ALBERTA WILDERNESS ASSOCIATION
"Defending Wild Alberta through Awareness and Action"

Honourable Leona Aglukkaq
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February 19, 2014

Dear Director,

Re: Comments on the *Proposed Recovery Strategy for Westslope Cutthroat Trout (Oncorhynchus clarkii lewisi) Alberta Population*

Alberta Wilderness Association (AWA) works throughout Alberta towards more representative and connected protection of Alberta's unique and vital landscapes that are the source of our abundant clean water, clean air and vital habitat for wildlife in each one of our six natural regions. We have been working in Alberta for more than forty years, to raise the profile of Alberta's spectacular wilderness, and to help Albertans learn more about the value of our wilderness and wildlife, and participate in opportunities to protect and care for the legacy that we will leave for future generations. With over 7000 members and supporters, AWA remains committed to assuring protection of wildlife and wild places for all Albertans.

We welcome the opportunity to provide comments on the *Proposed Recovery Strategy for Westslope Cutthroat Trout (Oncorhynchus clarkii lewisi) Alberta Population.*

Despite the ubiquitous historical presence of westslope cutthroat trout in many streams, rivers and lakes throughout Alberta, they now occupy only the uppermost reaches of watersheds in isolated patches along the eastern slopes of the Rocky Mountains. There are many threats to the survival of this

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subspecies including climate change, habitat damage and loss, invasive nonnative species, and overexploitation (Mayhood, 2009). A comprehensive recovery strategy and critical habitat identification is essential to maintain and increase the abundance and distribution of westslope cutthroat trout.

After consulting with many leading fish biologists in Alberta and British Columbia, AWA has concerns regarding the proposed Recovery Strategy. In particular we believe that the critical habitat identification is not consistent with the requirements of the *Species at Risk Act* (SARA). We submit the following comments for consideration.

Critical Habitat

In our view, elements within the proposed recovery strategy do not reflect the best available scientific information and therefore will not achieve the intended recovery objectives. Several of those elements fall within the identification of critical habitat. The critical habitat is defined in the *Species at Risk Act* (2002) as "the habitat necessary for the survival or recovery of a listed wildlife species and that is identified as the species' critical habitat in a recovery strategy or in an action plan for the species" and must be identified to the greatest extent possible, based on the best available scientific, community and Aboriginal information and in light of the precautionary principle (SARA s.41(1)(c), SARA s.38).

Habitat, including critical habitat, may include ''...spawning grounds and nursery, rearing, food supply, migration, and any other areas on which aquatic species depend directly or indirectly in order to carry out their life processes...'' (SARA s.2). In other words, and as is extremely well documented in peer reviewed scientific literature, habitat does not have to be directly occupied to be necessary for the survival and recovery of salmonids, including westslope cutthroat trout, and to be included within their critical habitat. **In order for this Recovery Strategy to be consistent with SARA's requirements, and to successfully recover westslope cutthroat trout populations, the identification of critical habitat must be substantially expanded beyond the current identification in the proposed recovery strategy as**:

"…all areas of bankfull waterbodies currently occupied by naturally occurring, pure strain populations within the original Westslope Cutthroat Trout distribution."

AWA believes this is not using the best available information and that there is abundant scientific evidence to support the following expansions to the critical habitat.

1. **Critical habitat designation needs to be expanded beyond where westslope cutthroat trout currently exist into previously occupied areas suitable for population restoration.**

Due to Alberta's numerous land uses adversely affecting water quality and quantity, AWA believes in order to recover populations, critical habitat must not be limited to waterbodies currently occupied by westslope cutthroat trout. If the goal is to "re-establish additional pure populations to self-sustaining levels," high quality habitat must be secured first. Identification as critical habitat of currently unoccupied watercourses, and surrounding vegetation, that are suitable for trout population expansion is necessary to ensure that habitat does not disappear or become further degraded before trout can be re-established. Currently isolated populations are less likely to be self-sustaining in the long term and are more vulnerable to changes in their environment. For these populations, identification of adjacent critical habitat for population expansion or re-establishment is particularly essential.

In Alberta, streams, and their adjacent vegetation, that currently possess a Class 'A' designation in the Operating Ground Rules for logging companies should be protected by a 100-metre no-logging buffer

zone, but many deviations continue to be allowed, destroying riparian habitat for westslope cutthroat trout. A prime example of this is the logging that occurred along Hidden Creek in 2012-2013, which greatly degraded the suitability of critical habitat on Hidden Creek. Streams currently occupied and those that are deemed feasible sites to re-establish pure populations should be identified as critical habitat for westslope cutthroat trout in this Recovery Strategy, and prohibitions against their destruction strictly enforced, to ensure long term population viability. Known thresholds for linear disturbances on land need to be adhered to in future land use planning and reclamation of those disturbances to below accepted thresholds is required to ensure the amount of sedimentation, fertilizers and polluted substances entering the waterways, all of which pose risks to westslope cutthroat trout, is greatly reduced. Reducing linear disturbances and reclamation should be explicitly expressed as an objective in the recovery actions of the recovery strategy.

