

FISH COLLECTION PERMIT
Non-Profit Scientific Research

File: 34770-20

Permit No.: **MRSU19-454239**

Permit Holder: **University of British Columbia** – Dolph Schulter
6270 University Boulevard
Zoology Department, UBC
Vancouver, BC V6T 1Z4

Authorized Persons: Dolph Schulter, Marius Roesti, Robert Devlin, Benjamin Freeman, Louise Chavarie, Jonathan Rolland, Antonin Machac, Ken Thompson. Stephanie Blain, Mackenzie Kinney, Lauren Alford, Kately Nikiforuk, Aveneet Chhina, Katie Chu.

Pursuant to section 19 of the *Wildlife Act*, RSBC 1996, Chap. 488, and section 18 of the Angling and Scientific Regulations, BC Reg. 125/90, the above named persons are hereby authorized to collect fish for scientific purposes from non-tidal waters subject to the conditions set forth in this Permit:

Permitted Sampling Period: April 3, 2019 – December 31, 2019

Permitted Waterbodies: See Appendix C for Region 1 and 2 waterbodies

Permitted Sampling Techniques: DN, MT, SN (subject to permit terms and conditions)

Potential Species: SB5, SB6, SB4, SB12, SB13, SBB, SBP, TSB (subject to permit terms and conditions)

Targeted Species: See Appendix D

Provincial Conditions: (Permit holders must be aware of all terms and conditions):

See Appendix A.

Region Specific Conditions:

See Appendix A.

Authorized by:

Monica Pearson, Sr. Aquatic Biologist
A person authorized by the Regional Manager
Recreational Fisheries & Wildlife Programs
South Coast Region

Michael Stahlberg, Regional Manager
Recreational Fisheries & Wildlife Programs
West Coast Region



Approved Date: February 25, 2019

Issued Date: April 3, 2019

Approved Date: April 2, 2019

Permit Fee Exempt

Any contravention or failure to comply with the terms and conditions of this permit is an offense under the *Wildlife Act*, RSBC 1996, Chap. 488 and B.C. Reg. 125/90.

Appendix A: Fish Collection Permit Conditions

Any Variation of the following terms and conditions will require explicit authorization by the appropriate regional Fish & Wildlife Section Head.

Provincial Conditions

1. This collecting permit is not valid
 - in national parks,
 - in provincial parks unless a Park Use Permit is also obtained,
 - in tidal waters,
 - for eulachon or for salmon* other than kokanee, or
 - for collecting fish by angling unless the permit holder and crew members possess a valid angling licence.

This collecting permit is **only** valid for species listed as threatened, endangered or extirpated under the Species at Risk Act (SARA) **in conjunction with a permit issued under Section 73 of SARA from Fisheries and Oceans Canada.**

*Contact the Department of Fisheries and Oceans for fish collecting permits for salmon, eulachon or SARA listed species (see Appendix B).

2. The permit holder (or the project supervisor) named on the application for a scientific collection permit will carry a copy of this permit while engaged in fish collecting and produce it upon request of a conservation officer, fisheries officer or constable.
3. Any specimens surplus to scientific requirements and any species not authorized for collection in this permit shall be immediately and carefully released at the point of capture.
4. Fish collected under authority of this permit shall not be used for food or any purpose other than the objectives set out in the approved application for a scientific collection permit. The permit holder shall not sell, barter, trade, or give away, or offer to sell, barter, trade or give away fish collected under authority of this permit. Dead fish shall be disposed of in a manner that will not constitute a health hazard, nuisance or a threat to wildlife.
5. No fish collected under authority of this permit shall be
 - transported alive unless authorized by this permit, or
 - transplanted unless separately authorized by the Federal/Provincial Fish Transplant Committee.
6. The permit holder shall, within 90 days of the expiry of this permit, submit a report of fish collection activities. Interim reports may also be required and shall be submitted as required by the permit issuer. All submissions must be filed electronically to: http://www.env.gov.bc.ca/fish_data_sub/index.html

Reporting specifications, information and templates are available from this website and outline the mandatory information requirements. Prior notification of submission or questions regarding data report standards can be made to: fishdatasub@gov.bc.ca

7. This collecting permit is subject to cancellation at any time and shall be surrendered to a conservation officer on demand or to the issuer upon written notice of its cancellation.
8. This permit is valid only for the activities approved on the application form and in accordance with any restrictions set out therein.
9. This permit is valid only for trained, qualified staff named in the Application. The permit holder will comply with all Worker's Compensation Board requirements and other regulatory requirements. Permit holders are responsible for ensuring staff members listed on the permit are properly certified for specific sampling methods or activities (e.g. electroshocking).
10. Any workers not listed on the permit must be supervised by the permit holder or one of the additional persons as named on the permit.

