



2022

FISHERY AUDIT

Unlocking Canada's Potential for Abundant Oceans

Oceana Canada's sixth annual *Fishery Audit* assesses the current state of Canada's fisheries and fisheries management, tracks annual progress and provides recommendations to meet federal policy commitments to return abundant wild fish populations to Canada's oceans.



2022

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IT'S TIME FOR ACTION



Over the past six years of *Fishery Audits*, the federal government has made significant investments, developed new policies and updated laws to improve fisheries management. The true measure of success, however, is on the water: have these changes led to healthier fisheries?

According to the indicators in this latest *Fishery Audit*, the answer is no. Fewer than one-third of wild fish stocks are considered healthy, and the vast majority of critically depleted stocks lack rebuilding plans.

The new *Fisheries Act* rebuilding regulations introduced in April 2022 can – and must – mark a turning point. Fisheries and Oceans Canada (DFO) now has a legal requirement to rebuild Canada's fish populations to support sustainable and prosperous fisheries, healthy coastal communities and a more resilient, bountiful ocean.

This is long overdue.

But to trigger the legal rebuilding requirements, stocks first need to be assigned a health status. And unfortunately, a large proportion of stocks – 37 per cent – continues to languish in DFO's "uncertain" category.

That's unnecessary. Enough data already exists to assign many of these stocks a provisional status to start managing them in accordance with the requirements of the new *Fisheries Act*. According to Oceana Canada's recent analysis, nearly a quarter of these "uncertain" stocks are likely critically depleted.

But as this year's *Fishery Audit* highlights, that's not the only issue the government needs to address.

Three years after the national Fishery Monitoring Policy was released, it has yet to be fully implemented in a single fishery. Meanwhile, the percentage of stocks with a recent stock assessment has declined.

DFO is also failing to take a growing body of climate research into account. Although many studies show how climate change is affecting fish, that science isn't being reflected



In the face of overfishing, mismanagement and accelerating climate change and biodiversity loss, the need to rebuild depleted wild fish populations has never been more urgent.

– Josh Laughren, Executive Director, Oceana Canada.

in assessments or management plans for fisheries. This is worrisome for species like shrimp and snow crab that are especially vulnerable to ocean acidification, extreme marine heat waves and other climate-related impacts.

Another concern is the state of forage fish: the species that feed whales, seabirds and many commercial fish. This year, DFO stopped commercial fishing on two critically depleted herring and mackerel stocks. However, other dangerously depleted forage stocks, like capelin, continued to be overfished. With the capelin quota set contrary to scientific advice and precautionary principles, the population is not being given any chance to recover.

The Canadian government has applied precautionary fisheries management inconsistently for too long – with disastrous consequences. Instead of focusing on short-term yields, it's time to prioritize the long-term value of a resilient ocean.

There is broad consensus on the way forward: DFO must take an ecosystem-based approach that reflects the interrelationships between species and a changing environment. It must follow its own policies to make decisions informed by the best available science and not allow the absence of data to delay needed action. It must do more to mobilize Indigenous Knowledge Systems to advance reconciliation and leverage valuable expertise and lessons



from Indigenous Peoples. The recommendations in this *Audit* propose practical steps to act on these priorities.

When we give oceans the chance, they have enormous potential to rebound, help sustain coastal communities and cultures, support a thriving seafood industry and feed people around the world.

There is no more time to lose. Canada has the laws and resources to restore abundance to our oceans. Now the government must act. The health of our oceans and all who rely on them depend on it.

In the six years Oceana Canada has been producing these audits, the number of healthy fisheries has decreased and most of the management indicators haven't budged.



THE 2022 SCORECARD



Credit: iStock/piola666

For six years, Oceana Canada has been evaluating the state of Canada's fisheries and how well — or poorly — the government is using the best available science, monitoring and management capabilities to restore abundance to our oceans. In 2022, progress on many management indicators continued to stagnate, despite clear policy and work plan commitments from DFO. The result is depleted stocks, overfishing, a lack of robust data and insufficient efforts to recover depleted populations. This scorecard presents the top-line results for 2022, while a deeper dive into the findings begins on page 8.