2. **Critical habitat designation needs to include riparian vegetation zones surrounding trout bearing streams and any streams that have potential to provide habitat for re-established populations within the species' historical range.**

Riparian habitat meets the biological criteria for critical habitat for westslope cutthroat trout because it is essential to aquatic ecosystem integrity and function that many fish species, including westslope cutthroat trout, rely on. Those functions include control of sedimentation and channel complexity through bank stabilization, provision of shade for water temperature regulation, input of large woody debris and allochthonous materials as energy sources, terrestrial invertebrate inputs, and filtering of nutrient and toxins from land uses (e.g. Richardson *et al.,* 2010). We note that there is a very large body of scientific literature showing that riparian habitat is essential to the survival of salmonids and to the provision of conditions suitable to support survival and recovery of salmonids, and little or no findings to the contrary. Some of this literature is reviewed in Richardson *et al.* 2010. For any freshwater fish species for which the suitability of their in-stream habitat depends on riparian habitat function, riparian buffers should be identified as critical habitat.

Most of the in-stream attributes outlined in the proposed Recovery Strategy as essential parts of westslope cutthroat trout critical habitat – clean cold water, sediment/silt free gravel substrate, large woody debris and bedrock – depend entirely on healthy riparian habitat function. Westslope cutthroat trout are particularly sensitive to riparian habitat function because of their specific life history, largely spent in riffles or pools of small shallow creeks. The current degraded quality of riparian vegetation adjacent to in-steam habitats has resulted in decreased quality of this species' habitat and has compromised their persistence. Forest harvest of riparian habitat can reduce shading for this cold water species, and siltation from access roads has a negative impact on spawning grounds in the absence of protective intact riparian vegetation. Restoration of degraded riparian areas should be a key action recommended within the Recovery Strategy, and a riparian habitat buffer should be identified as part of all areas of in-stream critical habitat for westslope cutthroat trout.

Under the new *Fisheries Act* (2013), riparian habitat is no longer protected which makes identification of riparian zones as critical habitat in the Recovery Strategy even more crucial to the survival and recovery of westslope cutthroat trout. Riparian zones as critical habitat should only be abandoned when there is clear evidence that it does not affect the survival of the specific species and in this case the evidence is to the contrary.

It seems negligent to have not included riparian habitat buffers as critical habitat for westslope cutthroat trout especially since it has already been identified for a number of other listed species including Nooksack dace, Salish sucker, and stickleback species pairs. In the *Recovery Strategy for the*

Nooksack Dace, critical habitat "… includes all aquatic habitats and riparian reserve strips of native vegetation on both banks for the entire length of the reach. Reserve strips are continuous and extend laterally from the top of bank to a width equal to the widest zone of sensitivity (ZOS) calculated for each of five riparian features, functions and conditions" (DFO, 2008). This shows that riparian zones do not just meet the biological criteria but also the policy and legal definitions as recognized by independent and federal scientists involved with the recovery plans. Both the Nooksack dace and the Salish sucker spend part or all of their life history residing in small streams and headwaters similar to westslope cutthroat trout. Arguably the temperature sensitivity of westslope cutthroat trout, which increases their potential for hybridization with non-native fish species, increases the importance of riparian habitat and provides a much stronger rationale to include it as critical habitat than for either dace or sucker. Given these clear precedents, it is not only scientifically and administratively valid to evaluate whether riparian is critical habitat for aquatic species, it is an essential part of identifying critical habitat for westslope cutthroat trout.

3. **Critical habitat designation needs to include key parts of the watershed responsible for ground water storage.**

Ground water storage is important for stream flow regulation (maintaining stream flows within the range of natural variability), reducing water temperature fluctuations, and ensuring sediment loads to receiving streams are minimized. The interaction between ground water and surface water creates a more stable quantity of water flowing downstream by acting as an underground sponge during flooding and ensuring continual flow during periods of drought. For a species like westslope cutthroat trout that relies on shallow headwater streams, this stability is essential.

