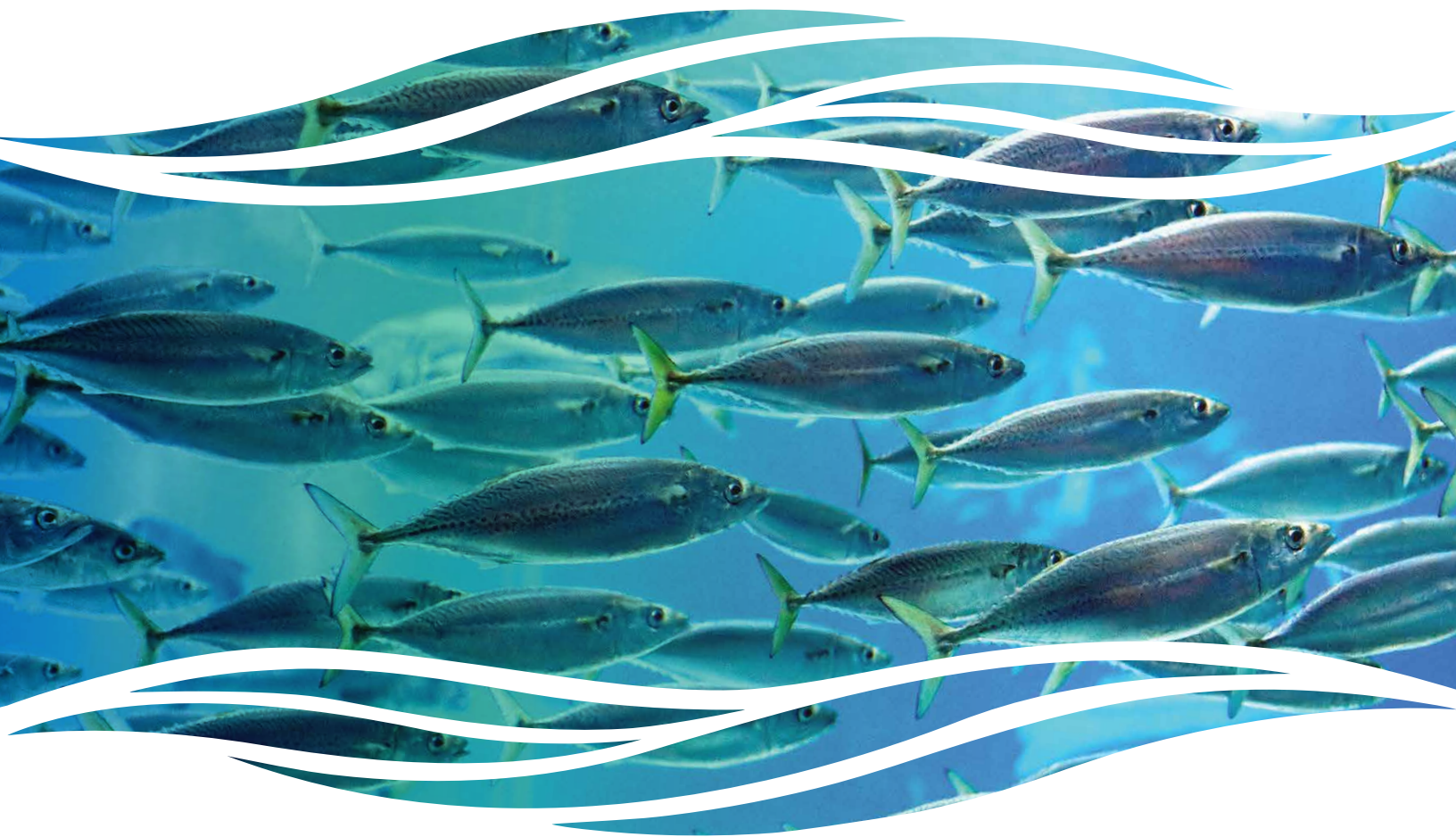




Public Report on the Fisheries Protection Program Monitoring Efforts



**Public report on the monitoring activities during the first year
of implementation of the National Monitoring Framework (2015)**

April 1, 2015 to March 31, 2016

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1 Introduction

The Fisheries Protection Program (FPP) of Fisheries and Oceans Canada (DFO) is responsible for the administration of the fisheries protection provisions of the *Fisheries Act*. Most notably, the FPP administers the prohibition in section 35 of the Act which states “No person shall carry on any work, undertaking or activity that results in serious harm to fish that are part of a commercial, recreational or Aboriginal fishery, or to fish that support such a fishery” where serious harm to fish is defined in the Act as “the death of fish or any permanent alteration to, or destruction of, fish habitat”. Fish that are part of a commercial, recreational or Aboriginal fishery, are interpreted to be those fish that fall within the scope of applicable federal or provincial fisheries regulations as well as those that can be fished by Aboriginal organizations or their members for food, social or ceremonial purposes, or for purposes set out in a land claims agreements. The FPP is also responsible for the administration of certain provisions of the *Species at Risk Act* [i.e., Sections 32 and 33, Subsection 58(1)], and has specific legislative responsibilities in relation to federal environmental assessment regimes including, among others, the *Canadian Environmental Assessment Act, 2012*, and regimes in the territories and under land claims agreements.

The FPP staff undertake the review of proposed works, undertakings and activities that may affect fish and fish habitat, and provide advice to ensure compliance with the *Fisheries Act* and the *Species at Risk Act*. This may also include issuing authorizations under the *Fisheries Act* and permits under the *Species at Risk Act*, when appropriate, with conditions for offsetting, monitoring, and reporting.

