

RESEARCH LICENCE

License #: 19-1020

Licensee: Golder Associates Ltd. [REDACTED]

Address: 201 Columbia Ave.
Castlegar, British Columbia
V1N 1A8

This License is valid for:

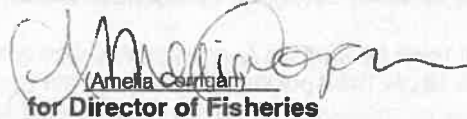
Golder Associates Ltd. on behalf of BC Hydro will be conducting a fish inventory on the Peace River at the Clear and Pouce Coupe river's confluences. All fish species and life stages will be targeted.

Permitted Sampling Gear:

- Electrofishing (Jet Boat, GPP 5.0, SR-18H)



Signature of Licensee



(Amelia Corrigan)
for Director of Fisheries

This license is valid from 06-June-2019 **to** 06-August-2019

Issue Date: 06-June-2019

Issuing Office: Grande Prairie

This license is not valid until signed by the Licensee and the Director of Fisheries or their designate.

Fish and Wildlife Division Notification

1. The licensee shall advise the Spirit River and Peace River District Fish and Wildlife Office and the Area Fisheries Contact of the intended times and places of collection at least **FOUR** working days in advance of the commencement of field activities.

Approved Sampling Locations

2. The sampling/handling/collection of fish under the authority of this license is permitted at the following locations:
 - i. Peace River (WBID: 2177), LLD: 7-83-11-W6
 - ii. Peace River (WBID:2177), LLD: 26-82-13-W6

Gear Restrictions

3. The licensee shall operate in accordance with the "Alberta Fisheries Management Division Electrofishing Policy Respecting Injuries to Fish".

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Fish Handling

4. All captured fish are to be handled and disposed of as follows:
 - (a) All live fish (not approved for retention under this licence) shall be handled in such a manner as to ensure maximum survival and be released to the waters from which they were collected
 - (b) Any species captured that is not named on the Alberta Environment and Parks (AEP) List of Native and Naturalized Fish Species in Alberta shall be reported immediately to the Area Fisheries Contact. Voucher specimens and digital photos of the specimens shall be submitted to the Area Fisheries Contact immediately for confirmation purposes, unless otherwise agreed to, and shall be reported as per the data return requirements.
 - (c) All fish mortalities shall have at a minimum, species, fork length (mm) and weight (g) collected. All sport fish mortalities shall also have an ageing structure, sex, and maturity collected.
 - (d) All fish mortalities are to be disposed of:
 - i. By incineration or disposal at an approved sanitary landfill; or
 - ii. In a manner approved by the Area Fisheries Biologist where the collection occurred, if disposal under sub-clause (i) is not practical.
5. For the purpose of this license, the following species, or group of species, and numbers of fish may be retained for research purposes:
 - (a) If captured, voucher specimens (up to 5 per species) of any species not named on the AEP List of Native and Naturalized Fish Species in Alberta, and which shall be surrendered to the Area Fisheries Contact immediately unless otherwise agreed to.
 - (b) **NO SPORT FISH ARE TO BE RETAINED.**
6. All species must be identified, enumerated and a fork length (mm) provided. Where large numbers (>100) of a single fish species are encountered at a sample location, a representative sample of that species may be measured for length using a valid sub-sampling technique.
7. Where an authorized number of individuals have been permitted to be culled in one of the preceding conditions, if the combined total mortality of those species identified in this License is exceeded, the Area Fisheries Contact must be notified immediately before continued sampling takes place.
8. The tagging or marking of fish is permitted as per the submitted study proposal.
9. The licensee is permitted to transport and temporarily hold live fish within the immediate study area, however, they must be returned into the same waterbody from which they were captured, unless they are to be transported for display or education purposes at an authorized facility which shall require an additional (separate) License.
10. Any proposed release of collected fish outside the immediate sampling area (waterbody) where fish are collected must be submitted to, and approved by the Head of Fisheries Allocation and Use of the Fisheries Management Branch and may additionally require a review by the Alberta Introductions and Transfers Committee.