Ground water quantity and quality is also crucial for the wintering habitat of stream dwelling salmonids including westslope cutthroat trout. Winter flows can diminish to levels that essentially trap fish in deeper pools between the frozen riffles along streams. Clean, oxygenated groundwater influx acts as a recharge mechanism to ensure sufficient freshwater habitat for westslope cutthroat trout over winter months (Brown and Mackay, 1995). Thus we strongly recommend that the critical habitat identification for westslope cutthroat trout includes any areas along the watershed responsible for ground water storage and recharge.

4. **Critical habitat designation needs to include the active flood plain as an important buffer to trout bearing streams and any streams that have potential to provide habitat for re-established populations within the species' historical range.**

Species in freshwater habitats that depend on high water quality and physical habitat structure in and around streams are strongly influenced by activities on land. In south western Alberta where most of the remaining populations of westslope cutthroat trout reside, the active flood plain needs to be considered as part of the species' critical habitat. Streams and rivers are constantly moving and shifting which can affect the habitat quality of westslope cutthroat trout. If a stream has a 100 metre buffer between the flowing water and industrial activities or roads, but during a flooding event the waterbody shifts 60-70 metres, only a very small vegetation buffer is left to prevent erosion and sedimentation, and this causes key threats to trout survival. Natural channel meandering is important for the health of aquatic ecosystems and this only occurs if the flood plain is protected from vegetation loss.

It is scientifically unsupportable to identify critical habitat for westslope cutthroat trout as though stream channels are static when in reality they move significantly and frequently. Due to the migratory nature of Alberta's streams and rivers, narrow riparian habitat strips on in-stream habitat are important

parts of critical habitat but are not on their own adequate to sufficiently protect new channels. In active floodplain areas, large land buffers need to be included as critical habitat for westslope cutthroat trout to accommodate movements in the stream channel and ensure the critical habitat remains sufficient for the recovery of this species and their long term survival.

5. **Critical habitat designation needs to include permanent and ephemeral tributaries upstream of trout bearing streams and any streams that have potential to provide habitat for re-established populations within the species' historical range.**

Permanent and ephemeral tributaries that feed water into fish habitats play a key role in the survival and recovery of westslope cutthroat trout. As with land uses adjacent to critical habitat, anything that occurs upstream of critical habitat impacts downstream ecosystems and may destroy critical habitat if improperly protected. Non-fish bearing water corridors are subject to many industrial activities such as forest canopy removal, herbicide spraying, roads, and 'temporary' stream crossings (Mayhood, 2009). These activities risk water quality downstream and adversely affect remaining westslope cutthroat trout populations as well as prevent successful re-establishment in candidate streams.

The *Species at Risk Act* does not permit the inclusion of socio-economic impacts as part of the assessment of critical habitat (Richardson *et al*., 2010). We see no biological reason to exclude these important and well known landscape elements that AWA has listed above (1-5) from the critical habitat identification of westslope cutthroat trout. If there is no inclusion of these elements within the critical habitat, Department of Fisheries and Oceans (DFO) needs to provide a scientific rationalization that justifies their exclusion. Given our review of the voluminous literature on these topics we believe no such scientific rationalization is possible without implicitly and unlawfully including socioeconomic considerations in the critical habitat identification.

The protection of fisheries requires the ongoing maintenance of freshwater and riparian ecosystem health (Lapointe *et al*., 2014). There needs to be an emphasis on watershed management as a function of critical habitat and westslope cutthroat trout need to be managed as one ecological unit in a dynamic environment for a successful recovery. The implications for what constitutes critical habitat are that riparian buffers, active floodplain areas, areas necessary for groundwater storage, historically occupied capable/restorable habitat and upstream tributaries must be identified as critical habitat for westslope cutthroat trout.

<u>Other considerations</u>

The feasibility, costs and timelines for recovery efforts need to be included as part of the recovery strategy. Land use planning in the south Saskatchewan region of Alberta is currently underway so extensive delays in the completion and implementation of the recovery strategy and action plan could further exacerbate the risks to this threatened species (see Appendix 1).

The final version needs to include detailed plans and risk analysis for each of the existing pure populations of westslope cutthroat trout and their watersheds. Population data was not provided in the proposed recovery strategy because of insufficient monitoring studies. The recovery strategy needs to set minimum viable population levels through population viability analysis, to calculate potential persistence into the foreseeable future. In the interim, despite the difficulty in providing empirical targets, the strategy should include quality targets such as 'populations with sufficient abundance to support moderate angling recreation.'

