



1.0 About this standard

A standard specifies how to implement a specific mitigation measure to achieve its objective and maximize its effectiveness. This standard provides national guidance from Fisheries and Oceans Canada (DFO) on how to implement the following mitigation measure:

- Capture fish within an isolated or enclosed area and relocate them to the same watercourse or water body.

This interim standard is intended for use in the implementation of [fish](#) capture and relocation (CR) occurring within freshwater (including rivers, streams, lakes, ponds) and [marine environments](#).

By following this standard, project proponents can reduce the risk of harmful impacts to fish and fish habitat to an acceptable level.

Fish CR, also referred to as fish salvage or fish rescue, involves the capture of fish within a project footprint and their relocation to suitable habitat outside of the work area, within the same waters. Fish CR may be required to support works, undertakings and activities (projects) such as the construction of new infrastructure or to support maintenance, repair or removal activities associated with existing in-water infrastructure. Some examples of projects that typically involve fish CR include:

- Watercourse crossing maintenance and installations: Projects such as bridge, culvert, or pipeline crossings associated with fish bearing waters, where the watercourse must be temporarily diverted or dewatered.
- Habitat restoration and offsetting projects: Restoration and offsetting activities such as streambank restoration, wetland rehabilitation, or construction of fish habitat.

2.0 User guide

Standards are one of a suite of tools used by the Fish and Fish Habitat Protection Program to manage the risk of harmful impacts to fish and fish habitat from projects carried out in or near water. They create efficiencies in the regulatory process by standardizing requirements for certain types of common projects.

Standards are not considered stand-alone documents. The conditions under which they can be applied, other applicable management measures (for example, carry out the project in accordance with [timing windows](#)), and any engagement or consultation requirements are dictated by the instrument within which the standards are referenced (for example, *Fisheries Act* authorization).

Project proponents can indicate their intention to follow one or more DFO standards in their [request for review](#) or in their [application for authorization](#). Submissions should indicate specific sections of the standards that apply to the proposed project and include any additional site-specific management measures related to the method used.

The type of watercourse or water body and site-specific conditions will inform the preferred method(s) for fish CR. Some examples include:

- Shallow or slow-moving water: Seine or hand-netting, minnow traps or backpack electrofishing can be used effectively when fish are concentrated in small, shallow pools or in slow-moving water.



- Deeper waters or moderate water velocities: Boat electrofishing or the use of seine nets may be effective in water bodies with deeper water or watercourses with faster currents, where fish are more dispersed.
- Vegetation-dense or debris-filled environments: Fyke nets or modified electrofishing techniques may be necessary in waters with dense aquatic vegetation or debris.

We acknowledge in certain instances, for example when the water depth and velocities are too great, these methods could be inefficient to capture fish. Under such circumstances, fish scaring tactics along with other means of isolating the work site (for example, bubble curtain) might be more appropriate. A [qualified environmental professional](#) (QEP) will determine the best method(s) based on site-specific conditions.

Standards do not remove nor replace the obligation to comply with all applicable statutory and regulatory requirements of the [Fisheries Act](#), the [Species at Risk Act](#), or other federal, provincial, territorial or municipal legislation and policy including guidance regarding species and habitats managed by these jurisdictions.

Up-to-date information on DFO standards can be found on the [Projects near water](#) website.

3.0 Methods

This fish CR standard includes guidance related to the execution of the following 6 steps:

- 3.1 [Pre-capture planning](#)
- 3.2 [Capture](#)
- 3.3 [Handling](#)
- 3.4 [Holding and transport](#)
- 3.5 [Release](#)
- 3.6 [Reporting](#)

3.1 Pre-capture planning

The purpose of pre-capture planning is to design a site-specific strategy to effectively capture and relocate fish in a manner that will reduce stress and injury, and mitigate the death of fish.

