

# wetlands & waterfowl migration routes

The wetlands of The Peel River watershed provide good habitat for waterfowl such as this Northern Shoveler. [KM]



Moose frequent wetlands in riparian areas of the Peel watershed. [FM]



Wetlands – areas that are waterlogged all or most of the time – can be ponds, marshes, bogs, fens, muskegs, peatlands, swamps or shallow lakes. They are often highly productive environments that provide habitat for a wide range of plants and animals and support many complex ecological relationships. They play a very important role in ecosystem health.

Wetlands are essential to the welfare of waterfowl populations – 22 species of ducks breed in the Yukon while 34 species of ducks, geese and swans spend some portion of their life cycle in the territory (Yukon Waterfowl Technical Committee, 1991). On a continental scale, the Yukon does not support a large population of breeding waterfowl (Dave Mossop pers. com.). However, due to its geographic location, the territory plays a vital role in spring and fall migrations and during the moult period. At that time, several million birds – a significant part of the Alaskan breeding populations – use

its wetlands. For these reasons the Yukon is an essential link between the crucial breeding grounds of Alaska and wintering grounds elsewhere in North and South America.

Migrating waterfowl seen in the Peel River watershed have likely migrated up the Mackenzie Valley. Although some of these migrating waterfowl will spend the summers breeding in the Peel River watershed, many others continue migrating west towards Alaska.

Wetlands support a host of other animals besides waterfowl. Moose, shrews, bats, voles, muskrat, mink, beaver and river otter all make wetlands their home at one point or another. Wetlands provide spawning, nursery and cover habitat for fish and are essential for amphibians. A number of rare plant species are found in Yukon wetlands.

There are two large wetlands of territorial

significance in the Peel River watershed, the Peel River Plateau and the Chappie Lake complex. The lower Snake River is also surrounded by wetlands of regional significance. Numerous small ponds, swamps, bogs and fens occur throughout the area as well, though they may be too small to be visible on the map.

## Peel Plateau Wetland Complex

The Peel Plateau wetland complex lies on a relatively flat bench perched almost 300 meters above the Peel River. The complex consists of approximately 3,000 medium to large-sized ponds and lakes. The largest of the lakes is also known as Turner Lake. Ponds range in size from 500 hectares to less than half a hectare. These ponds were likely formed when ice lenses melted and the flat terrain prevented the water from draining (Mossop, 2001).



The Peel Plateau wetland complex supports a relatively dense population of the Peregrine Falcons that nest in river valleys nearby. [RR]

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In Canada, and elsewhere in the world, wetlands are disappearing at an alarming rate due to infilling, draining and flooding for human development.

For instance, 71 percent of wetlands in the prairies no longer exist. In the Yukon, the greatest impact on wetlands has been due to hydroelectric developments. As well, at least five important wetland complexes have had grazing in them, four are next to residential developments and two are adjacent to agricultural activity (Department of renewable Resources, 2000). While there has been comparatively little loss of wetlands in the Yukon, the future is uncertain.

Beavers create many of the valley bottom wetlands in the Peel watershed. [PS]

Vegetation in this wetland complex consists of low open black spruce forest with rich shrub layer of willow and alder. Sedge tussocks cover the ground. The spruce forest is relatively rich at the edges of the larger lakes but thins out away from the lakes. Lichen is the dominant ground cover in many of the areas between the ponds. Many ponds are covered by sedge mats and are slowly being invaded by willows (Mossop, 2001).

An extensive survey of the wetland, with a special focus on waterbirds and birds of prey, took place in 1979. Waterbird diversity during this survey was found to be comparable to that of the Old Crow Flats further to the west. The high proportion of paired adults observed in spring suggested the wetlands also provide moderately important breeding habitat. An exceptionally good population of breeding Tundra Swans was observed here. Furthermore, the Peel Plateau wetlands are located in the

“Peel gap” ~ a space between the northern limit of the Wernecke Mountains and the southern limit of the Richardson Mountains. Many thousands of migrating birds pass through this natural flight path from the Mackenzie Valley to the northern interior of Yukon and Alaska. For instance, in May of 1979 a large flock of more than 100 Pacific Loons used Turner Lake for a 1-day staging layover. As a result, researchers speculate the Peel Plateau wetland complex may provide a critical staging area for waterfowl (Mossop, 2001).

