015.
Art modified by Robert Ray, Louisiana Sea Grant.*

1980s – 2020s Trawling Vessel



1980s – 2020s Trawling Vessel

Vessel Size: With development of new shrimp harvest sites, new steel-hull boats, from seventy-five to more than 100 feet in length were built. They have deep drafts and include refrigeration systems and enormous fuel and water tanks

Construction Material: These steel and fiberglass “super trawlers” were fabricated in a few Louisiana shipyards; there was a slow shift to boatyards in Bayou La Batre, Alabama.

Engines: Diesel power dominated the industry, with engines rated up to nearly 600 horsepower. By the early twenty-first century, marine diesels generated up to 2600 horsepower, with a dozen engines rated between 650 and 1800 horsepower. Often two of these engines powered these new trawlers. Further, auxiliary generators, from thirty to forty kilowatts are part of the engine room.

Rigging: A steel mast and boom supported very long dual outriggers, often equipped with hydraulic systems. The outriggers dragged four sixty-five-foot nets and their otter doors, with a steel sled attached to the middle of the configuration. Large dual winches spooled in the steel cables connected to the nets. The trawl net continued to be used.

Navigation Equipment: Discovery after discovery benefitted the industry. Satellite navigation systems, improved radios, internet access, state-of-the-art global positioning systems (GPS), better depth finders and dual radar units are incorporated into the electronics required to shrimp in open waters and beyond 200 miles from home ports.

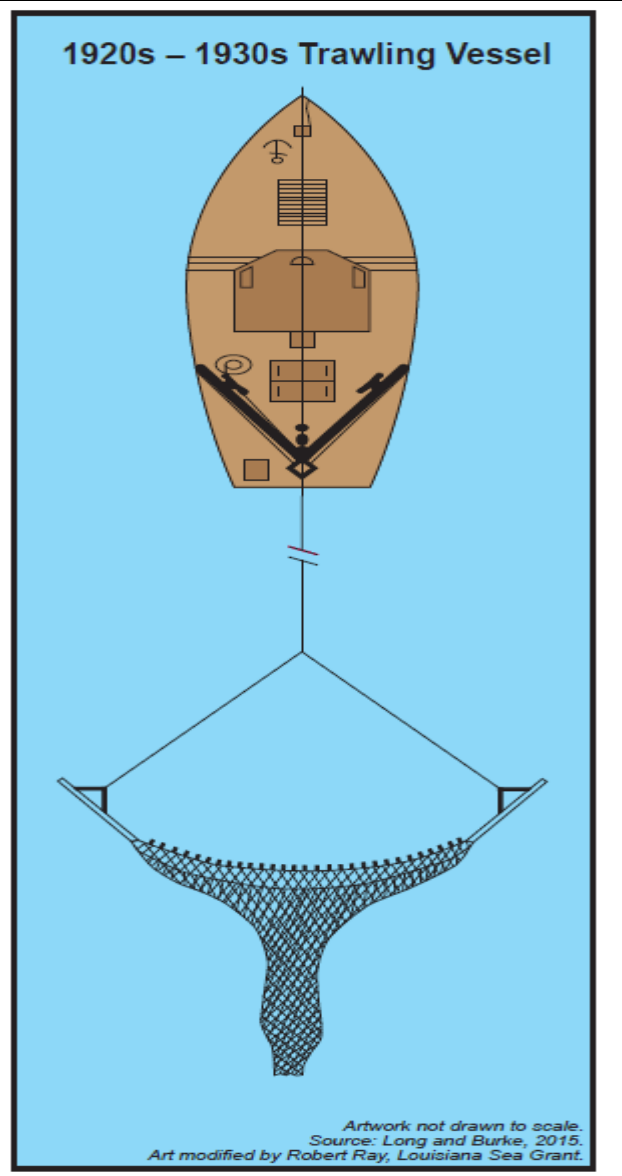
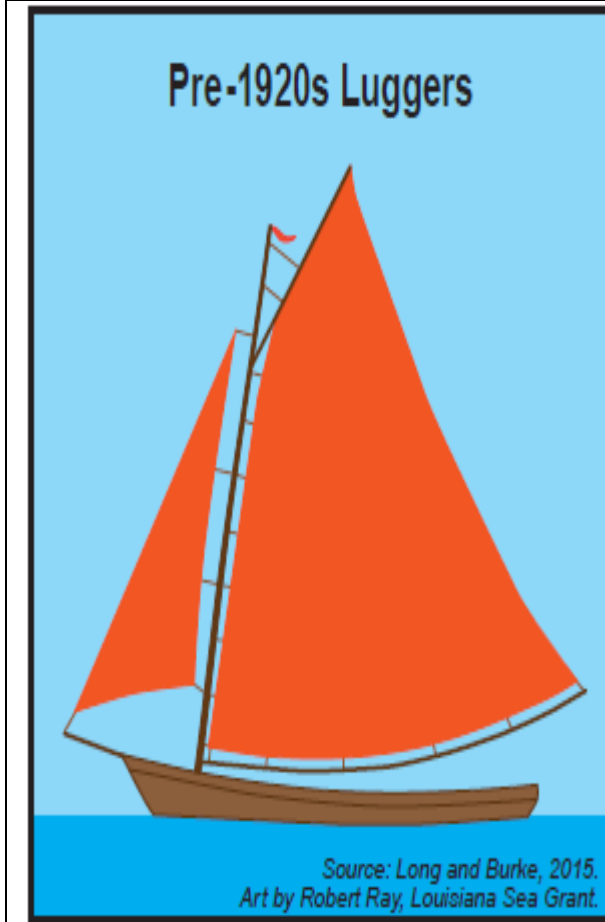
Voltage: Along with the twelve, thirty-two, 110-volt systems, modern boats have 220-volt power supply, as well.

