
# Fish and Wildlife Special Purpose Account Annual Report 2020-21

# Introduction

The Ministry of Natural Resources and Forestry (MNRF) manages Ontario's fish and wildlife resources to ensure the sustainability of wild populations, and the management of fishing, hunting, and trapping opportunities for ecological, social, cultural, and economic benefits. The fish and wildlife program accomplishes its mandate through resource management planning, research and monitoring, and the delivery of public services to sustain healthy fish and wildlife populations for Ontario's future.

Recreational fishing is important to the province, both economically and socially. Ontario anglers enjoy the greatest fish diversity in Canada, with 145 species. Walleye, Yellow Perch, Smallmouth Bass and Northern Pike are the most caught and harvested species. With more than 250,000 lakes and countless rivers and streams, Ontario's vast aquatic resources give anglers a wide range of fishing opportunities; everything from fishing from shorelines in the city to fly-in fishing trips in remote areas of the province. The 1.5 million anglers who enjoy Ontario's recreational fisheries spend $1.75 billion per year on recreational fishing in Ontario[1].

Ontario is home to a wealth of forests, shrublands, grasslands and wetlands that provide abundant wildlife habitat. The diversity of wildlife species in Ontario reflects the diversity of ecosystems in the province. Game wildlife species are not only important components of the ecosystems in which they are found but they provide sustainable hunting opportunities throughout much of the province. Ontario's goal for the management of these species is to ensure sustainable populations and ecosystems on which they rely, and for the continuous provision of ecological, cultural, social and economic benefits for the people of Ontario. Hunters in Ontario spend over $588 million on their activities each year.

In 1995, the ministry established the Fish and Wildlife Special Purpose Account (FW SPA) to demonstrate investment in fish and wildlife management activities. All revenue from licence fees, fines and royalties collected under the *Fish and Wildlife Conservation Act, 1997* flows into this account.

Funds held in the FW SPA may only be spent on:

- the conservation and/or management of fish and wildlife populations including the ecosystems which they rely upon
- matters related to the activities of people as they interact with, or affect wildlife or fish populations, including any matter related to safety, or,
- a refund of all or part of a fee or royalty

[1]Source: 2015 Survey of Recreational Fishing in Canada: Selected Results for Ontario Fisheries.

In accordance with section 85(4) of the *Fish and Wildlife Conservation Act*, the Minister of Natural Resources and Forestry must publish an annual report outlining the financial affairs of the FW SPA.

As a result of COVID-19 impacts in 2020-21, expenditures were lower than historical levels. The ministry implemented health and safety measures for staff, and the intermittent province-wide restrictions impacted the ability to deliver some in-person activities such as some research and monitoring programs, and the Learn to Fish program. Revenue was impacted as well due to the closure of the Canada-USA border. The closure impacted tourism and, because of this, fishing and hunting licence revenue from non-residents was much lower than historical levels. However, despite the challenges in 2020-21 the ministry continued to deliver fish and wildlife activities and this report highlights those fish and wildlife program activities and summarizes financial expenditures for the 2020-21 fiscal year.

# Fish and Wildlife Heritage Commission

The Fish and Wildlife Heritage Commission (FWHC), established under subsection 2(1) of the *Heritage Hunting and Fishing Act*, *2002*, provides recommendations on matters referred to it by the Minister. The FWHC members are appointed by Order-in-Council and represent a cross-section of key interests in the sustainable use of Ontario's fish and wildlife resources. The responsibilities of the FWHC include providing advice on:

- practices that will contribute to recreational hunting and fishing being valued by future generations
- public participation in fish and wildlife conservation programs
- youth participation in hunting, fishing and other fish and wildlife activities
- tourism related to hunting, fishing and other fish and wildlife related activities
- new opportunities for hunting, fishing and other fish and wildlife related activities, and
- the operation of the FW SPA

The FWHC was engaged in 2020-21 to provide advice on many FW SPA funded items including fisheries management, wildlife management, invasive species and marketing and communications. The Commission was also regularly updated on the financial position and sustainability of the FW SPA. General information about the Commission may be found here. The membership for 2020-21 was as follows:

| Position | Member name | Location |
|---|---|---|
| Chair | Mike Reader | Peterborough |
| Member | Yvonne Brown | Inverary |
| Member | Len Dickinson | Lanark |
| Member | Greg Farrant | Warkworth |
| Member | Jim Greenwood | Simcoe |
| Member | John McDonald | Sioux Lookout |
| Member | Brent McNamee | Manotick |
| Member | Gord Mitchell | Field |
| Member | Debbie Rivard | Murillo |
| Member | Dale (Jerry) Walker | Haliburton |

# Services Funded by the Fish and Wildlife Special Purpose Account

## Fisheries Management

### Fish Culture and Stocking

The province operates nine fish culture stations which produce and stock fish into public waters to rehabilitate degraded fish stocks and to create, maintain and enhance angling opportunities. The FW SPA covers a significant portion of the operating costs.

The ministry sets stocking targets, including those for community hatchery partners. Actual numbers produced in any year depend on the availability and quality of fertilized eggs.

This year, 5.99 million fish, weighing 177 metric tonnes were stocked into 1,150 waterbodies, including the Great Lakes and inland lakes, 1 percent above target. Fewer fish were stocked this year compared to some recent years, due to planned reductions in some stocking requirements, and an inability to proceed with Walleye wild spawn collections due to COVID-19.

The ministry supplied community hatchery partners with 0.85 million fertilized fish eggs or fry (newly hatched fish), 19 percent over target. Classroom hatchery partners received 0.36 million fertilized fish eggs for eventual stocking into public waters, fully meeting the target. Many community and classroom hatcheries temporarily halted operations, which reduced the overall need for fertilized fish eggs or fry as compared to other years.

