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FURE'S CABIN

HISTORIC STRUCTURE REPORT

KATMAI NATIONAL PARK & PRESERVE
## CONTENTS

**ACKNOWLEDGEMENTS** ................................................................. i

**INTRODUCTION** ........................................................................... 1

I. **ADMINISTRATIVE DATA SECTION** ............................................ 5

II. **PHYSICAL HISTORY AND ANALYSIS SECTION** ....................... 9

A. **HISTORICAL DATA** .............................................................. 9

B. **ARCHITECTURAL DATA** ......................................................... 17
   1. General Description - Site ................................................. 17
   2. Architectural Description - Existing Conditions ............... 17
   3. Recommended Treatment .................................................. 20
   5. Alternative Treatments ..................................................... 24
   6. Evaluation of Effect of the Recommended Treatment ........... 25

C. **ARCHEOLOGICAL DATA** ....................................................... 29

D. **PHOTOGRAPHS** ................................................................. 33

E. **HISTORIC AMERICAN BUILDINGS SURVEY DRAWINGS** ........ 92

F. **RECOMMENDED TREATMENT DRAWINGS** .......................... 102

III. **APPENDIX** .............................................................................

A. **NATIONAL REGISTER NOMINATION** ..................................... 105

B. **PREVIOUS FIELD NOTES** .................................................... 127

C. **BIBLIOGRAPHY** ................................................................. 135
INTRODUCTION

Fure's Cabin is being nominated to the National Register of Historic Places for its significance as an exceptional example of historic log craftsmanship, and for its representation of the lifestyle of early 20th-century non-native Alaskans. In the summer of 1983 the cabin was in good condition, but it is now on the verge of serious damage because of deterioration and lack of maintenance.

This report includes the Administrative and Physical History and Analysis sections of the Historic Structures Report (H.S.R.) mandated by NPS-28. Recommended Treatments for stabilization of Fure's Cabin are provided in both written and graphic form.

The Recommended Treatments section addresses the problems above and provides recommendations for work to be done by NPS day labor.

This report was originally prepared as an emergency stabilization report, but several things came to light during its initial review. First of all, it is not the goal of this division to further complicate the process of treating historic structures, nor to create a new document. With this in mind the report was modified to meet NPS-28 Guidelines for Historic Structure Reports.

Though stabilization sounds appropriate when speaking of rehabilitating an historic log structure, restoration is also necessary. The log structures are performing the dual role of holding up the building and protecting it from the weather. Because of these conditions it is difficult to separate stabilization treatment from restoration treatments; they become one and the same. Both terms may be applied to similar treatments.

A slight departure from conventional Historic Structure Reports will be found in the recommended treatment drawings. Because of the simplicity of these structures, the treatment drawings will be developed in sufficient detail, when coupled with the materials list, to carry out the actual work. This procedure will save significant time and funds that would normally be used in developing a separate package of Working Drawings and Specifications, as these are contained in this report.

Another departure from conventional Historic Structure Reports is the use of Historic American Buildings Survey (H.A.B.S.) drawings in place of existing condition drawings. Since both types of drawings record essentially the same information, it saves time and funds to utilize the H.A.B.S. format for the H.S.R. and still have a H.A.B.S. record archived in Washington, D. C.
B. ARCHITECTURAL DATA

1. General Description - Site

This structure is located in Katmai National Park and Preserve on the North Arm of Naknek Lake. This locale of the lake is named Bay of Islands. The structure is sited approximately 115 feet away from the shoreline of the lake and up a slope about 30 feet above water level. The entrance to the building faces east.

Fure's Cabin is accessible only by foot, boat or float plane. The site is heavily overgrown with vegetation, clearly demonstrating abandonment.