Length of Trip: The newer vessels are constructed to trawl for a week or up to two months. For these longer voyages, refrigeration units allow the catch to be individual quick freeze (IQF). Since these boats work in the Gulf of Mexico, they can operate year-round.

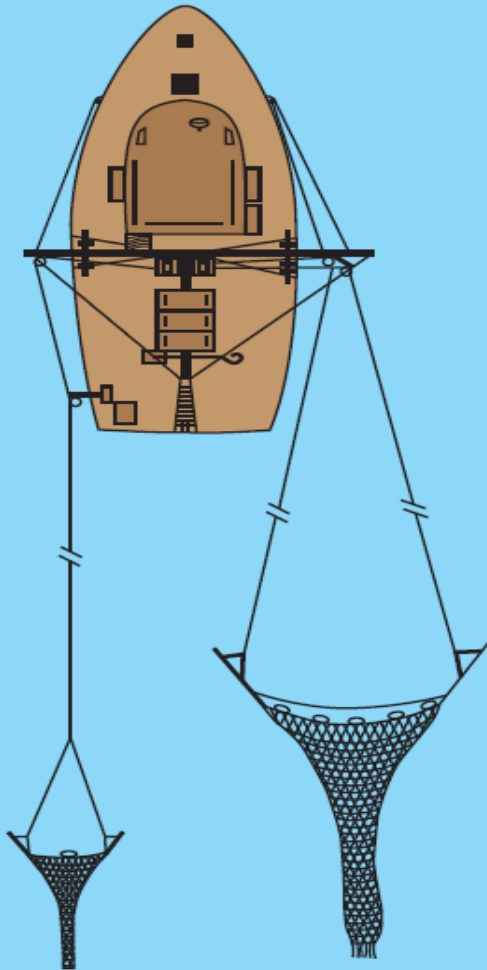
Accommodations: The wheelhouse continued to accommodate a captain’s stateroom, crew quarters, galley with freezer, television, heat and air conditioning units, hot and cold showers, ice makers and phones.

Engine Manufacturers: Caterpillar and Cummins diesels continued to power the fleet with improved engines.

