

South Fox Island Light Station
Name of Property

Leelanau County, MI
County and State

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in National Register Bulletin, *How to Complete the National Register of Historic Places Registration Form*. If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions.

1. Name of Property

Historic name: South Fox Island Light Station

Other names/site number: _____

Name of related multiple property listing:

N/A

(Enter "N/A" if property is not part of a multiple property listing)

2. Location

Street & number: South Fox Island

City or town: Leelanau Township State: MI County: Leelanau Code: 089 Zip: 49670

Not For Publication: Vicinity:

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended,

I hereby certify that this X nomination ___ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60.

In my opinion, the property ___ meets ___ does not meet the National Register Criteria. I recommend that this property be considered significant at the following level(s) of significance:

___ national ___ statewide X local

Applicable National Register Criteria:

X A ___ B X C ___ D

<hr/>	
Signature of certifying official/Title:	Date
<hr/>	
State or Federal agency/bureau or Tribal Government	

South Fox Island Light Station
Name of Property

Leelanau County, MI
County and State

In my opinion, the property ___ meets ___ does not meet the National Register criteria.	
Signature of commenting official:	Date
Title :	State or Federal agency/bureau or Tribal Government

4. National Park Service Certification

I hereby certify that this property is:
___ entered in the National Register
___ determined eligible for the National Register
___ determined not eligible for the National Register
___ removed from the National Register
___ other (explain:) _____

Signature of the Keeper

Date of Action

5. Classification

Ownership of Property

(Check as many boxes as apply.)

Private:

Public – Local

Public – State

Public – Federal

South Fox Island Light Station
 Name of Property

Leelanau County, MI
 County and State

Category of Property

(Check only **one** box.)

- Building(s)
- District
- Site
- Structure
- Object

Number of Resources within Property

(Do not include previously listed resources in the count)

Contributing	Noncontributing	
<u>7</u>	<u>2</u>	buildings
<u>2</u>	<u>0</u>	sites
<u>2</u>	<u>0</u>	structures
<u>0</u>	<u>0</u>	objects
<u>11</u>	<u>2</u>	Total

Number of contributing resources previously listed in the National Register 0

6. Function or Use

Historic Functions

(Enter categories from instructions.)

- DOMESTIC – single dwelling
- DOMESTIC – secondary structure
- TRANSPORTATION – water-related

Current Functions

(Enter categories from instructions.)

- VACANT
- _____
- _____
- _____

South Fox Island Light Station
Name of Property

Leelanau County, MI
County and State

7. Description

Architectural Classification

(Enter categories from instructions.)

OTHER – VERNACULAR

Materials: (enter categories from instructions.)

Principal exterior materials of the property:

FOUNDATION: BRICK

CONCRETE

STONE

WALLS: WOOD – board and batten

BRICK

METAL

ROOF: ASPHALT

METAL

Narrative Description

(Describe the historic and current physical appearance and condition of the property. Describe contributing and noncontributing resources if applicable. Begin with a **summary paragraph** that briefly describes the general characteristics of the property, such as its location, type, style, method of construction, setting, size, and significant features. Indicate whether the property has historic integrity.)

Summary Paragraph

South Fox Island is located in northern Lake Michigan, approximately seventeen miles from the northern tip of the Leelanau Peninsula in Leelanau County. The South Fox Island Light Station National Register boundary includes thirteen resources, which are clustered in a small complex of 10.4 acres at the southernmost tip of the island. Most of the island is privately-owned and inhabited year-round, while the remainder is owned by the State of Michigan and uninhabited. The light station complex is bounded by open, sandy or rocky beaches on the east, south, and west and by forest and open dunes to the north. Contributing resources include light towers, dwellings, and associated outbuildings, which together illustrate the growth of the light station and changes to navigation aid technology from the light station's establishment in 1867 until the light was decommissioned in 1969. Overall, the light station complex retains high material integrity. There is very little construction within the complex that post-dates the period of significance, and the historic resources have few material changes or alterations.

South Fox Island Light Station

Name of Property

Leelanau County, MI

County and State

Narrative Description

South Fox Island is located in Leelanau County, approximately seventeen miles northwest of the tip of the Leelanau Peninsula in northern Lake Michigan. The island is about five miles long and one-and-one-half miles wide, encompassing approximately 3,430 acres. About two-thirds of the island is under private ownership and one-third is owned by the State of Michigan and managed by the Department of Natural Resources. Public access by water is permitted only on publicly-owned lands, but there are no ferries, docks, or harbors. Limited access by air is provided by a small private air strip.

The Light Station was established in 1867 to guide vessels navigating the Manitou Passage to the southwest, Gray's Reef Passage to the northeast, and the North Passage to the south, and to warn of the dangers of the approximately nine miles of shoals extending south of the island where the three passages converged. The South Fox Island Light Station complex is located on 115 acres at the southern end of the island conveyed from the United States Coast Guard to the State of Michigan after the light station was decommissioned in 1969. The nominated property includes the southernmost 10.4 acres, which contains the nine buildings, two structures, and two sites that make up the light station complex.

The light station complex is bounded by open, sandy or rocky beaches to the east, south, and west, while the remainder of the state-owned property north of the complex, and much of the remainder of the island, is a natural landscape of hardwood forest, sandy or rocky lakeshore, or open dunes. The topography of the light station complex is slightly rolling and wooded with mature hardwood trees. The planned landscape elements include a grassy lawn in the center of the complex, and landscaping plants, including day lilies, oriental poppies, lilacs, and daffodils, are present near the buildings. A strawberry patch and remnants of apple and plum orchards also remain.

The original 1867 Lighthouse/Keeper's Dwelling was constructed about 285 feet north of the south shoreline on a small rise to maximize visibility from the lake by extending the light above the tree canopy. A large Assistant Keepers' Quarters building was constructed adjacent to this lighthouse in 1910. A Fog Signal Building was added to the southwest corner of the complex in 1895, and in 1934 a taller Skeletal Tower light was erected, which functionally replaced the earlier lighthouse.¹ In 1897, a boathouse was constructed at the southeast corner of the complex near the shoreline, and a dock site extends east of the boathouse approximately 195 feet from the shore. Additional outbuildings include a workshop, oil house, and smokehouse, as well as a restroom building and maintenance shed, both recently constructed. A small cemetery is located at the north end of the complex, and a network of concrete sidewalks, constructed in 1917, connect the buildings. Of the extant resources, seven buildings, two structures, and two sites date between 1867 and 1969 and retain sufficient integrity to be contributing. Two buildings were constructed after the period of significance and are therefore non-contributing.

¹ Note: Although range lights and other types of navigation aids are sometimes mounted on skeletal tower frames, throughout this nomination, the term "skeletal tower" refers to manned lighthouses which feature a lantern room mounted on a skeletal tower frame.

South Fox Island Light Station
Name of Property

Leelanau County, MI
County and State

Manmade landscape elements not specifically identified in the inventory include a light post between the Fog Signal Building and the Skeletal Tower, a flagpole base with a replacement flagpole southeast of the Lighthouse/Keeper's Dwelling, and a clothesline post east of the Lighthouse/Keeper's Dwelling that was constructed with square nails, suggesting it was installed before 1890.

Inventory Methodology

Since the light station complex has no streets or addresses, each resource has been assigned a number that corresponds to its location on the site map. The inventory is arranged according to these assigned numbers. Resources are named according to their historic function, and building functions and construction dates were derived primarily from the records of the Fox Island Lighthouse Association, which was organized in 2002 (originally named the Fox Island Education Association) to preserve and maintain the light station complex.

Resources in the inventory are coded contributing or non-contributing based on their date of construction and level of material integrity. A resource is contributing if it retains its original form, fenestration, and character-defining architectural features. All contributing resources were constructed during the period of significance, 1867 to 1969, and retain sufficient integrity of location, design, setting, materials, workmanship, feeling, and association to contribute to the historic character of the complex.

In general, resources within the complex retain original exterior materials, retain original windows, and have few, if any, additions or other alterations. The interior spaces of the buildings are also largely intact, and retain original floor plan arrangements, finishes, and detailing. Material changes within the complex are largely related to routine maintenance, such as the replacement of roofing materials, reconstruction of rotted wood elements like doors, or removal or reconstruction of structurally damaged wings or porches. These changes do not necessarily render a resource non-contributing.²

1. Lighthouse/Keeper's Dwelling – 1867

Contributing Building

Constructed of yellow Milwaukee brick, which was painted white around 1910 to improve daytime visibility and protect the brick from the weather, the Lighthouse/Keeper's Dwelling is approximately 285 feet from the lakeshore at the southern tip of the island. The load-bearing brick walls are thirteen inches wide at the base of the tower. The four-story, square lighthouse tower is centered on the front elevation, which faces southwest, and retains limestone lintels and sills and a stone block foundation. It is thirty-nine feet to the focal plane of the lantern and forty-five feet in total height. The tower has a replacement five-panel wood door, which serves as the main entrance to both the tower and the attached keeper's dwelling. There is a fixed six-light wood window at the first floor, six-over-six wood windows at the second and third floors, and a corbelled cornice between the third and fourth levels. The top level is a decagonal iron lantern

² Due to limited access to the South Fox Island Light Station, the inventory has been prepared using photographs and information provided by the Fox Island Lighthouse Association and the Historic Structure Report prepared by U.P. Engineers & Architects, Inc., in 2011.

South Fox Island Light Station
Name of Property

Leelanau County, MI
County and State

room, enclosed with wood panels after 1999. The lantern room is surrounded by a wide metal deck with an iron safety railing, and is accessed by a forty-eight-step iron spiral staircase.

The tower projects from the façade (southwest elevation) of the keeper's dwelling, a front-gable, one-story-with-raised-basement, rectangular building. The keeper's dwelling retains limestone lintels and sills, a stone block foundation with rectangular vents, and an interior brick chimney. The façade features six-over-six wood windows flanking the tower at the first floor. There are three six-over-six wood windows on the northwest elevation. The southeast elevation contains a six-over-six wood window and a three-over-six wood window that was shortened between 1917 and the 1930s. Prior to 1914, a hip-roof dormer with a three-over-three wood window was added to this elevation. The dormer is clad in master rib metal that matches the roof of the dwelling, which was added in 2010. The rear (northeast) elevation contains two three-over-six wood windows in the gable. A one-story shed-roof wing extends from this elevation with board-and-batten sheathing, exposed rafter tails, a brick foundation, three-over-three and six-over-six wood windows, and a rear entrance. This wing was added by 1880, and it was rebuilt between 2015 and 2017 with the original windows reinstalled.

The interior of the dwelling contains a parlor, kitchen, bedroom, and closet on the first floor. A small room that originally served as an oil room was converted to a bathroom sometime after the Oil House was constructed in 1895, possibly in 1910 when the Assistant Keeper's Quarters were completed, as that building was the first on the site to have indoor plumbing. The kitchen was also likely renovated at that time to include plumbing fixtures and cabinets. The second floor includes a bedroom, closet, office, and storage room. The dwelling was renovated with updated flooring and cabinetry in the 1950s.