Others supporting structures at this site include the following:

a. A windmill tower, with storage shed at its base, is located just west of the main cabin approximately in line with the cabin's north elevation. The tower appears to be about 30 feet from the cabin and is 12 feet square. The storage portion of the tower is covered with corrugated tin. An access door is located on the east elevation.

b. An outhouse is located uphill directly north about 100 feet from the cabin. The outhouse is sheathed with Blazo cans over log framework.

c. A lumber storage shed is located downhill in a southeasterly direction approximately 40 feet from the main cabin. This structure is constructed with nominal-dimensioned lumber and has a low-gabled roof sheathed with Blazo cans. Lumber is still stored in this shed.

The treatments recommended in this report primarily address the main cabin structure, as it is of the highest priority of the resource. Only items considered of primary importance to halt deterioration are dealt with in the stabilization of this structure. The following are the main areas of the building to be treated:

1. Sill Logs
2. Floor Planks
3. Roof Planks
4. Roofing

Interior furnishings, which also contribute to the significance of the site, will also be described as they will, perforce, be affected by treatment of the structure. A collection preservation guide is being developed by Harper's Ferry Center to address interior furnishings treatments.

2. Architectural Description - Existing Conditions

Fure's Cabin was constructed of native spruce apparently cut at this site. There is still evidence of cut stumps of adequate diameter near the cabin to have provided the original logs.
Though the structure has remained vacant since 1962, it is in remarkable condition, though it shows signs of neglect, especially the roof eaves and interior floor.

a. **Walls, Doors and Windows**

The walls are constructed with logs that have been hewn down to a very consistent dimension of 8 inches thick. The width of the horizontal log members vary from approximately 10 to 18 inches, depending upon which end of the log taper is measured. Some roundness of the logs is evident at the joints because the thickness of 8 inches was so carefully maintained. The undersides of the wall logs appear to have been kerfed to provide a tight weather-resistant fit.

The corner joints are all dovetailed with a high degree of craftsmanship and still fit tight. At various points there is evidence of large spikes having been driven into the dovetailed joints. All end-grain of these joints is painted with red paint. The paint appears to have been a regular maintenance operation in the upkeep of this structure performed by the owner, Roy Pure. The paint has remained in fair condition, thus slowing deterioration at the log butts.

Chinking of horizontal log joints is with, what appears to be, hemp and moss on the interior and exterior. Just to the right of the door, at the exterior, Russian newsprint has been used for chinking. Much of the chinking has weathered out, but joints are still tight due to the high level of craftsmanship. About half of the interior walls are covered with remnants of cardboard boxes.

Vertical logs are located at all door and window jambs and appear to be channeled to receive wall logs. East and west wall windows are fixed glass with two types of sash configurations. Two-over-two light sashes are used at the east wall and the west has three-over-three lights. Sashes are missing at the north and south walls and only a wire insect screen is nailed over the window frame. The only door is constructed of horizontal one-by-sixes at the exterior laminated with vertical one-by-sixes faced to the interiors.

b. **Sill Logs**

The existing condition of the sill logs is obvious because they have been in constant contact with the soil since the cabin was constructed. There is uniform dry rot primarily below the grade. This problem is compounded at the north elevation and the north end of the west elevation because the structure is built into the hillside. At least three courses of these wall logs, above the floor level, are in direct contact with soil at their exterior face.

c. **Floor Planks**

The floor planks consist of 3 by 12 inch hand-hewn planks. Taper and thickness vary a few inches and length averages 8 feet. These floor planks run transversely and are butted to a
hand-hewn beam that divides the floor longitudinally. It appears that the floor planks are supported at sill walls by a ledger and supported in a similar manner at the floor beam. There is extensive evidence of the floor heaving and sinking with probable direct soil contact on the underside. The underside of the floor planks appear to have roundness to them.

Due to the nature of this cabin's construction, the floor planks being very close to or touching the ground, there is a high probability that these undersides are dry rotted.

There is also visual evidence of a roof leak at the north end of the west wall that is directly affecting floor planks in that vicinity. Planks are generally mushy near sill walls and bearing points evidencing direct moisture contact.

