Research and Collection Permit – Project Proposal Form

# Instructions

Applicants must complete a copy of this form as part of their application for a Research and Collection Permit. All questions below must be answered by providing responses with concise but sufficient detail to facilitate the review of the proposed project. Additional instructions are provided following each question. Please enter your responses in the blank space provided following each question. Once completed, upload this document with your [application](https://parks.canada.ca/nature/science/recherche-research/permis-permits/formulaire-form).

**Name of Principal Investigator**:

Provide the name of the individual to whom the Research and Collection Permit would be issued if approved and who would be accountable for compliance with the terms and conditions of the permit. Depending on the context, the Principal Investigator may also be called the applicant or permit holder.

**Project title**:

Provide the official title of the project. The project title should briefly describe the key purpose of the project.

# Project Details

1. **General description of the project**:

Provide a concise description of the project. This should include the main type of research or collection activities to be conducted, their purpose and goals. Type of research may include, among others, Indigenous-partnered or Indigenous-led research, quantitative or qualitative research, or reference to a specific scientific discipline. Collection activities may include, among others, water sampling, specimen collection, survey, inventory or excavation.

Enter your response here.

1. **Project objectives**:

Describe the key objectives of the project?

Enter your response here.

1. **Relevance of proposed project to Parks Canada's current research priorities**:

Describe how or if the proposed project is linked to (or supports) the [research priorities](https://parks.canada.ca/nature/science/recherche-research/permis-permits/priorites-priorities) of the Heritage Areas, if applicable, and Parks Canada’s mandate and priorities as outlined in Parks Canada’s [plans](https://www.pc.gc.ca/en/agence-agency/bib-lib/plans) and [reports](https://www.pc.gc.ca/en/agence-agency/bib-lib/rapports-reports).

Enter your response here.

1. **Schedule**:

Provide a detailed schedule of major project activities including, but not limited to, project start and end date, fieldwork activities, lab work, collection management, and reporting, as applicable. Include specific dates for each activity listed.

Enter your response here.

1. **Description of the project’s study area**:
   1. For natural or social sciences research projects, provide a description of the study area and reasons for choosing the specific site. Include the location and the applicable National Topographic System (NTS) map sheet at the 1:50,000 scale, or appropriately scaled mapping and applicable project area name. Insert screen captures (PNG or JGEP) of any relevant maps or site plans.

Enter your response here or enter not applicable (n/a).

* 1. For archaeological research projects, provide a description of the study area and reasons for choosing the specific site. Include appropriately scaled mapping of the project area by inserting screen captures (PNG or JPEG) or as separate attachments (PDF) when submitting the application.

Enter your response here or enter not applicable (n/a).

1. **Requirements for special access**:

Special access may require additional authorization. Indicate any requirements for special access anticipated for your project (for example, aircraft landing permit, use of closed roads, use of motorized equipment, use of unmanned aerial vehicles, such as drones, access to restricted areas, among others). The Research Coordinator will help you determine what is required.

Enter your response here or enter not applicable (n/a).

1. **Field methods**:

Detail the methodology to be used while conducting fieldwork during the proposed project. Include, where applicable, discipline specific methods, proposed alteration of resources and resource altering activities, construction or installation plans, decommissioning plans, use of unmanned aerial vehicles (such as drones), among others. For social science projects, include target populations and sampling procedures, in addition to any draft survey instruments to be used. NOTE: All information pertaining to animal capture and handling should be described in the section on [Animal Care](#AnimalCare) (questions 52-60).

Enter your response here.

1. **Site conservation plan**:

Describe your strategy and methods for the conservation of archaeological site and/or the protection of natural site.

Enter your response here.

1. **Potential for disturbance and impacts of project activities and proposed mitigation measures**:

Outline the nature and extent of disturbances or impacts for the following categories. Also, describe any proposed mitigation measures to eliminate or minimize the impacts described. Examples of disturbances may include, but are not limited to, test holes and excavations, sampling live vegetation, collection of materials (type and quantities), animal disturbance or manipulation, impact on rare/sensitive resources, aesthetic impacts and potential issues of public concern.