2. Assistant Keepers' Quarters – 1910

Contributing Building

Located immediately northwest of the Lighthouse/Keeper's Dwelling, the Assistant Keepers' Quarters is a two-story-with-raised-basement, side-gable triplex built with one-to-one common bond red brick, three interior brick chimneys with stone caps, and a brick and stone foundation. Lou Comfort of Charlevoix, Michigan, was hired to build the building. The east end of the building contains a two-story dwelling, while the west end contains one dwelling on the first floor and another on the second floor. The front (southwest) elevation originally had gabled porches that provided access to each half of the building, but they were removed in the 1980s due to structural deterioration. The east end is three bays wide at the first floor, containing a door and two windows. A large gabled dormer contains two windows and a door that accessed a balcony, also removed in the 1980s. The west end is four bays wide at the first floor, containing a door and three windows. A large gabled dormer contains two windows. The one-over-one wood windows and doors retain limestone lintels and sills, but most of the openings have been boarded, including windows at the basement level. There is a secondary entrance at grade on the southeast elevation, which is sheltered by a shed-roof hood with sawn brackets. Quarter-round windows in the southeast and northwest gables have rowlock brick lintels and limestone sills and have also been boarded. The east end of the rear (northeast) elevation contains three windows, one of which has been shortened, and the west end contains two windows and a door, which is sheltered by a shed-roof hood with sawn wood brackets. Most windows on this elevation are set in arched openings with rowlock brick lintels and limestone sills. This elevation also has two

South Fox Island Light Station

Name of Property

Leelanau County, MI

County and State

large gabled dormers, each containing three windows. The northwest elevation contains a single bay each at the first and second floors.

The interior of the building is divided into three dwelling units. The west half of the building is a two-story dwelling that includes a kitchen, parlor, bathroom, and three bedrooms. The east half of the building has a dwelling on each floor, each with a kitchen, parlor, bathroom, and bedroom. The woodwork, plaster, and many original plumbing fixtures remain intact, and the dwellings were renovated with updated kitchen fixtures and cabinetry in the 1950s.

3. Skeletal Tower – 1905, 1934

Contributing Structure

A steel skeletal light tower is located just north of the Fog Signal Building, approximately 365 feet southwest of the Lighthouse/Keeper's Dwelling. It is approximately 104 feet tall, and 135 feet above the surface of Lake Michigan, with a pyramidal shape. The tower was originally constructed in 1905 on Sapelo Island, Georgia, but it was disassembled in 1933 to be transported for use at the South Fox Island Light Station, where it was erected in 1934.

The tower base, which measures twenty-eight feet square, rests on nine concrete pier footings. The tops of the piers, exposed several inches above grade, are hexagonal in shape and measure five feet across. The skeletal light tower was constructed with five vertical sections consisting of six-inch diameter vertical struts, three-inch diameter and four-inch diameter horizontal struts, and smaller tension rods. The structure tapers to support the two-story watch room and lantern room. The center of the tower is a cylindrical, enclosed metal stairwell, about six feet in diameter, which is supported by an eight-inch center post that extends the bottom vertical section, with the stairwell extending the remaining four vertical sections to the watch room deck. The stairwell is accessed by a narrow platform, and the entry to the staircase contains a pair of steel plate doors with a decorative metal Classical surround featuring pilasters supporting an entablature with a star motif in the center. The watch room is a circular room surrounded by an open deck with a metal railing, and the lantern room above is also surrounded by an open deck with a metal railing. The floor of the lantern room contains eight lights comprised of seven hexagonal glass blocks, which provide light to the watch room.

The tower does not have ground-level access, so it was originally accessed by a catwalk extending from the cupola of the adjacent Fog Signal Building to the stairwell, approximately twenty feet above grade. The catwalk was removed around 1969 when the light station was decommissioned, and the stairwell can now only be accessed by ladder.

4. Fog Signal Building – 1895, c.1930

Contributing Building

The Fog Signal Building is located approximately 395 feet southwest of the Lighthouse/Keeper's Dwelling, and a concrete sidewalk connects the two buildings. Charles Tilley of Northport, Michigan, was hired to construct the building in 1895. The Fog Signal Building is a frame, one-story, hip-roof building with two extant chimney stacks and roof and walls covered with corrugated metal sheathing. The building is oriented northeast toward the center of the light station complex. The front (northeast) entrance is slightly off-center and contains a pair of metal doors. The left (southeast) door is slightly wider and contains a four-pane light, and the right (northwest) door is narrower with a two-pane light. There is a six-light metal hopper window on this elevation, three windows on the southeast elevation, two windows on the northwest

South Fox Island Light Station
Name of Property

Leelanau County, MI
County and State

elevation, and three windows on the southwest (rear) elevation. A square, hip-roof cupola was added to the building around 1930 and contains a metal door and small fixed lights. A catwalk originally connected the cupola to the adjacent Skeletal Tower, but was removed around 1969 when the light station was decommissioned.

The interior of the Fog Signal Building is a large open space with a poured concrete floor where the signal machinery was located. It also contains a small coal storage room and a small tool storage room. The interior walls are covered with metal sheathing, with the exception of a small area where the underlying wood sheathing is exposed. An interior stairway provides access to the cupola, and two wood-sheathed interior columns were added in 2018 to support the weight of the chimney stacks.

5. Boathouse – 1897

Contributing Building

The Boathouse is a one-story, front-gable building with board-and-batten cladding, replacement batten swinging doors, a poured concrete floor, exposed interior framing, and metal boat skids. There are fixed four-light wood windows on the north and south elevations. The building is located approximately 290 feet southeast of the Lighthouse/Keeper's Dwelling adjacent to the lakeshore. The building faces east toward Lake Michigan and the underwater remains of a dock that is no longer extant. The beach extends along the east and south elevations of the building.

6. Dock Site – c.1867

Contributing Site

A dock site is located immediately east of the Boathouse and was the subject of a 2011 archaeological investigation by Wayne R. Lusardi, State Maritime Archaeologist at the Michigan Department of Natural Resources Thunder Bay National Marine Sanctuary (20 LU 129). Lusardi provided the following description of the site: "The pier consists of a linear structure extending eastward into Lake Michigan terminating 195 feet from the boat house. The extreme offshore end of the pier then bends 90 degrees and extends another 16 feet northward. The section of pier in the water is currently heavily eroded, collapsed in sections, and dispersed across the lake bottom, while the section of pier above water level is considerably more intact." Lusardi describes the construction of the pier as "a series of wooden cribs or boxes... positioned flat on the lake bottom arranged in squares or triangles... then filled with rocks or cultural materials primarily consisting of disposed boiler fragments and other large scraps of metal." Lusardi also notes "the pier appears to have been modified and extended throughout its lifetime," with the earliest elements of the pier dating to the establishment of the light station in 1867 and repairs and additions continuing through at least 1928.³

7. Maintenance Shed – 2020

Non-Contributing Building

A front-gabled, board-and-batten shed with a corrugated metal roof is located approximately 175 feet southeast of the Lighthouse/Keeper's Dwelling. The building is oriented facing west with paired board-and-batten doors on the west elevation and a fixed four-light wood window on the east elevation. The building was constructed on the site of a previous storage building. This building is non-contributing due to age.

³ U.P. Engineers & Architects, Inc., "Historic Structure Report for South Fox Island Light Station, South Fox Island, Leelanau County, Michigan," 2011, Bentley Historical Library, University of Michigan, Ann Arbor, 372-373, 377.

South Fox Island Light Station
Name of Property

Leelanau County, MI
County and State

8. Oil House – 1895

Contributing Building

The Oil House is a small, square, brick building with a metal hip roof, metal vent pipe, poured concrete floor, and a metal door. It is located approximately 60 feet south of the Lighthouse/Keeper's Dwelling. The building was constructed when the oil used for the light was changed from lard to kerosene, which could not be stored in the Lighthouse/Keeper's Dwelling. The building could store as much as 360 gallons of kerosene oil.

9. Outhouse – 2017

Non-Contributing Building

A small, front-gabled, board-and-batten outhouse with a metal roof and a plywood door is located adjacent to the Lighthouse/Keeper's Dwelling. This building is non-contributing due to age.

10. Workshop/Carpenter's Shop – 1897

Contributing Building

This one-story, front-gable building has board-and-batten cladding, a concrete foundation, and an asphalt roof that replaced an earlier cedar shake roof in 2010. The building faces southeast and is located roughly in the middle of the complex, approximately 115 feet southwest of the Lighthouse/Keeper's Dwelling. There is a batten door on the front (southwest) elevation, which is flanked by four-light fixed windows. There are four six-light wood windows on the southeast elevation and one four-light wood window on the northwest elevation. The rear (northeast) elevation contains a batten door with a small batten loft door above. The building retains an interior brick chimney, which is supported by an interior wood frame. The interior of the building is a single room with a wood floor. The building may have originally served as the summer kitchen for the first assistant keepers' dwelling (no longer extant) and been converted for use as a workshop/carpenter's shop when the new assistant keepers' quarters was completed in 1910.

11. Smokehouse – c.1900

Contributing Building

A small, front-gabled smokehouse with corrugated metal sheathing, a standing seam metal roof, but no door. The building is on the west side of the complex, approximately 110 feet north of the Skeletal Tower.

12. Cemetery – 1885

Contributing Site

A cemetery containing two known graves is located approximately 100 feet north of the Lighthouse/Keeper's Dwelling and Assistant Keepers' Quarters. One grave is believed to be that of Henry Turner, the captain of the *James Platt* who drowned on November 25, 1881. Records from the light keeper at the time indicate Turner's body was found on South Fox Island on August 10, 1882, and he was buried there. The grave is marked with a Grand Army of the Republic marker from Post 399 based in Northport. Although genealogical records show Turner was from Lapeer County and lived in Bay County, it is possible the Northport GAR Post placed the marker after the grave was disturbed by sailors visiting the island in 1899.⁴ The second grave is that of light station keeper Allen Cain's dog, Leader, which is marked with a cross bearing his name.

⁴ South Fox Island Light Affidavit, June 29, 1899, Fox Island Lighthouse Association Collection; Lewis Bourissau to unknown recipient, June 26, 1899, Fox Island Lighthouse Association Collection.

South Fox Island Light Station
Name of Property

Leelanau County, MI
County and State

13. Sidewalks – c.1917

Contributing Structure

A network of concrete sidewalks were constructed around 1917 to connect the Lighthouse/Keeper's Dwelling and Assistant Keepers' Quarters to the Boat House, Skeletal Tower and Fog Signal Building, and other outbuildings. The concrete sidewalks replaced earlier wood plank pathways built in the 1890s.

Integrity Statement

The South Fox Island Light Station retains integrity of location, setting, and design, including its original building spacing, orientation, and manmade landscape features. The built resources retain integrity of design, materials, and workmanship, with few alterations or additions. Only two buildings post-date the period of significance. Together the elements of the light station retain sufficient integrity of design, materials, and workmanship to convey the complex's historic feeling and association.

Statement of Archaeological Potential

The South Fox Island Light Station is closely related to the surrounding environment and landscape. Archaeological deposits from remnant landscape features such as paths and fence lines; infrastructural remains such as filled-in privies, wells, or middens; and structural remains of buildings can provide information valuable to the understanding and interpretation of the light station. Information concerning the spatial organization of buildings and infrastructure in relationship to natural and cultural elements of the landscape can be obtained from the investigation of these features.