Table 1: Number of fish stocked by species over the last five years (excluding partner stocking)

| Species | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|
| Atlantic Salmon | 403,819 | 376,274 | 595,060 | 371,393 | 523,476 |
| Aurora Trout | 2,689 | 45,392 | 35,954 | 17,940 | 7,150 |
| Bloater | 161,680 | 170,410 | 91,653 | 27,436 | 5,171 |
| Brook Trout | 971,508 | 874,332 | 1,113,343 | 945,380 | 986,010 |
| Brown Trout | 269,766 | 231,596 | 250,405 | 245,783 | 219,791 |
| Chinook Salmon | 308,190 | 260,506 | 196,554 | 203,040 | 382,415 |
| Lake Whitefish | 140,908 | 106,645 | 144,376 | 141,041 | 149,184 |
| Lake Trout | 3,103,617 | 2,775,682 | 2,672,139 | 2,870,890 | 2,736,581 |
| Muskellunge | 0 | 194 | 398 | 0 | 0 |
| Rainbow Trout | 358,594 | 410,732 | 386,977 | 369,250 | 369,915 |
| Splake | 583,813 | 635,678 | 614,939 | 599,847 | 576,316 |
| Walleye | 560,832 | 2,472,591 | 1,980,873 | 2,855,226 | 31,937 |
| **Annual total** | **6,865,416** | **8,360,032** | **8,082,671** | **8,647,226** | **5,987,946** |

Of the 5.99 million fish stocked by the ministry in 2020, 55 percent were released into the Great Lakes. The other 45 percent were released into inland waters (Table 2).

Table 2: Species stocked by region in 2020 (excluding partner stocking)

| Species | Great Lakes | Northeast | Northwest | Southern | Species Total |
|---|---|---|---|---|---|
| Atlantic Salmon | 523,476 | 0 | 0 | 0 | 523,476 |
| Aurora Trout | 0 | 7,150 | 0 | 0 | 7,150 |
| Bloater | 5,171 | 0 | 0 | 0 | 5,171 |
| Brook Trout | 0 | 350,352 | 378,963 | 256,695 | 986,010 |
| Brown Trout | 156,320 | 136 | 0 | 63,335 | 219,791 |
| Chinook Salmon | 382,415 | 0 | 0 | 0 | 382,415 |
| Lake Whitefish | 0 | 0 | 0 | 149,184 | 149,184 |
| Lake Trout | 2,047,230 | 232,141 | 296,864 | 160,346 | 2,736,581 |
| Rainbow Trout | 132,260 | 102,134 | 40,159 | 95,362 | 369,915 |
| Splake | 0 | 215,392 | 185,753 | 175,171 | 576,316 |
| Walleye | 26,394 | 3,560 | 0 | 1,983 | 31,937 |
| **Regional Total** | **3,273,266** | **910,865** | **901,739** | **902,076** | **5,987,946** |

Of the 2.71 million fish stocked into inland waters, about 21 percent will help protect, reintroduce and rebuild fish populations in areas where they have been suppressed or eliminated. The other 79 percent were stocked to enhance recreational fishing opportunities through put-and-take, put-grow-and-take and supplemental stocking. These types of stocking create hatchery-dependent fishing opportunities. They can also protect other species by diverting angling pressure away from waterbodies with naturally reproducing fish stocks that are vulnerable to overharvest. We promote these recreational angling opportunities on the Fish ON-Line website.

### Fisheries Legislation, Regulation and Policy

Fisheries legislation, regulation and policy, developed through engagement with stakeholders, partners, Indigenous communities and organizations, and the public, is the foundation of recreational and commercial fisheries management in Ontario. Regulations and policies outline where, when and how fishing is conducted in the province.

FW SPA expenditures support staff costs to deliver fisheries policy activities, such as:

- developing variation orders that implement changes to seasons, quotas and limits in fisheries management zones across the province
- working with the Federal government to amend federal fishery regulations
- reviewing policies and procedures governing the allocation of aquaculture and commercial bait licences

In February 2021, the government announced changes to regulations to make fishing for Common Carp more accessible. Anglers are now able to use up to three lines when targeting Common Carp in Fisheries Management Zones (FMZ) 12-20. It also clarifies the existing provisions when baiting, or chumming, a fishing area.

### Inland lakes monitoring

Broad-scale monitoring (BsM) is a long-term monitoring program that provides information on the state of Ontario's inland lake fish and fisheries to inform policy development and resource management decisions. Approximately 100-150 lakes across the province are sampled annually using standardized methods, with reporting on results for fisheries management zones every five years.

Intensive inland lakes monitoring is targeted, long-term monitoring on selected lakes with significant social or economic benefits that require more intensive management due to stressors like harvest, land use and invasive species. Examples include Lake of the Woods, Lake Nipigon, Lake Simcoe, and the Kawartha Lakes.

Data and reports from BsM and intensive inland lake monitoring support fisheries management planning and other resource management activities and are used by a wide range of stakeholders, Indigenous groups, anglers and the public.

In 2020-21, the ministry was unable to conduct its planned BsM program due to COVID-19, which prevented staff from beginning work within the required timing window. Sampling of these lakes was deferred and will be resumed in 2021-22.

The ministry was able to conduct focused aquatic monitoring on two provincially significant inland fisheries, Lake Nipissing and Lake Simcoe, including winter angler creels and collection of fish status and trend data. Assessments on several regional waterbodies were also completed. In addition, science development projects were initiated later in the summer/early fall, including conducting aerial angler activity counts to support a recreational angler survey and help understand COVID-19 impacts on fishing

pressure, testing environmental DNA (eDNA) collection methods and calibrating netting methods to improve estimates of fish populations.