- Conduct a desktop review of publicly available databases and reports to confirm fish species and life stages that could be present during CR.
- Conduct a site visit to fill in information gaps from the desktop review and to confirm the fish present and fish habitat conditions where the CR will take place.
- Identify in advance the appropriate site access points, gear, crew size, timing and location(s) for holding and relocating the fish.

These pre-capture activities will provide knowledge of fish species and densities, and site-specific habitat features to inform the approach.



3.1.1 Qualifications

All aspects of this standard are expected to be applied by, or in consultation with, a [QEP](#).

- The fish CR plan must be designed, implemented and led by a [QEP](#) competent in safely capturing, handling, identifying and releasing fish such as an aquatic biologist, fisheries biologist or fisheries technician.
 - Refer to applicable federal, provincial or territorial permits for specific qualifications required by the jurisdiction where fish CR will occur.

3.1.2 Permits

One or more permits, licences and authorizations may be required prior to proceeding with the fish CR.

- Obtain all applicable federal, provincial or territorial permits, licences and authorizations for fish CR.
 - Comply with all the terms and conditions of the permit obtained.
 - Keep a copy of the permit on site at all times in the possession of the Permit Holder or a person acting under the Permit Holder's authority that can be made available to an enforcement officer upon request.
 - All persons undertaking the fish CR under the authority of the Permit Holder will do so under the direction and oversight of the Permit Holder and will be familiar with the conditions of the Permit.

3.1.2.1 Fishing licence

Obtain a licence to fish for the fish CR.

- Obtain a licence under section 52 of the [Fishery \(General\) Regulations](#) when the CR activity is to be conducted in waters where the fishery is managed by DFO.
- Obtain a licence to fish (often referred to as scientific collection permit) for the CR activity when the fishery is managed by the provinces or territories. Consult the applicable websites for more information.

3.1.2.2 Species at risk

If species at risk are likely present, a *Species at Risk Act* permit may be required.

- Determine if there are critical habitats and distribution data for aquatic species listed under the *Species at Risk Act* in your area by checking the DFO [aquatic species at risk map](#).
- Consult the [Species at risk public registry](#) for any species-specific information relevant to their capture and relocation.
- Seek and obtain a *Species at Risk Act* permit if the CR has the potential to affect an aquatic species at risk unless the activity is permitted by a recovery strategy or an action plan.
- Implement any relevant species-specific handling protocols and guidelines published for the species at risk in question.



3.1.2.3 Aquatic invasive species

When conducting fish CR, include measures to prevent the introduction and spread of [aquatic invasive species](#).

- Follow the [Aquatic Invasive Species Regulations](#) when planning and conducting fish CR activities.
- Contact DFO or the appropriate provincial or territorial agency to [report an aquatic invasive species](#).
- [Clean, drain, dry and decontaminate](#) all gear used before and after it is used for fish capture, handling, holding and transport.

3.1.3 Transmittable diseases

There are aquatic species such as viruses, bacteria, parasites and other micro-organisms that can have devastating impacts in the aquatic environment. When conducting fish CR, include measures to prevent the introduction and spread of transmittable aquatic diseases.

- Decontaminate all gear used for fish capture, handling, holding and transport.
- Consult the Canadian Food Inspection Agency's [Aquatic animal diseases website](#) for additional information on guarding against the entry of aquatic animal diseases and helping control their spread.
- Refer to region-specific guidance on transmittable diseases (for example, whirling disease in British Columbia and Alberta).

3.1.4 Isolations

Temporarily isolating fish from in-water projects is a critical step that occurs during most fish CR to ensure the safety of fish. Properly designed and installed fish exclusion barriers prevent fish from re-entering the isolated area once removed, protect aquatic organisms from potential stress and injury, and help maintain regulatory compliance. Exclusion barriers must be tailored to site-specific conditions, ensuring they effectively exclude fish from the work area. Fish exclusion barriers are intended solely for fish exclusion (for example, screen or mesh). Different types of barriers are used to exclude flow and to manage sediment-laden water. In some cases, fish CR does not involve fish isolation (for example, CR of non-motile marine invertebrates prior to placement of material on habitat).

