Over one million acres in size, the Boundary Waters Canoe Area Wilderness contains 1,200 miles of canoe routes that traverse hundreds of lakes and rivers, and is home to abundant plants, fish and wildlife, including threatened and endangered species. With over 200,000 visitors per year, it is one of the most heavily used wilderness areas in the country.

Wilderness visitors have the opportunity to experience challenge, solitude, and beauty on whichever route they choose. Trails between lakes, called portages, are maintained at the minimum level necessary to allow safe passage while still retaining their rustic, wilderness character. Wilderness designation for the area does not allow mechanized trail maintenance, requiring wilderness managers to apply ingenuity and efficiency on maintenance projects in locations far from the nearest trailhead, and often under adverse environmental conditions.

The portage between Thomas and Cacabic lakes is ¾ miles long and includes a 300 foot wet section through an environmentally sensitive black spruce bog. Maintenance of this section in the past included a corduroy walkway which for the past 8 years had been submerged under inky black water. With pieces missing, a misstep on the walkway had the potential of plunging a person into four foot deep swamp muck, where other hazards also existed. Many visitors, to avoid this hazard, pioneered alternative routes around and over blown down trees through the sensitive spruce bog environment, which created many user developed trails and led to resource damage over a wide area.

After brainstorming potential options, including reroutes, portage closure, no action, and numerous structural designs, the Kawishiwi Ranger District's Trail Team settled on a design which utilized native materials (mostly dead or dieing spruce and tamarack trees on site), and rough sawn tamarack boards to construct a structure which essentially floats on the bog mat adjacent to the 300 foot wet section. Ten to forty foot tree sections were laid side by side and parallel to the wet area, as we found that wood submerged in the acidic bog environment does not degrade much over time. The rough sawn tamarack boards were then fastened on top of the logs to create a walking surface 18 - 20 inches wide, which met our trail width specifications for the area.

To reach the portage from the nearest summer trailhead requires a 15 mile travel route which includes 11 portages. In winter, using lakes and winter trails, the route is 13 miles one way. Timing of construction and freighting of a large amount of materials to the project area were two of the biggest challenges. It was determined that initial construction occur in winter, when the firm, frozen bog surface provided a flat surface to build on, and gathering and skidding nearby logs would be easier on packed snowshoe trails instead of soft, boggy swamp trails.

Freighting utilized the Districts dog team, as well as two contracted dog teams, to cover the 26 mile round trip route from the trailhead. Items hauled included over 3000 pounds of building material, as well as one employee and two volunteers, their winter camping gear, and construction tools. It took over two weeks to freight and complete construction. During that time, the people camped on site, and those running the dogs, encountered temperatures ranging from +30 to -30 degrees Fahrenheit.

Primitive tools used on the project:

- Dog teams, and the skill to drive them across lakes and portages while carry heavy, awkward loads. The teams used include the Districts 10 dog team, two contracted 10 dog teams, and two smaller (5 dog), Outward Bound teams driven by their staff. The Outward Bound teams were utilized to freight the boards across the narrow, ¾ mile portage to the construction site, while the larger teams were used for the 26 mile round trip trailhead run.
- Cross-cut saws for felling and bucking trees
- Brace and bit drills and screw drivers
- Axes, bow saws and chisels for shaping wood
- Canvas wall tents with sheet metal stoves
- Ice augers to reach fresh water

The project was completed as far as possible on the frozen bog surface in winter. In mid May, another trail crew returned to the site to level the structure, as it had settled unevenly during the spring thaw. At this time we also anchored the ends of the structure into the existing trail tread on either side of the wet section, and our work was complete.

By mid July, pictures and reports from our wilderness crews confirmed that new vegetation had already begun to fill in around the structure, and it's our hope that the 300 foot wet section will again be taken over by new vegetation and return to its natural, floating bog mat condition.

Overall, the Thomas to Cacabic boardwalk project benefits the safety of forest visitors, adds protection to the resource, and positions the resource for recovery by removing traffic where damage was occurring. The project also promoted cooperation by bringing together Forest Service employees, volunteers, and outside contractors to accomplish a challenging task under adverse environmental conditions.