There are several known archaeological sites within the complex. A 2011 archaeological study determined a historic pier, likely constructed in 1867 when the light station was established, extended 195 feet east from the boathouse, then angled ninety degrees northward and extended another sixteen feet (20 LU 129). Underwater remains of the pier suggest it was constructed of a series of wooden cribs, filled with rocks and rubble, reinforced with sheet metal, and finally filled with concrete. A set of steps and a large mooring block with 1928 inscribed in the cement were also discovered, located to the west of the dock site. In addition, locations of structural and infrastructural remains are known to be associated with a shed, two well houses, a midden, and a weather break fence. However, limited documentation of these resources is available, and no archaeological studies have been conducted with relation to these sites.

With the exception of the underwater resources investigated in 2011, no other archaeological investigation has been done to further study these known sites or to discover additional remains, and both known sites and undiscovered remains should be considered in any future development within the light station complex.

South Fox Island Light Station
Name of Property

Leelanau County, MI
County and State

Period of Significance

1867-1969

Significant Dates

1867 – construction of original lighthouse
1934 – erection of skeletal tower

Significant Person

(Complete only if Criterion B is marked above.)

N/A

Cultural Affiliation

N/A

Architect/Builder

Comfort, Lou (Builder, Assistant Keepers' Quarters, 1910)
Tilley, Charles (Builder, Fog Signal Building, 1895)

Statement of Significance Summary Paragraph (Provide a summary paragraph that includes level of significance, applicable criteria, justification for the period of significance, and any applicable criteria considerations.)

The South Fox Island Light Station is significant at the local level under Criterion A for Maritime History as a nineteenth and twentieth century navigation aid to vessels transporting grain, lumber, iron ore, coal, and other materials on Lake Michigan. Great Lakes shipping increased dramatically in the mid-nineteenth century following the opening of the Erie Canal and the Soo Locks, facilitating the movement of people and goods between the east coast and the Midwest. Located in northern Lake Michigan, the South Fox Island Light Station guided vessels through the channels of the Manitou Passage southwest of the island, Gray's Reef Passage northeast of the island, and the North Passage south of the island, which converge south of the light station where approximately nine miles of shoals extend from the island's southern tip. The

South Fox Island Light Station
Name of Property

Leelanau County, MI
County and State

light station remained an important navigational aid in the region until modern technology rendered the light obsolete and it was decommissioned in 1969.

The South Fox Island Light Station is significant at the local level under Criterion C for Architecture as an example of an intact lighthouse complex representative of nineteenth and early twentieth century Great Lakes light stations. It includes typical features of light station complexes, including the lighthouse/keeper's dwelling, oil house, fog signal building, boathouse, workshop/carpenter's shop, smokehouse, and assistant keeper's quarters, several of which are reflective of the remote location and self-sufficiency of the South Fox Island Light Station.

The South Fox Island Light Station is also significant at the local level under Criterion C for Engineering as the only extant skeletal tower on Lake Michigan in Michigan's Lower Peninsula. Skeletal towers were developed as a low-cost alternative to the masonry towers commonly built in the nineteenth century, and their prefabricated components could be assembled quickly and easily relocated as needed. The first skeletal towers were constructed on the Great Lakes in the 1860s, and by the 1920s, they had become the dominant lighthouse design in the region. The skeletal tower at the South Fox Island Light Station was built at Sapelo Island, Georgia, in 1905 and relocated to South Fox Island in 1934. Only two additional skeletal towers are known to remain extant on Lake Michigan, both in Wisconsin, and only three additional skeletal towers are known to remain extant in Michigan, all three located in the Upper Peninsula on Lake Superior.

The period of significance for the South Fox Island Light Station begins in 1867 with the construction of the first lighthouse. This lighthouse was functionally replaced by a taller skeletal tower erected in 1934, which is included as a significant date. The period of significance ends in 1969 when both lighthouses on the island were decommissioned.

Narrative Statement of Significance (Provide at least **one** paragraph for each area of significance.)

History of the South Fox Island Light Station and Maritime History Context

Natural History and Early Great Lakes Shipping

The South Fox Island Light Station is located on South Fox Island in Leelanau County in the northwestern region of Michigan's Lower Peninsula. The county was laid out in 1840 and formally established in 1863, with South Fox Island, along with North Fox Island, North Manitou Island, and South Manitou Island added to the county in 1895.⁵ South Fox Island is a crescent-shaped land mass oriented northwest to southeast. It is approximately five miles long and one-and-one-half miles wide, comprising about 3,430 acres with just under twelve miles of shoreline. It is just over four miles southwest of North Fox Island, its smaller neighbor, and approximately seventeen miles from the northern tip of the Leelanau Peninsula on the mainland.⁶

⁵ Leelanau Historical Society, "Leelanau Historical Society Museum," www.leelanauhistory.org (accessed March 2021).

⁶ Kathleen Craker Firestone, *The Fox Islands, North and South: Lake Michigan Islands, Volume II* (Northport, MI: Michigan Islands Research, 1996), 8.

South Fox Island Light Station

Name of Property

Leelanau County, MI

County and State

South Fox Island is part of a chain of small islands in northern Lake Michigan known as the Beaver Island Archipelago, which also includes North and South Manitou islands, North Fox Island, and Beaver Island. They were formed by the same glacial activity that carved the Great Lakes around 20,000 years ago. As the glaciers advanced and receded over thousands of years, the relatively soft sandstone, limestone, and shale of the Great Lakes was eroded away and depressed by the weight of the ice to form the lake basins, which reached their present configuration about 3,000 years ago. Deposits of harder rock were more resistant to erosion and form the many islands throughout the Great Lakes.⁷ It is believed that the water level was significantly lower than present levels, and there is some evidence that South Fox Island, North Fox Island, and Beaver Island were connected to each other and to the mainland by land bridges, while the Manitou Islands were similarly connected to the Leelanau Peninsula.⁸

South Fox Island typically has cooler summers and winters, and less snowfall, than the mainland. The topography is generally low rolling hills with a combination of sandy and rocky beaches, dunes and moraines, and hardwood forests. Maple, beech, and birch are the most common forest species, while the dunes support aspen, cedar, fir, ash, willow, juniper, and other trees. Some cleared areas are the remains of former farm fields. Common animals include red foxes, snowshoe hares, chipmunks, and white-tailed deer, as well as Bald Eagles, Canada geese, purple martins, and migratory birds and butterflies utilizing the island for rest.⁹

The island's name appears to derive from the Algonquian name *waugooshe-minis*, which translates to Fox Island.¹⁰ It is believed that Indigenous people utilized the islands long before the arrival of Europeans, likely members of the Ottawa nation, as they were the primary residents of the northwestern region of Michigan's lower peninsula in the 1700s.¹¹ The reason for the name is not known and may be a reference to populations of fox species living on the island or to the island's relationship to the fur trade. The islands were later also given names by white settlers, including Thomas Island (south) and Pierces Island (north), as well as Patmos Island (south) and Paros Island (north), however these names were short-lived.¹²

The Ottawa took full advantage of the abundance of Lake Michigan and primarily fished, but they also farmed and hunted to ensure year-round subsistence.¹³ They also were engaged in the fur trade, offering furs to European traders in exchange for European-made goods including cloth, metal implements, and glass beads.¹⁴ Animal pelts, especially beaver, were then

⁷ Willis F. Dunbar and George S. May, *Michigan: A History of the Wolverine State*, 3rd ed. (Grand Rapids, MI: Wm. B. Eerdmans Publishing Co., 1995), 1-2; National Oceanic and Atmospheric Administration, "Great Lakes Ecoregion," <https://www.noaa.gov/education/resource-collections/freshwater/great-lakes-ecoregion> (accessed March 2021).

⁸ Firestone, *The Fox Islands*, 21.

⁹ Firestone, *The Fox Islands*, 21, 25-27.

¹⁰ Firestone, *The Fox Islands*, 8, 35; Virgil J. Vogel, *Indian Names in Michigan* (Ann Arbor, MI: University of Michigan Press, 1986), 106.

¹¹ Charles E. Cleland, *Rites of Conquest: The History and Culture of Michigan's Native Americans* (Ann Arbor, MI: University of Michigan Press, 1992), color plate maps.

¹² Firestone, *The Fox Islands*, 35, 59.

¹³ Firestone, *The Fox Islands*, 35; Tanner, *Atlas of Great Lakes Indian History*, 18-23.

¹⁴ Michael S. Nassaney, *The Archaeology of the North American Fur Trade* (Gainesville, FL: University Press of Florida, 2015), 1.

South Fox Island Light Station

Name of Property

Leelanau County, MI

County and State

transported to Europe for use in making hats and other clothing.¹⁵ Some historical accounts indicate Indigenous peoples farmed and fished on the Fox Islands, and others suggest Native and European peoples alike sought the relatively calmer waters near the islands compared to the open areas of Lake Michigan as they traveled the Great Lakes.¹⁶

Fur trading declined dramatically by the 1830s, and the economy of the region shifted instead to commercial fishing. Some fishermen lived on the mainland and fished the waters near the island, while others lived on the island and transported either salted or fresh fish to mainland markets. Gill nets were the most common among fishermen, but seine nets and pound nets were also used. Whitefish and perch were the most desirable species, and some Indigenous fisherman also caught sturgeon.¹⁷

Through the middle decades of the 1800s, the political organization of South Fox Island changed many times. By 1836, South Fox Island had been ceded to the federal government by the Ottawa and Ojibwe nations. At that time, the Beaver Island Archipelago was part of the Michigan Territory's Michilimackinac County, which at that time included the northern half of the lower peninsula and the southern part of the upper peninsula.¹⁸ Emmet County was carved out of Michilimackinac County (later Mackinac County) in 1840, and in 1847, Michigan's new state legislature annexed the islands to Emmet County's Peaine Township.¹⁹ South Fox Island was surveyed for the state in 1847, after which it was opened for land purchases. By that time, a small number of European squatters were already living on the island, and they were soon followed by a small group of Mormons in the 1850s.²⁰ In 1855, the islands were separated from Emmet County, instead forming Manitou County, which included the Manitou Islands, the Fox Islands, and Beaver Island.²¹ Manitou County was dissolved and the archipelago divided in 1895, with the Manitou and Fox islands becoming part of Leelanau County and Beaver Island joining Charlevoix County, the political configuration that remains today.²²

Great Lakes transportation increased dramatically during this time, and a number of shipping lanes began to form on Lake Michigan. The channel formed between the Manitou islands and the Leelanau Peninsula became known as the Manitou Passage, and just north of this channel, between the Fox islands and Beaver Island on the west and the mainland on the east, is Gray's Reef Passage. Vessels traveling between the Straits of Mackinac and Chicago or other cities on southern Lake Michigan via this route not only reduced their journey as much as sixty miles,

¹⁵ Carolyn Gilman, *Where Two Worlds Meet: The Great Lakes Fur Trade* (St. Paul, MN: Minnesota Historical Society, 1982), 81-86.

¹⁶ Firestone, *The Fox Islands*, 35-36.

¹⁷ Firestone, *The Fox Islands*, 36-41.

¹⁸ Firestone, *The Fox Islands*, 49-50; J.H. Young, "The Tourist's Pocket Map of Michigan" (Philadelphia, PA: S. Augustus Mitchell, 1839), *Scanned Maps of Michigan*, Michigan State University Map Library, <https://lib.msu.edu/branches/maps/MSU-Scanned/Michigan/843-E-1839-Mitchell> (accessed March 2021).