A finish covering of oiled canvas is applied over the exposed surface of the floor planks. This oiled canvas also covers the center floor beam.

d. Roof Planks

Roof planks average 4 inches thick by 12 inches wide and are approximately 10 feet long. The planks are hand-hewn and exposed on the underside. All planks span from exterior walls to a 6 by 6 inch ridge beam.

The roof planks are sheathed with corrugated metal at the exterior. There are signs of rot at the butts of many of the planks because the corrugated metal does not uniformly cover the last inch of the plank. Water running off the roof is being soaked up into the end-grain and causing damage. It should be noted that the end-grain of the roof planks and the corrugated metal have all been treated historically with what appears to be red paint, similar to that found on wall corners.

According to historical data the roof was covered with sod after construction and was not sheathed with corrugated metal until the 1930's. Without removing the metal it is impossible to assess what amount of deterioration the sod and current leaks in the corrugated metal have caused to the roof planks. It is assumed, however, there are localized areas of deterioration existing out of sight under the corrugated roofing even though there are no observable signs of rot from the underside.

e. Interior Furnishings

This cabin was left full of Roy Fure's belongings, from woodworking tools to cooking utensils. In the northeast corner there is a Lang Junior wood cookstove. An iron bed is in the southwest corner.

Cardboard boxes and maps cover a good portion of the walls at the south end of the cabin, a respectful distance from the wood stove.
bleached wood, hollow-log chandelier hangs from the ceiling, and the northwest and southeast corners have built-in shelves.

3. **Recommended Treatment**

   a. **Preliminary Work**

   The following is a suggested list of recommended stabilization treatments in priority order to be performed after archeological clearance:

   **Preparation**
   1) Remove all furnishings and wall coverings after documenting their location. Remove items completely from the structure and keep in accordance with NPS procedures for historic objects.

   **Remove Floor Planks**
   2) Remove vegetation in an area approximately 10 to 12 feet from the exterior walls to allow for building trench and stabilization activities.

   3) Remove and label all floor planks with red (permanent ink) magic marker. Document location of planks so that these same boards can be replaced in their original position after stabilization work. Label the butts or underside of planks only.

   **Excavation**
   4) Excavate under all exterior walls and set screw jacks at bearing points. Excavate more extensively where jacks are placed so as to not remove any more bearing soil than required. Remove all soil contaminated by wood rot from this site and dispose of at the discretion of the Park Superintendent.

   b. **Inspection and Stabilization Work**

   **Inspection**
   1) When the entire structure is up on jacks and stable, inspect the sill logs for contamination by dry rot. If more than 50% of the log is rotted, or it is below the grade, consider it to have lost its structural integrity.

   2) Remove sill logs that have lost their structural integrity and replace with pressure-treated timbers (Douglas Fir) as indicated in Stabilization Drawings.

   **New Footings**
   3) Lay a 10 inch by 10 inch pressure-treated timber under all walls with the top surface level. Rest floor planks on this member so the finish floor height is established at this time. Set the 10 by 10 sill timber on level but undisturbed soil. Place foundation drain on uphill elevations with 90° elbow at north west corner. Backfill with gravel according to treatment drawings.
Wall Repair

4) Replace any wall timbers, that require it, with non-pressure treated logs (spruce) insuring that tool marks and dovetailing match level of original craftsmanship. Pressure treat wall timbers that will be in contact with soil. (Douglas Fir)

5) Drift pin new sill logs according to drawings.

Inspection

6) Inspect all existing floor boards and central beam for rot, and if at least 50% of a board's thickness remains, it should be re-used. With woodworking tools remove all damaged and rotted wood down to solid material.

Floor Repair

7) Cut and hew new floor planks to size for replacing members that have lost their structural integrity.

Inspection

8) Remove all corrugated roofing from roof planks only when replacement roofing materials are on site.

9) Once corrugated roofing is removed, inspect roof planks for extent of deterioration.