* 1. **Natural environment**:

Select Yes or No.

YES  NO

If yes, describe the nature and extent of any disturbance or impact and how you plan to mitigate them. Enter your response here.

* 1. **Cultural resources**:

Select Yes or No.

YES  NO

If yes, describe the nature and extent of any disturbance or impact and how you plan to mitigate them. Enter your response here.

* 1. **The visiting public**:

Select Yes or No.

YES  NO

If yes, describe the nature and extent of any disturbance or impact and how you plan to mitigate them. Enter your response here.

* 1. **Heritage area residents or community members adjacent to heritage area**:

Select Yes or No.

YES  NO

If yes, describe the nature and extent of any disturbance or impact and how you plan to mitigate them. Enter your response here.

1. **Site security and protection measures**:

Outline how the site will be made secure while conducting fieldwork during both on and off-work hours. Note that all permit holders are required to adhere to the [Canada Labour Code – Part II Occupational Health and Safety](https://laws-lois.justice.gc.ca/eng/acts/l-2/). For Parks Canada employees, contractors, students and volunteers, the Parks Canada Agency Occupational Health and Safety Policy also applies.

Enter your response here.

1. **Health and safety**:

Identify and describe how health and safety issues and concerns affecting researchers, Parks Canada personnel and the public will be addressed and mitigated while conducting fieldwork for the proposed project. Note that all researchers are required to adhere to the [Canada Labour Code – Part II Occupational Health and Safety](https://laws-lois.justice.gc.ca/eng/acts/l-2/), or other recognized standard, where applicable. For Parks Canada employees, contractors, students and volunteers, the Parks Canada Agency Occupational Health and Safety Policy also applies.

Enter your response here.

1. **Digital data and information**:

List all data and information expected to be generated from the proposed project. These may include, but are not limited to, data files, format types, analyses, digital maps and sketches, field notes, digital photographs, among others. Parks Canada may require copies of data generated from permitted projects. In these cases, applicants should discuss any requirements with the Research Coordinator. Any data files shared with Parks Canada are to be accompanied by industry standard metadata including a data dictionary.

Enter your response here.

1. **Other products**:

List all other products and analyses expected to be generated from the proposed project including, but not limited to, card files, maps, sketches, field notes, photographs, photo analysis, artifact collections, samples, among others.

Enter your response here.

1. **Planned reports and publications**:

Describe any planned reports and publications resulting from the proposed project and their significance to the knowledge base (or to the discipline of study).

Enter your response here.

1. **Public communications about the proposed project**:

Describe all planned public communications, including any presentations, articles or social media posts, among others, that aim to inform Heritage Area residents, local or Indigenous communities, or visitors about the project and its results.

Enter your response here or enter not applicable (n/a).

1. **Assistance or support requested from Parks Canada**

Describe any assistance or support requested from Parks Canada to conduct the project. Applicants are encouraged to discuss these needs with the Research Coordinator prior to submitting their application.

* 1. **Financial**:

Select Yes or No.

YES  NO

If yes, describe and include the amount requested and the amount secured from other sources. Enter your response here.

* 1. **Logistical**:

Select Yes or No.

YES  NO

If yes, describe the logistical support requested. Enter your response here.

* 1. **Data**:

Select Yes or No.

YES  NO

If yes, describe the data requested. Enter your response here.

* 1. **Special requests**:

Describe any additional assistance or support required or provided that does not fall into the previous categories. Enter your response here or enter not applicable (n/a).

1. **Project budget**:

Provide a budget outline that includes major cost categories such as: salaries, equipment, travel, report preparation, surveying, cartography, among others.

Enter your response here or enter not applicable (n/a).