¹⁹ Firestone, *The Fox Islands*, 51-52; "A New Map of Michigan with its Canals, Roads & Distances" (Philadelphia, PA: Thomas, Cowperthwait & Co., 1853), *Scanned Maps of Michigan*, Michigan State University Map Library, <https://lib.msu.edu/branches/maps/MSU-Scanned/Michigan/843-D-1853/> (accessed March 2021).

²⁰ Firestone, *The Fox Islands*, 36-38.

²¹ Firestone, *The Fox Islands*, 52; John Farmer, "Map of the State of Michigan and the Surrounding Country" (Detroit, MI: John Farmer, 1855), *Scanned Maps of Michigan*, Michigan State University Map Library, <https://lib.msu.edu/branches/map/MSU-Scanned/Michigan/843-A-1855-farmer-500/> (accessed March 2021).

²² Firestone, *The Fox Islands*, 55.

South Fox Island Light Station

Name of Property

Leelanau County, MI

County and State

they also reduced the risk of the stronger storms on more open areas of Lake Michigan. Vessels traveling to or from Green Bay, Wisconsin, sought similar advantages by traveling directly across the lake between South Fox Island and North Manitou Island, known as the North Passage.²³

The completion of the Erie Canal in 1825, followed by the completion of the St. Mary's Falls Ship Canal at Sault Ste. Marie, now the Soo Locks, in 1855 facilitated increased shipping on the Great Lakes. Manufactured goods were transported by water from the east coast into the frontier regions of the Midwest, and in turn, grain was taken from the Midwest to be processed by east coast industries. Iron ore, lumber, and coal from Michigan's upper peninsula, Wisconsin, and Minnesota was shipped to industrial centers at Detroit; Gary, Indiana; Buffalo, New York; and Cleveland, Ohio.²⁴

Steamships, which had become common on the Great Lakes by the 1850s, also contributed to the growth of marine traffic near the Beaver Island Archipelago, some carrying pioneers, others cargo. The vast distances between ports of call on the Great Lakes required large amounts of cordwood, and as a result, steamships made relatively frequent stops along their journey to refuel. Cordwood logging was common on South Fox Island, as well as Beaver Island and the Manitou islands, therefore steamships utilizing the Manitou, Gray's Reef, or North passages stopped at these islands to rest and to replenish their supplies of cordwood.²⁵

Increased shipping on the Great Lakes led to an increased need for water navigation aids, and in turn the construction of lighthouses on the Great Lakes were themselves a factor in the growth of Great Lakes shipping, helping to ensure valuable cargo arrived safely at its destination. The Lighthouse Service had been established as a branch of the Department of the Treasury in 1789 and was given the responsibility for construction and maintenance of lighthouses throughout the United States. Lights were positioned to mark harbor or river entrances, which were the locations of market ports or sheltered areas utilized during poor weather, or the lights warned of dangers such as shoals, reefs, islands, or points. During the day, lighthouses provided a bearing with which to determine precise location on the lakes. The first lighthouses were built on the Great Lakes in the early 1800s, and by 1860 there were over one hundred lights on the lakes.²⁶

²³ Larry and Patricia Wright, *Great Lakes Lighthouses Encyclopedia* (Erin, Ontario: Boston Mills Press, 2006), 333; U.P. Engineers & Architects, Inc., "Historic Structure Report for South Fox Island Light Station, South Fox Island, Leelanau County, Michigan," 2011, Bentley Historical Library, University of Michigan, Ann Arbor, 8.

²⁴ Charles K. Hyde, "United States Coast Guard Lighthouses and Light Stations on the Great Lakes," National Register of Historic Places Thematic Nomination, 1983, Section 8, Page 1; Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 14; Randy Schaetzl, "Iron and Steel," <https://project.geo.msu.edu/geomich/ironsteel.html> (accessed March 2021); Charles K. Hyde, *The Northern Lights: Lighthouses of the Upper Great Lakes* (Lansing, MI: TwoPeninsula Press, 1986), 14-15.

²⁵ Firestone, *The Fox Islands*, 77; Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 13; U.P. Engineers & Architects, Inc., "Historic Structure Report," 8.

²⁶ Hyde, "United States Coast Guard Lighthouses and Light Stations on the Great Lakes," Section 8, Pages 1-2; Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 13-15; Hyde, *The Northern Lights*, 12, 15. Note: The term "Lighthouse Service" is used throughout this nomination to refer to the governmental body which oversaw lighthouses between 1789, when it was first established, and 1939, when it was absorbed into the U.S. Coast Guard, although this body was known as the Lighthouse Establishment, Lighthouse Board, Bureau of Lighthouses, and Lighthouse Service during that period.

South Fox Island Light Station

Name of Property

Leelanau County, MI

County and State

Establishment of the South Fox Island Light Station (1860-1890)

Shipping on the Great Lakes increased dramatically in the second half of the nineteenth century, growing from four million tons of cargo in 1852 to eighty million tons of cargo by 1910. Both the number of ships and the size of ships also increased, resulting in a growing need to light difficult passages on the Great Lakes, including the Manitou, Gray's Reef, and North passages.²⁷ A lighthouse was built on South Manitou Island in 1839, the first light to aid ships traveling the Manitou Passage, followed by additional lights on the southern end of Beaver Island in 1851, the tip of the Leelanau Peninsula in 1852, and the northern end of Beaver Island in 1856 to guide vessels traveling Gray's Reef Passage.²⁸

With this increase in shipping near South Fox Island, the convergence of three primary passages at its southern tip, and the approximately nine miles of shoals extending to its south, a lighthouse and fog signal were recommended to aid navigation through this area in 1866. The following year, Congress appropriated \$18,000 to construct a lighthouse on the southern tip of South Fox Island where the federal government already owned substantial acreage. Additional land was purchased from the State of Michigan to bring the light station to 115 acres, and construction began on the tower immediately.²⁹

The lighthouse is a square tower built of load-bearing Milwaukee brick, which measures forty-five feet high. It was built on a small rise, which brought the focal plane to sixty-eight feet above Lake Michigan. The tower contains a circular iron stair with forty-eight steps leading to the lantern room, which was built with a decagonal iron frame pre-forged by the Detroit Locomotive Company. The light was a red beam produced by a wicked oil lamp surrounded by ruby glass. The light was mounted to a clockwork mechanism that rotated the light so that it flashed for one-and-one-quarter seconds every two minutes, which required winding every four and one-half hours. The light was first lit on November 1, 1867.³⁰

The first keeper assigned to the lighthouse was Henry J. Roe, who already lived on the island at the time of its construction with his wife, Marie, and their daughters, Florence and Mabel.³¹ The Roe family lived in the keeper's dwelling attached to the light tower, a one-and-one-half-story, rectangular home also built of Milwaukee brick. The entrance to the dwelling was through the light tower, which connected to a hall on the first floor. This floor included a parlor, kitchen with pantry, bedroom, and an oil room for storing the lard oil used to fuel the lighthouse lamp. The upper half-story contained another bedroom with a closet, as well as storage space, and in the basement, there were storage areas for wood to fuel the fireplaces and provisions such as

²⁷ Hyde, "United States Coast Guard Lighthouses and Light Stations on the Great Lakes," Section 8, Page 2; Hyde, *The Northern Lights*, 20.

²⁸ Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 266-267, 280-281, 333-334, 337-338.

²⁹ Firestone, *The Fox Islands*, 80; U.P. Engineers & Architects, Inc., "Historic Structure Report," 8; Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 331-332; Terry Pepper, "South Fox Island Lighthouse," *Seeing the Light*, <http://terrypepper.com/lights/michigan/southfox/southfox.htm> (accessed March 2021).

³⁰ Firestone, *The Fox Islands*, 80; U.P. Engineers & Architects, Inc., "Historic Structure Report," 8-9; Pepper, "South Fox Island Lighthouse."

³¹ Firestone, *The Fox Islands*, 80; Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 331-332; Pepper, "South Fox Island Lighthouse."

South Fox Island Light Station

Name of Property

Leelanau County, MI

County and State

potatoes and apples.³² The first assistant keeper was assigned to the station in 1871. John C. Hall was the first to serve in this position, and rather than building a new dwelling, assistant keepers shared the keeper's dwelling until the 1890s.³³

Willis Warner, a marine engineer from Algonac, served as light keeper from 1876 until 1882. In 1880, Warner constructed a five-foot tall wood fence (no longer extant) around the lighthouse for protection from the weather, although sand and snow still drifted over the fence from time to time.³⁴ Joseph Fontaine served as the next keeper, from 1885 until 1891. During his tenure, he constructed sunk cribs to serve as landing docks, and relocated the boathouse and boatway near the cribs, although none of these features remain extant.³⁵

Instructions for operating the lights was initially passed verbally from keeper to keeper, but in the 1880s, written manuals were developed by the Lighthouse Service. These manuals provided detailed instructions about keeping the light and lantern room clean, maintaining equipment and light complex grounds, and ensuring the light was lit during storms in spite of any challenges the storm caused to the light itself. Keepers also participated in several dangerous rescue efforts, taking the lighthouse boat to stranded vessels to bring crew members to shore.³⁶ The Lighthouse Service performed unannounced inspections of the light stations on a quarterly basis. Not only were the inspectors ensuring the lens was clean and the oil lamp filled, but also that the dishes in the keeper's dwelling were clean and the brass was polished. Even minor offenses such as these could result in an official complaint against a keeper.³⁷

Light keepers lived on the island only during the shipping season, which was generally from April to November each year. Their children typically attended school in Northport, and sometimes a keeper's wife would stay on the mainland with the children during the school year. When school was out, the keeper's family would join him on the island.³⁸ Light keepers made it a priority to remain at the light until the winter freeze brought the end of the shipping season, and to return again in time for the start of the season the following spring.³⁹

Expansion of the Light Station (1890-1957)

Shipping continued to grow on the Great Lakes as the turn of the twentieth century approached. Lumber and grain were the primary products shipped over the Great Lakes until about the turn of

³² Susan Roark Hoyt, *Lighthouses of Northwest Michigan* (Charleston, SC: Arcadia Publishing, 2004), 71; Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 331-332.

³³ U.P. Engineers & Architects, Inc., "Historic Structure Report," 19; Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 331-332.

³⁴ Firestone, *The Fox Islands*, 81-83; U.P. Engineers & Architects, Inc., "Historic Structure Report," 9; Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 331-332; Pepper, "South Fox Island Lighthouse."

³⁵ Firestone, *The Fox Islands*, 84; U.P. Engineers & Architects, Inc., "Historic Structure Report," 9.

³⁶ Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 16-17; Firestone, *The Fox Islands*, 80-86; Dennis L. Noble and T. Michael O'Brien, *Sentinels of the Rocks: From "Graveyard Coast" to National Lakeshore* (Marquette, MI: Northern Michigan University Press, 1979), 11.

³⁷ Firestone, *The Fox Islands*, 80.

³⁸ Firestone, *The Fox Islands*, 68, 80.

³⁹ Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 16, 331-332.