Roof Repair

10) Replace with new ones any roof planks that have lost structural integrity (loss of more than 30% of thickness). Hand hew new planks on the exposed underside. Retain roof planks judged in acceptable condition and remove dry rot with hand tools.

11. After all roof planking is securely fastened, install new corrugated roofing to match installation patterns of original material. Check that the new corrugated roofing does not leak.

Painting

12) Etch corrugated roofing with vinegar and paint entire roof and all roof plank butts with red oil base paint. (Prime prior to painting wood with mixture of 50% boiled linseed oil and 50% turpentine.)

13) Paint all dovetail end grain with red oil base paint after priming with mixture of 50% boiled linseed oil and 50% turpentine.

Window Repair

14) Repair all existing windows by replacing broken glass and repairing or restoring sash. Paint red restored sashes and glazing compound. (Several weeks may be required for glazing compound to set up.)
15) Construct new four light sashes to match basic design of other existing sashes. Glaze new glass in the same manner as described in item 14 and paint sashes red.

16) Check that existing door fits tight and operates easily. If any hardware requires replacement, replace in kind. Repair of screen door is optional.

c. Summary

All stabilization treatments recommended in this report are based on an evaluation of the structure without removing historic fabric. The inspection phases of the stabilization work are the most critical because this is when the bulk of design decisions will be made on-site. The success of the project will hinge on the individual craftsperson charged with the responsibility of carrying out the treatments. This project will require an individual with the following qualifications:

1) Journeyman carpenter.
2) Extensive experience in log and timber construction.
3) Experience and ability in dovetail joinery as it applies to log structures.
4) Specialized experience and ability in the use of historic hand tools, i.e., broad axe, draw knife, adze.
5) Ability to live and work for extended periods in primitive environments.

Another major consideration is accounting for all materials and inspecting them prior to commencement of work. The list of materials provided in this report is only as complete as early investigations allow; there will likely be additional materials required as the job proceeds.

It is important to note that the most difficult aspect of this job will be matching new work with old. Care must be taken by the craftsperson to match tool marks and detailing so that new work is as similar as possible with the historic appearance of original work.

4. Material List & Cost Estimate

Timbers, Full Dimension Spruce, Rough Sawn

1) 4 1/2" x 18" x 12' 25 Roof Planks
2) 3" x 12" x 10' 37 Floor Planks (transverse)
3) 9" x 18" x 16' 8 Wall Timbers
4) 9" x 18" x 22'  
5) 2" x 4" x 12'  
1  Floor Plank (longitudinal)  
9  Misc. Window Sash, etc.

Pressure Treated (CCA) (Chromated Copper Arsenate) Select Structural (No. 1), Douglas Fir, Full Dimension, Rough Cut Labeled (LP-22 Ground Contact 40).

6) 6" x 6" x 8'  
7) 10" x 10" x 8'  
8) 8" x 12" x 8'  
10  Sleepers for Floor  
9  Footing Timbers  
9  Sill Logs

Galvanized Steel Corrugated Roofing, 22 Gauge, Corrugation Spacing 2 5/8" ± Center with 32" Coverage Min.

9) 8' Panel  
10) 3' Panels  
11) 20" Wide Roof Cap  
12) 6" x 8' Perforated PVC Drain Tile  
13) 6" Perforated PVC Drain Tile 90°  
14) 5" Galvanized Spikes  
15) 7" Galvanized  
16) 16d Duplex Nails  
17) Roofing Nails 8d w/Neopren Washers  
18) 8' x 1/2" Dia. Galvanized Steel Rods or Copper Electric Grounding Rods  
19) Vinegar  
20) Roof Jack for 6" Dia. Single Wall Stove Pipe  
21) 6" Dia. Stove Pipe Rain Cap

18 each  
18 each  
24 Lin. Feet  
8 each  
1 each  
50 lbs.  
50 lbs.  
10 lbs.  
50 lbs.  
4 each  
5 Gallons  
1 each  
1 each