It is the proponent’s responsibility to know their legal obligations and to comply with laws and regulations. When serious harm to fish cannot be avoided, a proponent should request an authorization. In all cases, it is the project proponent’s responsibility to implement measures to avoid, mitigate or offset impacts to fish and fish habitat. In cases where residual impacts to fish and fish habitat are likely, the proponent is required, through an authorization or permit, to provide monitoring information that will demonstrate whether the management measures that they have undertaken are functioning as planned.

When the fisheries protection provisions of the *Fisheries Act* came into force on November 25, 2013, the FPP launched its Projects Near Water website^{1,2}, where project proponents are able to access the FPP's recommended best practices for avoiding harm to fish and fish habitat when carrying out works, undertaking or activities. The website also includes project self-assessment criteria to assist in determining the need for a DFO review. Proponent self-assessment criteria consist of lists of works, undertaking or activities and water body types for which a DFO review is not required, provided DFO best practices (entitled "Measures to Avoid Causing Harm to Fish and Fish Habitat") are implemented. When a proponent is unable to meet the self-assessment criteria or avoid serious harm to fish, they are advised to complete a Request for Review Form and submit it to DFO for review. As part of the review process, the FPP will assess if serious harm to fish and impacts to aquatic species at risk can be avoided, and provide advice as to whether or not the project can go ahead without a *Fisheries Act* authorization or *Species at Risk Act* permit.

The FPP evaluates the administration of, and compliance with, the provisions of the *Fisheries Act* and *Species at Risk Act*, as well as conformity of projects with Departmental guidelines and resulting advice (e.g. Letters of Advice) through site visits and the review of proponents monitoring reports. The FPP National Monitoring Framework sets out national targets and monitoring strategies to ensure a coordinated and nationally-consistent risk-based approach to monitoring. Monitoring is guided by national data collection standards and templates and is uploaded to a national database for further analysis of results. The operational details for implementing this framework are described in Regional Strategic Monitoring Plans; these plans take into consideration regional priorities along with trends, risk factors, environmental stressors, historical context and the ability to partner with other organizations. Overall, the FPP National Monitoring Framework and Regional Strategic Monitoring Plans are intended to promote a nationally consistent and coordinated approach to monitoring.

This report is provided in an effort to improve the transparency in DFO's activities to monitor projects that may affect fish and fish habitat, and to assess the effectiveness of the National Monitoring Framework and associated strategic monitoring plans. In so doing, this report establishes a baseline from which improvements to DFO's monitoring practices and approaches can be developed and evaluated. This initial report focuses on the FPP monitoring efforts from April 1, 2015 to March 31, 2016, as this period corresponds to the first year following the approval of the National Monitoring Framework.

¹ <http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html>

² Projects in New Brunswick, Nova Scotia or Prince Edward Island are initially evaluated through the "one-window approach" by the province. See section 7.1 of this report for more information.



2 Previous Program Evaluations

The Department has been subject to several audits, evaluations and reviews of activities administered by the FPP over the last two decades. Some of the most significant ones are described below.

- The report of the Commissioner of the Environment and Sustainable Development published in 1998 found a lack of rigorous assessments related to fish habitat under the *Fisheries Act*.
- The report of the Commissioner of the Environment and Sustainable Development published in 2001³ highlighted insufficient and inconsistent data gathering to understand the nature and trends of key threats to the Great Lakes basin.
- Harper and Quigley published a review in 2005⁴ entitled, “No Net Loss of Fish Habitat: A Review and Analysis of Habitat Compensation in Canada”, in *Environmental Management*. They concluded that only 37% of compensation projects in Canada were achieving their goal of No Net Loss of habitat productivity. Further, they identified inadequacies in recordkeeping, documentation and monitoring related to habitat compensation (i.e. offsetting) projects.
- The report of the Commissioner of the Environment and Sustainable Development published in 2009⁵ noted that “Fisheries and Oceans Canada and Environment Canada cannot demonstrate that fish habitat is being adequately protected as the *Fisheries Act* requires”, because of several factors including inadequate and insufficient monitoring.

³ http://publications.gc.ca/collections/collection_2013/bvg-oag/FA1-2-2001-1-9-eng.pdf

⁴ <http://link.springer.com/article/10.1007%2Fs00267-004-0114-x>

⁵ http://www.oag-bvg.gc.ca/internet/English/parl_cesd_200905_01_e_32511.html





- In 2012, Commissioner Cohen concluded, in his report *The Uncertain Future of Fraser River Sockeye*⁶, that “DFO is not achieving its goal of net gain of productive fish habitat. Nor is it achieving No Net Loss — the guiding principle of the first goal of the 1986 Habitat Policy. Further, DFO measures neither habitat loss nor gain.”

These reports have been invaluable to identify opportunities for continuous improvements contingent to availability of resources.

⁶ <http://publications.gc.ca/site/eng/9.696130/publication.html>





3 Fisheries Protection Program

3.1. Mandate

In April 2013, the Habitat Management Program was transformed into the Fisheries Protection Program. Changes to the organization were made to better align the FPP with the amendments to the *Fisheries Act* and how fisheries are protected, and to align protection efforts with management of commercial, recreational and Aboriginal fisheries. Under this new structure, the FPP manages impacts to commercial, recreational and Aboriginal fisheries resulting from habitat degradation or loss, alterations to fish passage and flow, or introductions of aquatic invasive species.