South Fox Island Light Station

Name of Property

Leelanau County, MI

County and State

the twentieth century when iron ore and coal became the most shipped materials.⁴⁰ The fishing industry in northern Lake Michigan also peaked around this time. Fishers caught whitefish, herring, and trout for sale in Chicago, Charlevoix, and other Great Lakes markets. The Booth Company, a large Chicago-based fishery operating on the Great Lakes, established a fishery on South Fox Island. Fish caught on the island's shoreline were salted and packed into wooden barrels at a fishery building constructed on the island, then transported to a larger Booth fishery facility in Charlevoix. The fishery remained in operation into the 1920s. Light station residents also fished the waters of South Fox Island and utilized the smokehouse to preserve their catch.⁴¹

To improve safety on the Great Lakes, the number of lighthouses had increased from just over one hundred in 1860, to over 330 lights by 1900. The importance of Lake Michigan within this shipping network was demonstrated by the ninety-six lights located there by that time, the most of any of the Great Lakes. In 1903, the Lighthouse Service was transferred from the Department of the Treasury to the Department of Commerce and Labor, which had been established that year. After that time, for the most part, lighthouse construction shifted from establishing new light stations to updating existing facilities.⁴²

Reflecting the importance of shipping on Lake Michigan and the volume of traffic on the Manitou, Gray's Reef, and North passages, the South Fox Island Light Station went through a period of growth during the late nineteenth and early twentieth centuries. In 1892, Lewis Bourisseau, who had been appointed keeper the year before, constructed the first sidewalks, which were wood plank walkways connecting the buildings at the light station. These were replaced around 1917 with concrete sidewalks. He also constructed the oil house in 1895, when kerosene oil replaced lard oil as the standard illuminant. The oil house could store as much as 360 gallons of fuel. A fog signal building had been recommended for the island as early as 1866, and was again recommended in 1888 and 1890, although both times funding was rejected.⁴³

In 1893, a fog signal was again recommended for South Fox Island, and two years later, \$5,500 in funding was appropriated to build a fog signal building at the light station. Charles Tilley of Northport was hired to construct the building. It was equipped with two boilers to operate corresponding rooftop 10-inch steam whistle fog signals. To reduce the risk of fire, the building was built with a concrete floor and the framing was covered with metal sheathing both inside and outside. In addition, the walls were insulated with sawdust, and the building includes a storage room for coal to fuel the boilers. It took about an hour for the boilers to become hot enough to sound the steam whistles, which sounded for three seconds every seventeen seconds, so Bourisseau lit the fires as soon as the threat of fog appeared on the lake.⁴⁴ In 1898, he dug a well

⁴⁰ Hyde, "United States Coast Guard Lighthouses and Light Stations on the Great Lakes," Section 8, Page 1; Hyde, *The Northern Lights*, 20.

⁴¹ Firestone, *The Fox Islands*, 38, 42-43; National Park Service, "Booth Island Fishery," www.nps.gov/articles/000/booth-island-fishery.htm (accessed March 2021).

⁴² Hyde, "United States Coast Guard Lighthouses and Light Stations on the Great Lakes," Section 8, Pages 1-2; Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 15.

⁴³ Firestone, *The Fox Islands*, 84-85; U.P. Engineers & Architects, Inc., "Historic Structure Report," 9-10, 13; Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 331-332; Pepper, "South Fox Island Lighthouse."

⁴⁴ Firestone, *The Fox Islands*, 85; U.P. Engineers & Architects, Inc., "Historic Structure Report," 9; Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 331-332; Pepper, "South Fox Island Lighthouse."

South Fox Island Light Station

Name of Property

Leelanau County, MI

County and State

and built a pumphouse to provide water to the fog signal, and a second well was dug in 1905.⁴⁵ Neither pumphouse remains extant.

After the fog signal building was constructed, Bourisseau expanded the plank walkways to connect to the new building. The boathouse, boatways, and cribs were in constant need of repair due to the damage caused by their exposed position on the water. In 1897, Bourisseau built the current boathouse, and the following year, he built a derrick and new boatways. He also built a new dock that is no longer extant, although archaeological remains are visible in the shallows near the boathouse. In 1903, the boatways were extended and new cribs were built, and additional cribs were built in 1905 to serve as a waterbreak to protect the boathouse.⁴⁶

Additional staff was needed to operate and maintain the light station as it continued to expand. In 1895, a second assistant keeper position was added, followed by a third assistant keeper in 1899.⁴⁷ This brought the staff at the light station to four, and it was standard practice for keeper's and assistant keepers' families to live with them as well. Therefore, additional housing was needed, and a frame assistant keepers' dwelling was constructed southwest of the lighthouse, near the present site of the carpenter's shop. The building only had five rooms to house two assistant keepers and their families, however, and soon two additional buildings were constructed.⁴⁸ None of these frame assistant keepers' dwellings remain extant.

In 1910, the current two-story, red brick assistant keepers' quarters was constructed west of the lighthouse. Lou Comfort of Charlevoix was hired to build the new dwelling. The building was equipped with indoor plumbing, which was still uncommon in many homes on the mainland, and the keeper's dwelling was also likely updated with indoor plumbing at that time. The eastern half of the building is a two-story apartment that was assigned to the first assistant keeper. The western half of the building contained two apartments, one on the first floor for the second assistant keeper and one on the second floor for the third assistant keeper.⁴⁹ A summer kitchen for the original assistant keepers' dwellings is believed to have been converted to the workshop/carpenter's shop after the new brick dwelling was completed.⁵⁰

There was a brief lapse in the third assistant keeper position in 1904, when Conrad Stram had been promoted and reassigned to another light, but his replacement, Alphonse Tyrer had not yet arrived. To fill the temporary gap, Bourissau hired his wife Josephine to fill the position.⁵¹ Keepers often appointed their wives to positions as assistant keepers, which had several advantages.⁵² Keepers were not paid very well and often requested their wives be appointed

⁴⁵ U.P. Engineers & Architects, Inc., "Historic Structure Report," 10.

⁴⁶ Firestone, *The Fox Islands*, 85; U.P. Engineers & Architects, Inc., "Historic Structure Report," 10-11.

⁴⁷ U.P. Engineers & Architects, Inc., "Historic Structure Report," 19.

⁴⁸ Firestone, *The Fox Islands*, 87-88; U.P. Engineers & Architects, Inc., "Historic Structure Report," 9; Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 331-332; Pepper, "South Fox Island Lighthouse."

⁴⁹ Firestone, *The Fox Islands*, 88, 93; U.P. Engineers & Architects, Inc., "Historic Structure Report," 11; Pepper, "South Fox Island Lighthouse."

⁵⁰ U.P. Engineers & Architects, Inc., "Historic Structure Report," 10; Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 331-332.

⁵¹ U.P. Engineers & Architects, Inc., "Historic Structure Report," 19-20; Lewis Bourissau to Light House Inspector, June 22, 1904, Fox Island Lighthouse Association Collection.

⁵² Patricia Majher, *Ladies of the Lights: Michigan Women in the U.S. Lighthouse Service* (Ann Arbor, MI: University of Ann Arbor Press, 2010), 18.

South Fox Island Light Station

Name of Property

Leelanau County, MI

County and State

assistant keeper for the additional income. The Lighthouse Service was generally agreeable to this arrangement and benefitted especially from family appointments in which children provided assistance in keeping the light without additional expense to the federal government.⁵³ In addition, the wives of keepers were already familiar with the operation of the light, as a wife often took over responsibility for the light if her husband was unable to maintain the light due to illness, exhaustion, injury, or absence. More women were appointed to positions as light keepers or assistant keepers in Michigan than any other Great Lakes state, with at least twenty-seven female keepers and at least twenty-six female assistant keepers between 1849 and 1954.⁵⁴

Between the 1860s and the 1920s, there were a number of small farms, sawmills, and fisheries operating on South Fox Island, however there were no villages and no independent economy on the island. Residents obtained supplies on the mainland that they were unable to grow or make themselves, and sawmills and fisheries processed and shipped goods to mainland markets. The lighthouse served as a center of community life, and mail came to residents of the island by mail boats arriving at the light station. Although the population justified the establishment of a post office on the island in 1905, by 1917 it had been closed, and by the 1920s only the inhabitants of the light station remained on the island. They continued to receive mail every two weeks by mail boat, and obtained most supplies from the mainland.⁵⁵

The last major change to the lighthouse complex took place in 1934 when a skeletal tower was relocated from Sapelo Island, Georgia, where it had been in operation since 1905. The tower's steel frame allowed a taller tower to be constructed than could be achieved with brick, and the new tower was 104 feet high with a focal plane 132 feet above Lake Michigan, which was a substantial improvement over the original forty-five foot tower with its sixty-eight-foot focal plane. The skeletal tower did not have ground-level access, so it was erected immediately adjacent to the fog signal building, which had an interior staircase to a cupola and exterior catwalk that connected to the tower's stairway. The catwalk is no longer extant.⁵⁶

As the twentieth century progressed, new technologies simplified the operation of the light station. The original lighthouse was powered by electrical generators installed in 1929, and a diesel engine powered electricity to the new skeletal light tower as well. In addition, diesel engines and a new air compressor were installed to power the fog signal in 1934, by which time the steam whistles had been replaced with diaphones. Although the keeper and assistant keepers were still tasked with maintaining the original light as a back-up, using these new technologies to operate the light and fog signal required less manual labor. The second and third assistant keeper positions were both eliminated in 1939, followed by the first assistant keeper position in 1948.⁵⁷

⁵³ Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 16.

⁵⁴ Majher, *Ladies of the Lights*, 9, 38-39.

⁵⁵ Firestone, *The Fox Islands*, 90, 93-94; Walter Romig, *Michigan Place Names* (Detroit, MI: Wayne State University Press, 1986), 208; Pepper, "South Fox Island Lighthouse."

⁵⁶ Firestone, *The Fox Islands*, 93-94; U.P. Engineers & Architects, Inc., "Historic Structure Report," 11-12; Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 331-332; Pepper, "South Fox Island Lighthouse."

⁵⁷ Firestone, *The Fox Islands*, 93-94; U.P. Engineers & Architects, Inc., "Historic Structure Report," 11-12, 19-20.

South Fox Island Light Station

Name of Property

Leelanau County, MI

County and State

These changes were common among all lighthouses on the Great Lakes, and by 1925, only 160 light stations were manned by a resident keeper, and nearly all the navigational aids added after that time were buoys. In 1939, the Lighthouse Service was transferred from the Department of Commerce and Labor, where it had been since 1903, and instead became a part of the U.S. Coast Guard, where it remains today. The Coast Guard continued the process of automating lights through the mid-nineteenth century.⁵⁸

Decline of the Light Station (1959 – present)

Shipping on the Great Lakes continued to grow throughout the second half of the twentieth century, increasing from eighty million tons of cargo in 1910, to 169 million tons in 1941, and to 200 million tons around 1970.⁵⁹ Although lake traffic had not decreased, improvements in navigational aids including radar, radio beacons, Loran, and GPS caused a dramatic decline in the need for lighthouses. This has proven especially true for commercial traffic, although smaller recreational vessels more commonly still rely on lighthouses.⁶⁰

Fog signals began to become obsolete by the 1920s as radio signals came into widespread use, and reliable portable generators and batteries facilitated automation at even remote lighthouses.⁶¹ In 1958, the skeletal tower at the South Fox Island Light Station was automated and the fog signal, which had been decommissioned four years earlier, was dismantled. Allen Cain, the last keeper at the light, was reassigned, and the U.S. Coast Guard took over the responsibilities of maintaining the generators and changing bulbs or batteries as needed. In 1969, the light was decommissioned and permanently shut off. Buoys now warn vessels of shoals or other underwater dangers near the island.⁶²

In the 1970s, many of the decommissioned lighthouses owned by the U.S. Coast Guard were sold, including the South Fox Island Light Station. In 1971, the 115 acres that make up the light station were deeded to the State of Michigan, while the lighthouse complex itself remained under the ownership of the U.S. Coast Guard until 1980. The light station is now also owned by the state and under the purview of the Michigan Department of Natural Resources. The buildings are maintained with the assistance of the Fox Island Lighthouse Association, a non-profit organization established in 2002 as the Fox Island Education Association, which has completed stabilization and general maintenance projects at the light station since 2006.⁶³

Architecture and Engineering Context

The South Fox Island Light Station is an intact, representative example of a mid-nineteenth-century light station on Lake Michigan. Great Lakes light stations typically include a complex of

⁵⁸ Hyde, "United States Coast Guard Lighthouses and Light Stations on the Great Lakes," Section 8, Page 1; Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 15; Hyde, *The Northern Lights*, 38.