### Recreational Fisheries Population Management

Northwest Region

Fisheries management plans are examined periodically by the ministry and the FMZ advisory council and generally involve the updating of fisheries information, confirmation of plan objectives, reporting on actions and identification of emerging fisheries issues. The FMZ 6 (Thunder Bay, Nipigon and Dryden area) plan examination identified 15 emerging fisheries issues within the zone; of these, revisiting the winter angling season for Lake Trout was identified as the highest priority. To address this, a Fisheries Plan Amendment process (the first such process in Ontario) was initiated for Lake Trout. A revised objective was recommended to enhance winter angling opportunities for Lake Trout. In November 2020, a proposal was posted on the Environmental Registry for public review to extend the Lake Trout angling season from February 1 to March 31 and 4th Saturday in May to September 30 to January 1 to September 30, matching the current season in FMZ 4 (Kenora, Red Lake, Dryden, Sioux Lookout, Thunder Bay area) and FMZ 5 (Fort Frances, Kenora and Dryden area).

Several waterbodies in the Northwest Region have been designated as provincially significant inland fisheries, including Lake of the Woods, Lake Nipigon, Lac Seul, Rainy Lake and the Winnipeg River. Of these, Lake of the Woods is one of the most important. The ministry monitoring data on Lake of the Woods indicates that the Walleye population is vulnerable to continued high levels of harvest to the point where the current harvest poses a risk to the quality of the current and future fishery.

In 2019, a planning exercise was launched to prepare a Recreational Fisheries Plan for the lake, beginning with a focus on Walleye. An advisory council was created including representatives from a broad range of interests on Lake of the Woods. Introductory meetings were held with the council to review the fisheries information. Due to precautions related to COVID-19, the advisory council has been meeting remotely; to date, six meetings have been held to discuss the management of the recreational Walleye fishery on Lake of the Woods.

Northeast Region

Eight FMZ 10 (Sault Ste. Marie and Sudbury area) council meetings were held between late 2018 and early 2020. Objectives, strategies, and regulation change options were developed for most fish species within the zone. This work is captured in a draft FMZ 10 management plan. Consultation on the draft plan, scheduled for early 2020 via an Environmental Registry posting, public open houses and Indigenous sharing sessions, was paused because of COVID-19. It is scheduled to resume in 2022. The format will be adapted to use virtual outreach through social media to direct people to the Environmental Registry and the ministry will conduct virtual meetings and open houses.

A draft Fisheries Management Plan for FMZ 11 (North Bay and Nipissing area) was posted on the Environmental Registry for comment in 2019, and four open house sessions were conducted. The plan was modified based on consultation results. Several key regulation changes proposed in the draft plan, including expanding the open season for bass, shortening the Lake Trout season, introducing new Lake Trout size restrictions, and aligning Muskellunge regulations within the FMZ and the French River were implemented on January 1, 2020. The Fisheries Management Plan was finalized, and a decision notice was posted on the Environmental Registry in December 2020.

Southern Region

Fisheries management planning is underway in FMZ 15 (Parry Sound, Bancroft, Pembroke, Algonquin Park area). The first advisory council meeting was held in March 2017. A draft plan should be ready for review by the advisory council in Fall 2021. After review, the draft plan will be posted for public review on the Environmental Registry of Ontario.

The ministry initiated an enhanced engagement approach in FMZ 16 (South-Western Ontario and Lake Simcoe area), due to its size and complexity. A series of listening sessions with the public, stakeholders, First Nation and Métis communities, and conservation authorities held in 2017-18 asked participants to share their vision for what the planning process should include and consider. In 2020-21 a discussion paper was finalized based on feedback from the listening sessions. The paper is expected to be posted in 2021-22 on the Environmental Registry of Ontario.

## Fisheries Research

Applied research, focused on fish populations and their ecosystems, provides a foundation of knowledge for provincial fisheries management, policy and regulations, including catch limits. Work includes gaining new relevant knowledge about fish and fisheries and the cumulative impacts of threats such as invasive species and climate change on the integrity of inland and Great Lakes fisheries. Population and ecosystem models, decision support tools, advances in research and development, as well as scientific advice, help sustain Ontario's fisheries and the $1.75 billion in economic benefits they provide. Highlights for this year include:

- The Lake Whitefish recruitment project work continued to better understand the significant decline in Whitefish populations on the Great Lakes. This included genetic, diet and growth analysis of larval fish and examination of plankton samples collected from previous years.
- The results of the Lake Simcoe ecosystem model were finalized. A paper was published, showing the impact of the invasion of dreissenid (e.g. quagga and zebra) mussels on fisheries management measures intended to restore cold water fish populations. These results will inform decisions related to the management of

Lake Trout (e.g. stocking levels), an important species in the recreational fishery and a target species for restoration in the Lake Simcoe Protection Plan. To request a copy send an email to: mailto:info.mnrfscience@ontario.ca.

- Research on how aquatic invasive species may spread across the landscape involved modelling that accounted for the various possible spread pathways. Human population change was also considered to determine its influence on the spread of invasive species over time to better understand future impacts and influence management and policy decisions. Two primary publications have been published so far on this topic. To request a copy send an email to: mailto:info.mnrfscience@ontario.ca.
- Research continued to quantify variations in reproductive potential among different age and size classes in exploited fish populations. The third and final controlled-breeding experiment with Lake Nipissing Walleye was completed. Results will inform fisheries management approaches into the future to ensure sustainability.
- The Community Restoration of Acid-Damaged Lakes research project continued in collaboration with the Ministry of the Environment, Conservation and Parks and Laurentian University. BsM surveys and food web sampling were completed on 8 more recovering Lake Trout lakes in the historically acid-damaged zone of northeastern Ontario, bringing the total sample to 33 lakes. The program will be expanded to include fish biodiversity sampling at the scale of drainage basin in 2021. The results of this work will continue to guide the rehabilitation of these fisheries.
- Further work was conducted on Lake Erie which supports an important commercial and recreational fishery. Potential causes for the low oxygen levels that occur each fall in this lake were identified. The results may explain the variation of fish abundance in those low-oxygen regions and improve the design of fisheries-independent surveys, such as interagency trawling surveys. Studies were also undertaken to model the vertical habitat (depths) of adult Walleye and better understand the feeding ecology of Walleye and other important fish species in Lake Erie. The results of this work will inform fisheries management and support commercial fishery quota management in the lake. To request a copy of the available publications on this work, send an email to: mailto:info.mnrfscience@ontario.ca
- Roving and access creel protocols have been developed and tested on Lake Simcoe for the 2020 and 2021 winter fishery. A new statistical approach was developed to analyze the survey data and has shown an improvement in our ability to measure angler behaviour especially in years with unsafe ice conditions. A paired roving and access creel (angler survey) was also conducted on Lake Nipissing over the 2021 winter fishery. The data sets were analyzed separately using traditional protocols. Aerial counts were conducted in the summer of 2020 and the winter for 2021 to aid with resource monitoring under the COVID-19 pandemic, and to calibrate the 2020 survey of recreational fishing in Ontario. All of this work enables better management of fisheries resources and continued improvement of monitoring protocols.