Overall Stock Health Status

Nearly one in five stocks are still critically depleted

For more than half a decade, the indicators of good fisheries management have largely remained unchanged. This year — once again — less than a third of marine fish and invertebrate stocks can be confidently considered healthy, and nearly one in five stocks are still critically depleted. In fact, the number of healthy stocks has declined since 2017.

DFO continues to classify more than a third of all stocks as “uncertain.” However, Oceana Canada's analysis suggests that enough data exists to assign many of them a provisional health status.¹ And that's a crucial first step toward effective and informed management.

Shifting stocks out of the uncertain category and assigning them to healthy, cautious and critical categories provides essential guidance for what management approaches to take. Under the new laws and regulations of the modernized *Fisheries Act*, all stocks in the critical zone require rebuilding plans. These plans must define objectives to rebuild the stock, including measurable targets and timelines. Meanwhile, stocks in the cautious zone are required to be managed at levels that support growth toward the healthy zone.

Over time, this will result in a greater number of healthy stocks and should prevent stocks in the cautious zone from slipping into critical territory. But none of this can happen until DFO does the basic research required to determine the health status of the 72 stocks in the uncertain category.



The continuing poor health of Canada's fish stocks clearly indicates that we're failing to manage our fisheries and we're getting a dismal return on investments. The loss of abundance and diversity — and the consequences that creates for future generations — cannot be overstated.

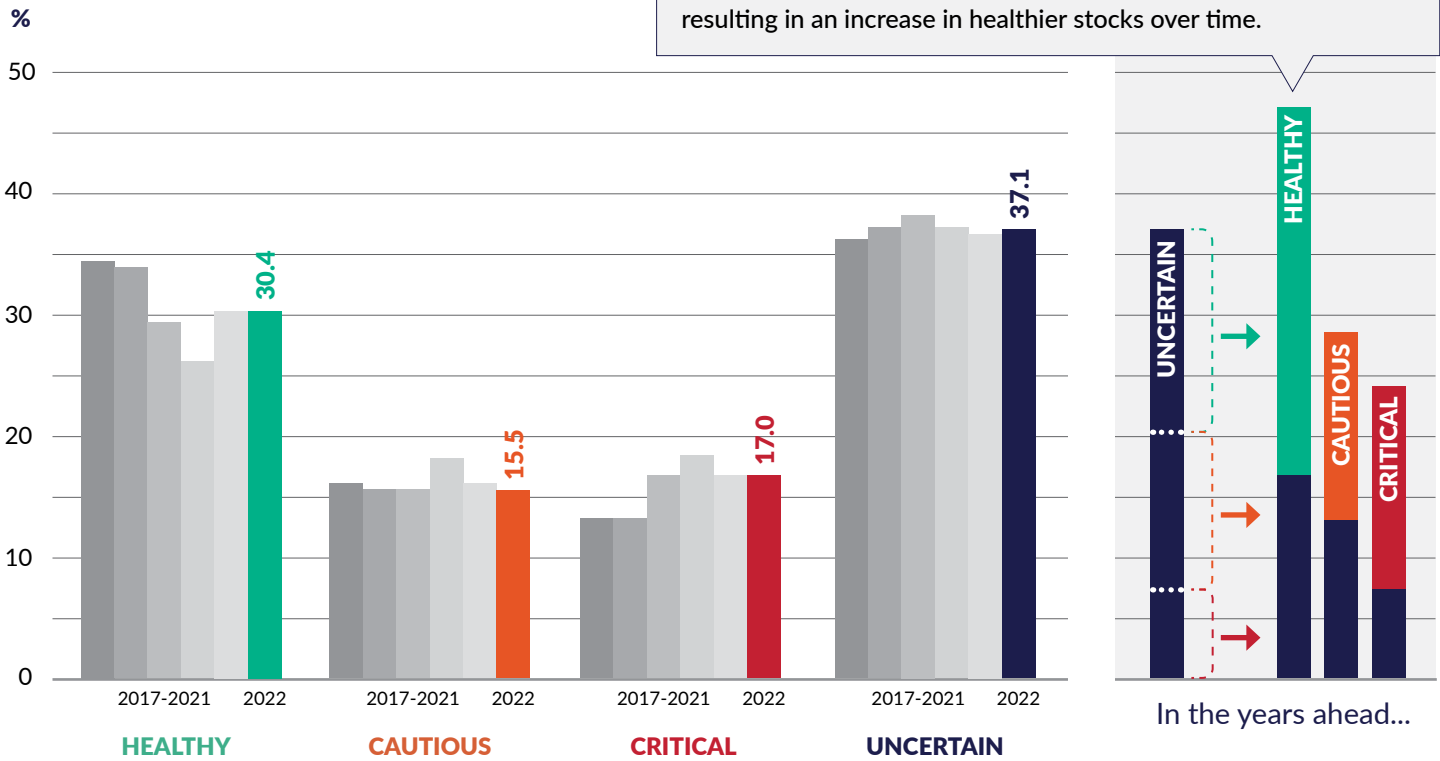
— Dr. Robert Rangeley, Science Director, Oceana Canada