- Follow the DFO [Standard: In-water site isolation](#) if isolation of the project work site from the surrounding aquatic environment is required for the purpose of excluding flow and to manage sediment-laden water.
- Use fish exclusion barriers to temporarily isolate the designated area where the fish CR will occur.
- Install fish exclusion barriers securely to ensure isolation effectiveness throughout fish CR.
- Regularly observe fish exclusion barriers to ensure structural integrity and isolation effectiveness during all phases of the fish CR.
- Keep fish exclusion barriers in place until the project requiring the fish CR has been completed.

3.1.5 Pushing, herding or corraling

The primary goal of pushing, herding or corraling is to minimize the number of fish requiring CR by encouraging fish to leave the work area before isolation through passive, low-stress methods. These



approaches reduce the number of fish exposed to the risk of stress or injury from CR, and improve the efficiency of fish CR efforts.

- Push, herd or corral fish away from the work area prior to isolation to minimize the number of fish requiring CR.
- Install fish exclusion and/or isolation barriers in a manner that allows for a single-directional movement to naturally herd or push fish out of the area during the isolation process.
- Push, herd or corral fish towards an escape route using electricity, nets, curtains or alternate means of directing fish.
- Conduct pushing, herding or corralling activities in a manner that reduces stress to fish.

3.1.6 Dewatering

Projects may involve isolation and dewatering activities. When used appropriately, dewatering, in conjunction with fish CR, can be an effective tool for concentrating fish within a smaller area, making the fish CR process more efficient. By gradually lowering water levels, fish are passively concentrated into confined sections of the water body, allowing for quicker and more targeted CR efforts. Proper planning and execution of dewatering can significantly reduce the time and effort required for fish CR and, therefore, reduce the risk of stress or injury from CR due to multiple capture efforts.

- Follow the DFO [Standard: In-water site isolation](#) to isolate and dewater the worksite if isolation of the project work site from the surrounding aquatic environment is required.
- Follow the DFO [Interim standard: Water intake end-of-pipe fish screen](#).
- Maintain water quality during the dewatering process (for example, temperature, dissolved oxygen, sediment).

3.2 Capture

Capture effectiveness is influenced by the type of non-lethal fish capture gear used and also by factors such as water conditions (for example, clarity, flow, depth), environmental variables, habitat characteristics, and substrate composition. A [QEP](#) will determine the best method(s) based on the site-specific conditions.

- Use only non-lethal fish capture methods.
- Select and combine passive and/or active fish capture methods to account for environmental conditions, to ensure all fish species and sizes in all habitat types are effectively targeted, and to reduce risk of stress, injury and mortality.
- Refer to applicable provincial or territorial permits and guidance documents for specific fish capture methods that may be required or restricted by those jurisdictions.

3.2.1 Passive methods

Passive capture methods involve the use of entrapment devices to capture fish without active movement by humans or machines. Entrapment devices capture fish that enter an enclosed area through one or more funnel or V-shaped openings that hinder escape after entrance.



- Use passive fish capture methods such as entrapment devices (for example, hoop nets, trap nets, Gee-type minnow, windermere and pot devices).

3.2.1.1 Entrapment devices

- Use entrapment devices only in slow-moving or deep water to target both small and large-bodied fishes.
 - Set entrapment devices in areas with sufficient water depth to submerge the entrances for the duration of deployment.
 - If the devices are to be used in the [marine environment](#), they must be emptied while still submerged and before the lowering of the tides.
 - Select entrapment device mesh and opening size based on target fish species and life stages.

3.2.2 Active methods

Active fish capture methods refer to fish collection techniques where humans actively utilize moving nets or devices to pursue and collect fish. These techniques require continuous operation during use and rely on mobility or direct interaction to target fish within a specific area.