- The Lake Nipissing Walleye fisheries model was updated to use a size, rather than age-based approach, enabling use of data from both fall Walleye index netting and large mesh gill net sampling. The update also provides a base for using creel data to directly estimate fish mortality from angling. From this work, a modelling framework for a new fisheries simulation platform will be developed. This work not only informs Lake Nipissing specific management, but it will also help refine fisheries models used across the province to inform fisheries decisions.

### Aquaculture Management

Aquaculture is the propagation, cultivation or rearing of aquatic organisms. Many different species of finfish, crustaceans, molluscs and aquatic plants may be farmed.

Private-sector fish culture in Ontario has evolved from the initial use of ponds to the highly intensive facilities that use long rectangular concrete raceways or circular tanks. Cage aquaculture raises fish (all Rainbow Trout) from fingerling to market-size in net-pens moored in the open waters of Lake Huron.

In 2019-20, approval was received to begin the process to issue 20-year aquaculture licences and 20-year land tenure authorization as appropriate. The ministry began working on the re-licensing process with the sector and continued to do so in this reporting period.

### Baitfish Management

Ontario's commercial bait industry is the largest in Canada, with almost 900 commercial bait licences issued in 2020. Estimates suggest that 60 to 80 percent of Ontario anglers use live baitfish at some point during the year.

The use, movement and harvest of live bait, however, can spread invasive species and fish diseases. This poses a significant ecological risk to Ontario's fisheries and the businesses and industries they support. To reduce this risk, the ministry has reviewed its bait policies and considered options for bait management.

The ministry actively communicates with commercial bait operators through provincial mailouts. It also educates anglers and bait operators about the risks posed by invasive species and the ecological danger of dumping unused bait.

In July 2020, the province released the final Bait Management Strategy after extensive consultation. The strategy is intended to protect Ontario's vibrant fisheries and the industries that rely on them, while also providing flexibility and business security to the bait industry and anglers.

Ontario's commercial fishing industry operates in the Great Lakes, large inland lakes such as Lake Nipigon and Lake Nipissing, and a few smaller lakes found mostly in northwestern Ontario.

Commercial fishing operations in the province range from small, one-person operations to larger corporate fleets. This industry plays a significant role in the economic and social welfare of many communities that depend upon the fishing industry. Commercial fishing is also important to Indigenous communities throughout the Great Lakes and northern Ontario. Approximately 85 percent of the commercial fish harvested in 2020 came from Lake Erie. The 2020 landed value of Ontario's commercial fishery was $35 million.

## Great Lakes Management

The ministry manages the Great Lakes to ensure long-term sustainable economic and social benefits by:

- developing fisheries management objectives and plans with Indigenous communities, stakeholders, the commercial fishing industry and partners including binational agencies
- engaging the public, provincial recreational and commercial fishery associations as well as local recreational fishing clubs
- supporting aquatic ecosystem research
- conducting fisheries assessment and monitoring
- stocking fish to protect native fish populations and support recreational fishing opportunities
- management of the cage aquaculture industry

Fisheries management in the Great Lakes is supported by three management units: Upper Great Lakes (Huron and Superior), Lake Erie and Lake Ontario. These management units develop fisheries management objectives in conjunction with Ontario stakeholders and partners as well as with United States partner agencies through the Great Lakes Fishery Commission.

The lake units monitor the status of fisheries and the health of the Great Lakes, and support research on the factors that affect them. Monitoring and research activities include:

- migratory fish assessments
- fish community assessments
- development of fish population abundance and exploitation estimates
- fish stocking and egg collection
- angler diaries
- invasive species monitoring and prevention (e.g. Invasive Carp)

### Upper Great Lakes Management

The FW SPA supports fishery management activities, fishery assessments, cage aquaculture management and licensing, including commercial, recreational and Indigenous fishing interests on Lake Huron (including Georgian Bay and the North Channel) and Lake Superior.

In 2020-21 in Lake Huron, the ministry supported stocking 1.71 million Lake Trout into Georgian Bay and the North Channel to support species restoration. These fish were all shore stocked due to the impacts of COVID-19 on stocking activities. The lake unit also completed a lake-wide fisheries assessment program and set commercial fish quotas. The ministry also continued to plan for the development of a Walleye management plan and non-native salmonid stocking plan for Lake Huron.

On Lake Superior, the ministry supported a lake-wide fisheries assessment program. It includes projects at several key fish community index sites spread along the shoreline from the St. Mary's River to the Pigeon River. The ministry also conducted a broad-scale fish community project in Black Bay. Commercial fish quotas were also set for each quota management area of the lake.

### Lake Erie Management

The Lake Erie Management Unit carries out operations between Sarnia and Niagara Falls, including work within the Huron Erie Corridor (including Lake St. Clair), Lake Erie, and the upper Niagara River.

Programs carried out in 2020-21 included trawling programs in the Eastern and Western basins to assess the hatch success of juvenile Yellow Perch and Walleye as well as hydroacoustic surveys to assess small prey fish. Lake-wide commercial catch sampling provided information on the biological characteristics of the harvest, and a whole lake gill net survey was conducted in partnership with the Ontario Commercial Fisheries Association. These surveys inform the abundance and exploitation estimates that are used to support fisheries management plans that are used to sustainably allocate international sustainable harvest levels, and ultimately Ontario commercial fish quotas.

