

# Research supporting the sustainability of culturally important paper birch trees (wiigwaasaatigoog) in the Great Lakes

A cooperative project between  
GLIFWC and USFS NRS



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The Great Lakes Indian Fish & Wildlife Commission (GLIFWC) is an inter-tribal natural resource agency with delegated authority to implement off-reservation treaty-rights on behalf of its 11 Ojibwe member bands.

Established to assist the member tribes in:

- conserving and managing off-reservation treaty resources
- protecting the habitats and ecosystems that support those resources
- maintaining institutions for tribal self-regulation off-reservation
- Implementing treaty rights in a biologically sound and culturally appropriate manner

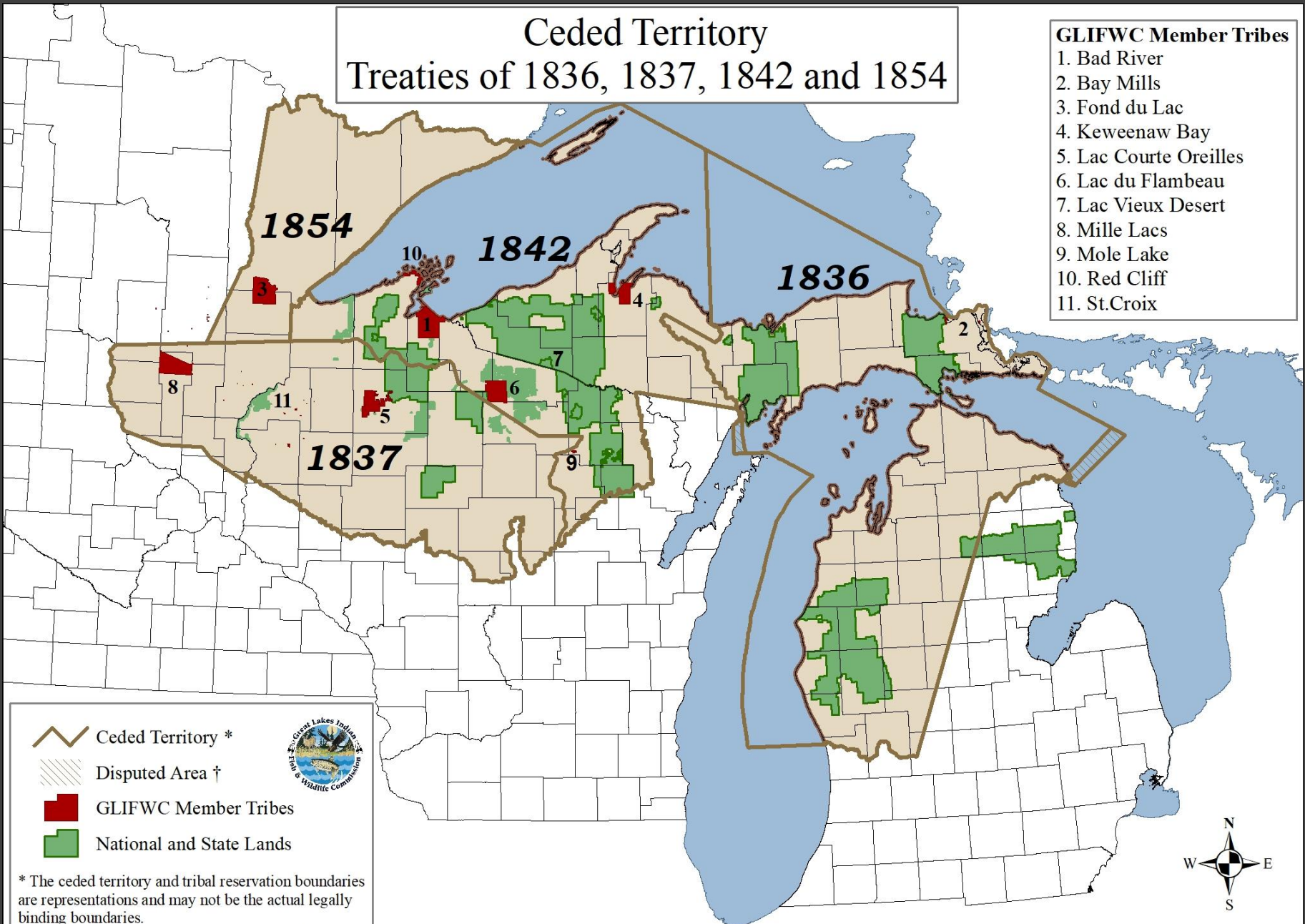






# Ceded Territory

## Treaties of 1836, 1837, 1842 and 1854

### GLIFWC Member Tribes

1. Bad River
2. Bay Mills
3. Fond du Lac
4. Keweenaw Bay
5. Lac Courte Oreilles
6. Lac du Flambeau
7. Lac Vieux Desert
8. Mille Lacs
9. Mole Lake
10. Red Cliff
11. St. Croix



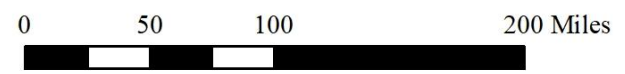
-  Ceded Territory \*
-  Disputed Area †
-  GLIFWC Member Tribes
-  National and State Lands



\* The ceded territory and tribal reservation boundaries are representations and may not be the actual legally binding boundaries.

† See 2000 Great Lakes Consent Decree and 2007 Inland Consent Decree.

Map created using Ceded Territory Boundary Version 2.1, February 2017, D. Unglaube





# Treaty Rights Litigation

Reaffirming tribal rights to fish in certain areas of the Great Lakes:

- 1971 - Jondreau Decision, Michigan State Court
- 1972 - Gurnoe Decision, Wisconsin State Court
- 1981 - U.S. v. Michigan (Fox) Decision, U.S. Federal District Court

Reaffirming inland hunting, fishing and gathering rights:

- 1983 - Lac Courte Oreilles v. State of Wisconsin (LCO) Decision aka. "Voigt" Decision
- 1997 - Mille Lacs and Fond du Lac Decision in Minnesota's 1837 Ceded Territory
- 1999 - Supreme Court Decision in favor of the Mille Lacs Band.