# Collections Management

Provide details on the management of collection during the entire course of the project. Collection refers to archaeological objects, natural objects (specimens), or samples collected and removed from the Heritage Area.

1. **Care and maintenance of the collection when conducting fieldwork**:

Detail your strategy for the conservation, transportation, and storage of the collection when conducting fieldwork.

Enter your response here or enter not applicable (n/a).

1. **Collection conservation arrangements (post fieldwork)**:

Describe your post-fieldwork conservation strategy for the collection during the tenure of your research project (for example, stabilization of composite or organic materials).

Enter your response here or enter not applicable (n/a).

1. **Retention of collection for research**:

If you require the collection for future research project needs, indicate the date expected for the transfer of the collection to the identified repository. This should be on or before the expiry date of the permit. Format yyyy/mm/dd.

Enter your response here or enter not applicable (n/a).

1. **Repository, disposition and export**:

Indicate the name of the repository for the collection that are to be retained, including institution name, address, contact name, telephone number and e-mail address. For collections that are not retained, indicate method of disposition or disposal. If you are intending to export, please indicate the destination and arrangements made to carry out the export process.

Enter your response here or enter not applicable (n/a).

1. **Archaeological collection**:

Indicate the name of the institution or business, address, contact name, telephone number and e-mail address for where the collection will be temporarily stored, prior to transferring the collection to a permanent repository.

Enter your response here or enter not applicable (n/a).

# Species at Risk

Provide details in the following questions if a species at risk, its residence and/or critical habitat may be affected by the proposed project.

1. **Describe how any individuals, residences and/or critical habitat for species listed as extirpated, endangered or threatened in** [**Schedule 1 – List of Wildlife Species at Risk**](https://laws.justice.gc.ca/eng/acts/s-15.3/page-10.html) **are likely to be affected**:

Document whether the activity will contravene one or more SARA prohibitions: cannot kill, harm, harass, capture or take an individual, or possess, collect, buy, sell or trade an individual or any part or derivative of an individual (s32); cannot damage or destroy a residence (s33); cannot destroy any part of critical habitat (s58); cannot carry out an activity that is prohibited under an emergency order (s80). Consider whether the activity or effects of the activity are identified as a threat to the species. Refer to the threats and critical habitat (biophysical attributes, features, and functions; activities likely to destroy) sections of the recovery strategy, action plan, residence description and/or COSEWIC status report for the species where available.

Enter your response here or enter not applicable (n/a).

1. **Alternatives that would reduce impacts**:

The purpose of this section is impact avoidance. Document how impacts of the activity on the listed wildlife species have been avoided by considering reasonable alternatives. Demonstrate that there are no other reasonable alternatives to the one selected that would further avoid the impact. Biological, ecological, conservation and recovery objectives, and technical and economic factors may be considered when deciding whether a given alternative is reasonable. An explanation of why not undertaking the activity is not considered reasonable must be provided.

Enter your response here or enter not applicable (n/a). A response must be provided if effects are identified in question 47.

1. **Measures to minimize impacts**:

After having determined that impacts on the listed wildlife species have been avoided to the extent reasonably possible, the applicant must apply all feasible mitigation measures to minimize the impacts that could not otherwise be avoided despite having selected the best alternative. Demonstrate that the needs of the species were fully considered during the design of the activity. Consideration must be given to identifying and adopting best practices for the species. Biological, ecological, technical and economic factors may be considered when considering what measures are feasible.

Enter your response here or enter not applicable (n/a). A response must be provided if effects are identified in question 47.

1. **Jeopardy to survival or recovery of the species**:

An activity will jeopardize the survival or recovery of the species if it increases threats to the extent that the species is not able to, or may not be able to, survive or recover. For species with a posted recovery strategy (final or proposed), the population and distribution objectives should be employed in the determination of jeopardy to recovery/survival (i.e., the proposed activity shall not increase threats to the extent that the population and distribution objectives will not be attained). For species where a recovery strategy has yet to be posted, the best available information on the species, including assessment information from COSEWIC, should be used to determine jeopardy.