In 2020 a quota of 12.86 million pounds of Walleye and Yellow Perch was set for commercial fishing on Lake Erie. Approximately 3.3 million pounds of commercially caught fish was inspected by the Lake Erie Management Unit Port Observer program through direct dockside inspections and through the review and validation of 10,030 daily catch records.

Quotas are managed on a binational basis on Lake Erie through the Lake Erie Committee (LEC) of the Great Lakes Fishery Commission. Stakeholder input is received by the LEC through two separate committees. The first is through the Lake Erie Percid Management Advisory Group (LEPMAG). This group is a binational multi stakeholder advisory group that is facilitated by Michigan State University's Quantitative Fisheries Centre.

Additionally, the FMZ 19 council (many of the FMZ council members are also LEPMAG members) provide input on Ontario and LEC fisheries management planning. The FMZ 19 council also provides a venue for information sharing between the ministry and our valued stakeholder partners.

The 2020 Lake Erie Management Unit Invasive Carp surveillance program sampling was reduced due to COVID-19 impacts. From July to August 2020, there were 267 water samples taken for Invasive carp surveillance (eDNA), from 89 locations in the Lake Erie and Lake Huron watersheds. None have been found to date.

### Lake Ontario Management

Lake Ontario fisheries are managed by the Lake Ontario Committee, which consists of the ministry in partnership with New York State Department of Environmental Conservation. The Lake Ontario Fish Community Objectives (2013) provide binational fisheries management direction to protect and restore native species and to maintain sustainable fisheries.

The ministry stocked over 1.7 million fish into Lake Ontario to support species restoration and provide angling opportunities. Species stocked include Chinook Salmon, Rainbow Trout, Brown Trout, Atlantic Salmon, Lake Trout, Walleye and deep-water cisco (Bloater).

The ministry completed a lake-wide fisheries assessment program to monitor the health of the fishery, including the main basin of Lake Ontario, the Bay of Quinte, the upper St. Lawrence River and Lake St. Francis. For example, in 2020-21:

- staff delivered more than 20 field and laboratory projects under strict COVID-19 safety procedures and restrictions, including a comprehensive long-term fish community monitoring program that spans more than five decades
- 104 nets were set in over 95 sites and 83 trawls, and 78,716 fish were captured for data collection (comprising of more than 40 species)
- staff interviewed 719 anglers during a new ice fishing access point angler survey on the Bay of Quinte
- more than 50,000 video images were recorded and processed from the Ganaraska River and Credit River video fish counter systems

FMZ 20 council members represent a broad spectrum of interests across the zone, including Muskies Canada, Bay of Quinte and Upper St. Lawrence River Guides, Central Lake Ontario Sport Anglers, Metro East Anglers, Port Credit Salmon and Trout Association, Halton Region Salmon and Trout Association, St. Catharines Game and Fish Association, Ontario Sportfishing Guides Association, Ontario Commercial Fisheries Association, Ontario Federation of Anglers and Hunters, competitive bass anglers, tributary anglers, academia, environmental interests and several unaffiliated anglers.

FMZ 20 advisory council members continued to be engaged in binational fish stocking

discussions. The council also developed angling regulation options for Largemouth and Smallmouth Bass angling seasons in Lake Ontario and the St. Lawrence River. Changes to the regulations came into effect on January 1, 2021.

## Fish and Wildlife Local Monitoring and Management

The ministry conducts local and regional activities for identified fish and wildlife management needs or reporting requirements. For example, the ministry conducts snow surveys, moose aerial inventories, and creel and aerial fisheries surveys. The ministry monitors and analyzes fish and wildlife populations across the province.

The ministry also identifies local fish stocking requirements, creates multi-year stocking plans and coordinates fish stocking locations across the province.

Regional activities include issuing and renewing licences for commercial fish and wildlife activities and trapping licences, auditing compliance with natural resources acts, managing licence regulations and initiating enforcement action for delinquencies, errors and/or omissions.

From time to time, fish and wildlife populations experience sudden die-offs. Local incident management is the response to fisheries incidents such as die-offs and spills. Direction and information is provided to the public and other agencies, as required. Responses may include conducting site inspections, contacting members of the public, collecting fish samples and coordinating fish health testing.

## Wildlife Management

### Wildlife legislation, regulation and policy

Wildlife legislation, regulation and policy, developed through consultation and engagement with stakeholders, partners, Indigenous communities and organizations, and the public, is the foundation of wildlife management. Regulations and policies outline where, when and how wildlife-related activities can be conducted in the province. They cover a wide range of actions associated with habitat, hunting, trapping, human-wildlife conflict, wildlife health, wildlife in captivity, and possession, buying and selling of wildlife.

FW SPA expenditures support the delivery of the wildlife management program, including the review and allocation of harvest opportunities, public planning and engagement opportunities.

Some key initiatives in 2020-21 included:

- supporting the hunting and resource-based tourism industries due to COVID-19 impacts
- improvements to moose management and a new harvest allocation system
- actions to prevent chronic wasting disease (CWD)

- changes to black bear hunting regulations
- burden reduction and regulatory streamlining improvements

### Game wildlife research

Game wildlife research generates new information on wildlife populations, distribution, health, behaviour, and habitat use of species such as waterfowl and other game birds, elk, lynx, deer, mink, fisher, moose, wolves, coyotes and black bear.

The FW SPA provides partial funding for wildlife research and monitoring. The program is delivered by scientists who design and conduct studies and programs that support diverse, healthy, sustainable wildlife populations and habitats.

### Big game

Moose

Ontario's abundant forests and wetlands provide valuable moose habitat that sustains a healthy moose population. Moose hunting is a popular outdoor activity pursued by Ontario residents and non-resident hunters from Canada, the United States, and beyond.

During the Moose Management Review in 2019, the Ministry heard from people across Ontario who wanted moose hunting to be fairer and more sustainable.