Evolution of the Shrimping Vessel

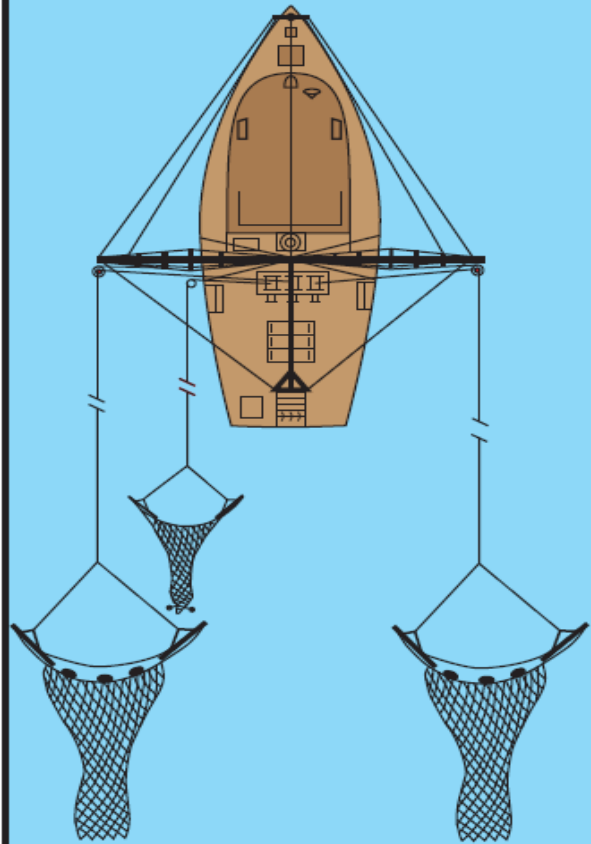


1940s – 1950s Trawling Vessel



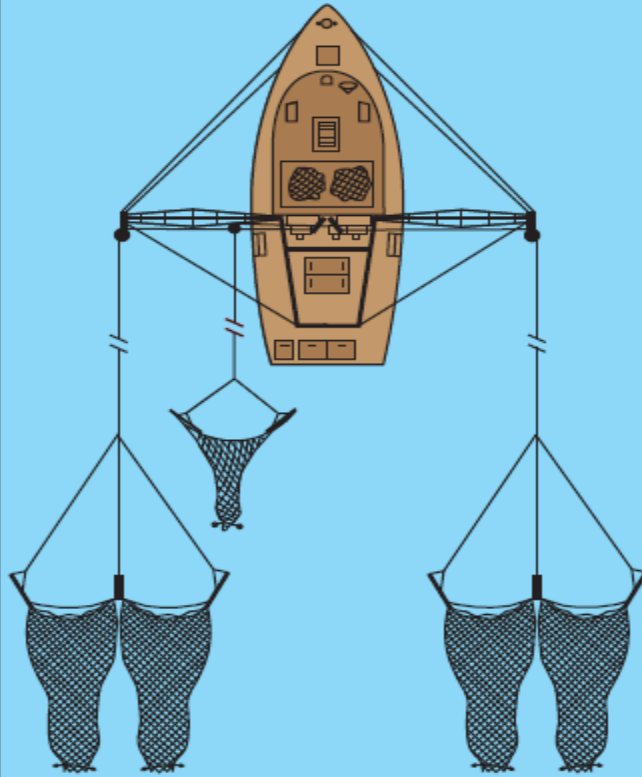
Artwork not drawn to scale.
Source: Long and Burke, 2015.
Art modified by Robert Ray, Louisiana Sea Grant.