1837	Treaty with the Chippewa at St. Peters, WI
1842	Treaty with the Chippewa at La Pointe, WI
1850	President Zachary Taylor issued an executive order in 1850 to move Ojibwe Indians living east of the Mississippi River to unceded lands
1850	Attempted removal of Ojibwe in 1850-51 which resulted in the Sandy Lake Tragedy — removal failed
1854	Treaty with the Chippewa Indians of Lake Superior and Mississippi, La Pointe, WI
1971	<i>People v. Jondreau</i> decision (MI)
1972	<i>State v. Gurnoe</i> decision (WI)
1981	<i>U.S. v. Michigan</i> (Fox decision)
1983	<i>Lac Courte Oreilles v. State of WI</i> (7th Circuit “Voigt” decision)
1983	Formation of Voigt Intertribal Task Force
1984	Formation of GLIFWC
1991	Final decision in <i>LCO v. WI</i> (Parties do not appeal)
1992	FS/GLIFWC/Voigt discussions begin regarding gathering and treaty rights
1993	MOU negotiations begin

## 1998 MOU Signed

1998	U.S. Representative Obey’s concerns prompt Forest Service to conduct public comment period
1999	<i>Minnesota v. Mille Lacs</i> Supreme Court decision
1999	Forest Service completes comment period, MOU finalized
2000	Campground Fee and Length of Stay Restriction Exemption Agreement
2000	First Annual Tribal/FS MOU meeting at Red Cliff

**MEMORANDUM OF UNDERSTANDING**

**REGARDING**

**TRIBAL - USDA-FOREST SERVICE RELATIONS**

**ON**

**NATIONAL FOREST LANDS**

**WITHIN THE TERRITORIES CEDED**

**IN**

**TREATIES OF 1836, 1837, AND 1842**

**PREAMBLE**

The Memorandum of Understanding (MOU) deals with the relationships of sovereign and federally recognized tribes of Lake Superior Chippewa Indians and of the USDA Forest Service, an agency of the government of the United States. The MOU is based on the principle of government-to-government interactions between the United States Government and federally recognized Indian tribes. The purpose of the agreement is to establish standards by which the Forest Service and the Tribes will act consistently across national forest lands within areas ceded in the treaties of 1836, 1837, and 1842.

