

WILDLIFE

Study geographic boundaries: PEAA and REAA. Additional analyses for the REAA will be completed for the supplemental filing.

Study time boundaries: Construction and operations phases.

Project works and activities considered in the study*:

Study methods: The wildlife assessment focuses on and addresses potential effects on birds (waterbirds, raptors, songbirds), mammals, and amphibians. Within the PEAA, there are many areas that are considered important for wildlife. The

Right-of-Way (RoW) crosses agricultural fields, wetlands, coniferous and mixed woods forests, alpine meadows, and rocky canyons. Some of the most important areas include where the proposed pipeline would cross the continental divide (south and west of Tumbler Ridge) and the Coast Mountains (south of Terrace). Given the diversity of ecosystems that will be crossed by the 1170 km pipeline RoW, it is not feasible to assess every wildlife species separately. Instead, the assessment is based on KI species. These species are important in their own right, but can also serve as indicators of potential environmental effects on similar species.

Several strategies are being used to gather information and assess potential effects on wildlife. Field studies, in combination with other information sources, are being used to document current conditions. The latter includes information from First Nations, hunters, trappers, researchers, environmental specialists, regulators and the general public. In 2006, Northern Gateway carried out a variety of wildlife field studies, including surveys of coastal tailed frogs, songbirds, grouse, raptors, trumpeter swans and water birds. Northern Gateway is carrying out additional studies in 2009, including surveys of winter tracks. Northern

Gateway will also incorporate the results of independent and government research studies into the assessment. Computerized wildlife models are being employed to integrate the best available information from all the sources listed above, and apply it over the entire length of the pipelines. Models help take information, which may be local in scale and apply it to the RoW and the broader region.

VEC	Key Issues	KIR	Baseline Results	Measurable Parameter	Potential Project Effects**	Proposed Mitigation	Residual Effects	Cumulative Effects
Wildlife	Loss of habitat Sensory disturbances Increased mortality Changes in the wildlife movement patterns Species at-risk Species that require large areas to live Effects on species of interest to First Nations Effects on species with high value for commercial, traditional or subsistence harvesting	BIRDS Barred owl Bay-breasted warbler Black-throated green warbler Canada Warbler Cape May warbler Common nighthawk Connecticut warbler LeConte's Sparrow Northern Goshawk Olive-sided Flycatcher Rusty Blackbird Sharp-tailed grouse Short-eared owl Sprague's pipit Trumpeter Swan Western Screech-Owl MAMMALS American marten Fisher Grizzly bear Moose Mountain goat Woodland caribou AMPHIBIANS Canadian toad Coastal tailed frog Northern leopard frog Western toad	Baseline habitat availability was assessed for most mammal species and some bird species using TEM-based models. General habitat rankings were used for other birds species when TEM-based models were not available. Mountain goat winter range/escape terrain was assessed using spatial data from the British Columbia Ministry of Environment. Wolverine habitat was assessed qualitatively.	Loss of habitat	Wildlife require natural vegetation to feed, reproduce and seek shelter. During construction, some natural vegetation will be cleared, reducing the area of habitat available for some species. Clearing can also reduce the quality of the remaining habitat by breaking it into smaller, more isolated patches that are less useful for some wildlife species. Some species, such as woodland caribou and grizzly bear, require large areas to live. Sustaining these species help the populations to prosper, as well as populations of many species that depend on smaller areas.	Currently being assessed.	Currently being assessed.	Currently being assessed.
				Sensory disturbances	Some wildlife species may avoid certain areas because of noise, lights and traffic associated with the project.	Currently being assessed.	Currently being assessed.	Currently being assessed.
			The assessment of mortality risk focused on woodland caribou, grizzly, bear, and hunted and trapped species. Linear feature densities were used to estimate current mortality risk.	Increased mortality	Increased mortality can be caused directly through collisions between vehicles and wildlife or indirectly through increased access for hunters into wildlife habitats.	Currently being assessed.	Currently being assessed.	Currently being assessed.
				Changes in the wildlife movement patterns	Pipelines and roads can cause barriers to movement of some species, while facilitating the movement of others (such as wolves).	Currently being assessed.	Currently being assessed.	Currently being assessed.
			These include the most sensitive species. Both the provinces of British Columbia and Alberta and the federal government have rigorous processes in place to identify species as endangered, threatened or special concern.	Species at-risk	Currently being assessed.	Currently being assessed.	Currently being assessed.	Currently being assessed.

*Refer to Figure 3.1 in section 3, Project description, for the full list of physical works and activities. **The effects of spills and malfunctions will be included in the update for the supplemental filing.