3.2. The FPP Policy Approach

To explain the fisheries protection provisions of the *Fisheries Act* to Canadians and to outline how the Department implements these provisions, DFO adopted the Fisheries Protection Policy Statement in October 2013. This policy statement focuses on the regulatory aspects of the FPP. The Policy further describes when works, undertakings or activities associated with development projects require an Authorization, that is, projects that are likely to result in a localized effect to fish populations or fish habitat in the vicinity of the project. The principles contained in the Policy Statement are applied to the review of project proposals and to monitoring.

3.3. Structure of the FPP

The FPP is divided into six administrative regions: Pacific (British Columbia and Yukon); Central and Arctic (Alberta, Saskatchewan, Manitoba, Ontario, Northwest Territories and Nunavut); Quebec (Quebec); Gulf (New Brunswick and Prince Edward Island); Maritimes (Nova Scotia) and Newfoundland and Labrador (Newfoundland and Labrador). The FPP is managed through 16 service delivery points (Vancouver, Nanaimo, Prince Rupert, Kamloops, Whitehorse, Yellowknife, Edmonton, Regina, Winnipeg, Burlington, Quebec City, Mont-Joli, Moncton, Dartmouth, St. John's and the National Headquarters in Ottawa).



3.4. Verification of Compliance and Effectiveness

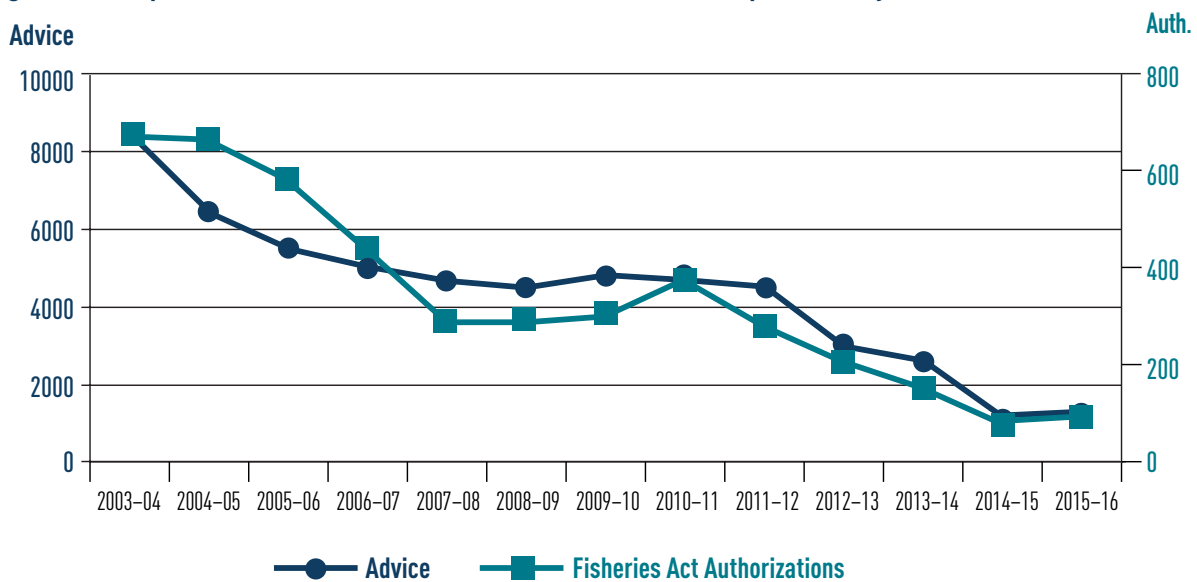
The majority of the FPP monitoring efforts are currently focused on verifying that projects are undertaken in conformity with the FPP advice, authorizations or permits, and are in compliance with the fisheries protection provisions of the *Fisheries Act* and the provisions of the *Species at Risk Act* (see section 6.1 of this report on compliance monitoring).

The monitoring undertaken by the FPP is done on site and by desktop audits. When performing site visits, the FPP gathers information in order to verify compliance with the legislation. The FPP also uses the information gathered in the field to verify the effectiveness of the avoidance, mitigation and offsetting measures, and to confirm that measures implemented to conserve and protect fisheries productivity are having the desired result (see section 6.2 of this report on effectiveness monitoring). The FPP conducts desktop audits of information provided by either the project proponent or other regulators (e.g. Environment Canada, National Energy Board, Canadian Nuclear Safety Commission, provinces, etc.) to assess whether the proponent is following requirements and whether measures being put in place are functioning as expected. Should the desktop audit give rise to concerns about compliance or effectiveness, a follow-up site visit would be considered by the FPP.

3.5. Evolution of FPP Advice and Authorizations

Since the early 2000s, both the amount of advice and number of Authorizations issued by the FPP have decreased significantly. Figure 1 illustrates the decline in the amount of advice provided and the number of Authorizations issued for each fiscal year since 2003–04.

Figure 1: Temporal trends for Authorizations issued and advice provided by the FPP



This trend may be explained by numerous initiatives during this period that were designed to focus efforts on high-risk projects where project-specific advice was required, and use of alternative guidance tools such as standards and guidelines for projects of lower risk.

In 2005, as part of the Environmental Process Modernization Plan (EPMP), a risk-management approach was implemented that emphasized establishment of upfront *Fisheries Act* requirements in order to streamline the review of projects, and to reduce the level of DFO involvement in the reviews of low-risk projects. DFO implemented a Risk Management Framework in 2006; after which DFO continued to develop and implement “Operational Statements” (OS) to manage low-risk projects without the need to seek project-specific DFO advice. Class Authorizations (i.e. agricultural municipal drains in Ontario and Placer mining in the Yukon) started to be tracked separately from project-specific *Fisheries Act* Authorizations in 2006–07. In 2012–13, the *Fisheries Act* was amended; the FPP and Conservation & Protection Directorate (C&P — DFO’s enforcement branch) further focussed activities on projects posing the greatest risk to the productivity of fisheries. The FPP realigned its resources towards the establishment of partnerships, standards and guidelines while reducing internal monitoring capacity and effort.