Subsequent to the survey, an area of 11,941 hectares was identified in the Yukon Waterfowl Management Plan as critical wetland habitat (Yukon Waterfowl Technical Committee, 1991).

In addition to waterfowl, the Peel Plateau wetland complex supports a relatively dense population of Peregrine Falcons nesting in the river valleys surrounding it. The wetlands

provide the prey for hunting adult Peregrine Falcons. The presence of several pairs of breeding Bald Eagles also suggests a productive aquatic ecosystem and healthy fish populations.

The “perched” location of the Peel Plateau wetlands make them particularly vulnerable to terrain disturbance. The ponds and lakes are virtually “hanging” well above the Peel River and are held in place by soils that are stabilized by ice. Any disturbance to the surface could cause this ice to melt and would lead to catastrophic drainage of the ponds and lakes. This would have great impacts on the productivity and survival of both the waterbirds and birds of prey that use the wetlands extensively (Mossop, 2001).



Lesser Yellowlegs are ever-present shorebirds in the Peel watershed. [JS]

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### Chappie Lake Complex

The Chappie Lake wetland complex is located south of the Peel River. This complex consists of a number of small lakes, ponds, marshes, swamps, bogs and fens nestled in depressions on a low plateau between the Wind and Bonnet Plume rivers. Chappie Lake is the largest of the lakes and is about 2 kilometres across. It is shallow, measuring only about 60cm deep during a survey in July of 2002 (Mossop et al., 2002). Chappie Lake and various of the wetlands in its vicinity drain into the Bonnet Plume River via a number of different creeks. The other wetlands drain into the Wind River and some directly into the Peel River.

Chappie Lake has been recognized as one of the 52 most important wetland areas for waterfowl and other wildlife in the Territory (Hayes, 2002).

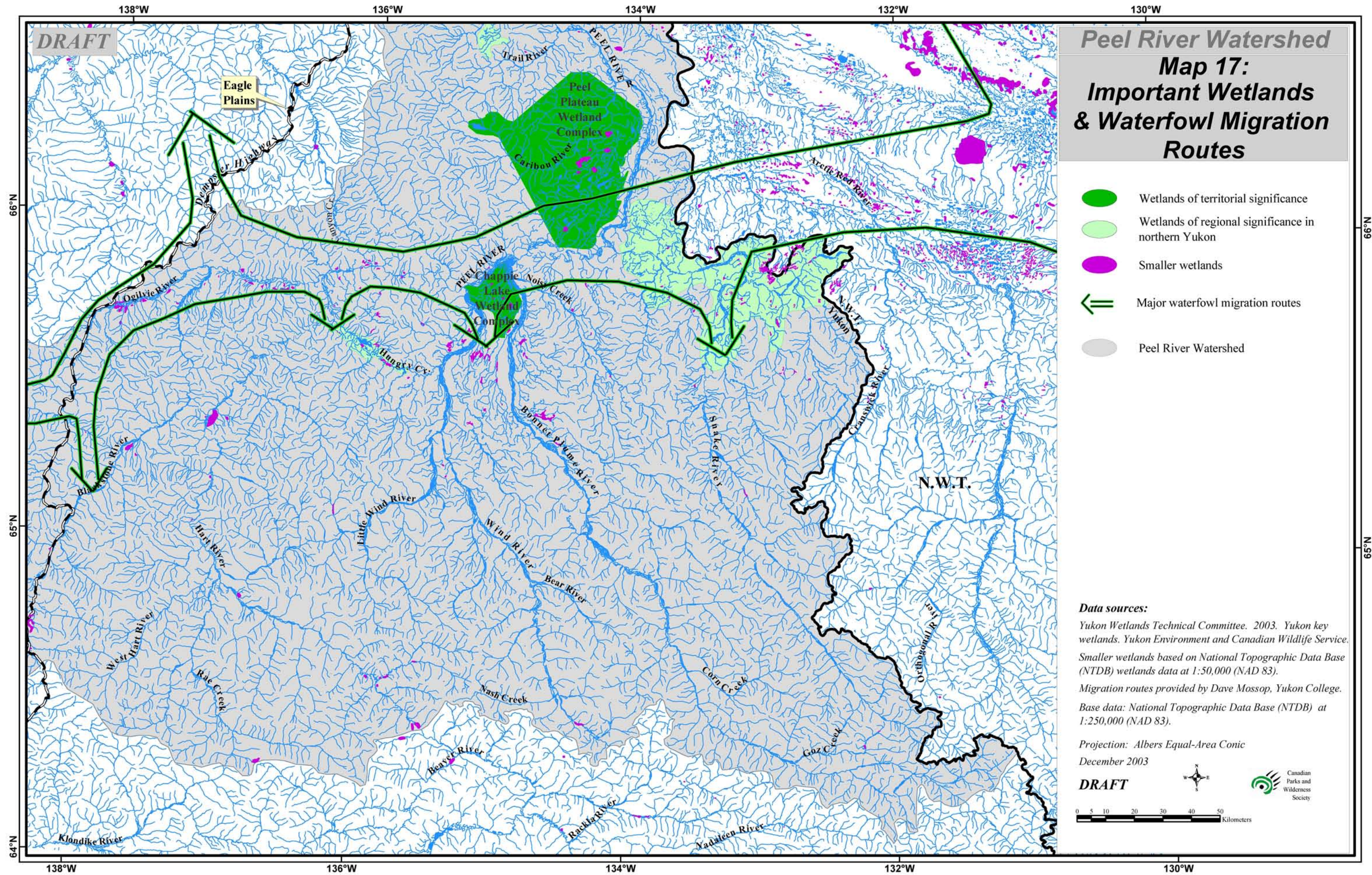
An extensive survey conducted in July 2002 found abundant wetlands of different types in

