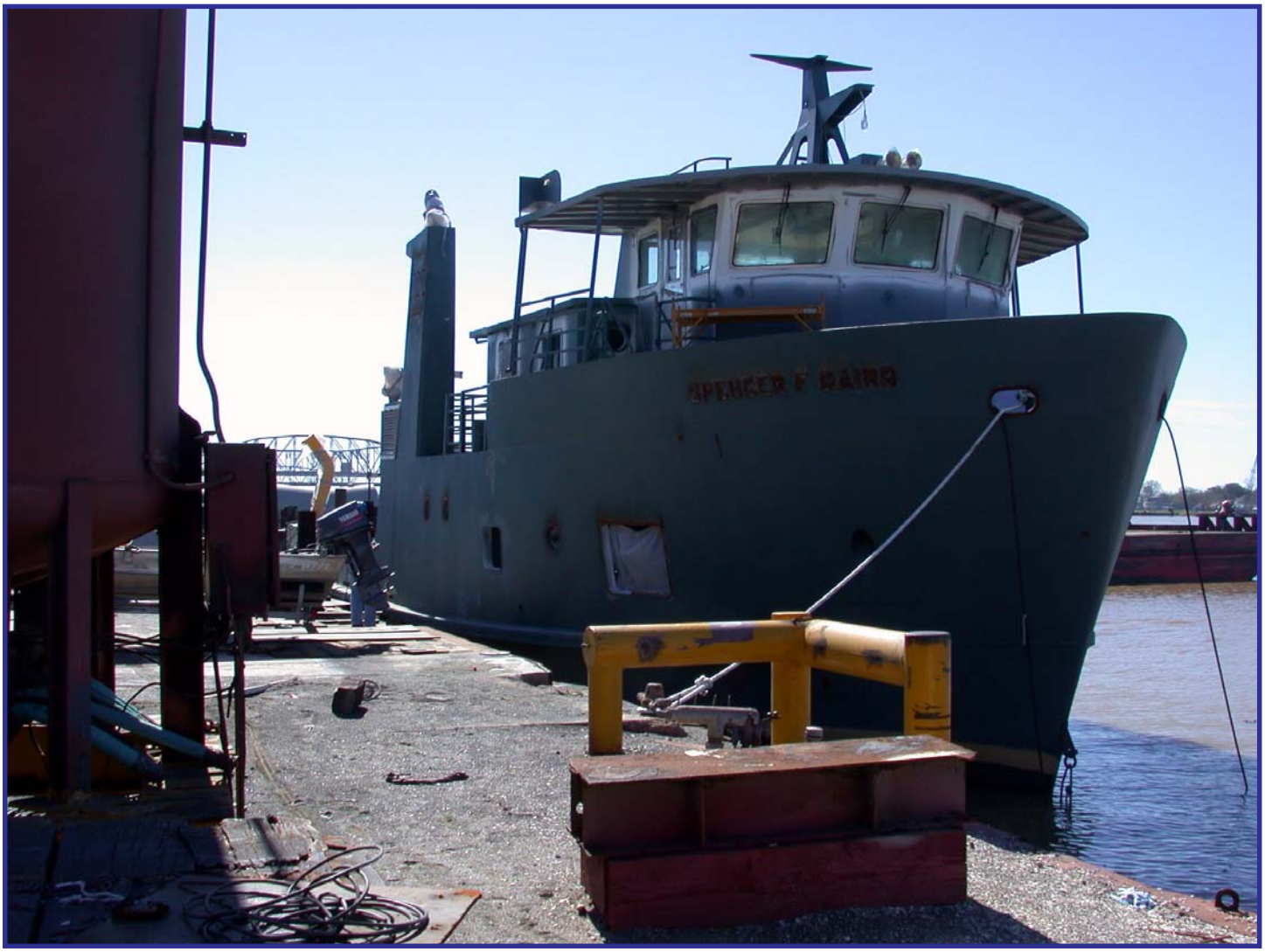
U.S. Fish & Wildlife Service

Region 3 - Great Lakes/Big Rivers

Leadership in Conserving, Enhancing, and Restoring Aquatic Ecosystems

Motor Vessel Spencer F. Baird is coming to the Great Lakes



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The brand new M/V Spencer F. Baird was launched for sea trials in Morgan City, Louisiana, on Tuesday February 14, 2006. The vessel will make its way to the Upper Great Lakes to replace the aging M/V Togue as soon as construction is complete.