Improvements started in 2020 and continue in 2021 and include a new tag allocation process to replace the previous tag draw, a new licensing approach, bows-only seasons in some Wildlife Management Units and other changes that will support a sustainable moose population, while making moose hunting fairer and more consistent for hunters.

2021 is the first year for the points-based moose tag allocation process that replaces the tag draw to distribute tags to resident hunters.

Moose aerial inventory surveys were conducted across 6 wildlife management units in 2020-21.

Deer

Deer are an important component of Ontario ecosystems. They can be found from the boreal forest to the southern Ontario agricultural belt. Winter severity is the main factor limiting population growth and northern range expansion. As a result, the range and density of deer populations can change over time, in response to weather (short-term), climate (long-term) and habitat changes.

Deer contribute substantial ecological, social and economic benefits to the people of Ontario. They are one of the most sought-after big game species for harvest by licensed hunters, both as a heritage activity and a food source. Deer are also very popular for non-consumptive activities like wildlife viewing. In some situations, deer come into conflict with

people. They can damage agricultural crops and are the most common big game species involved in collisions with vehicles.

This year, the ministry conducted a white-tailed deer socio-economic survey to collect information on deer hunter expenditures and perspectives.

The ministry continues to plan and communicate with partners and stakeholders to ensure effective responses to chronic wasting disease (CWD) and other wildlife disease threats if CWD is ever detected in Ontario.

In 2020, a total of 742 samples were collected and tested for CWD during annual surveillance (208 white-tailed deer and one red deer samples from eastern Ontario, and 533 white-tailed deer samples from the southwestern surveillance zone). CWD was not detected in any of the samples tested.

Bear

Black bears are a highly valued and unique part of Ontario's wildlife heritage, integral to a functioning ecosystem and Ontario's biodiversity. MNRF has been refining Ontario's black bear management program for several decades, in part through FW SPA funding. The province invested in harvest assessment, population management and inventory, allocation, communication, resolution of human-bear conflicts, and science and research.

This year, the ministry implemented several regulatory changes, including reducing the bear hunting season on the Bruce Peninsula, changing regulatory requirements for placing bear bait, and making regulatory changes to support the bear tourism industry. A regular annual spring bear hunting season will begin in 2021. These changes continue to be communicated to the public and stakeholders.

The ministry is working towards updating the provincial black bear population estimate, which was originally planned as a four-year project beginning in 2017 with results planned for release in 2021. Due to COVID-19 restrictions, the plan to complete the final year of sample collection has been postponed to 2022, with results expected in 2023.

### Rabies management

Ontario is a recognized leader in rabies surveillance and control. Since the province's most recent rabies outbreak, which began in December 2015, 480 cases of raccoon strain rabies and 21 cases of fox strain rabies have been confirmed in southern Ontario. In response, over six million oral rabies vaccine baits have been distributed, immunizing most raccoons, skunks and foxes that ate them. Funding from the FW SPA partially supported this work.

In 2020, nine raccoon rabies cases were detected in Ontario. No cases of fox strain rabies were detected. This represents an almost 60 percent drop in cases from 2019 and continues the overall downward trend. The ministry tested more than 3,350 specimens in 2020.

In 2020-21, approximately 1.1 million oral rabies vaccine baits were distributed via fixed wing aircraft, helicopter and ground crews. The trap-vaccinate-release program vaccinated 3,478 raccoons, 646 skunks, 14 red foxes and four coyotes. The Rabies Information Line responded to more than 400 public calls. Rabies research continued this year, including studies on remote bait uptake monitoring, the use of bait stations and post-baiting serology.

## Invasive Species

The ministry provides policy leadership and program funding to protect, conserve and restore vital habitat, such as wetlands, that are important for healthy fish and wildlife populations and recreational enjoyment. An essential aspect of this work involves supporting efforts to reduce the threat of invasive species, including prevention, detection, response and management of invaders. To achieve these objectives, the ministry continues to work closely with partners to implement the Ontario Invasive Species Strategic Plan and the *Invasive Species Act, 2015*.

Key initiatives supported by FW SPA funding in 2020-21 included:

- continuing and enhancing strategic partnerships to support education and outreach, research, monitoring/reporting, prevention and control of high-risk invasive species
- supporting the Ontario Federation of Anglers and Hunters' delivery of the Invading Species Awareness Program (ISAP)
- continuing strategic communication, research, collaboration and policy development to better understand and address the potential impact of high-risk invasive species and pathways, including wild pigs
- continuing an innovative social media awareness campaign that educates the public on how to identify and fight the spread of invasive species, particularly public reporting of wild pig sightings
- advancing the work of inter-provincial and international working groups focused on reducing the threat and impacts of invasive species in Canada, especially within the Great Lakes basin
- finalizing prevention and response plans for water solider and European water chestnut, and collaborating with partners on plans to control these high-risk invasive species
- developing innovative tools with partners to control invasive phragmites throughout Ontario's sensitive ecosystems

## Conservation Officers and Enforcement

Conservation officers provide regulatory enforcement for the protection of Ontario's natural resources and public safety. They employ specialized units and services to

support field enforcement, including canine, intelligence and special investigation services.

In 2020-21, of the 138,382 total enforcement contacts officers had while working in the field, there were 130,542 (94%) related to fish and wildlife laws and regulations which identified 5,708 fish and wildlife-related violations. Overall, there was a 96.6% rate of compliance with fish and wildlife laws and regulations.

Officers conduct public outreach and education to increase awareness and knowledge, and to promote compliance with Ontario's *Fish and Wildlife Conservation Act, 1997*. Conservation officers attend events, such as outdoors shows and fishing derbies, as well as fish and game clubs and trapping councils.

A key part of conservation officer outreach is educating youth about natural resources and engaging them in outdoor activities. Visits are made to school classrooms, youth clubs and family-focused outdoor events.