Reporting

11. All ageing structures (for collection, preparation, and ageing of walleye otoliths refer to Watkins and Spencer (2009), for all others refer to Fish Ageing Methods for Alberta by Mackay, Ash, and Norris (1990) unless otherwise agreed to by the Area Fisheries Contact) shall be marked with:
 - (a) Date and location (UTM co-ordinates) of capture,
 - (b) Species,
 - (c) Fork Length (mm), and if a mortality, weight (g), sex and maturity,
 - (d) Estimated age (number of visible annuli).
 - (e) FRL #

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12. Locations where sampling occurred and no fish were captured shall be recorded in the data return. The number of passes/attempts should be recorded.
13. Data return requirements will be satisfied by providing a digital copy of all fisheries data in the appropriate FWMIS loadform format within 90 days following the licence expiry date, as per the FWMIS data submission requirements, to the issuing Area Fisheries Contact. If a report was produced, a copy of the final report of the work (or the portions of the final report that includes all aspects pertaining to the inventory or research project), as well as any ageing structures if collected, and/or genetic samples if collected must be provided within 180 days of the expiry of the license.

Other

14. The use of explosives or piscicide chemicals is not permitted.
15. Any of the proposed activities shall adhere to as a minimum the "Standards for the Ethical Use of Fishes in Alberta" located on the AEP website under Fish Research Licenses.
16. This license must be in possession and available upon the request of staff from the Fish and Wildlife Division
17. This license is subject to cancellation at any time and shall be surrendered to the issuer upon written notice of its cancellation.
18. This license is non-transferable.

Best Practices

1. Where fish population data is collected, the corresponding fish habitat information that complies with the Fisheries Management Information System (FWMIS) protocol should be reported.
2. Where the following fish species are captured, photographic evidence (preferably through the use of a water filled photographic chamber) should be provided in the License return for Fisheries Management Branch verification purposes: Brassy Minnow, Deepwater Sculpin, Emerald Shiner, Finescale Dace, Goldeye, Largescale Sucker, Logperch, Mooneye, Mountain Sucker, Northern Pikeminnow, Northern Redbelly Dace, Pearl Dace, Pygmy Whitefish, Redside Shiner, River Shiner, Round Whitefish, Rocky Mountain Sculpin, Shortjaw Cisco, Silver Redhorse, Slimy Sculpin, Spoonhead Sculpin, and Western Silvery Minnow. Photographs should focus on characteristic features of that species. The return should also identify in the species comments section, the meristic features used to identify the above species, particularly in the case where photographic evidence may be by itself inconclusive AND should identify whether the species was captured outside of its expected range according to "Fishes of Alberta" (Nelson and Paetz 1992).
3. Where chemicals are used as an anaesthetic to facilitate fish handling, this use must comply with manufacturer's instructions governing the use of these chemicals and appropriate holding times shall be observed. Where MS222 is used, appropriate consumption advisories must be provided to the public and should follow current Health Canada direction.
4. In an effort to prevent the introduction and spread of aquatic invasive species and fish disease in Alberta, all license holders are expected to adhere to the Government of Alberta Decontamination Protocol when conducting work in water. The most current version of the Decontamination Protocol for Watercraft and Equipment must be followed and can be found on the AEP Stop the Spread website.
 - The Provincial Fish Disease Specialist or Fisheries Biologist may recommend further decontamination protocols depending on the risk posed by the proposed work (Example, QAC solutions may be ineffective for some AIS and fish disease).
 - The use of felt-soled wading boots is restricted unless the felt can be removed and properly decontaminated.

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- Please note that Fisheries Biologists have the authority to add the Decontamination Protocol as a Condition at their own discretion based on the risk of spreading whirling disease
5. Special care and planning should occur when engaged in cold weather non-lethal sampling to avoid frost damage to fish. Certain parts of fish, such as eyes, gill tissue, and thin fins may freeze in a few seconds if proper care is not taken at low temperatures. Heated tents or shelters over sampling areas may be used and insulated coolers containing water taken from the sampled waterbody may be used to hold fish for short periods (water must be changed regularly to ensure water temperatures are consistent between waterbody and the cooler). Care must be used to prevent fish from freezing to measuring boards, weigh scales, and sampling tools. When signs of undue stress and/or mortality of individuals are observed during cold weather, fish collection operations should be postponed until warmer conditions prevail.
 6. Locations where sampling did not occur at an intended site should be recorded in the data return spreadsheet and the reason for not sampling provided (e.g. low or no water flow).
 7. When electrofishing, and where not already considered mandatory under a referenced Standard, temperature and conductivity should be measured, recorded, and included in the FWMIS loadform return.
 8. Testing for fish diseases, pathogens, and parasites should be done according to a protocol specified by the Provincial Fish Disease Specialist within the Fisheries Management Branch. Any deformities or irregularities for measured fish should be noted in the FWMIS data return, and photographic documentation provided.

cc.

Eldon Pullishy, District Fish & Wildlife Officer
Adrian Meinke, Senior Area Fisheries Biologist
Ben Kissinger, Fisheries Biologist
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