Enter your response here or enter not applicable (n/a). A response must be provided if effects are identified in question 47.

# Animal Care

Animal Care Committee Review

Consult the Canadian Council on Animal Care (CCAC) [Guidelines](https://ccac.ca/en/standards/guidelines/) and [Guidelines on the care and use of wildlife](https://www.ccac.ca/Documents/Standards/Guidelines/Wildlife.pdf) for further information.

Applicants must answer all questions in this section if an animal care protocol has NOT been approved or is NOT pending review by an institutional Animal Care Committee (non-Parks Canada). Refer to [Appendix 2](#Appendix2) for further instructions for project proposals involving fish.

1. **Determine how many animals will be used to meet the requirements of the project including species, sex, and age**. Note that these numbers must be justified using power analysis or other statistical methods. Provide details of expected number of captures by species, sex, and age, if possible. Provide justifications of why this number of animals is required. The number of animals to be captured or handled cannot simply be based on financial constraints, such as the number of radio collars are purchased with available funds, but should be justified by the number of animals required to answer the research questions based on valid protocols and methods.

Enter your response here or enter not applicable (n/a).

1. **Provide a detailed description of all planned animal handling activities, from capture to release and recovery**.

In providing your responses below, identify who will perform each procedure and provide a detailed summary of each team member’s animal handling experience, including training courses and species specific expertise.

* 1. **Describe how animals will be captured, restrained, transported and monitored**:

Enter your response here or enter not applicable (n/a).

* 1. **Provide details of any chemical immobilization, including drug dosages, suppliers, reversal agents, as well as the measures taken to ensure drug residues do not persist in the environment or enter the human food chain**:

Enter your response here or enter not applicable (n/a).

* 1. **Identify potential by-catch species, anticipated by-catch numbers, and preventative actions to mitigate by-catch**:

Include information required to ensure appropriate salvage of by-catch, such as chase times, temperature restrictions for helicopter darting, and recommended frequency for trap/net checks, among others.

Enter your response here or enter not applicable (n/a).

1. **Specify details of a holding plan that describes diet, monitoring, and facility design if holding animals is required for more than 4 hours**:

Provide details that relate to holding of animals for recovery or translocation purposes. Explain what holding facilities will be used and for how long, as well as how the animals will be cared for while in confinement. Include drawings or sketches of holding facilities if applicable.

Enter your response here or enter not applicable (n/a).

1. **Provide details of permanent or semi-permanent marking to be used if animals will be marked in any way**:

Provide details including radio-collar weights, passive integrated transponder (PIT) tag size, ear tag size, and maximum or minimum size of animal that will be marked or collared, if applicable. Also describe whether or not marking procedures will be temporary or permanent, or if measures will be taken to remove markings in the future (for example, rot-off inserts in collars). Describe how chemically immobilized animals will be marked to ensure that drug residues do not enter the human food chain (for example, ear tags with a callback number).

Enter your response here or enter not applicable (n/a).

1. **Describe, in detail, any surgery upon animals proposed in this project, as well as the qualifications and training of individuals performing surgery. Include detailed information on the following**:

* surgical methods;
* instrument sterilization methods;
* surgical site preparation (disinfection);
* estimated length of surgery;
* analgesics to be used;
* impact on the animals;
* the estimated recovery time required by the animals before release; and,
* any post-release monitoring.

Enter your response here or enter not applicable (n/a).

1. **Describe the endpoints, such as behaviour and physiological responses of the animal, when humane intervention will be implemented to prevent or relieve excessive pain or distress**:

Enter your response here or enter not applicable (n/a).

1. **Specify any possible replacement, refinement and/or reduction alternatives that were explored or utilized for this project to prevent or relieve unnecessary pain and/or distress. Provide any justification if these are not to be employed, or a description of efforts to find such alternatives**:

Enter your response here or enter not applicable (n/a).