the area. Marshes of grasses, sedges and forbs were found along the shores of Chappie Lake and other lakes that had mineral substrates. Aquatic and emergent vegetation such as pondweeds, bur-reeds, pond lilies and water horsetail were common in the shallow waters along lake shores and in ponds. Riparian swamps with thickets of willow and shrub birch were found along the creeks and other drainageways. Thermokarst depressions (depressions that formed as a result of the melting of permafrost) were common and often contained bogs and fens, forming wetland complexes with peat plateaus, ponds & small lakes (Mossop et al. 2002).

Moose were abundant during the 2002 survey and were reported as commonly seen by Woody Elias, a trapper from Fort McPherson who for many years ran a trapline here. Both northern red-backed voles and chestnut-cheeked voles were also found to be abundant throughout the area. Beavers and muskrats were common in the wetlands but did not use Chappie Lake.

Woody Elias reported both those species using Chappie Lake in the mid 1980's, when the water level of the lake was apparently higher (Mossop et al., 2002).

A good variety of bird habitats was found throughout the wetland complex during the survey. Chappie Lake itself was considered a key feature, as it offers major staging habitat for waterbirds. The relative abundance of top-of-the-food chain predators such as Bald Eagles and Peregrine Falcons suggests the ecosystem is diverse and productive (Mossop et al., 2002).



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# Peel River Watershed

## Map 17: Important Wetlands & Waterfowl Migration Routes

- Wetlands of territorial significance
- Wetlands of regional significance in northern Yukon
- Smaller wetlands
- ⇐ Major waterfowl migration routes
- Peel River Watershed

**Data sources:**  
 Yukon Wetlands Technical Committee. 2003. Yukon key wetlands. Yukon Environment and Canadian Wildlife Service.  
 Smaller wetlands based on National Topographic Data Base (NTDB) wetlands data at 1:50,000 (NAD 83).  
 Migration routes provided by Dave Mossop, Yukon College.  
 Base data: National Topographic Data Base (NTDB) at 1:250,000 (NAD 83).

Projection: Albers Equal-Area Conic  
 December 2003

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