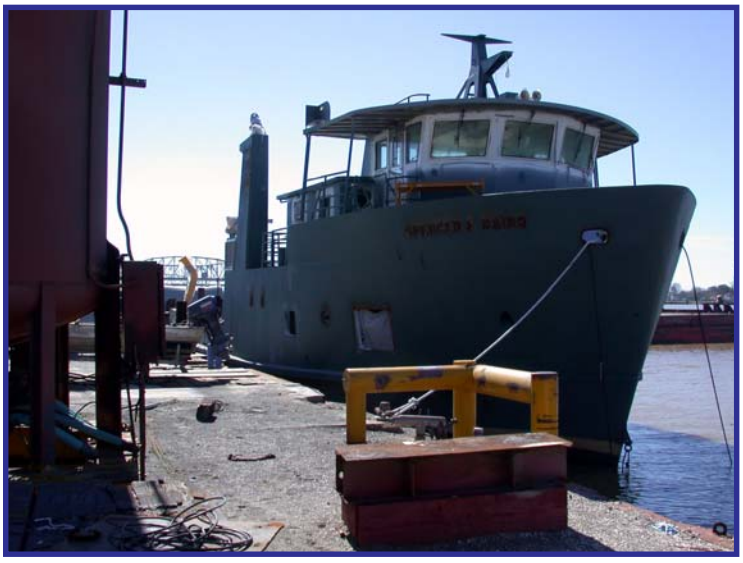
Motor Vessel Spencer F. Baird is coming to the Great Lakes

The Fish and Wildlife Service has been raising and stocking lake trout in the Great Lakes since 1960 in an effort to restore populations of this native fish species. It wasn't until 1989 that the Fish and Wildlife Service acquired a vessel to release lake trout on offshore spawning reefs. Historically, most of the lake trout production in lakes Huron and Michigan came from offshore spawning reefs. The Motor Vessel (M/V) *Togue* performed this work admirably for more than a decade.

The *Togue* is being retired in 2006 because of an ageing hull and weakened infrastructure along with safety concerns, and will be replaced by the M/V *Spencer F. Baird*, named for a prominent zoologist who, beginning in 1871, served as the first head of the U.S. Fish Commission, a forerunner agency to the Fish and Wildlife Service.

-USFWS **Spencer F. Baird**

The M/V *Spencer F. Baird* will make its maiden run this year, but the replacement process has been in the works for nearly six years. This initiative began in May 2000 as the Fish and Wildlife Service started working with the U.S. Army Corps of Engineer's Marine Design Center in Philadelphia to develop a "Concept Definition" for a replacement vessel. The process laid out the mission, regulatory requirements, vessel characteristics, and design features of the new vessel, forming the humble beginnings of the M/V *Spencer F. Baird*.



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Next, the "Togue Replacement Team" came together. This multidisplinary team was instrumental in conceptualizing the design of the *Spencer F. Baird* to meet the current stocking mission and add the stock assessment capabilitities.

This team included a Fish and Wildlife Service Midwest Regional Office staff: Paul Evenson of Engineering, who served as project manager; Clark Bartelt, a contract specialist; Todd Turner, Region 3 fish hatchery team leader; and Bob Adair, Great Lakes program supervisor.

Region 3 field staff on the team included fishery biologist/data analyst Chuck Bronte and Project Leader Mark Holey from the Green Bay Fishery Resources Office (FRO) in Wisconsin; Togue crew members Robert Bergstrom, marine engineer, and Ship Captain Mike Perry, both of Jordan River National Fish Hatchery (NFH); and Hatchery Manager Rick Westerhof of Jordan River NFH.

Rounding out the team were Greg Lee, a naval architect with the Marine Design Center, and K.H. Ho, manager of marine engineering with ABS (American Bureau of Shipping) Consulting in Houston.

Improvements were made to the M/V Spencer F. Baird to minimize stress on native lake trout, while en route to offshore stocking reefs. Fish stocking characteristics include the following:

Fish tanks: Ten 1,000-gallon removable tanks designed to minimize fish seasickness, three large access hatches to facilitate fish monitoring, repair and maintenance of tanks and transport of larger fish (the *Togue* had eight tanks of less than 1,000 gallons and the tanks were not removable).

Fish capacity: 190,000 six-inch fish per trip (the *Togue* could carry 100,000 six inch fish per trip).

Oxygen system: Onboard oxygen concentrator system, 15 l/minute (the *Togue* used heavy oxygen bottles that had to be transferred back and forth from the vessel to the hatchery).

