



## Provincial Orals Scenario

Welcome to Pinawa! As you know by now Pinawa sits on the shores of the Winnipeg River, on the edge of Whiteshell Provincial Park and is just 110 kilometers from Winnipeg. Pinawa derives its name from the First Nations people who lived in the area prior to the explorer La Vérendrye's arrival. This particular part of the landscape was referred to as "pinnowok" or "calm waters." The town has many amenities, some of which you have been able to experience during your day of field-testing. The geography of the area is typical of the Boreal Forest and the Canadian Shield. Thin soils overlay deep granite deposits. Granite outcrops are common. Bogs and swamps are home to Black Spruce and Tamarac forests, while Trembling Aspen, Ash, Birch and other hardwood trees and shrubs inhabit site that are well drained on clay soils. Jack Pine can be found on rocky outcrops with their thin, acidic soils.

Wildlife species include whitetailed deer, which have become very abundant over the last decade. Wolves have become abundant as well, preying on the growing deer herd. Black bears also come into close contact with the townsite. The local moose population has all but disappeared in the last decade, due to the presence of the brainworm parasite and a growing predator population of wolves and bears. Bird surveys noted the presence of songbirds, migratory waterfowl, raptors such as Bald Eagles, hawks, and owls, as well as upland game birds such as Ruffed Grouse. Ground nesting birds, such as grouse and waterfowl, support healthy populations of coyotes and Red Fox.

The Winnipeg River supports a diverse assemblage of large and small bodied fish species (~53 species), including recreationally fished species like walleye, northern pike and bass, and the only freshwater Manitoba fish species with a shark like tail and rows of large bony plates, the long lived, slow growing lake sturgeon. Recently the spiny waterflea, an aquatic invasive species, was found in the Winnipeg River increasing the number of aquatic invasive species in the river to three. Since the 1880s the flows on the Winnipeg River have been regulated by hydro-electric generating stations. There are a total of six hydroelectric generating stations on the river. The Winnipeg River drainage basin is the most significant Lake Winnipeg sub basin with the Winnipeg River alone contributing 49% of discharge flows and, 25% of the nitrogen and 15% of the phosphorous loadings to Lake Winnipeg.

The town of Pinawa has taken advantage of its location, the mixed forests, granite outcrops and surrounding water typical of the Canadian Shield provide ample opportunity for recreation such as sailing, canoeing, fishing, hiking, swimming, snowmobiling and cross country ski trail to mention but a few activities. The town is home to one of Manitoba's great golf courses, has a very active and growing marina, many hiking and cross-country ski trails that include the opportunity to walk over a suspension bridge, a public beach, a public swimming pool, a campground and is located on the trans-Canada trail. The town also has services to offer both townfolk and visitors including things such as a hospital, primary sewage treatment system (although the two campgrounds have septic systems), a landfill, a recycling system, parking, shopping, hotels, etc. The town council has an aggressive mandate to double the town's current population of 1,500 by attracting a new generation of family-centered entrepreneurs. As such, new areas for development have been identified and some new residential developments are already under development, such as The Pinawa Landing development and the Trillium Ridge Development.

Town council is keen to get the input of your team on a number of issues that confront this growing community. Please address each of the following questions:

1. Using the map and air photo provided, identify existing and potential rural and urban non-point source pollution sources.
2. Explain, using examples from the list you have created above, how you think these non-point source pollutants will affect the local watershed's soil, water (surface and ground water) wildlife, forests and people (economics and health).
3. Outline the activities that the town council should require of developers working in the community to combat the effects of non-point source pollution through the use of low impact development in the new residential development areas of Pinawa Landing and Trillium Ridge.
4. Identify other low impact development initiatives that town council could implement throughout the town to reduce problems with non-point source pollution.