Table 1 provides a summary of the total number of development proposals (i.e. referrals), authorizations issued and advice provided by the FPP, by regions, during the fiscal year 2015–16.

Table 1 — Summary of number of Referrals received, Authorizations and Class Authorizations issued, and amount of advice provided for fiscal year 2015–16

FPP Referrals/Authorizations/ Advice for Fiscal year 2015–2016	Pacific	Central & Arctic	Quebec	Gulf	Maritimes	Newfoundland and Labrador	Total
Referrals received	553	1416	192	393	336	206	3096
Advice* provided	109	405	231	232	92	156	1225
Authorizations issued	14	37	16	5	9	1	82
Class Authorizations issued**	83	113	N/A	N/A	N/A	N/A	196

* Advice provided includes: written advice to federal agencies, provincial/territorial/other agencies and boards, letters of advice to proponent and mitigation measures provided to permitting agencies.

** Class Authorizations are streamline approvals process under the Fisheries Act and Species at Risk Act for agricultural municipal drains in Ontario and for placer mining in the Yukon.





4 Monitoring Framework

In 2015, the FPP implemented a National Monitoring Framework. The goal of this Framework is to improve the effectiveness and consistency of how the measures to avoid, mitigate or offset impacts to fisheries productivity are being applied. The Framework identifies monitoring objectives and provides guidance to the FPP's regional teams on how to develop Regional Strategic Monitoring Plans. In so doing, the Framework contributes to a nationally-consistent risk-based monitoring program, while allowing for regional priority setting for targeted monitoring activities. The monitoring efforts are prioritized based on the risk to fisheries productivity posed by the project being monitored.

4.1. Regional Strategic Monitoring Plans

The implementation of the Framework started with each region establishing a monitoring plan describing:

- the regional monitoring context;
- current monitoring initiatives and their status;
- trends in development activities;
- fish and fish habitat status in the region;
- monitoring focus of the region; and
- processes in place to report monitoring results.



Regional areas of focus for monitoring activities (summary provided in Table 2) were identified within regional monitoring plans in order to clearly establish project types to be monitored within a given year. Areas of focus were selected by taking into consideration various factors, including but not limited to:

- sensitivity of fisheries resources and the extent of potential effects;
- compliance history and established risks;
- fisheries management objectives;
- opportunities for collaboration with external partners;
- investment of resources and cost effectiveness;
- trends in development activities and industry sectors; and
- gaps in current and past regional monitoring approaches.

Table 2 — Areas of focus identified in the Regional Strategic Monitoring Plans for fiscal year 2015–16.

Areas of focus	Regions					
	Pacific	Central & Arctic	Quebec	Gulf	Maritimes	Newfoundland and Labrador
Culvert and watercourse crossings		x	x	x	x	x
Shoreline stabilization		x	x	x		x
Pipelines				x		
Small craft harbours			x	x	x	
Occurrences	x			x		x
Fish passage / ladders				x	x	x
SARA Permits	x	x				
<i>Fisheries Act</i> conditions in Environmental Assessments	x				x	
Class Authorizations	x	x				
Habitat banking			x		x	
Dredging and excavation		x	x	x	x	
Dams			x	x	x	x
Mines			x			x
Auditing regulatory partners	x	x		x	x	
Watercourse realignment			x			
Restoration projects and water withdrawals					x	





5 Joint Monitoring Initiatives

The FPP has arrangements with certain federal and provincial agencies conducting initial review of project plans, under their respective jurisdictions, and determining whether project proponents require the FPP advice or project review under the fisheries protection provisions of the *Fisheries Act* or provisions of the *Species at Risk Act*. In addition, these agencies also monitor the compliance of these projects with their respective legislations. The arrangements therefore serve to streamline the review process as well as associated monitoring activities.

5.1. Partnerings with Provinces and Territories

“One-window” Approach

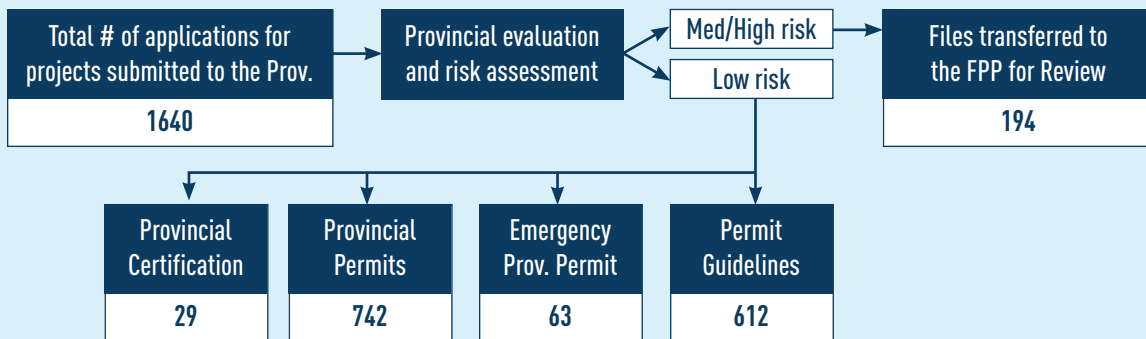
The FPP has agreements with New Brunswick, Prince Edward Island and Nova Scotia that allow provincial agencies to perform initial reviews of projects to determine whether following provincial advice is sufficient to avoid impacts to fisheries, or if additional FPP review is required. This process is referred to as the “one-window” approach. When appropriate, joint monitoring of the projects is conducted by the province and the FPP.