This year, conservation officers took part in 57 outreach events interacting with 1,542 people across the province at hunter and trapper groups, hunter education courses, naturalist and outdoor clubs, pet stores, trade shows, and other community events. However, restrictions due to COVID-19 limited attendance at such events compared to previous years.

## Customer Service

Almost two million anglers and hunters use the Fish and Wildlife Licensing Service to purchase Outdoors Cards and fish and wildlife licence products, to participate in big game draws and to submit their mandatory hunter reporting.

Anglers and hunters can purchase licences and apply to big game draws over the internet, by phone or in-person at 66 ServiceOntario locations and approximately 500 participating licence issuers across the province. In 2021-21, more than 650,000 fishing licences, 530,000 hunting licences and 500,000 Outdoors Cards were issued.

Table 3: Fishing and hunting licence sales and revenue by residency

| 2020-21 fishing and hunting licence sales | Number sold | Revenue ($ in millions) | % of revenue |
|---|---|---|---|
| Resident fishing licences | 605,266 | $21.87 | 42% |
| Resident hunting licences | 535,382 | $22.85 | 44% |
| Canadian resident fishing licences | 46,883 | $1.7 | 3% |
| Non-resident fishing licences | 13,648 | $0.85 | 2% |
| Non-resident hunting licences | 3,050 | $0.47 | 1% |
| Outdoors Cards | 514,532 | $4.41 | 8% |
| Receipt replacements | 4,044 | $0.04 | 0% |
| **Total** | **1,722,805** | **$52.19** | **100%** |

Hunters completed more than 240,000 draw applications, 87 percent of which were processed electronically, via phone and internet. The remaining 13 percent were made in-person.

The Natural Resources Information and Support Centre answers questions about Outdoors Cards and licensing, hunting and fishing regulations, hunting accreditation, big game draws, wildlife conflicts, land use and other natural resources related topics of interest. In 2020-21, the centre responded to 137,000 inquiries from anglers, hunters, and fishing and hunting licence issuers. Most of the requests (74 percent) were phoned in and the remaining inquiries came via email.

## Marketing and Communication

The ministry promotes fish and wildlife outdoor activities through social media, annual fishing and hunting regulation summaries, outreach events, the Kids' Fish Art Contest, Learn to Fish and Fish ON-Line. These activities increase public awareness of fish and wildlife resources, demonstrate the social, economic, health and lifestyle benefits of fishing and hunting, and sustain Ontario's recreational fishing and hunting heritage.

### Learn to Fish

Learn to Fish is a free program that teaches new anglers how to fish in Ontario. Fishing is a fun and relaxing way to spend time outdoors, but it can be intimidating for some people just getting started into the sport. Learn to Fish participants learn all the basics of fishing, including fish handling, casting, knot tying, and more, giving them the knowledge and confidence to fish independently.

Due to COVID-19, all in-person programs were cancelled for the 2020 season and Learn to Fish moved to a digital platform. The digital Learn to Fish program includes a series of how-to videos, colouring and activity pages, and more, allowing Ontarians to explore the program from home.

### Fish ON-Line

Fish ON-Line is a mobile-friendly fishing tool with maps and information on fishing in Ontario. It offers data on 20,000 lakes and rivers across the province. It helps anglers plan fishing trips, check fishing regulations and learn about Ontario sport fish. In 2020-21, there were almost 800,000 pageviews on Fish ON-Line from over 294,000 interested anglers. This represents a 49% year-over-year increase in usership. This is one example of how licence dollars are being re-invested to support anglers by providing enhanced service and increased public access to data collected with licence dollars.

### Hunter Education

The Ontario Hunter Education Program (OHEP) is administered by the Ontario Federation of Anglers and Hunters on behalf of the ministry. The ministry continues with its efforts to modernize the OHEP by looking for opportunities to utilize new technology in course delivery to reduce barriers for customers and increase hunter recruitment.

In 2020-21, due to COVID-19 affecting in-person course delivery, the ministry introduced a temporary process to allow students to complete an online course with similar content to Ontario's course, followed by a virtual examination with an instructor. This year, close to 15,000 students completed the hunter education course.

### Social Media

Anglers, hunters and wildlife enthusiasts have been keeping up with Ontario's fish and wildlife program by following us on social media. The ministry has been sharing research findings, regulation updates, safety messaging, reminders about upcoming events, draw deadlines and much more. Not only does social media provide real time updates, it also provides a customer service channel for the public to ask questions and reach a staff member during business hours.

The newest customer service channel, Instagram, has almost 13,000 followers. Instagram content includes engaging campaigns such as Trivia Tuesdays and an "Ask an Expert" video series. Instagram also features highlights where users can find helpful information outside of business hours.

Stay informed and follow along! Users can tag Ontario Fish and Wildlife in photos they post for a chance to be featured on the Instagram page.

Facebook: https://www.facebook.com/fishwildlifeon
Twitter: https://www.twitter.com/fishwildlifeon
Instagram: https://www.instagram.com/fishwildlifeon

### Stakeholder and Advisory Committee Engagement and Consultation

Stakeholder engagement and consultation is an important part of managing fish and wildlife resources. Committees representing stakeholders, residents, tourism outfitters and Indigenous communities provide input to the ministry regarding big game quotas, fisheries management planning, commercial fish quotas and other matters.

This year, the ministry supported meetings of the Big Game Management Advisory Committee, Fish and Wildlife Heritage Commission, Great Lakes Fishery Commission, Lake Simcoe Fisheries Management Committee and fisheries management zone councils.

# Financial Summary

## Revenue

FW SPA revenue fluctuates significantly from year to year because of an ongoing three-year purchasing cycle for Outdoors Cards. This year the ministry provided relief to the Commercial Fishing Industry and the Hunting and Fishing Resource Based Tourism Industry which decreased revenue to the FW SPA in 2020-21.