- Use active fish capture methods such as dip netting, electrofishing, seine netting, and hand capture.
- Refer to applicable federal, provincial or territorial permits and guidance documents for required operator competencies, specific water quality condition limitations, gear restrictions, specific collection restrictions and other relevant recommendations when using active fish capture methods.

3.2.2.1 Dip netting

- Use dip netting alone or in combination with other active fishing techniques (for example, electrofishing, seine netting, angling).
 - Select dip netting mesh sizes and materials based on target fish sizes and life stages.

3.2.2.2 Electrofishing

- Use electrofishing to strategically target fishes within freshwater environments. Electrofishing is not suitable for use in the [marine environment](#).
 - Apply electrofishing consistently across the entire isolated wetted area of the project to maximize capture efficiency, ensuring water depth does not exceed the vertical extent of the electric field.
 - Employ backpack electrofishing in wadeable areas with compact substrate.
 - Employ boat or float electrofishing in non-wadeable areas or areas with soft substrate.
 - Select electrofishing settings based on water quality conditions, fish species and fish size.
 - Refer to applicable federal, provincial or territorial permits and guidance documents for required operator competencies, specific water quality condition limitations, and gear restrictions of those jurisdictions.

3.2.2.3 Seine netting

- Use seine netting in slow-moving water with limited vegetation and debris.
 - Use seine nets in areas with water depth that does not exceed the height of the net.



- Select seine net dimensions based on water depth and size of the work area, and mesh size based on target fish sizes.

3.2.2.4 Hand capture

- Use hand capture to collect non-motile or sedentary fish species.
 - Refer to applicable federal, provincial or territorial permits and guidance documents for specific collection restrictions and recommendations by those jurisdictions.

3.2.3 Clearance criteria

A variety of appropriate passive and/or active fish capture methods must be deployed through successive passes until all fish have been captured and relocated away from the project area and its influence.

- If no other specific permits or guidance applies, fish CR may conclude after 2 consecutive attempts with each gear type (that is, active and/or passive methods covering the entire wetted project area) that result in zero fish being captured.
- If site isolation measures are compromised or if there are significant delays in the project following fish CR, fish CR efforts must be re-implemented to ensure the continued protection of fish in the affected area.
 - Refer to applicable federal, provincial or territorial permits and guidance documents for specific clearance criteria (that is, minimum effort required, maximum fish captured by species during fishing efforts) of those jurisdictions.

3.3 Handling

Handle captured fish in a manner that minimizes the risk of stress, injury and mortality. Proper planning will help to minimize handling time.

- Land and handle fish using dip nets made of soft and non-abrasive material.
- Use wet, clean, bare hands or decontaminated, non-abrasive gloves to prevent removing the mucous barrier from fish.
- Minimize air exposure, particularly in extreme cold or heat conditions.
- Refer to applicable federal and provincial or territorial permits and guidance documents for minimum fish data collection requirements and tagging procedures of those jurisdictions.
 - Enumerate captured fish by species prior to release, ensuring that these actions do not jeopardize their survival.

3.4 Holding and transport

Hold and transport fish in a manner that minimizes the risk of stress, injury and mortality.

- Minimize hold times.
- Minimize transport distances.
- Separate fish by their respective species and life stages in the appropriate size and number of



containers to limit overcrowding and predation.

- Monitor fish in holding containers for signs of stress.
- Monitor water quality conditions in holding containers (that is, water temperature and dissolved oxygen); refresh water as needed.
- Minimize differences in temperature and oxygen concentrations between source water and water in holding containers.
- Consider holding fish in insulated, covered and aerated containers and out of the elements during extreme weather or longer transport times.
- Refer to applicable federal and provincial or territorial permits and guidance documents for specific fish-holding and transport restrictions of those jurisdictions.