The policies of the Forest Service toward federally recognized tribes are intended to strengthen relationships and further tribal sovereignty through fulfilling mandated responsibilities and through support and assistance of various kinds to tribal governments. The relationships between the Tribes and Forest Service are comprised of several parts, including honoring treaty-based usufructuary rights as well as policies of the Forest Service toward Indian nations. While court decisions, laws, regulations, policies and Executive Orders from the President of the United States have all shaped the Forest Service's policy toward Indian tribes, nothing in this agreement is in any way intended to abrogate or affect in any fashion judicial decisions which have interpreted such treaty rights.

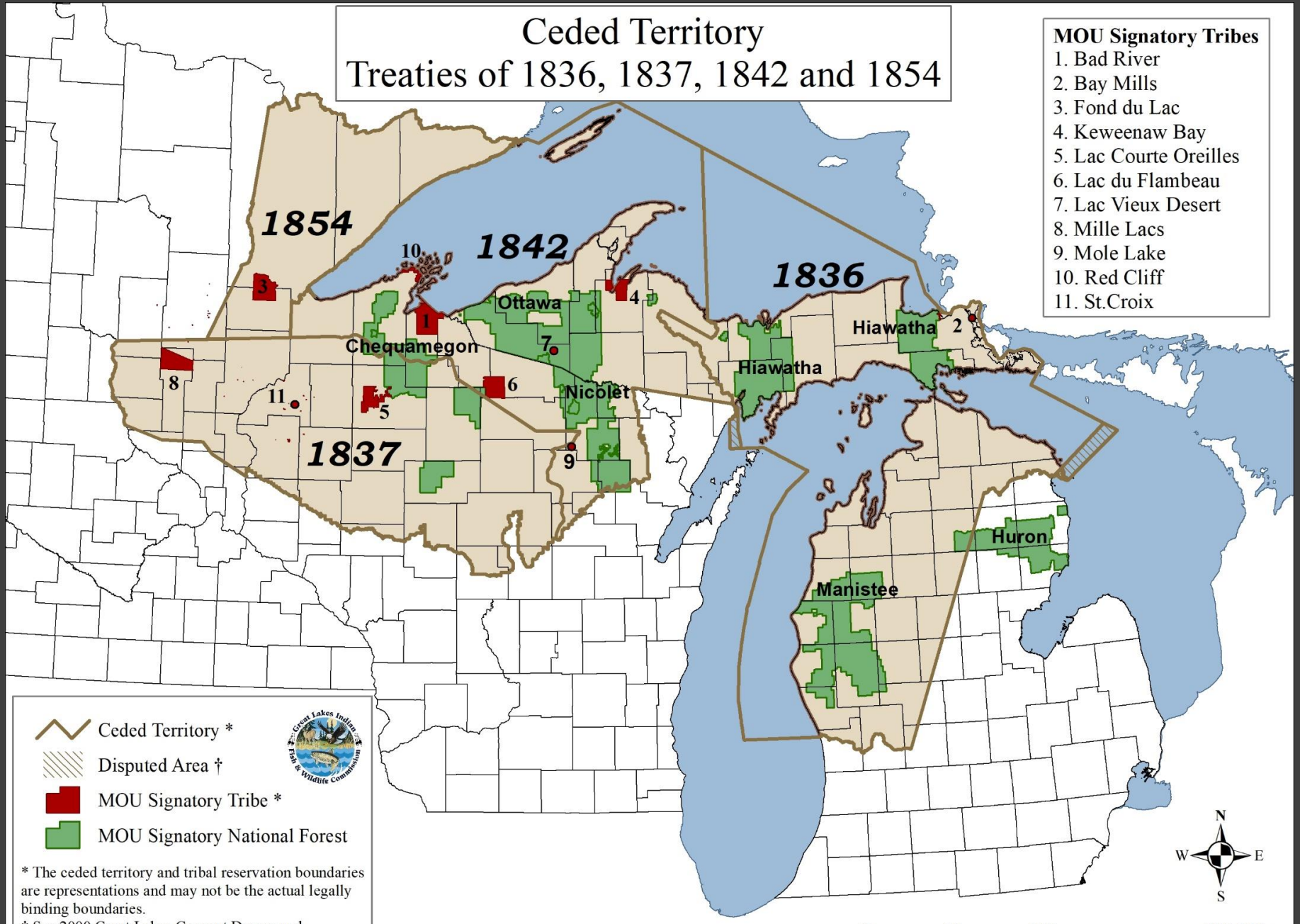
This MOU recognizes existing treaty rights of Tribes to hunt and fish and to gather wild plants on national forest lands in accord with applicable regulatory authorities of the States or other federal agencies having jurisdiction over such activities. Reference in the MOU to such