1960s – 1970s Trawling Vessel



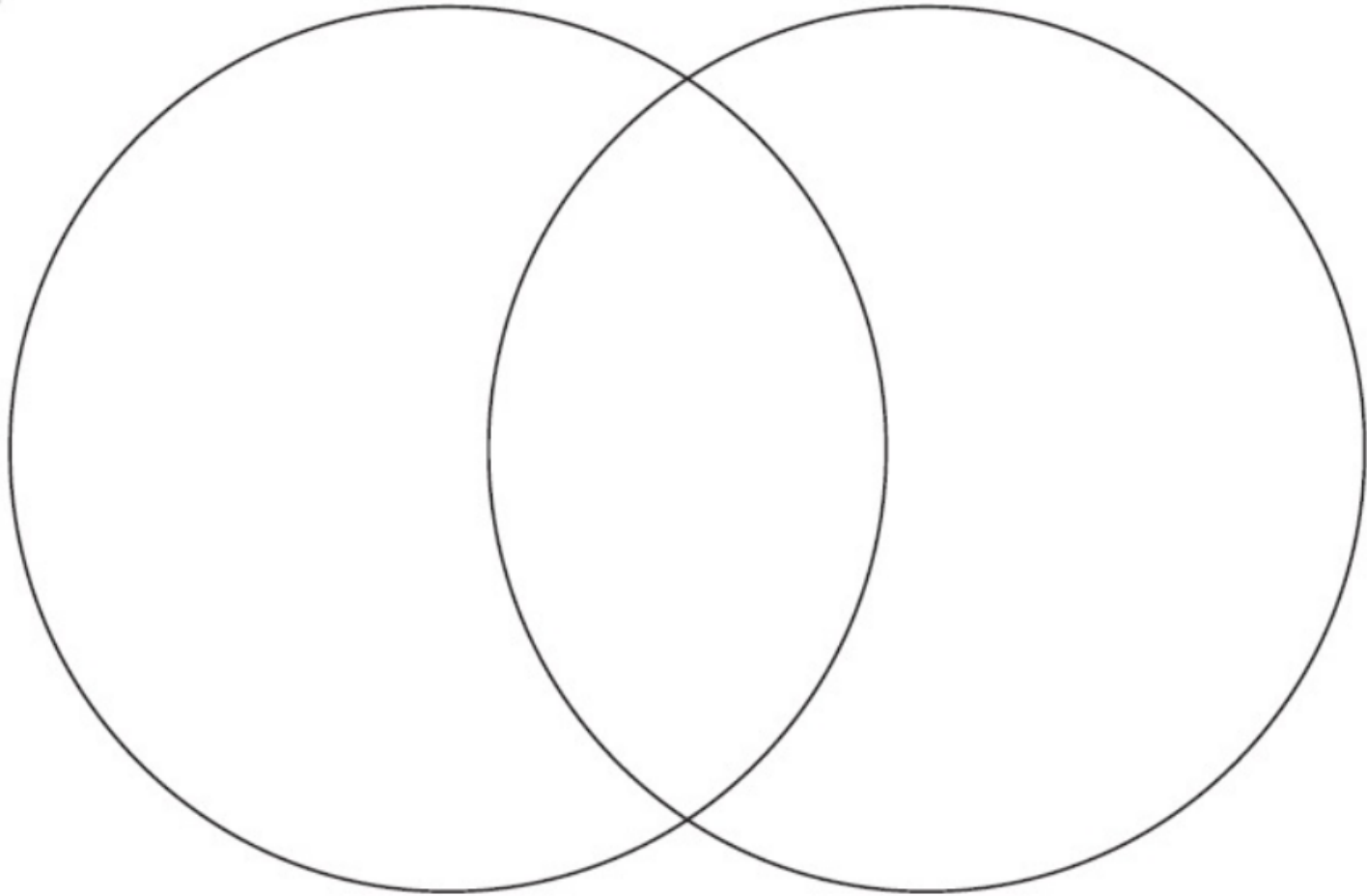
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Source: Long and Burke, 2015.
Art modified by Robert Ray, Louisiana Sea Grant.