Monitoring with the Province of New Brunswick:

Through the one-window approach, the FPP — Gulf Region directly reviewed less than 12% of the total number of provincial applications for work in or near watercourses. In the remainder of cases, provincial review processes incorporated the FPP requirements. The FPP — Gulf Region reviewed a sub-set of projects reviewed by the Province to ensure that the FPP requirements were being met, and to make adjustments if needed. These included projects such as boat launch ramps, pipeline and cable crossings, road crossings (bridges and culverts) and shoreline protection.

Figure 2: Summary of the New Brunswick review process completed for 2015–16.



Monitoring with the Province of Prince Edward Island:

According to the Prince Edward Island *Watercourse, Wetland and Buffer Zone Activity Guidelines*, maintenance of existing instream sediment basins or silt traps requires a provincial regulatory review and a federal advisory review. In 2015–2016, the applicability of this process was assessed to determine whether it should remain the same or if modifications should be made to improve the process. Monitoring for compliance and effectiveness of all management measures was therefore jointly conducted by federal and provincial colleagues while dredging activities were being undertaken as well as after their completion. Eleven (11) projects were monitored. Results were compiled and integrated, and based upon the level of risk identified it was concluded that, with the existing management measures being applied, these activities were adequately managed by the provincial guidelines and regulation, therefore reviews for this activity type should no longer require a federal advisory component.

Yukon Placer Mining Class Authorization

In the Yukon, the majority of placer gold mining is managed by a “class” *Fisheries Act* authorization system. These class-type authorizations are issued at the watershed level and are intended for Placer mining projects that have predictable and common impacts on fish and fish habitat, and for which standard mitigation and offsetting measures can be prescribed. In 2008, this class authorization system was modernized through the implementation of the Fish Habitat Management System for Yukon Placer Mining (the Management System).

The Management System is supported by two distinct monitoring initiatives: The first to verify industry compliance with the standards and the second to verify the effectiveness of the Management System in achieving its objectives of a viable Yukon placer mining industry and the conservation and protection of fish and fish habitat supporting fisheries.

Natural Resource Officers employed by the Yukon Territorial Government are responsible for carrying out the inspections and monitoring of placer mines to determine compliance with the *Fisheries Act*. The FPP supports the Yukon government by providing the Natural Resource Officers with training and necessary authorities under the *Fisheries Act*. In 2015, 542 compliance inspections were completed by Yukon government officers at 294 active (i.e., undertaking mining or restoration activities) placer gold mines.

Effectiveness monitoring of class authorizations by Yukon government officers involves annual monitoring of water quality, aquatic health and economic health. The economic health and water quality monitoring is carried out by Yukon government, while the aquatic health monitoring is shared between the FPP and the Yukon government. Additionally, Yukon First Nations are invited to share traditional knowledge that may add to the monitoring results. Annual monitoring results are posted on the Yukon Placer Secretariat Website.⁷ The combined results inform adaptive management changes to the standards and allowable practices.

5.2. Partnering with other Organizations

Ontario Agricultural Drains Class Authorization

Within Ontario, many rural watercourses are managed under the *Ontario Drainage Act*. The FPP has worked with the Drainage Superintendents of Ontario, the Ontario Federation of Agriculture, the Ontario Ministry of Agriculture, Food and Rural Affairs, the Rural Ontario Municipal Association, and Ontario Conservation Authorities to develop a streamlined class authorization process for the review and approval of maintenance works within watercourses designated under the *Ontario Drainage Act* as Agricultural Drains. The Province of Ontario and the FPP have developed a single notification form to streamline the review of maintenance works under the *Fisheries Act*, *Species at Risk Act*, *Conservation Authority Act* and the provincial *Endangered Species Act*. Monitoring by the FPP of the works captured under the class authorization (agricultural drains maintenance) includes monitoring 10% of the drains approved through the class authorization process, and has included financial support effectiveness monitoring work looking at the recovery of fish and fish habitat following drain maintenance.

⁷ http://www.yukonplacersecreariat.ca/monitoring_results.html

Monitoring in the Alberta Oil Sands Region

Several monitoring initiatives in partnership with other organizations take place in Alberta. Of note, the FPP is collaborating on monitoring initiatives that include universities and industry; these initiatives include:

- In Alberta and the Northwest Territories, the FPP is a member and advisor to the **Peace-Athabasca Delta Ecological Monitoring Program** — (PADEMP). The PADEMP is comprised of provincial, territorial and federal government, researchers, non-government and Indigenous representatives. Incorporating both Indigenous knowledge and western science, PADEMP was initiated to develop an integrated monitoring program that can measure, evaluate and communicate the state of the Peace-Athabasca Delta, including changes to the ecosystem that result from cumulative regional development.
- The FPP is a co-chair on the **Fisheries Sustainable Habitat Committee** (FiSH Committee) which is comprised of representatives from industry and government. The Committee's focus is to bring efficiency on meeting the conditions of *Fisheries Act* authorizations and share lessons learned relating to the construction of fisheries offsets in the oil sands region. This joint industry-government partnership moves beyond individual project developments, incorporating an integrated regional approach to fish habitat accounting (validating and refining fish Habitat Suitability Index models) as well as coordination of compliance monitoring and impact validation (i.e. effectiveness monitoring), as required.



