

Ojibwe cultural landscapes of Voyageurs National Park, Minnesota

By Andrew LaBounty

FOR SEEING THE BIG PICTURE, so to speak, archeologists turn to aerial imagery. For examining cultural landscapes over a large area, such as at Voyageurs National Park in Minnesota, *historical* aerial imagery supplies an incredible wealth of information. Although Voyageurs was not established as a national park until 1975, the earliest aerial photographs were taken in 1927 as a result of a flight conducted by the International Joint Commission (IJC) to manage the waterways between Canada and the United States (Bullard and Scovil 1930). Under conditions of high water and intensive logging (see Lynott et al. 1986), the IJC inadvertently captured not only the status of the waterways, but also aerial images containing more than 250 cultural features related to Ojibwe land use. Using a stereoscope in combination with modern GIS techniques, it is now possible to investigate and record the cultural landscape of nearly 200 years of historical occupation by the Bois Forte band of Ojibwe as it appears in these early photographs.

Stereoscopes have been in use since 1838, often as a recreational device. These units mimic binocular vision by feeding a separate image to each eye through mirrors and lenses. When used to view one scene at two slightly different angles, a stereoscope allows the brain to see a 2-D image in three dimensions. In this case, an airplane took a series of pictures as it flew over the international boundary in 1927, with no thought to later viewing them in 3-D. Each successive picture is therefore at a slightly different point of view, but two adjacent pictures still contain the same features, so overlapping features can be seen in three dimensions with the stereoscope. Our research took advantage of this phenom-

enon to gauge tree height in 1927 and to differentiate bare earth from thick stands of vegetation in these black-and-white photos. The simulated three-dimensional view also made it possible to distinguish pit features, buildings, and other Ojibwe cultural features from natural variations in topography.

Digital, georeferenced copies of the 1927 aerial photos were simultaneously created by the Minnesota Department of Natural Resources and overlaid with archeological site locations provided and maintained by the Midwest Archeological Center in Lincoln, Nebraska. Using this combination of data, we selected salient pairs of aerial photographs for examination under the stereoscope, accurately recorded all observed cultural features in a GIS, and compared the observed historical features with previously identified archeological sites. We further based interpretations of observed features on Ojibwe oral histories and extensive research into historical Ojibwe land allotments (Richner 2002), resulting in a powerful way of viewing the historical landscape of Voyageurs National Park.

Results: Alligator Bay

Nearly the entire park area exhibits some form of cultural activity in 1927. Most of

Abstract

Appreciation and preservation of Ojibwe cultural resources are a major focus of Voyageurs National Park, Minnesota. Stereo pairs of 1927 International Joint Commission aerial photography were compared to archeological site locations recorded over the last 30 years to identify more than 250 historical features. These features reveal otherwise isolated archeological sites as a system of contemporaneous and interrelated occupations. Through the identification of structural features and vegetation differences, Ojibwe archeological sites are newly associated with one another by trails, piers, portages, and other landscape features. By combining and overlaying these data in a GIS along with modern imagery, historical Ojibwe occupation can be better understood and interpreted by park staff as a complex and persistent cultural landscape spanning the lakes of Voyageurs National Park. The results of this research are therefore a combination of archeological and nonarcheological data sets, repurposed and recombined to the benefit of the park as a whole.

Key words

cultural landscape, geographic information system (GIS), homesteading, International Joint Commission, logging, Midwest Archeological Center, Ojibwe, photographic analysis, stereoscope, Voyageurs National Park

By using a combination of old and new technologies, this research provides a glimpse into the past cultural landscapes of Ojibwe residents, enhancing preservation of the land with a deeper understanding of its meaning.