1980s – 2020s Trawling Vessel



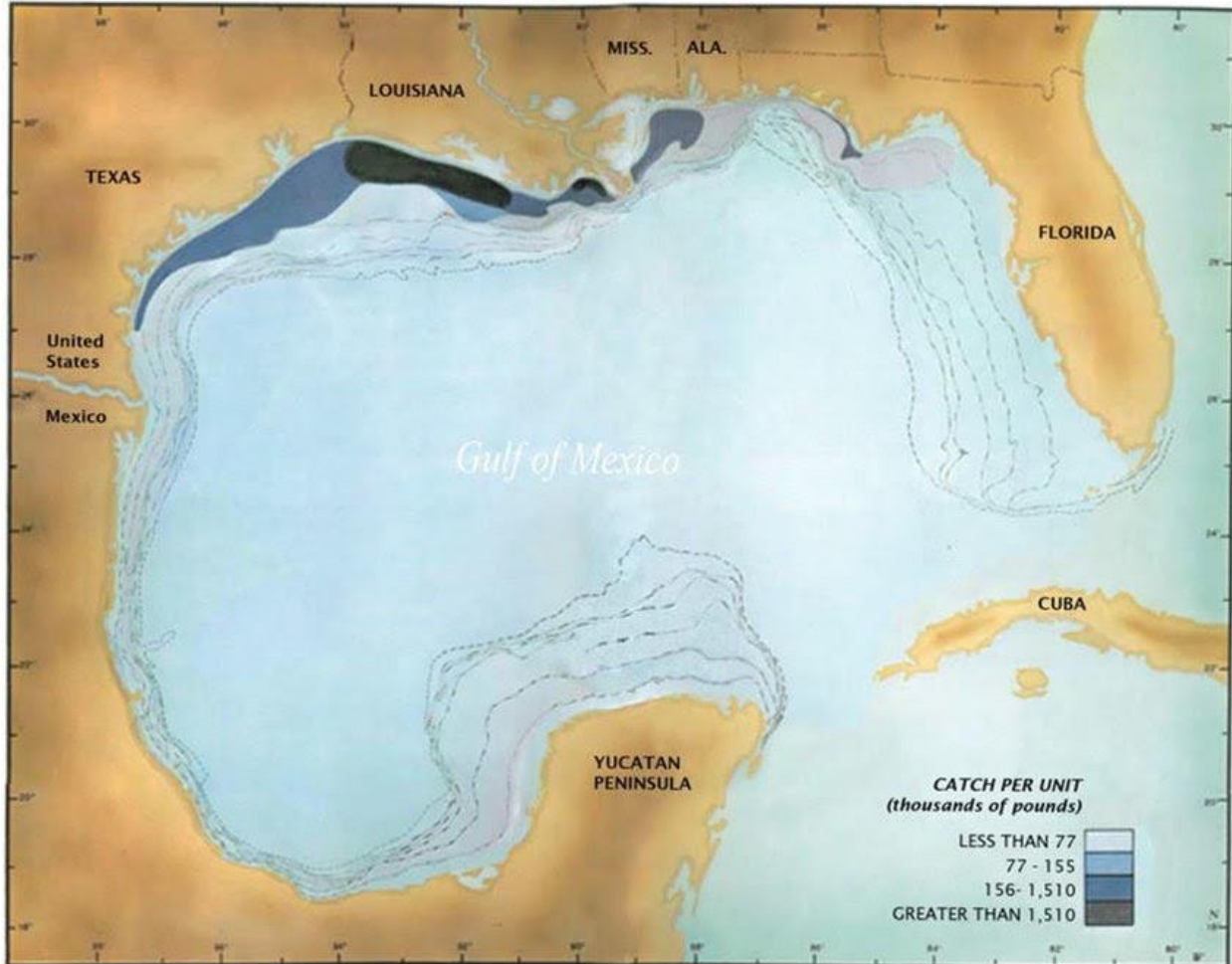
*Artwork not drawn to scale.
Source: Long and Burke, 2015.
Art modified by Robert Ray, Louisiana Sea Grant.*