Photo by Shane Petry: Westslope Cutthroat Trout (Oncorhynchus clarkii lewisi).

In Alberta, the FPP biologists have completed monitoring site visits in collaboration with DFO's Conservation and Protection Program (C&P) and Species at Risk Program (SARP), and provincial biologists on projects where potential threats to aquatic species at risk require a higher level of regulatory oversight. Of note, the FPP, SARP and C&P jointly monitored projects in southern Alberta with a focus on habitat protection for Westslope Cutthroat Trout. The purpose of the targeted monitoring was to follow-up on a number of cases of potential non-compliance brought to the attention of the SARP and the FPP, and subsequently referred to C&P. The joint monitoring provided an important opportunity to collaboratively inspect and assess sites, prioritize potential compliance issues based on potential threats, enhance internal integration, and collaborate with Government of Alberta partners to continue to develop a strategic approach to compliance and enforcement activities.



5.3. Monitoring Agreements with other Federal Regulators

DFO leverages partnering opportunities with other government departments in support of the consistent and efficient administration and enforcement of the fisheries protection provisions of the *Fisheries Act*. DFO has arrangements with these other departments, to reduce the overlap in the review and monitoring of projects of common interest. Some of these partnering agreements include:

- **National Energy Board (NEB)**

The “Memorandum of Understanding between Fisheries and Oceans Canada and National Energy Board for Cooperation and Administration of the *Fisheries Act* and the *Species at Risk Act* Related to Regulating Energy Infrastructure” was signed December 16, 2013. Under this arrangement, the NEB conducts preliminary reviews of projects it regulates for potential impacts to fish and fish habitat. Those for which authorizations may be required are directed to the FPP. The NEB conducts regular inspections to confirm compliance with conditions of *National Energy Board Act* (NEB Act) approvals. With the signing of the Memorandum of Understanding, NEB also inspects for unauthorized serious harm to fish, or non-compliance with conditions of *Fisheries Act* authorizations.

In the fiscal year 2015–16, NEB monitored 102 works, undertakings or activities. Of those, 97 were deemed to be compliant with NEB Act and *Fisheries Act* requirements for fish and fish habitat protection. Five were found in non-compliance with NEB Act requirements for fish and fish habitat protection and none were found in non-compliance with *Fisheries Act*; these incidents of non-compliance were dealt with through the NEB process.

During the same period, the FPP conducted site inspection of one NEB-regulated project and determined that the proponent was applying appropriate mitigation, which included DFO’s ‘Measures to Avoid Causing Harm’ and no compliance or enforcement action was required.

- **Canadian Nuclear Safety Commission (CNSC)**

The “Memorandum of Understanding between Fisheries and Oceans Canada and Canadian Nuclear Safety Commission for Cooperation and Administration of the *Fisheries Act* and the *Species at Risk Act* Related to Regulating Nuclear Materials and Energy Developments” was also signed December 16, 2013. Under this arrangement, the CNSC conducts preliminary reviews of projects it regulates for potential impacts to fish and fish habitat. Those for which authorizations may be required are directed to the FPP.

There is currently one *Fisheries Act* authorization in place subject to this MOU. Under the MOU, CNSC is responsible to ensure compliance with the conditions of this authorization. The proponent and the CNSC are working on the development of compliance verification criteria to be used to verify that all conditions listed in the *Fisheries Act* authorization are met.



- Environment and Climate Change Canada (ECCC) — Metal Mining Effluent Regulations (MMER)**

The Minister of ECCC is responsible for administering and the enforcing of the MMER established under the *Fisheries Act*. However, DFO continues to assist ECCC by providing expertise, as needed, on fish and fish habitat and in evaluating and administering habitat compensation plans submitted under section 27.1 of the MMER. Currently there are 27 Tailings Impoundment Areas (TIAs) listed in Schedule 2 of the MMER (Table 3). The FPP carries out monitoring, through site visits and review of proponent Monitoring Reports, to verify compliance and effectiveness of active projects.

Table 3 — Provincial and territorial distribution of listed TIAs under Schedule 2 of the MMER

Province or Territory	Nunavut	British Columbia	Saskatchewan	Manitoba	Ontario	Quebec	Newfoundland & Labrador	Total
Number of TIAs	3	7	1	1	4	3	8	27





6 Monitoring Activities

6.1. Compliance Monitoring

The objective of compliance monitoring is to determine whether the terms and conditions prescribed under a *Fisheries Act* authorization were implemented, and to verify compliance with the fisheries protection provisions of the Act. The bulk of the FPP monitoring efforts are put towards verifying compliance with the *Fisheries Act* and the *Species at Risk Act*, including verification of compliance with the conditions of authorizations, permits and the FPP advice to avoid and mitigate impacts. Compliance monitoring is conducted by completing site visits during or after project construction and by performing an audit of the required monitoring reports provided by the project proponents. During fiscal year 2015–16, the FPP verified compliance of 494 projects through site visits and audited 556 proponent monitoring reports for a total of 1050 compliance verification activities, over a period where the FPP provided advice close to 1225 times. During that period of time, 1150 authorizations were active. It is important to note that for various reasons, some projects may have been monitored multiple times, while others may not have been monitored during that time period.

When possible, the FPP first engages in compliance promotion activities with proponents to raise awareness and encourage voluntary compliance with the fisheries protection provisions of the *Fisheries Act*. When serious harm to fish and fish habitat occurs, the FPP, in collaboration with C&P (and other regulators if applicable), recommends the most appropriate enforcement actions based on the information available at that time. Enforcement actions range from an official warning to a recommendation to lay charges.



