

Ms. Lynda Yonge, Director, Wildlife Division
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Email: lynda_yonge@gov.nt.ca

Dear Ms. Yonge:

Request for clarification respecting the assessment of western toad

Thank you for your letter of February 9, 2015, requesting clarification on the assessment of western toad in the NWT. The Species at Risk Committee (SARC) reviewed your request and provides further clarification below.

Request:

“Please provide clarification on the threat of wildfire. Where wildfires are mentioned in the status report (pages 12 and 26), the report suggests that western toads are resistant to wildfire and that fires can lead to short-term habitat benefits for western toad. Are wildfires currently having an important impact on the western toad in the NWT? Is wildfire expected to increase and become a more important threat in the future? If wildfire were to increase, how would that be expected to impact the western toad in the NWT?”

Further clarification from SARC: The available information related to wildfires does indicate that these fires can have short-term beneficial effects: western toads tend to preferentially choose somewhat open habitats and have been known to colonize wetlands after recent burns.

However, the available information also suggests that the selection of open habitat and recent burn areas is tempered by the seasonal risk of desiccation. In northern British Columbia, recent clearcuts under 0.05 km² in size were not impediments to movements; however, larger clearcuts and smaller clearcuts later in summer when temperatures are relatively high may be inhospitable.

Western toads are vulnerable to events occurring at sites where individuals are concentrated, such as breeding sites (adults, eggs, tadpoles and metamorphs) and terrestrial migration routes to and from breeding sites. Random events can have major impacts on cohorts or even an entire population, resulting in local extirpation. The long time to maturity for females, and the fact that most females breed only once in their lifetime, makes northern populations especially vulnerable to threats and declines.

Living as they do in the Liard Valley of the NWT (an area that has not burned in some time) and given the apparent limits to movement caused by larger open areas as noted above, SARC feels that the potential for wildfires resulting in habitat loss is an important consideration in the management of western toad habitat in the NWT.

Request:

“Please provide clarification on the threats of habitat degradation, resource exploration and development. The status report (e.g., pages 20, 22, 24) explains that habitat loss, degradation and fragmentation are occurring, but the level of impact remains unknown. The report also states that western toad habitat fragmentation is not believed to be a major issue and cumulative impacts are thought to be relatively low at present. Are habitat degradation, resource exploration and development currently having an important impact on the western

toad in the NWT? Are these factors expected to increase and become more important threats in the future? If habitat degradation, resource exploration and development were to increase, how would that be expected to impact the western toad in the NWT.”

Further clarification from SARC: Habitat degradation and resource exploration and development are not currently having a significant impact on western toads in the NWT and their future impact is unclear, depending upon future exploration and development decisions and approvals. However, the Taiga Plains ecozone, where western toads are located, has the highest density of roads in the NWT, at 0.49 km of road per 100 km². Seismic line density is 0.51-1.50 km/km² in the western toad's range in the Liard Valley. This isn't high compared to some other parts of western Canada, but the region has nonetheless seen a considerable amount of oil and gas exploration and development, as well as some coal exploration activity around Fort Liard. Further north around Fort Simpson there are active mineral claims and prospecting permits. Roads, trails and seismic lines are all known to alter toad habitats and represent obstacles to dispersal and migration.

Beyond the physical changes that resource exploration and development may cause to western toad habitat, these activities also have the potential to increase exposure to pollutants. Spills of fuel oil, various chemicals such as antifreeze and glycol-based products for vehicles, lube oil and other hydrocarbons have increased in recent years, although impacts of these chemicals on western toads is unknown.

Road maintenance and increased development may create 'sink breeding habitats' (e.g., borrow sites), which females sometimes use for egg laying. Females typically breed only once during their lives, and as these sites are particularly susceptible to mass mortalities from equipment use,

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overburden removal, changes in water availability and vehicle collisions following metamorphosis, breeding effort at these sites may be wasted.

There is also concern associated with the increased access to western toad habitat that resource development and exploration might provide. It is likely that humans act as agents of amphibian chytrid fungus (Bd) transmission between wetland sites on recreational gear such as waders and research equipment.

For these reasons, as well as the synergistic effects co-stressors such as habitat degradation can sometimes have on emergence or lethality of diseases such as Bd, SARC considers habitat degradation and resource exploration and development to be a possible future threat to western toads in the NWT.

I hope this satisfactorily addresses your questions and concerns.

Sincerely,



Dr. Paul Latour, Interim Chairperson
Species at Risk Committee

- c. Northwest Territories Species at Risk Committee
Northwest Territories Conference of Management Authorities