Name: _____ Date: _____ Class Period: _____

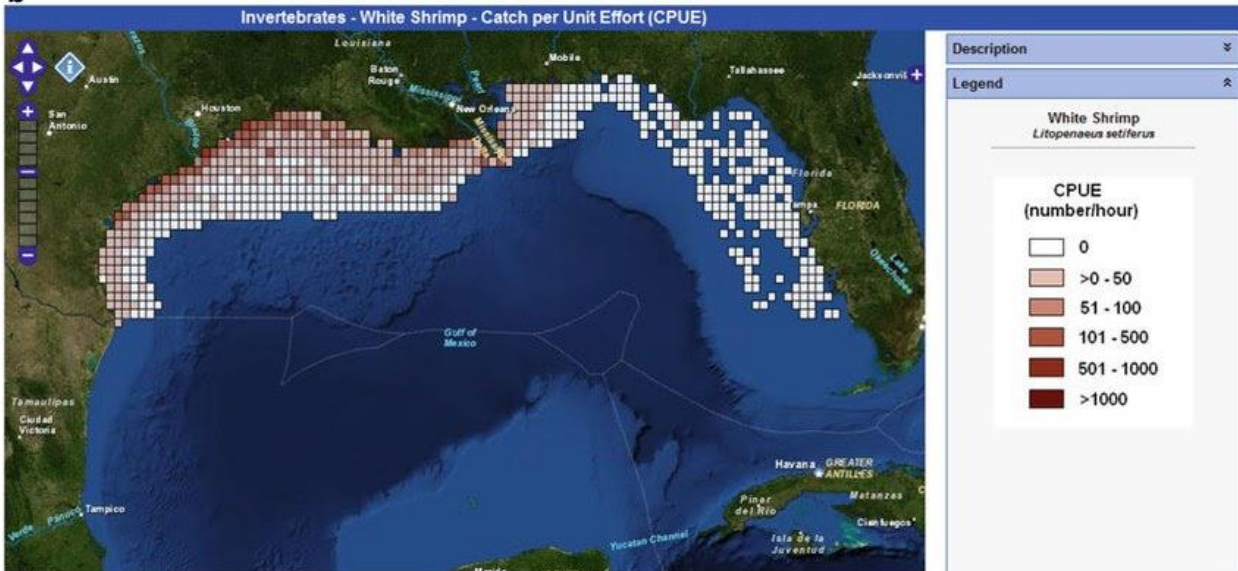


White Shrimp Locations

a

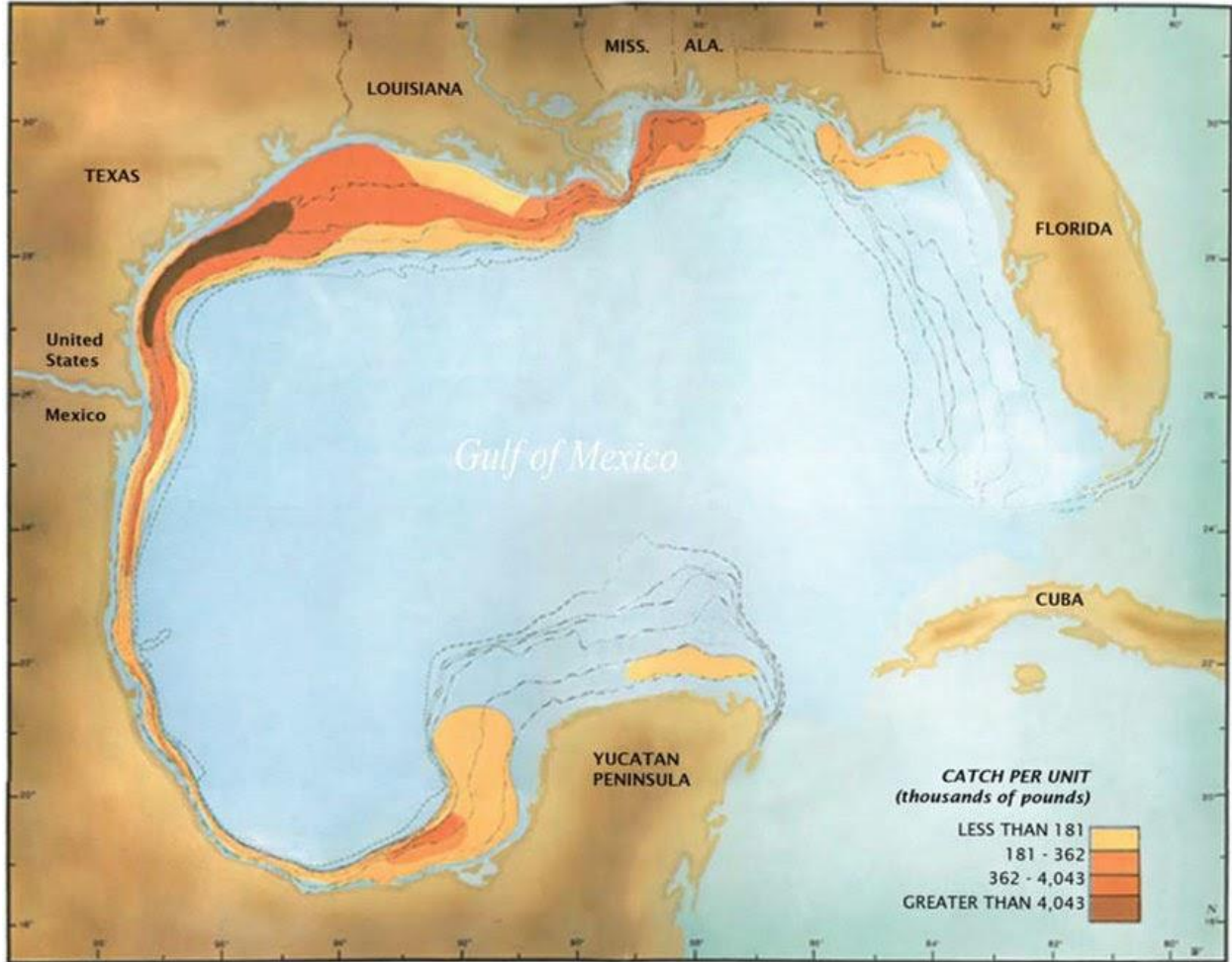


b

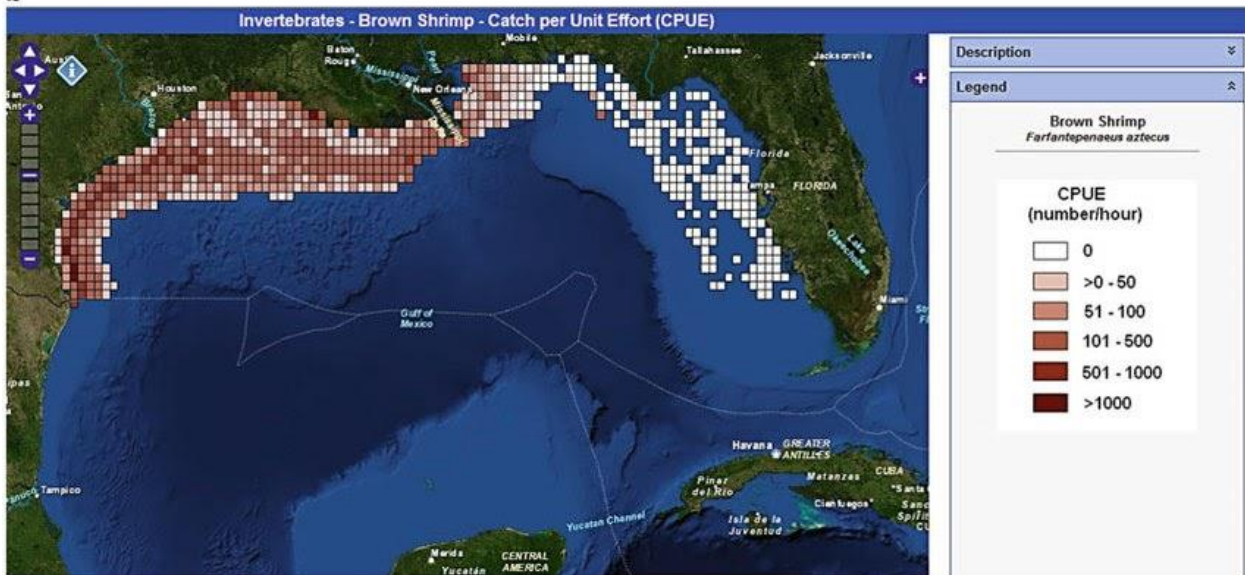


Brown Shrimp Locations

a



b



Number of Shrimp Caught in Trawler Net

	Student #1	Student #2	Student #3	Student #4	Total	Percentage
Rubber Bouncy Ball						
Marbles						
Golf Balls						
Dice						
Small Pebbles						

Number of Shrimp Caught in Trawler Net

	Student #1	Student #2	Student #3	Student #4	Total	Percentage
Rubber Bouncy Ball						
Marbles						
Golf Balls						
Dice						
Small Pebbles						