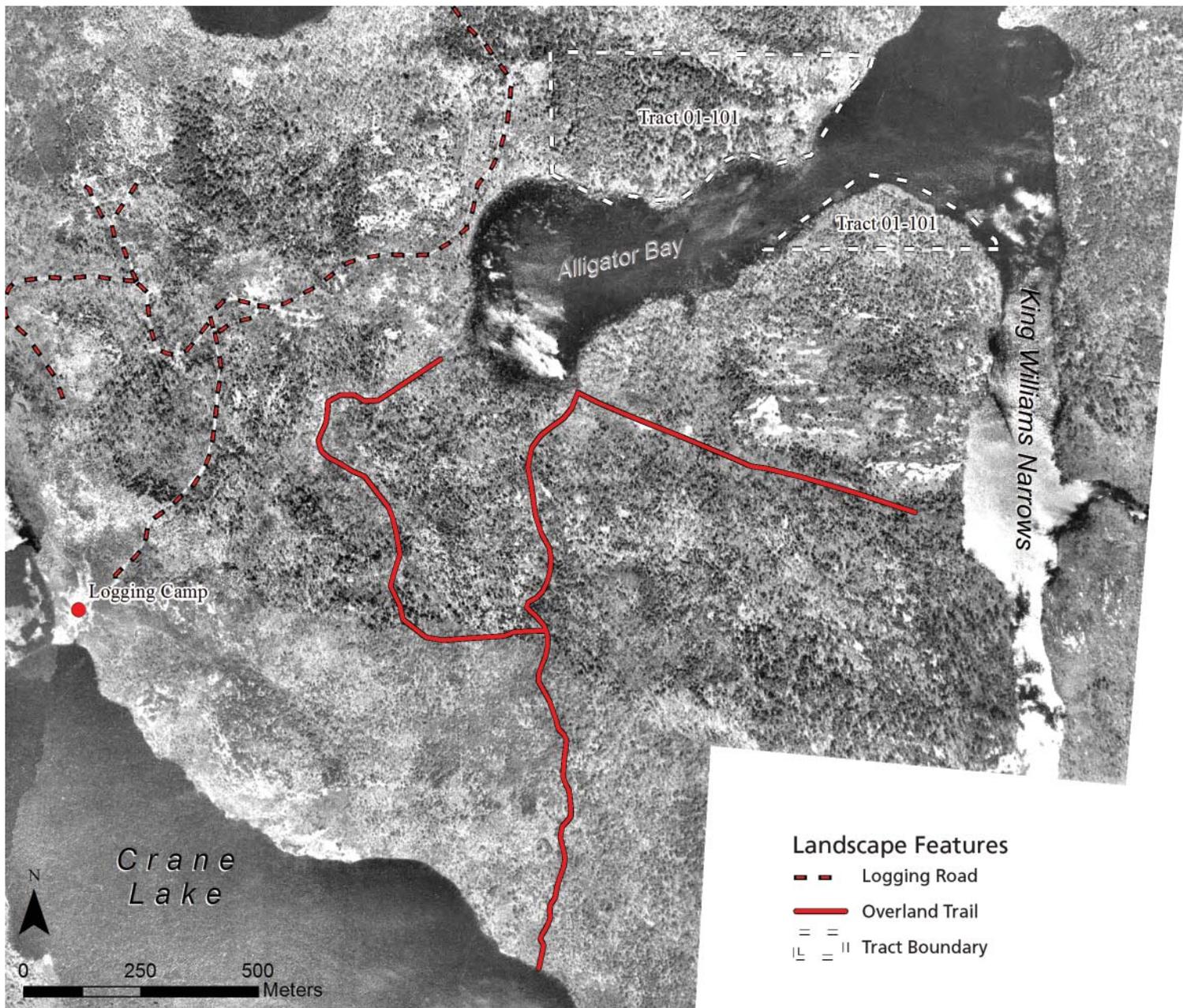


Figure 1. Alligator Bay, 1927. Notable cultural features are highlighted in red and include uncut pine stands in tract 01-101 and an overland winter trail from Crane Lake to Alligator Bay and King Williams Narrows.

the results from this preliminary investigation can be associated with Ojibwe activity specifically, but of those, only one will be presented here to illustrate the results of the research.

Prior to this investigation, notable features at Alligator Bay—named for the amphibious logging vessel rather than the animal—included several archeological sites and

the remains of a major Virginia and Rainy Lake Logging Company camp. The 1927 manifestation of these is remarkable, and several additional features are revealed in the historical imagery (fig. 1).