For Roof  
For Roof  
For Roof Ridge  
For Foundation Drain  
For Foundation Drain  
For Floor & Roof Planks  
For Walls  
For Temporary Work  
For Corrugated Roofing  
For Drift Pins  
For Etching Corrugated Roof
22) 6" Dia. Single Stove Pipe in 3' Sections

23) Paint, Benjamin Moore, Semi-Gloss Alkyd House Paint Brown (FST 1)

24) 12 Ton Capacity Screw Jack as per GSA Catalog 5120-00-224-7522

25) 6ML Plastic Sheet Type I, GSA Catalog 8135-00-5790-6489 12 x 100

Estimated cost of this material delivered on site is: $8,000.00.

Estimated cost of labor to install recommended treatment: $12,000.00

5. Alternative Treatments

These alternatives take into consideration the fact that funds may not be available for the recommended treatment.

a. No Further Treatment: This alternative would result in further water damage and deterioration of Pure's Cabin from Katmai's severe weather conditions. Routine maintenance would continue. (This alternative is not recommended.)

b. Exterior Preservation Treatments Only: This alternative would include all essential work recommended for the exterior of the building -- all roof work, replacement of deteriorated walls, sills and repair of windows and door. Routine maintenance would continue. (This alternative is not recommended because the only interior work left would be the floor, and it would have to be removed to replace sill logs.

c. Interior Adaptive Use Treatment Only: This alternative would include only floor plank replacement and would not fully stabilize deterioration of historic fabric. (This alternative is not recommended.)

Of all the alternative treatments, "b" is the preferred treatment because if these items were accomplished, the structure would be effectively stabilized from deterioration.
6. **Evaluation of Effect of the Recommended Treatment**

   a. **Discussion**

   The following determination of effect of the recommended treatments is made in accordance with section 800.4(b) of the Advisory Council on Historic Preservation regulations, "Protection of Historic and Cultural Properties." The council's criteria reads as follows:

   A federal, federally assisted, or federally licensed undertaking shall be considered to have an effect on a National Register property eligible for inclusion in the National Register (districts, sites, buildings, structures, and objects, including their settings) when any condition of the undertaking causes or may cause any change, beneficial or adverse, in the quality of the historical, architectural, archeological, or cultural character that qualifies the property under the National Register Criteria.

   Fure's Cabin, as explained earlier in this report is currently being nominated to the National Register of Historic Places. The architectural and historical qualities described in the National Register Nomination are briefly outlined in the following statements to be used in applying the criteria of effect.

   1) Fure's Cabin reflects a unusually high level of craftsmanship and gives evidence of early non-native Alaskan life style.

   2) Overall dimensions of the cabin are consistent.

   3) All logs used in construction of the cabin were hand hewn to a rectangular shape.

   4) Dovetail joinery was used at all four corners of the structure and carefully detailed for a tight fit.

   b. **Evaluation of Effect**

   1) **No Effect:** Recommended treatments having no effect on the qualities of Fure's Cabin that qualify it for individual nomination to the National Register are as follows:

      a) Removal of all furnishings and wall coverings to be stored elsewhere in accordance with the NPS Manual for Museum Standards and the Katmai Collection Preservation Guide recommendations.

   2) **No Adverse Effect:** Recommended treatments that are considered as having an overall beneficial effect on Fure's Cabin are as follows:

      a) All replacement of rotted roof, floor and wall timbers with new material insuring that as much historic fabric as possible is retained even if higher labor cost is incurred.
b) Removal of encroaching vegetation.

c) Application of paint to log ends.

d) Repair and reconstruction of windows.

e) Replacement of deteriorated roof sheathing.

3) **Adverse Effect:** Recommended treatments that are considered as having an adverse effect on the qualities of Fure's Cabin that qualify it for individual nomination to the National Register of Historic Places are as follows:

   a) **No Adverse Effect** is anticipated from treatments recommended in this report.