



FISH COLLECTION PERMIT
Research

File: 34770-20

Permit No.: NA-SU12-76311

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

Client No.: 205

Authorized Persons: Dolph Schluter, Dr. Matt Arnegard, Seth Rudman, Diana Rennison,
Dr. Catherine Peichel, Gina Conte, Sara Miller, Patrick Tamkee, Shaun McCann, Michael White,
Kieran Samuk, Anna Greenwood and Eugene Sit.

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 4, 2012 to December 31, 2012

Permitted Waterbodies: West Coast and South Coast Regions – See Appendix C

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

**Target Species: TSB, SB12, SB13, SBB, SBP and CAS (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, Fish & Wildlife Section Head
A person authorized by the Regional Manager
Recreational Fisheries & Wildlife Programs
West Coast Region

Permit No.: NA-SU12-76311

Authorized by:

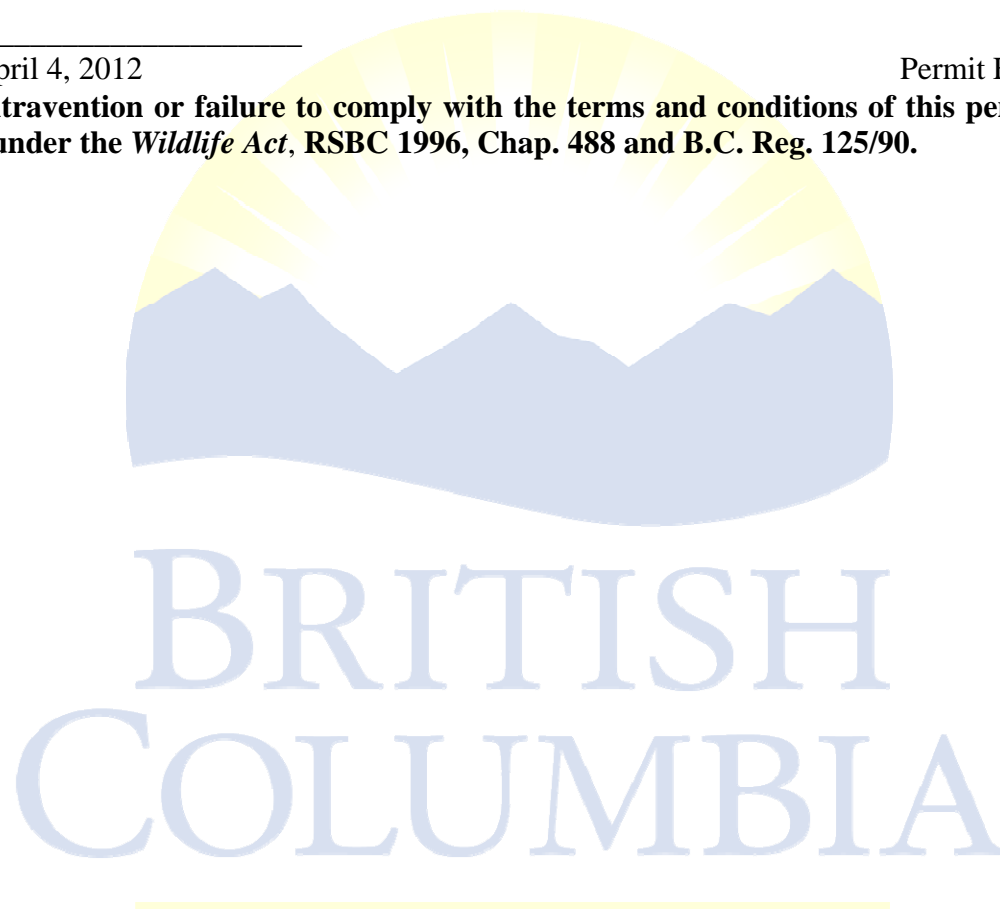
Iain Lunn, Fisheries Biologist
A person authorized by the Regional Manager
Recreational Fisheries & Wildlife Programs
South Coast Region



Date: April 4, 2012

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: <http://www.apbbc.bc.ca/files/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>
White Sturgeon	<i>Acipenser transmontanus</i>

Applications for permits to specifically collect and retain listed species must be reviewed by the appropriate Recovery Team, 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), co-chair of the Non-Game Freshwater Fish Recovery Team.