Another overarching consideration is the implications of climate change. Higher atmospheric temperatures will directly affect the biological functions of westslope cutthroat trout because of their sensitivity to water temperature fluctuations (Mayhood, 2009). Ecosystem shifts due to climate change at this point are unavoidable and must be accounted for in the recovery strategy; however impacts on westslope cutthroat trout can be mitigated to a certain extent by including the above elements into critical habitat designation.

AWA hopes these comments will be carefully considered and looks forward to seeing these recommendations incorporated into the final recovery strategy for the Alberta population of westslope cutthroat trout.

Sincerely,

ALBERTA WILDERNESS ASSOCIATION

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References

Input was received via verbal and unpublished written communication from Carl Hunt, Retired Fishery Biologist, B.S.A. ; Lorne Fitch, P. Biologist; Mike Pearson, P. Biologist; Susan Pinkus, Ecojustice Senior Scientist.

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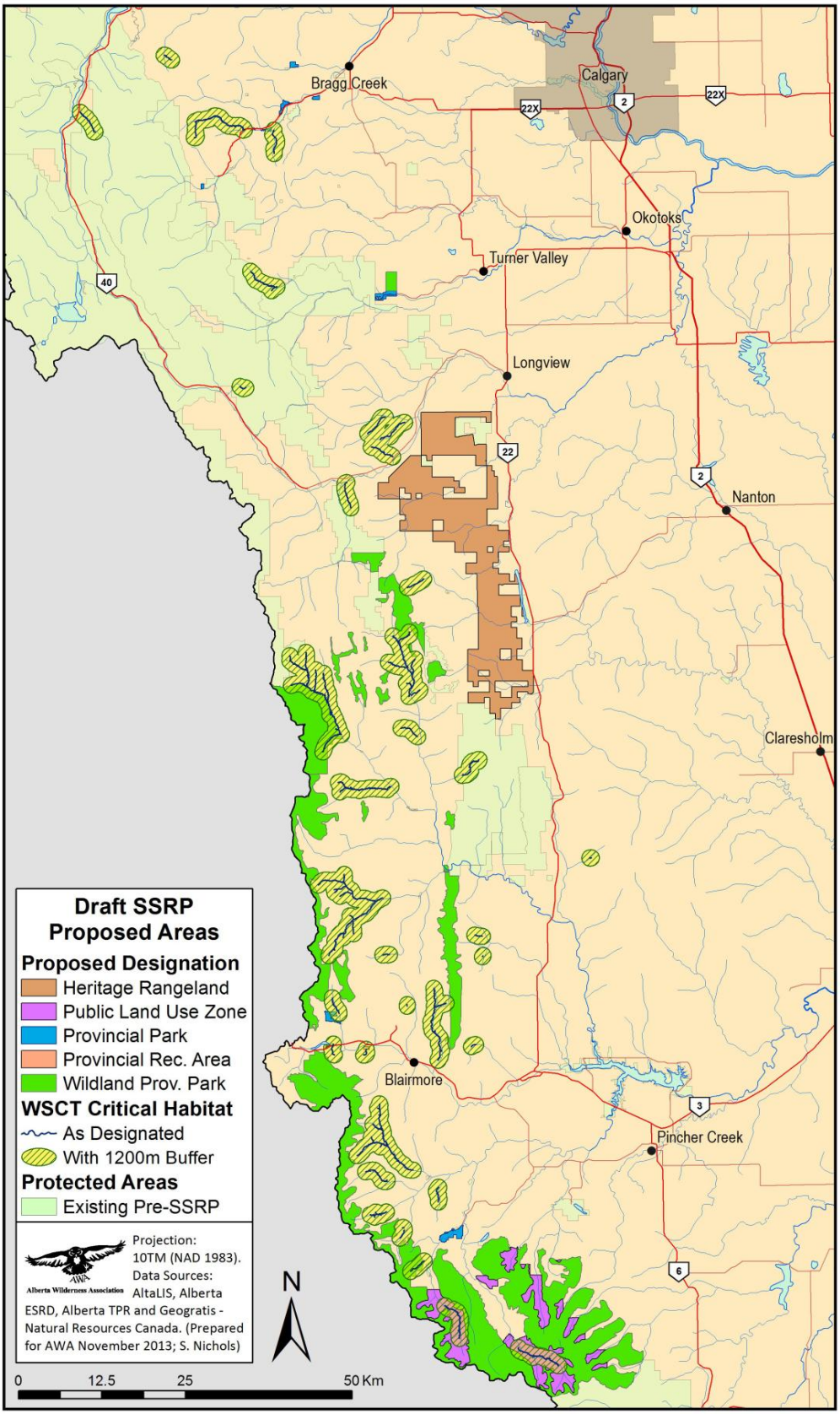
Appendix 1



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