# Ceded Territory

## Treaties of 1836, 1837, 1842 and 1854

### MOU Signatory Tribes

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-  Ceded Territory \*
-  Disputed Area †
-  MOU Signatory Tribe \*
-  MOU Signatory National Forest

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 † See 2000 Great Lakes Consent Decree and





## Primary Purposes of the MOU:

- 1) Implementing gathering rights under tribal regulations
- 3) Establishing the consultation process for management decisions that affect treaty rights



## How the project started

### Key Terms:

Wiigwaas – Paper Birch Bark

Wiigwaasaatig – Paper Birch Tree

Wiigwaasaatigoog – Paper Birch Trees *pl.*

Wiigwaasi-jiimaan – A Birch Bark Canoe

Wiigwaasaatig (Paper birch, *Betula papyrifera*) is a cultural keystone species for the Anishinaabe in the US Great Lakes region.

In the early 2000s, GLIFWC staff began hearing from member tribes that artisans were experiencing increasing difficulty finding wiigwaas (paper birch bark) for traditional uses.

The issue of birch decline was brought up at the annual MOU meeting between the 11 member tribes and the USFS.

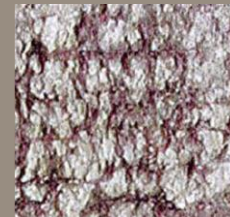
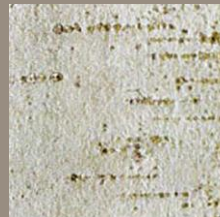
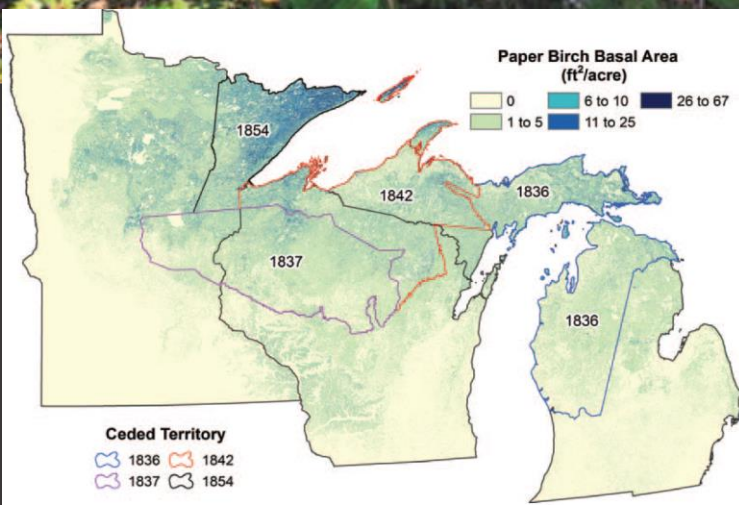
A Technical Working Group (TWG) made up of GLIFWC and Northern Research Station scientists was created to explore the wiigwaas resource and this issue.