⁵⁹ Hyde, *The Northern Lights*, 36.

⁶⁰ Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 17.

⁶¹ Hyde, *The Northern Lights*, 38-39, 195.

⁶² Firestone, *The Fox Islands*, 95-96; U.P. Engineers & Architects, Inc., "Historic Structure Report," 12-13; Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 331-332; Pepper, "South Fox Island Lighthouse."

⁶³ U.P. Engineers & Architects, Inc., "Historic Structure Report," 13-14.

South Fox Island Light Station

Name of Property

Leelanau County, MI

County and State

buildings that support the lighthouse function. Complexes were built over time, typically from the mid-nineteenth century to the early twentieth century, and therefore demonstrate the evolution of technology and engineering in navigational aids during that time. The first buildings constructed within the complex were the lighthouse itself and the keeper's dwelling, most in the early or mid-nineteenth century. By the late nineteenth century, light station complexes also had oil houses for storing the kerosene used to fuel the lamps. Most also included a fog signal by this time, the operation of which often required the hiring of assistant keepers and in turn necessitated the construction of additional living quarters. By the 1920s, taller skeletal towers functionally replaced the earlier masonry lighthouses, although remarkably few remain extant. Boathouses were necessary at island light stations especially, and other common outbuildings included maintenance sheds, carpenter shops, outhouses, and wellhouses. Light stations on Lake Michigan, and throughout the Great Lakes, include a wide variety of architectural designs, even within a single period of construction.

In addition to the 1867 South Fox Island Light Station, five additional lights guided vessels traveling the Manitou, Gray's Reef, and North passages. The South Manitou Island Lighthouse (NR 1983) was the first to be built, with the original lighthouse completed in 1839.⁶⁴ Beaver Island is protected by two light stations, with the Beaver Island Light Station (NR 1978), known as the head light, originally constructed on the south end of the island in 1851, followed by the first St. James Harbor Lighthouse, known as the harbor light, constructed on the north end of the island in 1856, although only the lighthouse tower remains of the original harbor light complex.⁶⁵ A light station was also constructed on the southeast end of North Manitou Island in 1896, however it was replaced by the North Manitou Shoal Lighthouse in 1935 and is no longer extant.⁶⁶ The Grand Traverse Light Station (NR 1983) on the mainland at the northern tip of the Leelanau Peninsula also helped to guide ships traveling between the three passages and the Straits of Mackinac, as well as marking the entrance to Grand Traverse Bay, and the first lighthouse was constructed here in 1852.⁶⁷

There was great variation in lighthouse design throughout the Great Lakes, even among buildings constructed within a relatively short period of time and under similar climatic conditions. This variation is outlined in *Great Lakes Lighthouses Encyclopedia*, in which Larry and Patricia Wright identified ten lighthouse tower design types while also noting that there were additional design types not included in their list. Five designs of those listed, including conical, schoolhouse style, cylindrical, square, and square integral towers, were built on the Beaver Island Archipelago between 1839 and 1870, and a sixth design, skeletal towers, was built on the

⁶⁴ Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 333-334; Jill M. York, "South Manitou Island Lighthouse Complex and Life-Saving Station Historical District," National Register of Historic Places Nomination, 1983; Terry Pepper, "South Manitou Island Lighthouse," *Seeing the Light*, <http://www.terrypepper.com/lights/michigan/southmanitou/southmanitou.htm> (accessed March 2021).

⁶⁵ Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 266-267, 337-338; Dan Kaczynski, "Beaver Island Light Station," National Register of Historic Places Nomination, 1978; Terry Pepper, "Beaver Head Lighthouse," *Seeing the Light*, <http://www.terrypepper.com/lights/michigan/beaverhead/beaverhead.htm> (accessed March 2021).

⁶⁶ Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 308-309.

⁶⁷ Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 280-281; Hyde, "United States Coast Guard Lighthouses and Light Stations on the Great Lakes," "Grand Traverse (Cat's Head Point) Light Station"; Terry Pepper, "Grand Traverse Light," *Seeing the Light*, <http://www.terrypepper.com/lights/michigan/gdtravers/gdtravers.htm> (accessed March 2021).

South Fox Island Light Station

Name of Property

Leelanau County, MI

County and State

archipelago in the 1930s. According to the “United States Coast Guard Lighthouses and Light Stations on the Great Lakes” National Register Thematic Nomination, the two most common lighthouse designs on the Great Lakes during the early and mid-nineteenth century were brick or frame keeper’s dwellings with the light mounted to the top of the building in a cupola or tower, and the Wright’s schoolhouse style featuring a rectangular brick or frame keeper’s dwelling with a square light tower attached to the front elevation, usually between twenty-five and forty feet in height. Like the lighthouse towers, the lantern rooms themselves also had great variation during this period, although by the 1870s, most were octagonal or decagonal in form.⁶⁸

A variety of materials were utilized in lighthouse construction as well. The earliest lighthouses were constructed of wood or rubble stone, but sturdier materials, including granite, brownstone, limestone, brick, and cast-iron, were needed to protect the light from damage by the elements.⁶⁹ Milwaukee brick, also known as Cream City brick, was a preferred building material for Great Lakes lighthouses, including those of the Beaver Island Archipelago. In the early 1900s, the western shore of Lake Michigan was known for its abundance of red lacustrine clay, which produced a yellow-colored brick known for strength and weather-resistance, and therefore was ideal for lighthouse construction. Much of the city of Milwaukee, Wisconsin, was built with this type of brick, earning it the nickname the “Cream City,” and by the mid-nineteenth century, bricks from Milwaukee’s many brickyards were shipped throughout the Midwest.⁷⁰

The lighthouses of the Beaver Island Archipelago demonstrate the variety of design types in Great Lakes lights. Built within the twelve-year period from 1858 to 1870, these five lights were each constructed under similar conditions but represent four different designs, although strong Milwaukee brick was consistently the preferred construction material. The Grand Traverse lighthouse is a two-and-a-half-story Milwaukee brick keeper’s dwelling with a square rooftop light tower completed in 1858.⁷¹ The present lighthouse at the Beaver Island Light Station is an 1858 Milwaukee brick conical tower, which has an 1866 two-story Milwaukee brick keeper’s dwelling attached by a covered passageway and a 1915 two-story frame assistant keepers’ dwelling attached to that.⁷² The 1867 South Fox Island lighthouse is an example of the schoolhouse style, constructed with Milwaukee brick and featuring a square tower attached to the front elevation of a rectangular brick keeper’s dwelling.⁷³ The extant lighthouse on South Manitou Island is an 1870 conical red brick tower connected to the 1866 two-story, Milwaukee brick keeper’s dwelling by a passageway.⁷⁴ And the present light at St. James Harbor is a

⁶⁸ Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 16; Hyde, “United States Coast Guard Lighthouses and Light Stations on the Great Lakes,” Section 8, Page 2.

⁶⁹ Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 16.

⁷⁰ Terry Pepper, “Cream City Brick,” *Seeing the Light*, http://www.terrypepper.com/lights/closeups/cream_city_brick/cream_city_brick.htm (accessed March 2021).

⁷¹ Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 280-281; Hyde, “United States Coast Guard Lighthouses and Light Stations on the Great Lakes”; Pepper, “Grand Traverse Light.”

⁷² Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 266-267; Kaczynski, “Beaver Island Light Station”; Pepper, “Beaver Head Lighthouse.”

⁷³ Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 331-332; Terry Pepper, “South Fox Island Lighthouse,” *Seeing the Light*, <http://terrypepper.com/lights/michigan/southfox/southfox.htm> (accessed March 2021).

⁷⁴ Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 333-334; York, “South Manitou Island Lighthouse”; Pepper, “South Manitou Island Lighthouse.”

South Fox Island Light Station

Name of Property

Leelanau County, MI

County and State

cylindrical tower built of Milwaukee brick in 1870, which was attached to the keeper's dwelling by a passageway until the dwelling was demolished in the 1940s.⁷⁵

Although the architecture of lighthouses was greatly varied through the nineteenth and early twentieth centuries, lamp technology demonstrates a clear pattern of evolution during this time. The earliest Great Lakes lighthouses were lit with Lewis Lamps, which were wicked lamps with parabolic reflectors behind the light source that were easily warped by the heat of the light itself, diminishing the light's function.⁷⁶ These were replaced by the Fresnel lens, developed by French physicist Augustus Fresnel. The Fresnel lens also relied on wicked lamps for the light source, but utilized a series of glass prisms to produce a more powerful beam than the parabolic reflectors of the Lewis Lamp. The lens was produced in varying sizes, known as orders, with the first order being the largest and most powerful, usually used on open coastlines, and the fifth order being the smallest, usually reserved for small bays or rivers. Lenses were typically covered with linen curtains during the day to protect them from heat or damage from the sun.⁷⁷ The beam could either be fixed or rotate, it could be programmed to have its own unique flashing pattern, and it could be white or red in color. The combination of these characteristics specific to each lighthouse was published for use in conjunction with maritime charts for determining a vessel's navigational position.

Although the Fresnel lens, developed in 1822, was greatly superior to the Lewis lens, it was another thirty years before was finally adopted by the Lighthouse Service. All lighthouses constructed after 1852 were fitted with this type of lens, including those of the Beaver Island Archipelago.⁷⁸ The fourth-order lens was the most common along the Manitou, Gray's Reef, and North passages, and was installed at the South Fox Island, Beaver Island, and St. James Harbor light stations. South Manitou Island required a more powerful lens and was therefore fitted with a third-order lens, while the Grand Traverse lighthouse was fitted with a smaller fifth-order lens to light the entrance to Grand Traverse Bay.⁷⁹ Self-contained lamp-lens systems were developed by the 1920s, so Fresnel lenses were no longer installed in new lights after that time, although

⁷⁵ Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 337-338.

⁷⁶ Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 14; Terry Pepper, "Argand and Lewis Lamps," *Seeing the Light*, <http://www.terrypepper.com/lights/closeups/illumination/argand/lewis-lamp.htm> (accessed March 2021); Noble and O'Brien, *Sentinels of the Rocks*, 6; Hyde, *The Northern Lights*, 13.