1. **Specify the methods of euthanasia and carcass disposal that will be available when conducting fieldwork and their application for both target and non-target animals**:

Enter your response here or enter not applicable (n/a).

1. **Canadian Council on Animal Care (CCAC) - Category of Invasiveness**:

See [Appendix 1](#_Appendix_1_–) below or refer to the [original document](https://www.ccac.ca/Documents/Standards/Policies/Categories_of_invasiveness.pdf) for descriptions of each Category of Invasiveness.

Select Category B, C, D, E or N/A (not applicable).

B C D E N/A

# Indigenous Engagement and Consultations

The Government of Canada is working to advance reconciliation and renew the relationship with Indigenous peoples, based on recognition of rights, respect, cooperation and partnership. Parks Canada is determined to honour this commitment.

Parks Canada also recognizes the role science, research and collection activities play in reconciliation with Indigenous peoples. In this spirit, Parks Canada encourages applicants to engage with local Indigenous communities at all stages of project development and delivery. Applicants should consider how their proposed project could meet the interests, priorities or concerns of Indigenous communities (see Wong et al. FACETS. 5(1) – <https://doi.org/10.1139/facets-2020-0005>). Applicants are encouraged to discuss this further with the Research Coordinator prior to submitting their application.

In addition to Indigenous engagement, Parks Canada has an obligation to consult Indigenous groups under established agreements, such as a comprehensive land claim, cooperative management or other contractual agreement. Furthermore, as a representative of the Crown, Parks Canada has a duty to consult, and where appropriate, accommodate Indigenous groups when it considers conduct that might adversely impact potential or established Aboriginal or treaty rights protected by Section 35 of the *Constitution Act, 1982*. As such, Parks Canada is responsible for undertaking consultations with Indigenous groups as part of the permitting process.

1. **Have you engaged or discussed with Indigenous communities about your project**?

Enter your response here.

# Reviews and Authorizations

As part of the application process, project proposals submitted to Parks Canada are reviewed by professionals, experts, and Indigenous language and knowledge keepers.

1. **Peer review**:

Note: This is not applicable to project proposals focused on archaeological research as these projects are reviewed internally by Parks Canada archaeologists, unless stated otherwise.

Provide the name, affiliations and contact information of:

* 2 professionals or experts in the field of study who could provide peer review of the proposed project.

or

* language and/or knowledge keepers appointed by the Indigenous communities who have direct interest in the proposed activities who could review the proposed project.

Enter your response here.

1. **Ethical Committee review for research involving humans**:

This set of fields confirms that ethical considerations have been met, as reviewed by institutional Ethical Committees. Consult the [Tri-Council Policy Statement - Ethical Conduct for Research Involving Humans – TCPS 2 (2022)](https://ethics.gc.ca/eng/policy-politique_tcps2-eptc2_2022.html) and [Canadian Association of Research Ethics Boards’ newsletter](https://careb-accer.org/newsletter/) for further information.

* 1. **Was the project reviewed by an institutional Ethical Committee for research involving humans**?

Select Yes, No or N/A (not applicable).

YES  NO  N/A

* 1. **If yes to 62a, describe the recommendations received from the institutional Ethical Committee**:

Note the ‘Ethical Review’ applies only to projects that involve collecting information on humans.

Enter your response here or enter not applicable (n/a).

1. **Additional authorizations, permits and/or licences**:

If known, indicate any additional governmental (or other) authorizations, permits, and/or licences that are required. If already obtained, indicate the type of authorization and the reference number, as applicable. Upload a copy of additional authorizations, permits and/or licences along with other supporting documentation when submitting your application online.

Enter your response here or enter not applicable (n/a).

# Appendix 1 – Determining Canadian Council on Animal Care (CCAC) - Category of Invasiveness

## Category of Invasiveness A

Not applicable.

