



## **Step 1: Characterization of the Watershed**

The purpose of this step is:

- To identify the dominant physical biological, and human processes and features of the Cass /Winnibigoshish watersheds that affect ecosystem function or condition.
- To identify, map, and describe the most important land allocations, uses, Forest Plan objectives, and regulatory constraints that influence resource management in the watershed.

The combined Cass/Winnie watersheds are 289,706 acres in size and are located within the headwaters of the Mississippi River drainage basin. The watersheds are mostly forested with little urban or industrial development and therefore are in good condition when compared with other portions of the basin from a state or nationwide perspective.



Lakes, streams and wetlands comprise over half of the watershed area. The landscape is a result of glacial activity that occurred between 13,000-9,000 years ago. The Cass/Winnie watersheds are a mosaic of upland forests, forested wetlands, lakes, streams, and non-forested bogs and meadows. Several major native plant communities are represented. These native plant communities in various successional stages provide for a wide variety of habitat conditions, which support a diversity of wildlife species. In

addition, the lakes, ponds, streams and rivers within the watersheds support diverse fish and aquatic communities.

When glaciers retreated approximately 12,000 years ago, the Cass/Winnie watersheds were a focal point for human settlement. Archaeological sites within the watershed reveal human presence as early as about 9,000 years ago and there is scant evidence of even earlier occupations. From a historic perspective, The Cass/Winnie watersheds provided an abundance of food staples from an aquatic system that included a vast fishery and extensive wild rice beds, the advantages of unhindered water transport, and



the proximity to a major ecotone allowing access to resources offered by both prairie and forested systems.

Today the watersheds contain a significant proportion of the jack pine and red pine forests occurring within the Chippewa National Forest proclamation boundary. This vegetation was largely shaped by landscape fires, which often swept into the area from the prairies to the west. These re-



-occurring disturbance events resulted in a “prairie influence” on vegetation composition and structure that is relatively unique within the Chippewa National Forest. Landscapes within these watersheds feature some of the oldest and largest red and white pine on the Chippewa. Roads guide travelers through these old forests found in the Ten Section on the east shore of Cass Lake and Pike Bay and the Avenue of Pines north and east of Deer River.



Also unique to these watersheds is the presence of several miles of the upper Mississippi River and two relatively large lakes (Cass and Winnibigoshish). Evidence is abundant that lake levels and drainage patterns have changed dramatically in post-glacial times. Wave cut terraces 5-11 feet higher than present day levels in Cass Lake and Winnibigoshish indicate that there were stable higher lake levels for a period of time. In addition there is evidence that both lakes experienced levels as much as 5-10 feet lower than today’s levels. These disturbance events have relevance to current day management because the remnant landscapes left behind. Some of the wildlife, fish, and plant species associated with these larger lakes and rivers are uncommon in other portions of the Forest.

Several changes have taken place since Europeans settled the area. Tree harvesting practices and the suppression of fire have changed the composition, structure, and spatial arrangement of today’s forested landscape from the 1870’s. Dams control water in the Mississippi River and headwater lakes at Stump Lake, Cass Lake and Lake Winnibigoshish. These dams have changed the natural hydrologic regimes in the lakes and river. The dams have affected the littoral and riparian communities associated with these lakes as well as the aquatic and riparian communities along the Mississippi River.



Roads, trails, and utility corridors also contribute to the changes in terrestrial and aquatic habitats within this watershed. Cumulatively, they have affected water quality, amount and distribution of remote habitats, and a continuous forest canopy.

Several species currently listed as Minnesota species of special concern and USDA Forest Service Regional Forester's Sensitive Species are known to occur within this watershed. Species that occur in this watershed include the northern goshawk, black-throated blue warbler, black-backed woodpecker, Caspian tern, common tern, greater redhorse, and pugnose shiner.

Local communities and businesses were established and continue to exist because of the rich water and forest resources within the Cass/Winnie watersheds. The watersheds have a "northwoods" character that draw people to not only visit the area but to make the area their home. These watersheds are the home of the Leech Lake Band of Ojibwe and the majority of the watersheds are within the boundaries of the Reservation.

The Leech Lake Band of Ojibwe is a federally recognized tribe. The tribal government consists of a Tribal Council, which includes a tribal chair, district representatives, a treasurer and a secretary. The Band supports a division of resource management and employs resource management professionals to manage the fishery, lands, vegetation, timbered lands and other natural resources. They also have a housing division, social services division, law enforcement agency and tribal court system. The Band operates two educational facilities, a K-12 school called Bug-o-ne-gee-shig located between Cass Lake and Bena and the Leech Lake Tribal College in Cass Lake. Cass Lake also has a hospital and an Indian Health Service office. Almost all tribal government offices are located in Cass Lake.

Three casinos are managed by the Band and are major employers in the area in and near the Cass/Winnie watersheds. Proceeds from these businesses are used to improve infrastructure and provide for the needs of members of the Leech Lake Band and benefit non-members indirectly.



Infrastructure within the watersheds that is tied to tourism is plentiful including nearly 40 resorts, over 15 developed recreation areas, 53 boat launch sites. Three visitor information centers served 6,800 people last year with environmental education programs.

The local economy is also tied to forest products ranging from supplying building materials to supplying other products such as balsam boughs, birch bark, maple syrup, wild rice, and a variety of berries.

The character of the Cass/Winnie watersheds are rural in nature, with the exception of the area in and around the town of Cass Lake. Each of the three counties in and surrounding these watersheds are experiencing population growth. However, most of the growth has

been in and around Bemidji in Beltrami County upstream of the watersheds, in and around Walker in Cass County just south of the watersheds and in and around Grand Rapids in Itasca County downstream of Cass/ Winnie watersheds. 1990 census data for the state of MN shows that minorities make up 5.5% of the total population and that 8.7% of the people live below the poverty level. In Beltrami and Cass counties these figures are significantly higher than the state levels. The following table shows the minority population data and poverty level data for the State, Beltrami, Cass and Itasca counties.

	<b>Beltrami</b>	<b>Cass</b>	<b>Itasca</b>	<b>State</b>
<b>Minority Population</b>	17.2%	11.4%	7.5%	5.5%
<b>Below Poverty Level</b>	18.6%	15.9%	12.6%	8.7%

National Forest System lands within the watersheds are assigned to different management emphases according to the 1986 Forest Land Management Plan. There are twelve management areas within the watersheds. Approximately 55,604 acres are managed for pulpwood production and 72,007 acres are managed for sawtimber sized conifers and sawtimber sized aspen. There are also 2,525 acres dedicated to recreation areas and 11,118 acres assigned to unique historic, biotic, aquatic or geologic areas and research areas. At the current time the Chippewa National Forest is in the process of revising this Forest Plan with a scheduled completion date of October 2002.

The Mississippi Headwaters Board is made up of representatives from eight counties. The board regulates activities within ¼ mile along the Mississippi River, Lake Andrusia, Cass Lake, Pike Bay and Lake Winnibigoshish. Sections of the river and headwater lakes within the National Forest Boundary are classified in the 1992 Management Plan as wild, or “having unique and significant natural, cultural and scenic, scientific and recreational values and are generally considered remote.”<sup>1</sup>

The Mississippi River was nominated by local communities and selected as one of 14 American Heritage Rivers in July of 1998 by President Clinton. The objectives of the American Heritage Rivers Initiative include economic revitalization, natural resource and environmental protection, and historic and cultural preservation.