⁷⁷ Hyde, "United States Coast Guard Lighthouses and Light Stations on the Great Lakes," Section 8, Page 3; Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 16; National Park Service, "Fresnel Lens," <https://www.nps.gov/articles/fresnel-lens.htm> (accessed March 2021); Terry Pepper, "The Incredible Fresnel Lens," *Seeing the Light*, <http://www.terrypepper.com/lights/closeups/illumination/fresnel/fresnel.htm> (accessed March 2021); Hyde, *The Northern Lights*, 17-19, 24-27; Noble and O'Brien, *Sentinels of the Rocks*, 6, 12.

⁷⁸ Hyde, "United States Coast Guard Lighthouses and Light Stations on the Great Lakes," Section 8, Page 3; Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 16; National Park Service, "Fresnel Lens"; Pepper, "The Incredible Fresnel Lens"; Hyde, *The Northern Lights*, 19, 24-26; Noble and O'Brien, *Sentinels of the Rocks*, 6, 12.

⁷⁹ Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 266-267, 280-281, 309, 331-335, 337-338; Fox Island Lighthouse Association, "Facts & Maps," <http://www.southfox.org/maps.htm> (accessed March 2021); Pepper, "South Fox Island Lighthouse"; Pepper, "Beaver Head Lighthouse"; Pepper, "South Manitou Island Lighthouse"; Pepper, "Grand Traverse Light."

South Fox Island Light Station

Name of Property

Leelanau County, MI

County and State

older lighthouses were not usually retrofitted.⁸⁰ Among the Beaver Island Archipelago lights, only the Fresnel lens at the St. James Harbor Lighthouse remains in place and in use today.⁸¹

In the 1860s and 1870s, lard oil was the primary illuminant for the lighthouse lamps, and was typically stored in the keeper's dwelling for easy access. However, after 1877, kerosene began to replace lard oil as the preferred fuel for lighthouses, taking its place as the standard illuminant by 1885. Unlike lard oil, kerosene could not be stored safely in the keeper's dwelling, therefore oil houses were added to light station complexes.⁸² Oil houses were generally small, brick, gabled buildings located near the lighthouse for easy access by the keeper. In 1895, a small, brick oil house was constructed at the South Fox Island Light Station, and similar brick oil houses were added to the St. James Harbor Lighthouse in 1885, the Grand Traverse Light Station in 1896, and the Beaver Island Light Station in 1902.⁸³ At South Manitou Island Lighthouse, a cylindrical, metal oil house was constructed in 1893.⁸⁴ The Lighthouse Service began exploring electrification of lighthouses around 1900 but electrification was not widespread until the 1920s, therefore kerosene and oil houses remained in use until at least that time.⁸⁵

Periodic fog obscured lighthouses, land, and underwater dangers from view, necessitating an audible navigation aid to both prevent running aground and to assist in identifying location. The first fog signals were bells struck by hand, but by the mid-nineteenth century, these were replaced by automated systems that utilized clockwork mechanisms to strike the bell instead. By the 1870s, these were replaced with steam whistles, which utilized a steam engine to operate a whistle, horn, or siren and were therefore louder than the earlier bell signals. The first-class siren was the most powerful of the steam whistles. By the 1920s, the diaphone fog signal, a two-toned horn powered by steam, had come into use, with the Type F diaphone the most common.⁸⁶

Although the fog signal buildings of the Beaver Island Archipelago light stations were built over a period of only twenty years, from 1895 to 1915, they represent a wide variety of forms and materials, and were consistently updated over time as new technology became available. A frame, hip-roof fog signal building was constructed at the South Fox Island Light Station in 1895. The building contained two large boilers to operate corresponding rooftop whistles, and both the interior and exterior of the building were covered in metal sheathing to prevent fires. In 1929, the horn was upgraded from a steam whistle to a diaphone horn, which was operated with

⁸⁰ Hyde, *The Northern Lights*, 44.

⁸¹ Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 337-338.

⁸² Hyde, "United States Coast Guard Lighthouses and Light Stations on the Great Lakes," Section 8, Pages 2-3; Noble and O'Brien, *Sentinels of the Rocks*, 8; Hyde, *The Northern Lights*, 27-28.

⁸³ Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 266-267, 280-281, 331-332, 337-338; Pepper, "South Fox Island Lighthouse"; Pepper, "Grand Traverse Light"; Pepper, "Beaver Head Lighthouse"; Kaczynski, "Beaver Island Light Station."

⁸⁴ Pepper, "South Manitou Island Lighthouse"; York, "South Manitou Island Lighthouse."

⁸⁵ Hyde, "United States Coast Guard Lighthouses and Light Stations on the Great Lakes," Section 8, Page 3; Noble and O'Brien, *Sentinels of the Rocks*, 8; Hyde, *The Northern Lights*, 43.

⁸⁶ Terry Pepper, "Fog Signal Technology," <http://www.terrypepper.com/LIGHTS/closeups/fogsignal/index.htm> (accessed March 2021); United States Lighthouse Society, "The History of Fog Signals by Wayne Wheeler," <https://uslhs.org/history-fog-signals> (accessed March 2021); Hyde, *The Northern Lights*, 28.

South Fox Island Light Station

Name of Property

Leelanau County, MI

County and State

a diesel engine that powered an air compressor installed in 1934.⁸⁷ A similarly designed fog signal building was also constructed at the Eagle Harbor Light Station in Michigan's Upper Peninsula on Lake Superior the same year, the only known extant fog signal building to share this design.⁸⁸ Two steam whistle fog signal buildings were added to the South Manitou Island Lighthouse in the 1870s, the only light station in the Beaver Island Archipelago to maintain a back-up signal. In 1896, new frame buildings were built to house the machinery, small, one-story, rectangular buildings with a side-gabled form. The fog signals were updated in 1933 with the installation of Type F diaphone signals. One of the fog signal buildings remains extant at the light station, and the other was relocated for use in Duluth, Minnesota.⁸⁹ A rectangular, red brick fog signal building was constructed at the Grand Traverse Light Station in 1899. It housed a steam-powered whistle, which was replaced in 1933 with a Type F diaphone signal that was powered by diesel engines, rather than steam.⁹⁰ A similar red brick fog signal building was constructed at the Beaver Island Light Station in 1915. It is a rectangular building with a center-gabled form and limestone lintels, sills, and other detailing. It originally housed a first-class siren steam whistle, which was later replaced with steam-powered foghorns.⁹¹

The addition of fog signals at light stations often meant an increase in responsibilities that necessitated the hiring of assistant light keepers. Light keepers and their assistants were required to have the light operational by sunset and to maintain the light until after sunrise. They divided the work into watch shifts, known as departments. Often the assistant took the first department and was responsible for lighting and maintaining the flame until around midnight, at which time the keeper took over. Both the keeper and assistants were responsible for cleaning, polishing, and maintaining every element of the lighthouse, dwellings, outbuildings, and station grounds. Detailed instructions for these responsibilities were provided by the Lighthouse Service.⁹²

There was no standard for handling increasing housing needs for light keepers, their assistants, and their families. In some cases, assistants simply shared the keeper's dwelling, sometimes constructing additions as the staff and their families outgrew their living space. In other cases, separate assistant keepers' quarters were constructed. At the South Manitou Island Lighthouse, assistant keepers were hired in the 1870s after the new tower was built and the fog bell was updated, and the existing keeper's dwelling was subdivided to accommodate three families.⁹³ At the Beaver Island Light Station, the keeper and his assistants also originally shared the keeper's dwelling, which contained two dwelling units. A second assistant was assigned in 1898, after

⁸⁷ Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 331-332; Pepper, "South Fox Island Lighthouse."

⁸⁸ Terry Pepper, "Eagle Harbor Light," *Seeing the Light*, <http://www.terrypepper.com/lights/superior/eagleharbor/eagleharbor.htm> (accessed March 2021).

⁸⁹ Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 333-334; York, "South Manitou Island Lighthouse"; Pepper, "South Manitou Island Lighthouse."

⁹⁰ Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 280-281; Hyde, "United States Coast Guard Lighthouses and Light Stations on the Great Lakes"; Pepper, "Grand Traverse Light."

⁹¹ Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 266-267; Kaczynski, "Beaver Island Light Station"; Pepper, "Beaver Head Lighthouse."

⁹² Noble and O'Brien, *Sentinels of the Rocks*, 11-12.

⁹³ Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 333-334; York, "South Manitou Island Lighthouse"; Pepper, "South Manitou Island Lighthouse."

South Fox Island Light Station

Name of Property

Leelanau County, MI

County and State

which the keeper's dwelling was expanded with a two-story frame addition.⁹⁴ After the fog signal was added at the Grand Traverse Light Station in 1899 and an assistant keeper was hired, here too the keeper's dwelling was enlarged to a duplex in 1901.⁹⁵ The South Fox Island Light Station, on the other hand, constructed separate dwellings for the assistant keepers. The current building, a two-story-with-raised-basement, red brick dwelling containing three units, was completed in 1910 and replaced earlier frame buildings.⁹⁶

The engineering technology of lighthouses changed in the mid- to late nineteenth century when many harbor lights were relocated from the mainland onto piers and breakwaters. Skeletal towers could be constructed taller and at a much lower cost than brick or stone towers, and since they were constructed with prefabricated sections, they could be built quickly and easily relocated. These towers have a central cylinder containing the stairway, which leads to a lantern room, sometimes with a watch room below the lantern room, and which is supported by a metal frame. They were initially tended by light keepers, and the keeper's dwelling was often attached to the tower by a walkway at the second-floor level. The earliest examples on the Great Lakes were built in the 1860s, and by the 1920s skeletal towers had become the dominant lighthouse form on the Great Lakes.⁹⁷ At South Fox Island, the 1867 lighthouse had a focal plane of just sixty-eight feet, which was significantly lower than the approximately 100-foot focal planes of the other lights on the Beaver Island Archipelago. Therefore, a taller skeletal tower, which had originally been constructed in Georgia in 1905, was relocated to South Fox Island in 1934.⁹⁸

In spite of their popularity, few skeletal towers have survived due to their exposed locations and the damage caused by storms and winter ice.⁹⁹ The South Fox Island skeletal tower is the only known skeletal tower remaining extant on Lake Michigan in Michigan's Lower Peninsula.¹⁰⁰ Three additional skeletal towers are known to remain extant in Michigan, all of which are located on Lake Superior in Michigan's Upper Peninsula. The Whitefish Point Lighthouse (NR 1973) is an iron skeletal tower seventy-five feet tall and completed in 1861; the Manitou Island Light Station has a forty-two-foot iron skeletal tower completed in 1862; and the Copper Harbor Light

⁹⁴ Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 266-267; Kaczynski, "Beaver Island Light Station"; Pepper, "Beaver Head Lighthouse."

⁹⁵ Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 280-281; Hyde, "United States Coast Guard Lighthouses and Light Stations on the Great Lakes"; Pepper, "Grand Traverse Light."

⁹⁶ Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 331-332; Pepper, "South Fox Island Lighthouse."

⁹⁷ Hyde, "United States Coast Guard Lighthouses and Light Stations on the Great Lakes," Section 8, Page 3; Russ Rowlett and the University of North Carolina at Chapel Hill, "Onshore Skeletal Lighthouses, 1861-1910," <https://www.ibiblio.org/lighthouse/types/skeletal.html> (accessed March 2021).

⁹⁸ Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 266-267, 280-281, 331-334, 337-338; Pepper, "South Fox Island Lighthouse"; York, "South Manitou Island Lighthouse"; Pepper, "South Manitou Island Lighthouse"; Hyde, "United States Coast Guard Lighthouses and Light Stations on the Great Lakes"; Pepper, "Grand Traverse Light"; Kaczynski, "Beaver Island Light Station"; Pepper, "Beaver Head Lighthouse."