3.5 Release

Release fish in a location and manner that minimizes risk of stress, injury and mortality. Fish should be released immediately upstream or downstream of the capture site, beyond the influence of the project. Migrating fish should be released either upstream or downstream based on their current life stage requirements. The release sites should be easily accessible and potential construction-related disturbances (for example, noise, vibration, light pollution) at these sites should be considered. The functions, features and attributes of the receiving habitat should be similar to the capture site.

- Safely relocate fish from the isolated work area to an appropriate location in the same watercourse or water body.
- Release fish into waters with similar habitat functions, features and attributes to the capture site.
- Release fish in multiple locations within the same watercourse or water body to maintain natural species density and limit overcrowding and predation (if a large quantity of fish is to be released).
- Monitor released fish to ensure that they adapt to conditions in the receiving environment.
 - Select alternative fish release location(s) if fish are not adapting to their receiving environment.
- Refer to applicable federal, provincial or territorial permits and guidance documents for authorized release locations and disposal procedures for mortalities for those jurisdictions.

3.6 Reporting

- Submit data and reports required for all project-specific permits, licences, authorizations and notifications.
- Report fishing method, effort and capture data (that is, species and abundance) to DFO in sufficient detail to demonstrate clearance criteria were achieved.
- As a minimum, use the [summary tables](#) provided in this standard for both active and/or passive capture methods.



Table 1: Fish CR example summary table for passive gear types. MT = Gee-style minnow trap. h = hours.

Pass number	Gear type	Start date/time	End date/time	Number of devices	Effort (h)	Cumulative (effort(h))	Number of species x captured	Number of species y captured	Total number of fish captured
1	MT	2024-12-01 13:30	2024-12-02 09:30	8	192	192	32	35	67
2	MT	2024-12-02 13:30	2024-12-03 09:30	8	192	384	5	5	10
3	MT	2024-12-03 13:30	2024-12-04 09:30	8	192	576	3	2	5
4	MT	2024-12-04 13:30	2024-12-05 09:30	8	192	768	2	1	3
5	MT	2024-12-05 13:30	2024-12-06 09:30	8	192	960	0	0	0
6	MT	2024-12-06 10:30	2024-12-06 11:30	8	192	1152	0	0	0

Table 2: Fish CR example summary table for active gear types. BPEF = Backpack electrofishing. s = seconds

Pass number	Gear type	Start date/time	End date/time	Area fished (m ²)	Effort (s)	Cumulative effort (s)	Number of species x captured	Number of species y captured	Total number of fish captured
1	BPEF	2024-12-02 09:45	2024-12-02 10:45	300	310	310	5	5	10
2	BPEF	2024-12-03 09:45	2024-12-03 10:45	300	306	616	3	2	5
3	BPEF	2024-12-04 09:45	2024-12-04 10:45	300	307	923	2	1	3
4	BPEF	2024-12-05 09:45	2024-12-05 10:45	300	309	1,232	0	0	0
5	BPEF	2024-12-06 09:45	2024-12-06 10:45	300	310	1,542	0	0	0



4.0 Glossary

Fish: As defined in the *Fisheries Act*, fish includes:

- parts of fish,
- shellfish, crustaceans, marine animals and any parts of shellfish, crustaceans or marine animals, and
- the eggs, sperm, spawn, larvae, spat and juvenile stages of fish, shellfish, crustaceans and marine animals.

Marine environment: Comprises all ocean, coastal waters and estuaries, including intertidal zones and salt water marshes, and extending, in the case of watercourses, up to the freshwater limit.

Qualified environmental professional (QEP): A person experienced in identifying and analyzing risks to fish and fish habitat generated from various works, undertakings or activities conducted in or near water, and implementing management measures to avoid and mitigate those risks. They possess a post-secondary degree or diploma in biological, geophysical or environmental sciences and are referred to as:

- applied scientists
- aquatic biologists
- environmental consultants
- fisheries biologists
- fisheries technicians
- fluvial geomorphologists
- natural resource consultants