Table 4: FW SPA revenues for the last three fiscal years ($ in millions)

| **Source of revenue** | **2018-19** | **2019-20** | **2020-21** | **2020-21 % of total** |
|---|---|---|---|---|
| Angling and hunting licences/permits and Outdoors Cards* | $62.7 | $71.3 | $52.0 | 96% |
| Commercial fishing licences and royalties | $ 2.9 | $ 1.8 | $0.1 | 0% |
| Commercial baitfish licences | $ 0.3 | $ 0.3 | $(0.2) | 0% |
| Furbearer licences and royalties | $ 1.0 | $ 0.8 | $0.4 | 1% |
| Rabies vaccine royalties | $ 0.5 | $ 0.5 | $0.5 | 1% |
| Fines and penalties | $ 0.7 | $ 0.9 | $0.6 | 1% |
| Interest | $ 0.6 | $ 0.7 | $0.1 | 0% |
| Service fee revenue | $ 3.5 | $ 0.0 | $ 0.0 | 0% |
| Other revenue | $ 0.8 | $ 0.8 | $0.5 | 1% |
| **Total revenue** | **$ 73.0** | **$ 77.1** | **$54.0** | **100%** |

* Revenue for the fiscal year does not align with revenue in Table 3 due to the timing of payments received and recorded in the financial system.

## Expenditures

Fish and wildlife operating expenditures were $90.1 million in 2020-21. Expenditures were lower than historical levels as a result of COVID-19 impacts. Approximately 70 percent of total expenditures ($63.2 million) were funded by the FW SPA. The remaining $26.9 million in fish and wildlife expenditures were funded by the Consolidated Revenue Fund (CRF).

Annual expenditures from the FW SPA are planned based on the 3-year rolling average of expected revenues. The ministry maintains a residual balance in the FW SPA each year, balancing program delivery and long-term funding requirements. Treasury Board approves the FW SPA recovery level and ending balance as part of the ministry's annual budget submission.

Table 5: Summary of 2020-21 FW SPA actual expenditures ($ in millions)

| **Fisheries management** | **($ in millions)** |
|---|---|
| Fish culture | $ 6.42 |

| | |
|---|---|
| Broad-scale monitoring | $ 2.65 |
| Fisheries research | $ 2.44 |
| Recreational fisheries population management | $ 1.62 |
| Legislation, regulation and policy development | $ 1.48 |
| Fisheries legislation and regulations (operational costs) | $ 0.76 |
| Baitfish licensing and authorizations | $ 0.46 |
| Fisheries local incident management, such as fish die-off, invasive species detection, sediment/chemical spills | $ 0.23 |
| Commercial fisheries and aquaculture licensing and authorizations | $ 0.17 |
| **Total fisheries management** | **$16.23** |
| | |
| **Conservation officers and enforcement** | |
| Conservation officer salaries, benefits and operating costs | $ 14.13 |
| **Total conservation officers and enforcement** | **$ 14.13** |
| | |
| **Wildlife management** | |
| Wildlife research | $ 2.78 |
| Wildlife legislation, regulation and policy | $1.39 |
| Wildlife legislation and authorizations | $ 1.08 |
| Wildlife population management - terrestrial game wildlife | $ 0.84 |
| Human/wildlife conflict communications | $ 0.69 |
| Licence issuance and related activities to manage furbearer populations | $ 0.60 |
| Trapping harmonization agreements with province | $0.40 |
| Wildlife legislation, regulation and policy (operational costs) | $ 0.39 |
| Rabies management | $0.36 |
| Wildlife disease surveillance | $ 0.20 |
| **Total wildlife management** | **$ 8.73** |
| | |
| **Customer service/engagement** | |
| Licensing and client services | $ 2.51 |
| Educational outreach to public and stakeholders | $ 1.15 |
| Fees paid to private licence issuers | $ 0.50 |
| Trapper licence and education service agreements | $ 0.36 |
| Hunter education | $ 0.31 |
| **Total customer service/engagement** | **$ 4.83** |
| | |
| **Great Lakes management** | |
| Fisheries population assessments - Lake Erie | $ 2.57 |
| Fisheries population assessments - Lake Huron and Lake Superior | $ 2.26 |
| Fisheries population assessments - Lake Ontario | $ 1.58 |
| **Total Great Lakes management** | **$ 6.41** |
| | |
| **Licensing service development, system hosting and mailouts** | |
| Fish and wildlife licensing service | $ 4.46 |
| Big game Fish and Wildlife Licensing Service development | $ 0.40 |
| | |
| **Total licensing service development, system hosting and mailouts** | **$ 4.86** |

| | |
|---|---|
| **Fish and wildlife local monitoring and management** | |
| Conduct snow surveys and fisheries surveys, complete data analysis, fish stocking | $ 2.31 |
| **Total fish and wildlife local monitoring and management** | **$ 2.31** |
| | |
| **Financial and other management** | |
| Financial administration | $ 1.44 |
| Oversight of hunter education and trapper licensing, education and harmonization agreements | $ 0.21 |
| **Total financial and other management** | **$1.65** |
| | |
| **Invasive species management** | |
| Legislation, regulation and policy development | $ 1.28 |
| Ontario invasive species management transfer payment | $ 0.08 |
| **Total invasive species management** | **$ 1.36** |
| | |
| **Marketing and communications** | |
| Public outreach and education regarding angling and hunting | $ 0.82 |
| Fishing and hunting regulation summaries | $ 0.42 |
| **Total marketing and communications** | **$ 1.24** |
| | |
| **Information management/information technology** | |
| Systems to support fish and wildlife management | $ 0.84 |
| Information technology to support fisheries population data analysis | $ 0.35 |
| **Total information management/information technology** | **$ 1.19** |
| | |
| **Stakeholder/advisory committees** | |
| Stakeholder/advisory committees such as FMZ councils, Fish and Wildlife Heritage Commission, Big Game Management Advisory Committee, Lake Simcoe Fisheries Management Committee, Great Lakes Fisheries Commission | $ 0.25 |
| **Total stakeholder/advisory committees** | **$ 0.25** |
| **Grand total** | **$ 63.19** |