# First steps

As a first step the TWG analyzed data 20 years of data from the Forest Inventory and Analysis (FIA) program (NRS-FIA).

Analysis showed an overall decline in wiigwaasaatigoog in the Lake State Ceded Territories, and revealed a lack of data specific to the quality of the wiigwaas resource.

This prompted the next charge of the TWG, to evaluate not only the status and changes in wiigwaasaatig, but also assess the characteristics of existing wiigwaas through the lens of a TEK knowledge holder



# Design of a birch bark inventory



Develop an inventory field guide that combined TEK and Western science in a mutual effort to further inventory the wiigwaasaatig resource in the Ceded Territories.

This guide was then provided to the FIA program, which incorporated the methods into its preexisting manual and trained inventory crews in the implementation of the TEK protocol.

measurement

Journal of  
**FORESTRY**

## Using Traditional Ecological Knowledge as a Basis for Targeted Forest Inventories: Paper Birch (*Betula papyrifera*) in the US Great Lakes Region

Marla R. Emery, Alexandra Wrobel, Mark H. Hansen, Michael Dockry, W. Keith Moser, Kekek Jason Stark, and Jonathan H. Gilbert

Traditional ecological knowledge (TEK) has been proposed as a basis for enhanced understanding of ecological systems and their management. TEK also can contribute to targeted inventories of resources not included in standard mensuration. We discuss the results of a cooperative effort between the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) and USDA Forest Service's Forest Inventory and Analysis Program (FIA). At the urging of member tribes, GLIFWC staff worked with tribal gatherers to document TEK regarding desired characteristics of birch bark for traditional uses and translated this into an inventory field guide. The guide was

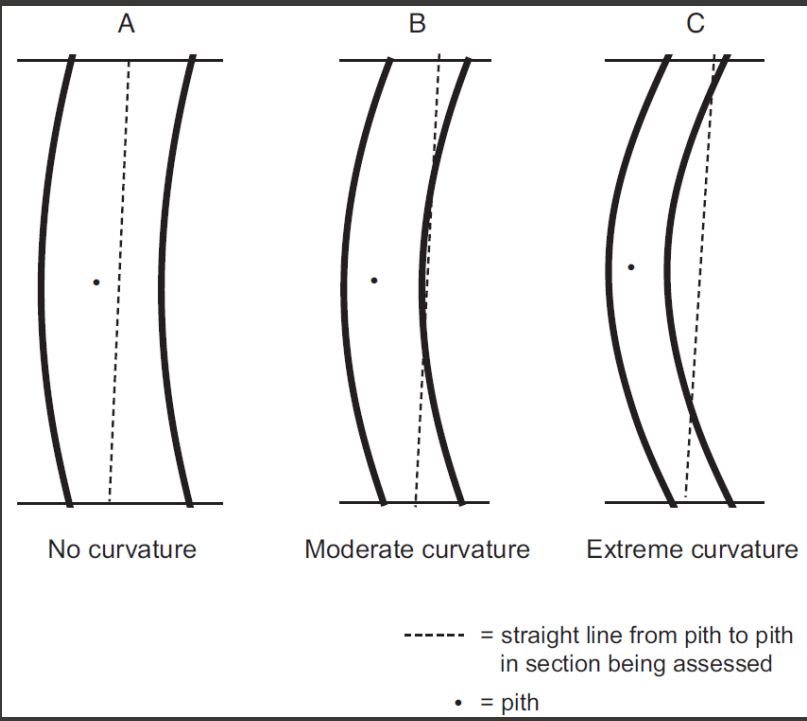
**I**nventory is fundamental to forest management. Forest inventories provide information about the current status of resources and a basis for projecting trends. Where long-term data are available, inventories help document the effects of past management, disturbance, and successional