Appendix A: Fish Collection Permit Conditions Continued

11. All sampling equipment that has been previously used outside of B.C. must be cleaned of mud and dirt and disinfected with 100mg/L chlorine bleach before using in any water course to prevent the spread of fish pathogens (e.g. Whirling disease) and / or invasive plant species. Any washed off dirt or mud must be disposed of in a manner such that it cannot enter a watercourse untreated.
12. No electrofishing is to take place in waters below five degrees C.
13. No Sampling of Fish in waters over twenty degrees C.
14. Electrofishing may not be conducted in the vicinity of spawning gravel, redds, or spawning fish, or around gravels which are capable of supporting eggs or developing embryos of any species of salmonid at a time of year when such eggs or embryos may be present.
15. Angling must only occur in accordance with the regulations specified in the current BC Freshwater Fishing Regulations Synopsis.

Region Specific Conditions

West Coast Region

- Within the boundaries of Management Units 1-1 through 1-13, there shall be no electrofishing in: (1) streams above 630 meters elevation, (2) in anadromous rivers from January 1 to June 30, (3) or any lake tributaries from January 1 to June 30.
- All sampling gear follow Association of Professional Biologists' advisory practice bulletin #5. Practice Advisory – Dydimio, see:
<http://a100.gov.bc.ca/pub/eirs/viewDocumentDetail.do?fromStatic=true&repository=BDP&documentId=9469>
- The permit holder must advise the West Coast Region of sampling activities 24 hrs. prior to field operations. Please complete the following notification form:
http://www.env.gov.bc.ca/pasb/reports/fish/permit_notify1.html

South Coast Region

- The permit holder must notify the Aquatic Fish and Wildlife Section of the Ministry of Forests, Lands, Natural Resource Operations and Rural Development at SCFishandAquaticWildlife@gov.bc.ca with the following information at least 24 hours prior to undertaking work:
 - approved SFC permit number
 - report number (where applicable)
 - company
 - contact
 - address
 - phone
 - fax
 - water body
 - watershed code
 - purpose of collection
 - start date
 - end date
- All streams sampled, for which a watershed code does not presently exist, will require a map showing the location of the stream and sampling location with the map scale identified at time of reporting.
- Electrofishing and minnow trapping can harm or kill non-target species of management concern such as the endangered Coastal Giant Salamander (within the Chilliwack River drainage system), Oregon Spotted Frog, and Pacific Water Shrew (within the lower Fraser River Valley). Any incidental captures (alive or dead) of any red- or blue-listed wildlife species must be reported to the Ministry of Forest, Lands, Natural Resources and Rural Development, South Coast Region. For further information on these species or to report incidental captures, please contact the Fish and Aquatic Wildlife Section by e-mail at SCFishandAquaticWildlife@gov.bc.ca.
- Please refer to the following website for the least risk in-stream work windows:

https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/working-around-water/work_windows_low_main.pdf

Where possible, collection should be conducted during the least risk work windows identified. The exception is seasonal or ephemeral streams where sampling may not be possible during the prescribed window due to flow conditions.

- The permit holder must refer to the following when sampling Salish Sucker, Nooksack Dace and Stickleback species.
 - Salish sucker sampling guidelines – <http://www.frontcounterbc.gov.bc.ca/pdf/SalishSuckerCollectionGuidelines2015.pdf>
 - Nooksack dace sampling guidelines – <http://www.frontcounterbc.gov.bc.ca/pdf/NooksackDaceCollectionGuidelines2015.pdf>
 - Stickleback species pairs sampling guidelines – <http://www.dfo-mpo.gc.ca/species-especies/publications/sara-lep/stickleback-epinoches/index-eng.html>
- All non-native fish species captured under this permit are to be humanely euthanized and disposed of appropriately. Within 48 hours of capture, a record of the species, capture location, date, waterbody, number, size range (mm) and digital imagery must be submitted to the Fish and Aquatic Wildlife Section by email at SCFishandAquaticWildlife@gov.bc.ca. Non-native fish species include, but are not limited to: American Shad; Black Catfish; Black Crappie; Brown Catfish; Carp; Goldfish; Largemouth or Smallmouth Bass; Pumpkinseed Sunfish; and Weather-fish.

Appendix B: Table 1 - Species at Risk

The following are species at risk that have been listed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as either endangered, threatened or a species of special concern. Species also listed under the Species at Risk Act (SARA) are identified with an asterisk, and are subject to additional permitting requirements through the Federal Department of Fisheries and Oceans (DFO).