Tract 01-101 within Voyageurs National Park is currently held in trust by the Bureau of Indian Affairs (BIA), meaning the land is owned by the BIA on behalf of the

historical Ojibwe owners in perpetuity, but is managed by the National Park Service because it falls within the boundaries of the national park. Based on archeological and historical research, the land appears to have been a historical Ojibwe dwelling established under the Homestead Act of 1862 (Richner 2002, p. 76). Its proximity to the King Williams Narrows suggests that the land may have been claimed by

a family member of Joe King Williams Bego, an Ojibwe man for whom the strait is named. In claiming such an allotment, Ojibwe families subjected themselves to the requirements of homesteading and gave up their claim to reservation land and the associated annuities, choosing instead to claim ownership and development rights on a particular parcel of land (Richner 2002). On this particular tract, virgin pine is obvious in the simulated 3-D stereo view, terminating precisely at the tract boundaries that are still in effect today. A nearby, deeply cut logging road (not highlighted) attests to the volume of wood removed from nearby tracts, and bare earth can be seen extending south and west from tract 01-101. Combined with tract 01-101's current BIA trust status, these features suggest that it was protected from clear-cutting through private ownership, providing further visual evidence in support of the archeology that the land was an off-reservation allotment to a native Ojibwe family as of 1927. In addition, the aerial photographs demonstrate a contrast between Ojibwe and some European land management practices, and provide explanations for why the vegetation on tract 01-101 remains so different from the rest of the park today.

To the south of tract 01-101 is a set of overland trails that appear to follow drainages and skirt high ground. Although archeological sites are known in the vicinity of the trail, there was nothing to link these sites interpretively. Given the clear evidence of traffic between the northern and southern shores, however, it now seems that previously disparate archeological sites may indeed be part of a community or network of habitation sites. Moreover, it is known that King Williams Narrows does not freeze completely in the winter because of its rapid flow, and is therefore unsafe as a winter walking trail. It is therefore likely that the trail seen in the 1927 aerial photos is the traditional winter passage between Crane Lake and Alligator

Bay. On an even larger scale, this winter trail may be part of the Mukooda Portage, which provided, even until recently, access to the Lac la Croix First Nations to the east (National Park Service, Voyageurs National Park, Mary Graves, Chief of Resources, e-mail dated 12 June 2013).

Implications for management

Alligator Bay is a small area with relatively few visible cultural features dating to 1927. Elsewhere throughout the park, this research identified trails, structures, culturally managed vegetation (e.g., logging or lack thereof), and docks. At many locations, past logging activities still exert a dominating influence over the landscape, as evidenced in historical clear-cutting and abandoned road and rail networks. At other places, thick stands of pine suggest (and physically obscure) Ojibwe ownership and land use. In still other areas, extensive logging reveals the bare-earth expression of a long history of Ojibwe use through standing structures, mounds, trails, and portages.

The 1927 cultural landscape of Voyageurs National Park is more evident today as a result of this research and demonstrates a variety of Ojibwe cultural connections, including water travel, family lands, social connections, and vegetation management. These findings directly apply to resource management and the way the park interprets the culturally modified spaces between archeological sites. As another example, the trees at Alligator Bay were known to be virgin timber. We now understand how and when they were protected from logging, lending historical and cultural value to an otherwise natural resource. For natural resource management itself, there is evidence of fire throughout the park, contributing to the establishment of a fire history and the relative ages and burn frequency of old growth at Voyageurs.

These results also inform future research by combining old and new data to represent otherwise unidentified features in a practical, manageable way. We combined stereoscopic photo analysis with GIS-based documentation, which proved to be an effective way to derive information from even poor-quality aerial photographs. This made it a simple (if time-consuming) process given the tools and the resource, and allows for the addition and recombination of additional information through GIS technologies. Most importantly, however, by using a combination of old and new technologies, this research provides a glimpse into the past cultural landscapes of Ojibwe residents, enhancing preservation of the land with a deeper understanding of its meaning.

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