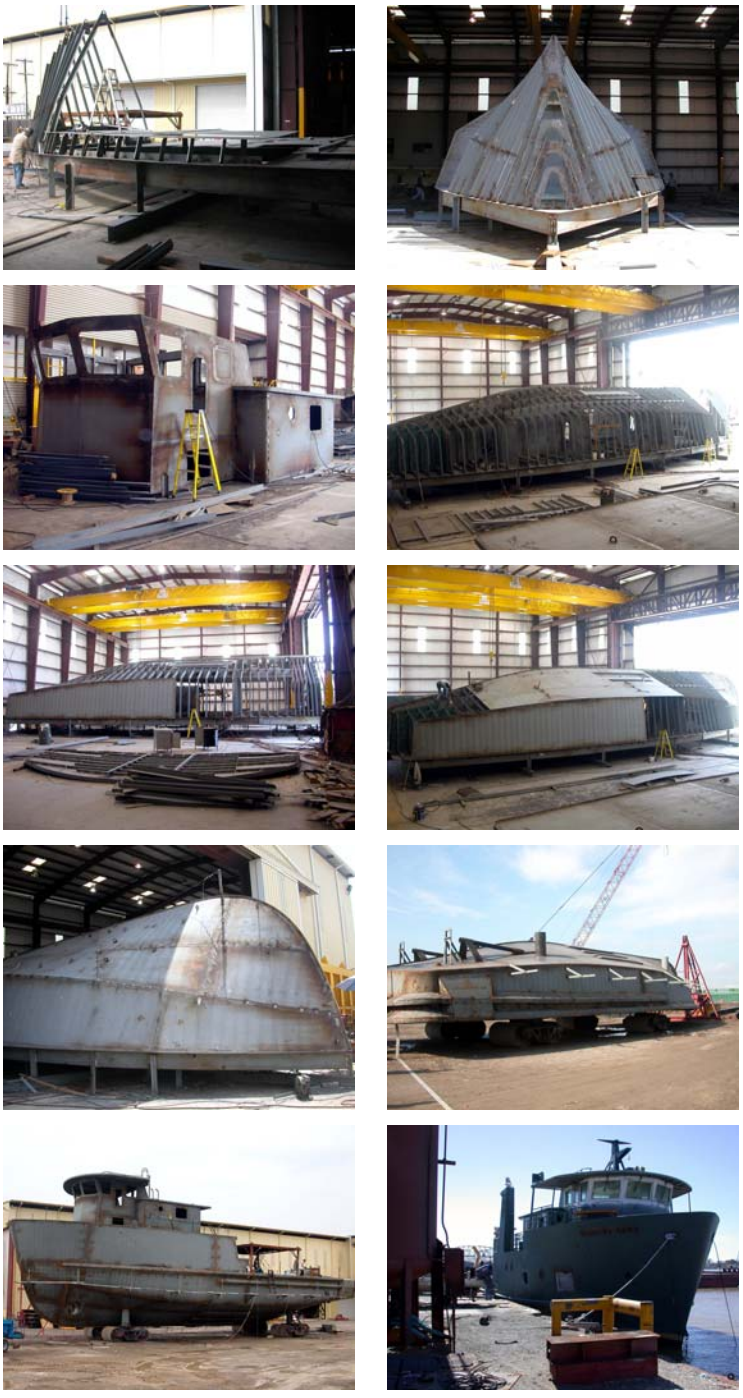
Dual ballast/chilled water system: 3,440 gallons, chilled from 65°to 45° Fahrenheit in less than 10 hours (the *Togue* had neither system, but relied on chilled water from the trucks and lake water, if it was colder, to lower the water temperature in the tanks).

A subgroup of this team was responsible for selecting a naval architectural firm to design the new vessel from proposals by companies. The team did on-site interviews with the top three firms, which was an excellent way to see who they would be working with. They selected Timothy Graul Marine Design of Sturgeon Bay, Wisconsin, to design the new "one-of-a-kind vessel" to stock lake trout and carry out stock assessment activities in the Great Lakes.

Graul and staff joined the growing team and assisted with selecting a shipyard to build the new vessel. Conrad Industries, Inc., in Morgan City, Louisiana, received the contract in October 2004. Founded in 1948 by J. Parker Conrad, Conrad Industries specializes in construction, conversion, and repair of a variety of marine vessels for commercial and government customers.