Common Name	Scientific Name
Benthic Paxton Lake Stickleback	* <i>Gasterosteus sp.</i>
Benthic Vananda Creek Stickleback	* <i>Gasterosteus sp.</i>
Limnetic Paxton Lake Stickleback	* <i>Gasterosteus sp.</i>
Limnetic Vananda Creek Stickleback	* <i>Gasterosteus sp.</i>
Nooksack Dace	* <i>Rhinichthys sp.</i>
Morrison Creek Lamprey	* <i>Lampetra richardsoni</i>
Vancouver Lamprey (Cowichan Lake Lamprey)	* <i>Lampetra macrostoma</i>
Cultus Pygmy Sculpin	* <i>Cottus sp.</i>
Shorthead Sculpin	* <i>Cottus confusus</i>
Hotwater Physa	* <i>Physella wrighti</i>
Limnetic Enos Lake Stickleback	<i>Gasterosteus sp.</i>
Benthic Enos Lake Stickleback	<i>Gasterosteus sp.</i>
Salish Sucker	<i>Catostomus sp.</i>
Speckled Dace	<i>Rhinichthys osculus</i>
Charlotte Unarmoured Stickleback	<i>Gasterosteus aculeatus</i>
Columbia Mottled Sculpin	<i>Cottus bairdi hubbsi</i>
Giant Stickleback	<i>Gasterosteus sp.</i>
Green Sturgeon	<i>Acipenser medirostris</i>
Umatilla Dace	<i>Rhinichthys umatilla</i>
West Slope Cutthroat Trout	* <i>Oncorhynchus clarki lewisi</i>
White Sturgeon	<i>Acipenser transmontanus</i>

Applications for permits to specifically collect and retain listed species must be reviewed by the appropriate provincial expert, who will screen permits to ensure that any impacts on listed species are acceptable. For white sturgeon the contact is Steve McAdam (steve.mcadam@gov.bc.ca). For listed non-game freshwater fish the contact is Jordan Rosenfeld (jordan.rosenfeld@gov.bc.ca).

Appendix C: Authorized Waterbodies

Region	Waterbody	Watershed Code
2	Ambrose Lake	900-147300-93700
2	Brown Lake	900-154100
2	Campbell River	900-000500
2	Cranby Lake	905-126000-31000
2	Emily Lake	905-126000-61600
2	Garden Bay Lake	900-147300-18900
2	Kirk Lake	905-126000-61600-75600
2	Klein Lake	900-147300-79800
2	Campbell River	900-000500
2	Little Quarry Lake	905-145000-08500
2	Mike Lake	100-026700-06000-38500
2	Murdo-Frazer Park Pond	900-069300
2	Paq Creek	900-141100
2	Paxton Lake	905-126000-66000-97900
2	Priest Lake	905-126000-61600
2	Trout Lake	900-126800
2	West Creek	100-041600
1	Black Lake	930-081200
1	Bullocks Lake	925-258500-65900
1	Enos Lake	920-440400
1	Hoggan Lake	925-380000-26400
1	Morton Lake	920-643100
1	Sarita River	930-110800
1	Sproat Lake	930-137400-99100
1	Lake Stowell	925-258500-90300

Appendix D: Targeted Species

Target Species	Up to # of Fish	Watershed Code
Threespine Stickleback	50	900-147300-93700
Threespine Stickleback	50	930-081200
Threespine Stickleback	50	900-154100
Threespine Stickleback	200	925-258500-65900
Threespine Stickleback	360	900-000500
Threespine Stickleback	240	905-126000-31000
Emily Lake Benthic Stickleback	32	905-126000-61600
Emily Lake Limnetic Stickleback	32	905-126000-61600
Enos Lake Stickleback*	105	920-440400
Threespine Stickleback	50	900-147300-18900
Threespine Stickleback	100	925-380000-26400
Threespine Stickleback	150	905-126000-61600-75600
Threespine Stickleback	50	900-147300-79800
Threespine Stickleback	100	925-258500-90300
Threespine Stickleback	200	905-145000-08500
Threespine Stickleback	100	100-026700-06000-38500
Threespine Stickleback	30	920-643100
Threespine Stickleback	80	900-069300
Paxton Lake Benthic Stickleback	42	905-126000-66000-97900
Paxton Lake Limnetic Stickleback	53	905-126000-66000-97900
Priest Lake Benthic Stickleback	74	905-126000-61600
Priest Lake Limnetic Stickleback	84	905-126000-61600
Threespine Stickleback	100	930-137400-99100
Threespine Stickleback	50	900-126800
Threespine Stickleback	80	100-041600

* The species pair has collapsed and only hybrids will be collected