## Category of Invasiveness B

Methods used which cause little or no discomfort or stress

Possible examples: observational studies in which there is some disturbance to the animals but not to the point that the same individuals are repeatedly observed so as to habituate or otherwise modify their behaviour; census or other surveys which disturb animals but which do not involve capture or marking individuals; non-invasive studies on animals that have been habituated to captivity; short periods of food and/or water deprivation equivalent to periods of abstinence in nature.

## Category of Invasiveness C

Methods which cause minor stress or pain of short duration

Possible examples: capture, using methods with little or no potential to cause injury and marking of animals for immediate release; long-term observational studies on free ranging animals where the behaviour of individuals may be altered by repeated contact; brief restraint for blood or tissue sampling; short periods of restraint beyond that for simple observation or examination, but consistent with minimal distress; short periods of food and/or water deprivation which exceed periods of abstinence in nature; exposure to non-lethal levels of drugs or chemicals; low velocity darting and slow-injection darts with immobilization chemicals. Such procedures should not cause significant changes in the animal’s appearance, in physiological parameters (such as respiratory or cardiac rate, or fecal or urinary output), in social responses or inability to survive. Note: During or after Category C studies, animals must not show self-mutilation, anorexia, dehydration, hyperactivity, increased recumbency or dormancy, increased vocalization, aggressive-defensive behaviour, or demonstrate social withdrawal and self-isolation.

## Category of Invasiveness D

Methods which cause moderate to severe distress or discomfort

Possible examples: capture, using methods that have the potential to cause injury (for example, high velocity darting and rapid-injection darts with immobilization chemicals, net gunning, among others); maintenance of wild caught animals in captivity; translocation of wildlife to new habitats; major surgical procedures conducted under general anesthesia, with subsequent recovery; prolonged (several hours or more) periods of physical restraint; induction of behavioural stresses such as maternal deprivation, aggression, predator-prey interactions; procedures which cause severe, persistent or irreversible disruption of sensorimotor organization. Other examples in captive animals include: induction of anatomical and physiological abnormalities that will result in pain or distress; the exposure of an animal to noxious stimuli from which escape is impossible; the production of radiation sickness; exposure to drugs or chemicals at levels that impair physiological systems (N.B. Experiments described in this paragraph would be Category E if performed on wildlife immediately prior to release). Note: Procedures used in Category D studies should not cause prolonged or severe clinical distress as may be exhibited by a wide range of clinical signs, such as marked abnormalities in behavioural patterns or attitudes, the absence of grooming, dehydration, abnormal vocalization, prolonged anorexia, circulatory collapse, extreme lethargy or disinclination to move, and clinical signs of severe or advanced local or systemic infection, among others.

## Category of Invasiveness E

Procedures which cause severe pain near, at, or above the pain tolerance threshold of un-anaesthetized, conscious animals

This Category of Invasiveness is not necessarily confined to surgical procedures, but may include exposure to noxious stimuli or agents whose effects are unknown; exposure to drugs or chemicals at levels that (may) markedly impair physiological systems and which cause death, severe pain, or extreme distress; behavioural studies about which the effects of the degree of distress are not known; environmental deprivation that has the potential to seriously jeopardize an animal’s well-being; use of muscle relaxants or paralytic drugs without anesthetics; burn or trauma infliction on un-anaesthetized animals; a euthanasia method not approved by the CCAC; any procedures (for example, the injection of noxious agents or the induction of severe stress or shock) that will result in pain which approaches the pain tolerance threshold and cannot be relieved by analgesia (for example, removal of teeth without analgesia, or when toxicity testing and experimentally-induced infectious disease studies have death as the endpoint); capture methods with a high potential of causing severe injury that could result in severe chronic pain and/or death (for example, leg hold traps).

# Appendix 2 – Fish Capture and Handling

The Parks Canada Animal Care Committee (ACC) receives many applications each year for projects that involve the capture and handling of fish for the purpose of research, conservation, management, and fish salvage. In order to prevent delays in permitting, applicants should consider the following criteria to include in their methodology.

