

FISH COLLECTION PERMIT
Research

File: 34770-20

Permit No.: **NA-SU14-93473**

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

Authorized Persons: Dolph Schluter, Dr. Matt Arnegard, Kieran Samuk, Diana Rennison,
Dr. Catherine Peichel, Seth Rudman, Sara Miller, Monica Yau, Gina Conte, Julian Heavyside.

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: May 6, 2014 to December 31, 2014

Permitted Waterbodies: West Coast Region, South Coast Region - See Appendix C

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

Target Species: CAS, CCT, Paxton Lake Benthic Stickleback, Paxton Lake Limnetic Stickleback, Priest Lake Benthic Stickleback, Priest Lake Limnetic Stickleback, Threespine Stickleback (subject to permit terms and conditions)

Permitted Lethal Sampling: see Appendix D (subject to permit terms and conditions)

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

See Appendix A.

Region Specific Conditions:

See Appendix A.

Authorized by:

Michael Stalberg
Regional Manager
Recreational Fisheries & Wildlife Programs
West Coast Region



Date: May 6, 2014

Authorized by:

Iain Lunn, Fisheries Biologist
A person authorized by the Regional Manager
Recreational Fisheries & Wildlife Programs
South Coast Region



Date: May 6, 2014

Permit Fee \$25

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.
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. 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.
14. 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 streams above 630 meters in elevation, in anadromous waters, or in lake tributaries from January 1 to June 30.
- All sampling gear follow Association of Professional Biologists' advisory practice bulletin #5. Practice Advisory – Didymo, see: <https://www.professionalbiology.com/sites/default/files/pdfs/Didymo.pdf>
- The permit holder must advise the West Coast Region of sampling activities 48 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

- 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) 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 Environment, Lower Mainland Region. For

further information on these species or to report incidental captures, please call Kym Welstead, Species at Risk Biologist, MOE, Surrey at (604) 582-5200 or by e-mail at Kym.Welstead@gov.bc.ca.

- Please refer to the following website for the least risk in-stream work windows:
http://www.env.gov.bc.ca/wsd/water_rights/licence_application/section9/index.html
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.zoology.ubc.ca/~schluter/stickleback/Salish_sucker/Guidelines%20for%20collection%20of%20Salish%20sucker.pdf
Nooksack dace sampling guidelines – http://www.zoology.ubc.ca/~schluter/stickleback/Nooksack_dace/non-password%20protected%20files/Guidelines%20for%20the%20Collection%20of%20Nooksack%20Dace.pdf
Stickleback species pairs sampling guidelines -
http://www.zoology.ubc.ca/~schluter/stickleback/stickleback_species_pairs/other%20stickleback%20files/Guidelines%20for%20the%20Collection%20and%20In%20Situ%20Scientific%20Study%20of%20Stickleback%20Species%20Pairs.pdf

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: Permitted Waterbodies

ACTIVITY	MOE REGION	WATERBODY	WATERSHED CODE*
Research	2	AMBROSE LAKE	900-147300-93700
Research	1	BLACK LAKE	930-081200
Research	1	BLACKBURN LAKE	925-258500-75600
Research	1	BONSALL CREEK	920-298700
Research	2	Burnaby Mountain Golf Course pond	(504193 / 5456986)
Research	1	CEDAR LAKE	920-700700-84700-22300
Research	2	CRANBY LAKE	905-126000-31000
Research	2	Jericho Park Pond	(485635 / 5457677)
Research	2	KANAKA CREEK	100-037400
Research	1	KENNEDY LAKE	930-306400
Research	2	KIRK LAKE	905-126000-61600-75600
Research	2	CAMPBELL RIVER	900-000500
Research	2	LITTLE QUARRY LAKE	905-145000-08500
Research	2	Murdo-Frazer Park pond	(492483 / 5462365)
Research	2	NORTH LAKE	900-152008
Research	1	PACHENA LAKE	930-085500
Research	2	LILY LAKE	900-141100
Research	2	PAXTON LAKE	905-126000-66000-97900
Research	2	PLACID LAKE	100-026700-06000-06400-0860
Research	2	PRIEST LAKE	905-126000-61600
Research	1	ROSSEAU LAKE	930-085500-39200
Research	2	SALMON RIVER	100-038800
Research	1	Triangle Lake	(310253 / 5564872)
Research	2	TROUT LAKE	900-126800
Research	2	WEST CREEK	100-041600

Appendix D: Permitted Lethal Sampling

TARGET SPECIES	# OF FISH	SAMPLE WATERBODY	CODE*
Threespine Stickleback	400	AMBROSE LAKE	900-147300-93700
Threespine Stickleback	100	BLACK LAKE	930-081200
Threespine Stickleback	50	BLACKBURN LAKE	925-258500-75600
Threespine Stickleback	100	BONSALL CREEK	920-298700
Threespine Stickleback	100	Burnaby Mountain Golf Course pond	(504193 / 5456986)
Threespine Stickleback	100	CEDAR LAKE	920-700700-84700-22300
Prickly Sculpin	20	CEDAR LAKE	920-700700-84700-22300
Threespine Stickleback	450	CRANBY LAKE	905-126000-31000
Threespine Stickleback	60	KANAKA CREEK	100-037400
Threespine Stickleback	400	KENNEDY LAKE	930-306400
Threespine Stickleback	50	KIRK LAKE	905-126000-61600-75600
Threespine Stickleback	144	CAMPBELL RIVER	900-000500
Threespine Stickleback	124	LITTLE QUARRY LAKE	905-145000-08500
Threespine Stickleback	74	LITTLE QUARRY LAKE	905-145000-08500
Threespine Stickleback	100	Murdo-Frazer Park pond	(492483 / 5462365)
Threespine Stickleback	80	NORTH LAKE	900-152008
Prickly Sculpin	20	NORTH LAKE	900-152008
Threespine Stickleback	100	PACHENA LAKE	930-085500
Threespine Stickleback	400	LILY LAKE	900-141100
Prickly Sculpin	50	LILY LAKE	900-141100
Paxton Lake Benthic Stickleback	110	PAXTON LAKE	905-126000-66000-97900
Paxton Lake Limnetic Stickleback	110	PAXTON LAKE	905-126000-66000-97900
Coastal Cutthroat Trout	20	PLACID LAKE	100-026700-06000-06400-0860
Priest Lake Benthic Stickleback	140	PRIEST LAKE	905-126000-61600
Priest Lake Limnetic Stickleback	110	PRIEST LAKE	905-126000-61600
Threespine Stickleback	100	ROSSEAU LAKE	930-085500-39200
Prickly Sculpin	20	ROSSEAU LAKE	930-085500-39200
Threespine Stickleback	60	SALMON RIVER	100-038800
Threespine Stickleback	100	Triangle Lake	(310253 / 5564872)
Threespine Stickleback	430	TROUT LAKE	900-126800
Threespine Stickleback	60	WEST CREEK	100-041600