The partnership resulted in an article published in the Journal of Forestry on using TEK for targeted inventories

Task	TEK experts	GLIFWC	FIA
Identify and interview TEK experts	X	X	
Identify birch bark characteristics		X	
Validate characteristics	X	X	
Translate characteristics to discrete variables		X	X
Develop measurements for variables		X	X
Produce field guide		X	X
Train field crews			X
Implement protocol			X
Review & revise protocol		X	X
Analyze data			X
Interpret results	X	X	X
Develop management recommendations		X	X



Variable	Codes	Definitions
Curvature	0	No Curvature
	1	Moderate Curvature
	2	Extreme Curvature
Branching	0	Absent
	1	Present
Past Harvest	0	Absent
	1	Present
Bark Texture	1	0-50% Rough Bark
	2	51-100% Rough Bark
Lenticels	1	Fine
	2	Coarse
Branch Scars	0	Absent
	1	Present
Exfoliating Bark	0	Absent
	1	<50% Exfoliating Bark
	2	>50% Exfoliating Bark
Blemishes	0	Absent
	1	Present
Fungus	0	Absent
	1	Present
Lichens and Moss	0	Absent
	1	Present



## Paper Birch (Wiigwaas) of the Lake States, 1980-2010

With Special Emphasis on Bark Characteristics  
in the Territories Ceded in the Treaties of 1836,  
1837, 1842, and 1854



Forest  
Service

Northern  
Research Station

General Technical  
Report NRS-149

April 2015

# Focused FIA reports

The first report detailed wiigwaasaatig data collected by the FIA program on forested lands in the Great Lakes region from 1980-2010

## Forest Resources within the Lake States Ceded Territories 1980 - 2013



Forest  
Service

Northern  
Research Station

Resource Bulletin  
NRS-96

September 2015

In the second, FIA inventory data was used to report on forest conditions within the Lake States Ceded Territories (1980-2013)


# Jiimaan-sized Wiigwaasaatig Research



What makes some grow to jiimaan-quality?

- Began with an assessment of site, tree and bark characteristics for all trees >15-20" in the Ceded Territories
- Used the birch bark inventory protocol that was already developed
- Identified sites with large-diameter wiigwaasaatigoog
- Used existing forest inventory data from USFS FIA (all lands), Wisconsin (state lands), National Park Service (NPS lands), and sites identified by tribal harvesters (NFS lands).

*“For canoe construction, bark must be over one-eighth in thick, tough, and from a naturally straight trunk of sufficient diameter and length to give reasonably large pieces. The ‘eyes’ must be small and not so closely spaced as to allow the bark to split easily in their vicinity.”*

A photograph of a large, thick-trunked tree in a forest. The tree is the central focus, with its trunk showing a rough, textured bark. Several people are standing in the lower part of the frame, looking towards the tree. The forest is dense with green foliage, and sunlight filters through the leaves, creating dappled light on the ground and the tree trunk.

# Tribal Forest Protection Act (TFPA) Project

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2024-Ongoing

-Located and preserve existing large diameter birch on the landscape

-Locate areas where large diameter birch can be restored

-Establish educational program for tribal members and USFS employees to learn all things birch and birch harvesting

# Lessons Learned

- It is important to consider both ways of knowing and ways of learning while conducting any type of forest research in support of both culturally and scientifically appropriate management practices.
- Cooperating in “western scientific” projects supports the recognition that the Native people of North American are the original ecologically minded, forest managers.
- Communication is Key
  - It is an iterative process
  - Involves repeatedly checking in and listening throughout the project.
  - Being honest and communicating challenges as early as possible.
- Use of interns allows involving youth in the research of interest to the tribe(s). Children and youth are understood to be the future leaders who will ensure the continuation of the tribe and its traditions, and involving them in the research increases the value of the research to the tribe
- From the USFS perspective, hearing the issue first and then cooperating puts the lead in the right place



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**Forest Inventory and Analysis**  
*The Nation's Forest Census*