With the contract awarded, it was exciting to see the vessel being built after all the work that went into the design. The team hired ABS Consulting to ensure the vessel would be built to the American Bureau of Shipping's internationally recognized construction and safety standards, and made weekly visits to Conrad Industries to review and report back progress to the Fish and Wildlife Service on all aspects of the construction.

Meanwhile, construction continued. Fish and Wildlife Service biologists held their breaths when hurricanes Katrina and Rita hit the Gulf Coast area in September 2005 as the M/V *Spencer F. Baird* was being built. Located in a corridor between the paths of the two storms, the shipyard was not damaged but construction came to a temporary halt because of port closures that affected supplies and material lines of support. Laborers were in short supply, as well. Fortunately, construction on the *Spencer F. Baird* resumed on a limited basis in October 2005.



-USFWS photos

M/V Spencer F. Baird Construction Photos

Key principal characteristics of the M/V Spencer F. Baird include:

Length (overall): 95 feet
Beam (molded): 30 feet
Draft fully loaded, amidships: 9 feet, 6 inches
Complement: Captain, Marine Engineer, Seaman/Fisherman, five biologists
Staterooms: two single, three double occupancy
Fuel Capacity: 8,160 gallons
Potable water: 1,925 gallons
Propulsion: Geared diesel engines, 850 BHP each at 2,100 RPM; Two 54-inch diameter, four-blade fixed pitch propellers on solid shafts
Speed: Maximum: 14.7 MPH; Minimum: trawling sustainable for 45 minutes at 1 MPH
Certification: USCG Uninspected Vessel, ABS International Load Line
Route: Exposed waters/Great Lakes winter
Class: ABS A1, AMS, Survey/Fishing Vessel and Ice Class CO notation per ABS Steel Vessel Rules, 2004
Science spaces: wet lab and gill net lifting station in starboard bow, dry lab for electronics and wing control station forward of amidships

On February 13, 2006, Conrad Industries launched the *Spencer F. Baird*. Sea trials are expected to occur in late March to test all equipment and machinery to ensure that it is operating properly. Delivery to the M/V *Spencer F. Baird's* home port of Cheboygan, Michigan, is anticipated to be late April 2006, assuming the vessel passes its sea trials with flying colors.

Special events surrounding the vessel's debut are being planned for this summer. They include a grand dedication event with dignitaries to be invited from the Interior Department, Fish and Wildlife Service, and Congress, as well as possibly some "port-of-call" events where the vessel would be open for tours at various ports around the Great Lakes. Watch future issues of *Fish Lines* for more information about events.

Following all of the events and hoopla, the new vessel and its crew will get to work. It is expected that the *Spencer F. Baird* will stock about 3.7 million lake trout annually, primarily in lakes Huron and Michigan.

Unlike the *Togue*, the new vessel will be able to evaluate the performance of stocked lake trout and measure the abundance of other species using gill nets, bottom and midwater trawls, and scientific echosounders that measure abundance and distribution of fish with sonar. This capability will expand the science mission of the fishery resources offices to meet the information and assessment needs of the Fish and Wildlife Service, as well as those of state, tribal, provincial, and Federal partners, through coordinated surveys.

Fishing gear selections were made to complement those of our partners' survey vessels; however, new technologies were also included to improve efficiencies and data quality. For example, an "autotrawl system" will allow sensors on the trawls to communicate data with the onboard winches to automatically pay out or retrieve cable as required to keep the trawl geometry correct. This is the first system of its kind to be used on a vessel in the Great Lakes.

The M/V *Spencer F. Baird* contains a wet lab in the starboard bow for retrieving gillnets with a hydraulic lifter and processing catches from all gears. Trawl winch controls and hydroacoustic monitoring systems, as well as output screens for navigation data, are located in a dry lab just aft of the wet lab and near the main work deck. Davits for deploying other gear such as plankton nets or bathymetric profilers are located on the starboard and port upper deck as well as an extra science winch for towed bodies.

The Fish and Wildlife Service expanded capabilities to off-shore stock lake trout in lakes Huron and Michigan in 1989, when it acquired a former shrimp trawler that had been seized as contraband. After a retrofit, this vessel, renamed the *Togue*, stocked more than three million lake trout annually in lakes Huron and Michigan. Of 63 science vessels operating in the Great Lakes, the M/V *Togue* is the only hatchery fish distribution vessel in operation.

In its lifetime as a stocking vessel, the M/V *Togue* has put tens of millions of lake trout in the Great Lakes, making it one of the keys to the potential success of the Fish and Wildlife Service's lake trout rehabilitation program.

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