



PERMIT ISSUED UNDER SECTION 73 OF THE SPECIES AT RISK ACT

Permit Number: SARA 147

Permit Authority:

This permit is issued to the person(s) listed below under the authority of the Minister of Fisheries and Oceans pursuant to section 73 of the Species at Risk Act (SARA), and authorizes them, subject to the following terms and conditions, to engage in scientific research activities (described below) that relate to the conservation of the affected species identified below or benefit the said species or are required to enhance its (their) chance of survival in the wild. This permit is granted as a privilege, not property, and is issued at the Minister's discretion and may be revoked or amended to ensure the survival or recovery of a species.

Authorized Person:

Dolph Schluter
Ubc Dept Of Zoology
6270 University Blvd.
Vancouver BC V6T 1Z4

Assistant(s):

Patrick Tamkee, Dr. Matt Arnegard, Dr. Kerry Marchinko, Rowan Barrett, Gina Conte, Laura Southcott

Species and Catch Limits:

Species / Population	Limit / Comment	Age Class
STICKLEBACK - BENTHIC VANANDA LAKE (GASTEROSTEUS)	100 Count	Mature adult (1 year old)
STICKLEBACK - BENTHIC PAXTON LAKE (GASTEROSTEUS)	100 Count	Mature adult (1 year old)
STICKLEBACK - LIMNETIC PAXTON LAKE (GASTEROSTEUS)	100 Count	Mature adult (2+ years old)
STICKLEBACK - LIMNETIC VANANDA LAKE (GASTEROSTEUS)	100 Count	Mature adult (2+ years old)

Live specimens collected from the field or made from crosses between wild-caught fish will be kept in aquaria (in the Biosciences building) or in the experimental ponds facility on the campus of the University of BC.

Retention of specimens collected Authorized

Area of Activity:

South Coast
Priest Lake and Paxton Lake on Texada Island,
British Columbia

Authorized Activities:



Capture Technique: Minnow traps, as well seine and dip nets, will be used to capture sticklebacks. Traps will be set for a maximum of 12 hours.

Method of Handling: sticklebacks will be gently decanted from the minnow trap or net into a bucket of aerated, fresh lake water.

Maintaining fish in captivity: Sticklebacks are raised and kept in stand-alone 100-litre aquariums with filtration and aeration. Sticklebacks are fed twice daily with live and frozen food.

Studies of assortative mating: An adult male stickleback is introduced to an aquarium or enclosure and allowed to build a nest over several days. A gravid female is introduced and the time it takes to spawn with the male (to a maximum of 30 minutes) is recorded. Choice designs will also be investigated, in which more than one male is available to a female.

Method of Euthanasia and Disposal: Sticklebacks are killed with MS222 (1 part MS222 per 20 000 part water, buffered using sodium bicarbonate). In the rare event of animal injury, the sticklebacks will be immediately euthanized with an overdose of MS222 and preserved in pure ethanol for laboratory analysis.

Research will focus on the causes of reproductive isolation (low gene flow) between coexisting limnetic and benthic species. Research will test the role of nesting habitat in assortative mating. This work continues to provide baseline ecological and genetic information for management of the stickleback species pairs, and to monitor changes occurring in the stickleback species pairs.

Terms and Conditions:

Pursuant to subsection 73(6) of SARA, the following terms and conditions apply to this permit:

- 1) This permit is only valid for the activities described above. It (or a copy) must be carried by a member of the field crew and be made available to a Fishery or Conservation Officer upon request.
- 2) This permit does not replace any other permits required under provincial or federal legislation.
- 3) The death of any individual of the affected species identified above, resulting from activities authorized by this permit, shall be reported immediately to the regional coordinator identified below.
- 4) By February 28 2011, a comprehensive report must be filed detailing any activity, authorized by this permit, which results in killing, harming, harassing, capturing or taking of any individuals of the affected species above. If the individuals were captured and are being held then you must also indicate where they are being held and what is planned for these captured individuals (death, release, etc.). The completed reports shall be sent to:

Heather Stalberg
Species at Risk Recovery Planner
Oceans, Habitat & Enhancement Branch
Fisheries & Oceans Canada
985 McGill Place
Kamloops, B.C. V2C 6X6
Telephone: (250) 851-4960
Facsimilie: (250) 851-4951
Heather.Stalberg@dfp-mpo.gc.ca



Duration of Permit: This permit is valid from Mar 1, 2010 until Dec 15, 2010.

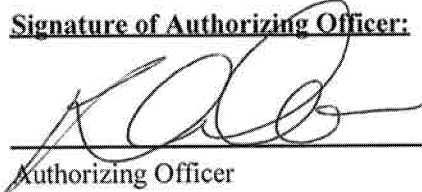
Date of issue: Feb 25, 2010

This permit is not valid until read and signed by the authorized person, signifying agreement with the conditions of permit:

I hereby certify that I am the authorized person named above (Dolph Schluter) and that I have read and understand the conditions of this permit,

Dolph Schluter		March 1, 2010
Print Name	Signature	Date

Signature of Authorizing Officer:

	Feb. 25. 2010
Authorizing Officer	Date

Karen Calla
SARA Regional Manager
Fisheries & Oceans Canada, Pacific Region
#200-401 Burrard St.
Vancouver, BC V6C 3S4
on behalf of the Minister of Fisheries & Oceans Canada

Further Information about this permit is available from the above authorizing officer or from SARA@pac.dfo-mpo.gc.ca