⁹⁹ Hyde, "United States Coast Guard Lighthouses and Light Stations on the Great Lakes," Section 8, Page 3; Rowlett, "Onshore Skeletal Lighthouses, 1861-1910."

¹⁰⁰ Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 331-332; Pepper, "South Fox Island Lighthouse."

South Fox Island Light Station

Name of Property

Leelanau County, MI

County and State

Station (NR 2012) includes a sixty-foot steel skeletal tower built in 1933.¹⁰¹ Two additional skeletal towers are known to remain extant on Lake Michigan, including the sixty-five-foot Plum Island Rear Range Lighthouse, built in 1897, and the 111-foot Rawley Point Lighthouse, built in 1894, both in Wisconsin.¹⁰²

Additional outbuildings at the light stations supported the self-sufficiency required for such remote posts as those of the Beaver Island Archipelago. Boathouses were necessary for transportation to the mainland for supplies or to visit family members living or attending school there. Maintenance sheds and carpenter's shops were used to store tools and supplies for maintaining the buildings and grounds. Lighthouse keepers commonly maintained small gardens and fruit orchards, in part to supplement their food supplies with fresh fruits and vegetables, but also as a hobby, especially on more isolated assignments.¹⁰³ The South Fox Island Light Station includes an 1897 boathouse, 1897 carpenter's shop, and the remains of apple and plum orchards, as well as a strawberry patch. Similarly, the South Manitou Island Lighthouse retains a boathouse, work shed, and two storage sheds, while the Beaver Island Light Station retains a maintenance building.¹⁰⁴

Although light stations remained necessary elements in Great Lakes navigation through the early twentieth century, new technology in the mid- and late twentieth century began to replace the lights. Radar, radio beacons, Loran, GPS, and other modern navigation technologies have reduced dependency on visual aids to identify a vessel's location or avoid underwater dangers.¹⁰⁵ As a result, of the five extant lights of the Manitou, Gray's Reef, and North passages, only the St. James Harbor Lighthouse remains in use.¹⁰⁶ Other lights were automated then later decommissioned when they had become obsolete in favor of new technology, including the South Fox Island Light Station (automated in 1959 and decommissioned in 1969) and the Beaver Island Light Station (automated in the 1930s and decommissioned in 1962).¹⁰⁷ Others were functionally replaced with new lighthouse technologies, including the South Manitou Lighthouse, which was replaced by the South Manitou Shoal Gong Buoy, and the Grand Traverse Light Station, which was replaced in 1972 by a steel tower beacon, both of which remain in use today.¹⁰⁸

¹⁰¹ William Lowery, "Whitefish Point Lighthouse," Nomination to the National Register of Historic Places, 1973; Lisa Gamero, "Copper Harbor Light Station," Nomination to the National Register of Historic Places, 2012; Rowlett, "Onshore Skeletal Lighthouses, 1861-1910."

¹⁰² Rowlett, "Onshore Skeletal Lighthouses, 1861-1910."

¹⁰³ Noble and O'Brien, *Sentinels of the Rocks*, 10-11.

¹⁰⁴ Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 266-267, 331-334; Pepper, "South Fox Island Lighthouse"; York, "South Manitou Island Lighthouse Complex"; Pepper, "South Manitou Island Lighthouse"; Kaczynski, "Beaver Island Light Station"; Pepper, "Beaver Head Light."

¹⁰⁵ Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 17; Hyde, *The Northern Lights*, 59, 194-195.

¹⁰⁶ Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 337-338.

¹⁰⁷ Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 266-267, 331-332; Pepper, "South Fox Island Lighthouse"; Kaczynski, "Beaver Island Light Station"; Pepper, "Beaver Head Lighthouse."

¹⁰⁸ Wright and Wright, *Great Lakes Lighthouses Encyclopedia*, 280-281, 333-334; York, "South Manitou Island Lighthouse Complex"; Pepper, "South Manitou Island Lighthouse"; Hyde, "United States Coast Guard Lighthouses and Light Stations on the Great Lakes"; Pepper, "Grand Traverse Light."

South Fox Island Light Station
Name of Property

Leelanau County, MI
County and State

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South Fox Island Light Station

Name of Property

Leelanau County, MI

County and State

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South Fox Island Light Station
Name of Property

Leelanau County, MI
County and State

South Fox Island Light Station
Name of Property

Leelanau County, MI
County and State

Previous documentation on file (NPS):

- preliminary determination of individual listing (36 CFR 67) has been requested
- previously listed in the National Register
- previously determined eligible by the National Register
- designated a National Historic Landmark
- recorded by Historic American Buildings Survey # _____
- recorded by Historic American Engineering Record # _____
- recorded by Historic American Landscape Survey # _____

Primary location of additional data:

- State Historic Preservation Office
- Other State agency
- Federal agency
- Name of repository: National Archives at Chicago
- Local government
- University
- Name of repository: University of Michigan at Ann Arbor
- Other
- Name of repository: _____

Historic Resources Survey Number (if assigned): _____

10. Geographical Data

Acreage of Property 10.4 acres

Latitude/Longitude Coordinates (decimal degrees)

Datum if other than WGS84: _____

(enter coordinates to 6 decimal places)

- | | |
|------------------------|-----------------------|
| 1. Latitude: 45.379197 | Longitude: -85.838428 |
| 2. Latitude: 45.379001 | Longitude: -85.835446 |
| 3. Latitude: 45.377912 | Longitude: -85.835508 |
| 4. Latitude: 45.377618 | Longitude: -85.835508 |
| 5. Latitude: 45.377334 | Longitude: -85.838182 |
| 6. Latitude: 45.377339 | Longitude: -85.838383 |
| 7. Latitude: 45.377942 | Longitude: -85.838997 |
| 8. Latitude: 45.378001 | Longitude: -85.839075 |
| 9. Latitude: 45.378364 | Longitude: -85.839018 |

Verbal Boundary Description (Describe the boundaries of the property.)

The boundary begins at the upper west corner of the historic district at the western shoreline at latitude 45.379197, longitude -85.838428, then extends eastward in a straight line to the eastern shoreline at latitude 45.379001, longitude -85.835446, then follows the tax parcel line

South Fox Island Light Station
Name of Property

Leelanau County, MI
County and State

along the eastern shore to latitude 45.37792, longitude -85.836006, then turns east and extends 130 feet to latitude 45.377912, longitude, -85.835508, then turns south and extends 100 feet to latitude 45.377618, longitude -85.835508, then turns west and extends 180 feet to the southern parcel line at latitude 45.37762, longitude -85.836184, then continues to follow the southern and western parcel lines to the beginning.

Boundary Justification

The boundary includes all of the area historically associated with the light station, including the complex of historic buildings, structures, and landscape features, as well as sufficient surrounding land to provide adequate context. The boundary follows the parcel line for the property with two exceptions. The boundary deviates from the parcel line to exclude the wooded areas and open dunes to the north where no activity related to the light station is known to have taken place. The boundary also deviates at the southeast corner where archaeological studies have shown that historic docks, cribs, and boatways extended into the lake. Based on archaeological data, the boundary extends into the lake at this location to include the historic dock site.

11. Form Prepared By

name/title: Cheri Szcodronski, Architectural Historian
organization: Firefly Preservation Consulting, LLC
street & number: 58 Fox Hill Court
city or town: Chelsea state: MI zip code: 48118
e-mail: cheri@fireflypreservation.com
telephone: 615-604-5618
date: March 2021

Additional Documentation

Submit the following items with the completed form:

- **Maps:** A **USGS map** or equivalent (7.5 or 15 minute series) indicating the property's location.
- **Sketch map** for historic districts and properties having large acreage or numerous resources. Key all photographs to this map.
- **Additional items:** (Check with the SHPO, TPO, or FPO for any additional items.)

Photographs

Submit clear and descriptive photographs. The size of each image must be 1600x1200 pixels (minimum), 3000x2000 preferred, at 300 ppi (pixels per inch) or larger. Key all photographs to the sketch map. Each photograph must be numbered and that number must correspond to the photograph number on the photo log. For simplicity, the name of the photographer, photo date, etc. may be listed once on the photograph log and doesn't need to be labeled on every photograph.

South Fox Island Light Station
Name of Property

Leelanau County, MI
County and State

South Fox Island Light Station

Name of Property

Leelanau County, MI

County and State

Photo Log

Name of Property: South Fox Island Light Station

City or Vicinity: South Fox Island

County: Leelanau State: MI

Photographer: Fox Island Lighthouse Association

Date Photographed:

Photo #0001:

Lighthouse/Keeper's Dwelling – Front (southwest) Elevation

Facing northeast

1 of 24

Photo #0002:

Aerial of Fog Signal Building and Skeletal Tower

Facing southwest

2 of 24

Photo #0003:

Aerial of Light Station

Facing northeast

3 of 24

Photo #0004:

Lighthouse/Keeper's Dwelling – Northwest Elevation

Facing east

4 of 24

Photo #0005:

Lighthouse/Keeper's Dwelling – Southeast Elevation

Facing west

5 of 24

Photo #0006:

Lighthouse/Keeper's Dwelling Interior – First Floor Hall

Facing southwest

6 of 24

Photo #0007:

Lighthouse/Keeper's Dwelling Interior – Parlor

Facing southwest

7 of 24

South Fox Island Light Station

Name of Property

Leelanau County, MI

County and State

Photo #0008:

Assistant Keepers' Quarters – Front (southwest) Elevation

Facing northwest

8 of 24

Photo #0009:

Assistant Keepers' Quarters – Rear (northeast) Elevation

Facing west

9 of 24

Photo #0010:

Assistant Keepers' Quarters – Interior

Newel Post Detail

10 of 24

Photo #0011:

Fog Signal Building – Front (northeast) Elevation

Facing southwest

11 of 24

Photo #0012:

Fog Signal Building – Interior

Facing west

12 of 24

Photo #0013:

Fog Signal Building and Skeletal Tower

Facing southwest

13 of 24

Photo #0014:

Skeletal Tower – Stairwell Detail

Facing north

14 of 24

Photo #0015:

Skeletal Tower – Stairwell Detail

Iron Staircase Detail

15 of 24

Photo #0016:

Oil House – Front (northwest) Elevation

Facing southeast

16 of 24

South Fox Island Light Station

Name of Property

Leelanau County, MI

County and State

Photo #0017:
Boathouse – Front (east) Elevation
Facing west
17 of 24

Photo #0018:
Boathouse – Interior
Facing west
18 of 24

Photo #0019:
Workshop/Carpenter’s Shop – East Elevation
Facing west
19 of 24

Photo #0020:
Workshop/Carpenter’s Shop – Interior
Facing northwest
20 of 24

Photo #0021:
Cemetery
Facing north
21 of 24

Photo #0022:
Outhouse – South Elevation
Facing north
22 of 24

Photo #0023:
Maintenance Shed – Front (west) Elevation
Facing east
23 of 24

Photo #0024:
Light Station Landscape
Facing west
24 of 24

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C.460 et seq.).

Estimated Burden Statement: Public reporting burden for this form is estimated to average 100 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Office of Planning and Performance Management, U.S. Dept. of the Interior, 1849 C. Street, NW, Washington, DC.