Table 4 — Summary of monitoring and enforcement activities for fiscal year 2015–16

Monitoring and enforcement activities	Regions						
	Pacific	Central & Arctic	Quebec	Gulf	Maritimes	Newfoundland and Labrador	Total
Projects monitored by site visit*	67	148	34	128	90	27	494
Proponent monitoring reports audited	318	47	76	26	72	17	556
Files where potential compliance issues with the <i>Fisheries Act</i> were observed	15	15	4	2	25	0	57
Warning issued	8	4	2	0	0	0	14
<i>Fisheries Act</i> direction	1	1	1	0	0	0	3
Charges laid	0	0	1	0	0	0	1
Alternatives to prosecution**	1	0	0	0	1	0	2
Convictions under Section 35(1) of the <i>Fisheries Act</i>	3	0	0	0	0	0	3

*Site visits were conducted on projects where paragraph 35(2)(b) Fisheries Act Authorizations or Letters of Advice were issued or for projects for which the proponent used the self-assessment tool on the FPP website (or the provincial guidelines in the Gulf and Maritimes regions.). A project may have had more than one site visit in 2015–16 so actual number of site visits can be greater than total projects monitored.

**Alternatives to prosecution include out-of-court settlements aimed at restoring impacts to fisheries.

6.2. Effectiveness Monitoring

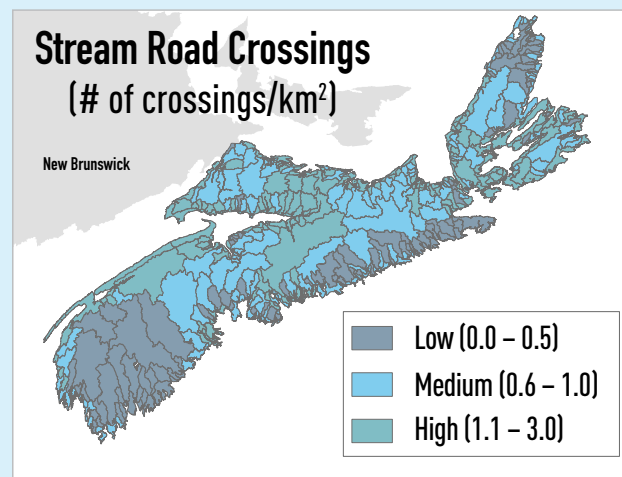
A complete and comprehensive effectiveness monitoring approach requires the implementation of a monitoring program that assesses fisheries productivity before (pre-construction or baseline) and after the project (post-construction), assesses control sites and the impacted areas, and assesses impact over multiple years.⁸ To date, the FPP has not developed these types of “full effectiveness monitoring” programs for most project types, given the high cost and effort required relative to the duration and scale of the projects typically being monitored. Instead, the FPP has undertaken monitoring of key indicators of fish habitat function to determine if management measures being adopted by project proponent are resulting in favourable conditions for fish (i.e. “functional effectiveness monitoring”).

⁸ http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2012/2012_060-eng.html



Example of a project involving functional effectiveness monitoring: Nova Scotia is home to a number of small watersheds that are highly developed with many historical impediments to fish passage. This has led to a high degree of fish habitat fragmentation. For this reason, the FPP monitoring during 2013 to 2016 in this part of the country has focussed on watercourse crossings, particularly on culverts. Results from the fiscal year 2015–16 monitoring study showed over 30% of the culverts installed (78 structures) were in non-conformity with the guidance/advice issued for their construction and were not likely effective in allowing fish passage. To address this situation, a working group has been created, with one of DFO's largest partners in Nova Scotia, to remediate these sites, and to improve fish passage at future sites. Ongoing work will be required to continue to improve the monitoring of the effectiveness of fish passage measures.

The map shows the number of stream crossings/km² of a given watershed using a quantile classification, which distributes data equally into three different categories. There are approximately 300 watersheds used in this analysis, so each crossing density classification grouping represents approximately 100 watersheds.



(Photo by Yves Dubé; FPP)

Example of a project involving functional effectiveness monitoring: In Quebec, monitoring activities in 2015–16 showed that, for most projects, management measures implemented were in compliance with DFO requirements. For example, as part of a project to build a marine terminal, the *Fisheries Act* authorization imposed various conditions, including: setting up an underwater noise mitigation device; monitoring cetaceans during pile driving operations, and halting of work when cetaceans came within a specified distance the project. The proponent was also required to document the implementation of these mitigation measures and to submit a monthly report to DFO. In total, pile driving operations were stopped 83 times because of the presence of cetaceans within the exclusion zone. Overall, the FPP is of the view that the mitigation measures imposed were properly implemented.



7 Moving Forward: Improved Indicators and Reporting on Outcomes

Since 2012, the FPP capacity to monitor development projects has been limited, resulting in a focus on compliance monitoring of those projects where the FPP provides project-specific advice, either through a letter of advice or a *Fisheries Act* authorization. With the introduction of the National Monitoring Framework, the development of nationally consistent targets for monitoring and the development of regional strategic monitoring plans have resulted in more proactive and structured monitoring efforts. However, the FPP continues to rely heavily on partners to complete monitoring of projects for compliance and effectiveness related to fisheries protection.

There is an important distinction between compliance and effectiveness monitoring, and how the results of both types of monitoring inform program and project management activities. Investment in effectiveness monitoring is required to begin to help assess the broader status of fish and fish habitat and ecosystem health monitoring.