## General

* List all species that could potentially be captured in the system and the expected or estimated magnitude of each species (10’s? 100’s? 1000’s?).
* Provide gear and boat decontamination protocols if working in areas where whirling disease, zebra mussels, or other invasive organisms or disease is of concern.
* By-catch: In addition to listing potential by-catch and potential magnitude of capture, list methods that will be used to mitigate by-catch. If avian, reptilian or mammalian by-catch is possible (for example, waterfowl entering a Fyke net), describe methodology to prevent mortality between trap checks (for example, haul-out floats, shelves, air space above water to allow breathing, among others).
* Canadian Council on Animal Care (CCAC) category of invasiveness: This is a required field and information on how to determine the appropriate category can be found in Appendix 1. Electrofishing is considered category “D” and most trapping methods are considered category “C”.

## Capture

* Describe nets/traps to be used (for example, length, mesh size, material, among others).
* Describe frequency of trap/net checks. The maximum duration between checks should be 24 hours. Seine nets should be used as active gear and checked for fish immediately following capture. Minnow, windermere or similar traps should be checked every 24 hours.
* Electrofishing: Provide electrofishing protocols or attach electrofishing standard operating procedure (SOP) that provides details on how and when this capture method will be used.

## Handling

* Handling: Include a complete description of how fish will be handled EACH TIME they are captured. Suggestions include: wet or gloved hands, no bug spray or sunscreen on hands, provide the maximum time the fish will be out of the water until release or euthanasia (usually 30 seconds unless supplemental oxygenated water is run across the gills).
* Holding and Transport: Describe these activities in detail. Examples include: How will water quality be monitored during live fish holding and transport. Are supplemental water quality devices (for example, filtration, oxygenation) being provided? Ensure that holding tanks have lids to prevent fish escape. Ensure that predator and prey species are held in separate holding containers.

## Holding

* Stocking density: Investigators must provide maximum stocking density for the species if they are to be temporarily housed in tanks prior to processing or if they will be housed for longer periods of time in captivity. Stocking density should be backed up with at least one reference from the primary literature. As a general rule, the stocking density limit should be less than 0.2kg/L.
* If fish are to be housed in captivity for extended durations, describe captive diet, weight monitoring protocols, and planned endpoints if fish weight cannot be maintained within 5% compared to the week before.
* Water quality monitoring: Describe how water quality will be monitored in holding or permanent tanks. What parameters are being monitored? How often are they being monitored? What are the criteria for changing the water? In permanent systems, describe the filtration system. For temporary holding, water temperature should not deviate more than 2°C from source water.

## Sampling

* Sample collection: Describe in detail materials and techniques used to gather biological samples from the fish. Be sure to describe sterile technique if needles, scalpel blades, or other equipment is used to gather samples from multiple fish.
* Tagging: Describe in detail the method used to tag fish (for example, fin clip, freeze branding, Carlin tags, visible implant tags, passive integrated transponder (PIT) tags, internal data loggers, internal acoustic or radio tags). Details are important.

## Anesthesia or Euthanasia

* Anesthesia: Describe in full detail protocols for anesthesia. This includes the anesthetic to be used (for example, Tricaine-S/Syscaine (MS-222) or clove oil); the concentration to be used for anesthesia; clinical signs of anesthesia in the fish indicating when anesthesia is taking effect, when it is in an appropriate anesthetic plane for sampling, and when an overdose has occurred; when anesthetic water will be replaced and; how anesthetic water will be disposed following procedure.
* Euthanasia: Every application must provide a protocol for euthanasia even if lethal collection is not intended. Accepted methods of euthanasia employ a two-step process. Step one renders the fish fully unconscious by either an anesthetic overdose or blunt force trauma to the head. Step two ensures the fish will not awaken from the unconscious state and stops vital function usually using a physical method such as decapitation, pithing the brain/spinal cord, or severing the spine.