COLUMBIA

Appendix C: Permitted Waterbodies

Activity	MOE Regions	Water Body	Watershed Code
Minnow traps & seine	Lower Mainland	Ambrose Lake	900-147300-93700
Minnow traps & seine	Lower Mainland	Brown Lake	900-154100
Minnow traps & seine	Lower Mainland	Bruce Lake	905-145000-30700
Minnow traps & seine	Vancouver Island	Bullock Lake (Salt Spring)	925-258500-65900
Minnow traps & seine	Lower Mainland	Burnaby Mountain Golf Course pond	100-020100-79100
Minnow traps & seine	Vancouver Island	Cedar Lake	920-700700-84700-22300
Minnow traps & seine	Vancouver Island	Clear Lake (Comox)	905-291000-76900
Minnow traps & seine	Lower Mainland	Cranby Lake	905-1260-310-000
Minnow traps & seine	Lower Mainland	Crane Lake	920-643100-54400
Minnow traps & seine	Lower Mainland	First Lake (Texada Island)	905-126000-26900-55300
Minnow traps & seine	Vancouver Island	Hadley Lake (Lasqueti Isl.)	905-119500-40900
Minnow traps & seine	Vancouver Island	Hammil Lake	900-281100-43700
Minnow traps & seine	Lower Mainland	Heisholt Lake (Texada Isl.)	NA
Minnow traps & seine	Vancouver Island	Hoggan Lake	925-380000-26400
Minnow traps & seine	Lower Mainland	Jericho Park Pond	900-029800
Minnow traps & seine	Lower Mainland	Jones (Wahleach) Lake	100-101800
Minnow traps & seine	Lower Mainland	Kirk Lake (Texada Isl.)	905-126000-61600-75600
Minnow traps & seine	Vancouver Island	Lawier Lake	920-643100-63900
Minnow traps & seine	Lower Mainland	Little Campbell River	900-0005-000
Minnow traps & seine	Lower Mainland	Little Quarry Lake (Nelson Isl.)	905-145000-08500
Minnow traps & seine	Lower Mainland	Marion (Jacobs) Lake	100-026700-06000-06400-6710
Minnow traps & seine	Lower Mainland	Mike Lake (Golden Ears)	100-026700-06000-38500
Minnow traps & seine	Lower Mainland	Murdo-Frazer Park pond (MacKay)	900-069300
Minnow traps & seine	Lower Mainland	North Lake (Sechelt)	900-152008
Minnow traps & seine	Vancouver Island	Ogden Lake (Lasqueti)	905-119500-09100
Minnow traps & seine	Vancouver Island	Ormond Lake	920-700700-84700-70700
Minnow traps & seine	Vancouver Island	Pachena Lake	930-085500
Minnow traps & seine	Lower Mainland	Paq (Lily) Lake	900-141100
Minnow traps & seine	Lower Mainland	Paxton Lake	905-1260-660-979
Minnow traps & seine	Lower Mainland	Paxton Lake	905-1260-660-979
Minnow traps & seine	Lower Mainland	Priest Lake	905-1260-616-000
Minnow traps & seine	Lower Mainland	Priest Lake	905-1260-616-000
Minnow traps & seine	Vancouver Island	Rosseau Lake	930-085500-39200
Minnow traps & seine	Lower Mainland	Second Lake (Texada Island)	NA
Minnow traps & seine	Vancouver Island	Spirit Lake	920-725300-45200
Minnow traps & seine	Vancouver Island	Swan (Blenkinsop) Lake	920-079700-24800-82100
Minnow traps & seine	Lower Mainland	Trout Lake	900-126800
Minnow traps & seine	Lower Mainland	Placid Lake	100-026700-06000-06400-0860

Appendix D: Permitted Lethal Sampling

TARGET SPECIES	# FISH SAMPLED	WATERBODY/CODE	
Threespine stickleback	100	Ambrose Lake	900-147300-93700
Threespine stickleback	100	Brown Lake	900-154100
Threespine stickleback	100	Bruce Lake	905-145000-30700
Threespine stickleback	100	Bullock Lake (Salt Spring)	925-258500-65900
Threespine stickleback	100	Burnaby Mountain Golf Course	100-020100-79100
Threespine stickleback	100	Cedar Lake	920-700700-84700-22300
Threespine stickleback	100	Clear Lake (Comox)	905-291000-76900
Threespine stickleback	100	Cranby Lake	905-1260-310-000
Threespine stickleback	100	Crane Lake	920-643100-54400
Threespine stickleback	500	First Lake (Texada Island)	905-126000-26900-55300
Threespine stickleback	100	Hadley Lake (Lasqueti Isl.)	905-119500-40900
Threespine stickleback	100	Hammil Lake	900-281100-43700
Threespine stickleback	100	Heisholt Lake (Texada Isl.)	NA
Threespine stickleback	100	Hoggan Lake	925-380000-26400
Threespine stickleback	100	Jericho Park Pond	900-029800
Threespine stickleback	100	Jones (Wahleach) Lake	100-101800
Threespine stickleback	100	Kirk Lake (Texada Isl.)	905-126000-61600-75600
Threespine stickleback	100	Lawier Lake	920-643100-63900
Threespine stickleback	200	Little Campbell River	900-0005-000
Threespine stickleback	100	Little Quarry Lake (Nelson Isl.)	905-145000-08500
Threespine stickleback	100	Marion (Jacobs) Lake	100-026700-06000-06400-6710
Threespine stickleback	100	Mike Lake (Golden Ears)	100-026700-06000-38500
Threespine stickleback	100	Murdo-Frazier Park pond (Mack)	900-069300
Threespine stickleback	100	North Lake (Sechelt)	900-152008
Threespine stickleback	100	Ogden Lake (Lasqueti)	905-119500-09100
Threespine stickleback	100	Ormond Lake	920-700700-84700-70700
Threespine stickleback	100	Pachena Lake	930-085500
Threespine stickleback	100	Paq (Lily) Lake	900-141100
Paxton Lake Benthic stickleback	235	Paxton Lake	905-1260-660-979
Paxton Lake Limnetic stickleback	225	Paxton Lake	905-1260-660-979
Priest Lake Benthic stickleback	245	Priest Lake	905-1260-616-000
Priest Lake Limnetic stickleback	245	Priest Lake	905-1260-616-000
Threespine stickleback	100	Rosseau Lake	930-085500-39200
Threespine stickleback	500	Second Lake (Texada Island)	NA
Threespine stickleback	100	Spirit Lake	920-725300-45200
Threespine stickleback	100	Swan (Blenkinsop) Lake	920-079700-24800-82100
Threespine stickleback	115	Trout Lake	900-126800
Coastal Cutthroat Trout	20	Placid Lake	100-026700-06000-06400-0860
Coastal Cutthroat Trout	15	Second Lake (Texada Isl.)	NA
Prickly Sculpin	50	Paq (Lily) Lake	900-141100