7.1. Compliance Monitoring

Moving forward, compliance monitoring needs to be founded on a sound policy and legal base. This means that key policy objectives of the FPP need to be established and clearly communicated, and that the appropriated indicators of success need to be identified. Development of the conditions, criteria and processes related to compliance monitoring will need to be developed in close collaboration with DFO's C&P to ensure that they can be implemented within the existing legal framework, and to ensure that the results will support compliance monitoring and enforcement on particular projects, where appropriate. In addition, the FPP will need to continue to work with other regulatory partners (i.e. federal and provincial regulators) to share compliance monitoring practices, information and capacity. Developing this sound and balanced compliance monitoring program enables a broader compliance story related to fisheries protection to be told.



7.2. Effectiveness Monitoring

With respect to effectiveness monitoring, there is a need to develop effective, repeatable, evidence-based tools and approaches to monitoring. This will require collaboration with, and specific advice from, DFO Science to develop protocols and methodologies for scientifically defensible monitoring of effectiveness. Development of the FPP effectiveness monitoring approaches should follow two streams: the first to assess program effectiveness at maintaining the function of aquatic systems, the fish and their fish habitat (i.e. “functional effectiveness monitoring”); and the second to assess overall effectiveness in meeting the ultimate desired outcomes of the FPP related to the sustainability and ongoing productivity of fisheries (i.e. “full effectiveness monitoring”). In simple terms, the FPP should focus on delivering a strong functional effectiveness monitoring program for the majority of projects monitored, allowing rapid, cost-effective and direct monitoring of results related to small and medium scale projects. Monitoring related to sustainability and ongoing productivity of fisheries will require more ongoing DFO Science engagement, and collaboration with external partners, to develop and implement long-term full effectiveness monitoring programs for large-scale projects, or in areas where the effects of a large number of cumulative threats to fisheries need to be assessed and followed. In addition, full effectiveness monitoring of major projects can be negotiated with project proponents and required through legally enforceable conditions of authorization; thereby ensuring that monitoring is commensurate with the scale of a project’s potential effects on fisheries.

7.3. Cumulative Effects Monitoring

Monitoring the effects of a large number of cumulative threats to fisheries is more appropriately assessed through ecosystem health monitoring. By its very nature, ecosystem health monitoring is resource-intensive and, where it has been attempted, has involved partnerships between various stakeholders. Ecosystem health monitoring can inform DFO of the overall trends in availability and abundance of fish habitat, or the status of other ecosystem parameters. These parameters can then be used to define priorities for offsetting, identify key threats to fisheries productivity, and inform regulatory decisions surrounding activities that can result in serious harm to fish. Further work is necessary to identify objectives, priorities and partnerships that could guide re-investment in this type of monitoring in the future.

7.4. Methodology and Resources for Monitoring

Continued work is required to ensure monitoring methodologies and parameters are standardized so that data is consistently and properly captured to allow analysis that can identify trends in compliance, fish habitat function, and if possible, overall productivity. The analysis conducted to support this report has started to identify areas where improvements to existing data capture tools can be made, including improved database requirements, data entry protocols, geospatial information and reporting capabilities for various types of monitoring activities.



This report identifies opportunities for improvement and modernization of the FPP's monitoring program. Three main areas emerge to form the elements of a vision for an effective and adaptive monitoring program:

Better Plans

The FPP National Monitoring Framework and associated regional strategic monitoring plans should be improved to be more strategic, proactive and directional. Clear program objectives and indicators should be identified early in order to plan monitoring activities, assess information management requirements, and determine the level of resources needed to support each element of the monitoring program. Roles and responsibilities for monitoring activities within the FPP, with external partners, and with project proponents should be balanced and transparent.

Lastly, standard approaches to developing, implementing, updating and reporting on these plans should be put into practice, and would form the foundation for an adaptive FPP monitoring program.

Better Methods

The right tools and methodologies should be developed and implemented to assess compliance rates of projects with legal requirements, determine the effectiveness of advice being provided by the FPP, and to measure the effectiveness of the FPP in achieving its key objectives. This would include tools and approaches to:

- Ensure that requirements for compliance and reporting are clear so that they can be implemented and monitored effectively;
- Establish key questions, assessment criteria, field methodologies and data capture protocols for proponent and FPP compliance and effectiveness monitoring;
- Ensure consistent implementation and assessment of compliance and effectiveness monitoring, and the analysis of results, through the development of clear tools and training programs for staff;
- Evaluate existing data repositories and their ability to effectively and efficiently support future compliance and effectiveness monitoring priorities;
- Carry out analyses of proponent-led full effectiveness monitoring; and
- Support and resource effectiveness and ecosystem health monitoring by DFO and partners to assess and track trends in sustainability and productivity of fish habitat to inform future program priorities and decision making.

In addition, the FPP should establish processes and practices for monitoring and management of incidents of potential non-compliance with the *Fisheries Act* and the *Species at Risk Act* so that they can be tracked and results can be reported.





Better Communication

This report is a first step in engaging with Canadians more meaningfully on fisheries protection monitoring. Next steps should include further education and outreach with those interested in conserving and protecting the aquatic environment. Future reports should be released at regular intervals and focus on building and enhancing connections, cooperation and partnerships, and on supporting the development of tools, guidance and practices aimed at ensuring the protection of fish and fish habitat.





8 Conclusion

As the FPP continues to develop and improve, the level of monitoring resources required will be dependent on the level of effort desired and objectives of the monitoring activities. It will be important to ensure that improvements to monitoring systems are scalable, in that they can be implemented and maintained and different levels of intensity and investment, based on FPP needs. It will be important to ensure adequate resources are allocated to implement monitoring priorities.