¹ For details, see Oceana Canada's report, *A Fuller Picture of the State of Canada's Fisheries: Assessments for Data-Limited Stocks*. Available at <https://oceana.ca/en/reports/a-fuller-picture-of-the-state-of-canadas-fisheries-assessments-for-data-limited-stocks/>

HEALTH STATUS OF CANADA'S FISHERIES, 2017 TO 2022

TIME FOR A CHANGE

Little has progressed in the last six years – and that must change. By assigning a clear status to all uncertain stocks, we would expect to see the overall health categories change as shown below. Those in depleted states may be subject to rebuilding requirements, resulting in an increase in healthier stocks over time.



Healthy, Cautious and Critical

DFO has three categories of fish stock health. They are often defined relative to the stock biomass that would produce a maximum sustainable yield (B_{MSY}). Maximum sustainable yield is the largest volume of fish that can theoretically be harvested without reducing the size of the population over the long term.²

HEALTHY

A stock is considered healthy if its biomass is greater than 80 per cent of that which would support B_{MSY} . When a stock is in this zone, fisheries management decisions are designed to keep it healthy.

CAUTIOUS

A stock falls in the cautious zone if its biomass is between 40 and 80 per cent of B_{MSY} . If a stock falls into this zone, harvesting rates should be reduced to avoid seriously depleting it and to promote rebuilding to the healthy zone.

CRITICAL

A stock falls in the critical zone if its biomass is less than 40 per cent of B_{MSY} . If a stock moves into the critical zone, serious harm is occurring, and conservation actions become crucial.

² Maximum sustainable yield (MSY) is a globally accepted standard for fisheries management. The UN Food and Agriculture Organization's Code of Conduct for Responsible Fisheries, to which Canada is a signatory, indicates governments or other agencies responsible for fisheries management need to adopt appropriate measures, based on the best scientific evidence available, that are designed to maintain or restore stocks at levels capable of producing MSY.



Credit: Shutterstock/RLS Photo

REBUILDING WILD FISH AND ENSURING HEALTHY FISHERIES REQUIRES:



Sound science

to understand the status of stocks, their biology and how fishing pressure and environmental factors will affect them in the future.



Effective monitoring

to determine how many fish are harvested and discarded from all sources of fishing activity.



Good management decisions

based on data that considers stocks in the context of a changing ecosystem and prioritizes long-term health, abundance and prosperity over short-term yields.

2022 Hits and Misses

This year, the federal government made several difficult but necessary decisions that prioritized rebuilding fish abundance. But in other cases, it failed to follow scientific advice and DFO's guidance on the Precautionary Approach. This inconsistency highlights that more work needs to be done to improve fisheries management in Canada.

Following scientific advice

Reduced fishing pressure to support the population recovery of depleted stocks

- ✓ Pacific herring
- ✓ Atlantic spring and fall herring (4T)³
- ✓ Atlantic mackerel
- ✓ Atlantic cod (3Pn4RS)

Failing to follow scientific advice

Maintained dangerously high fishing quotas on depleted stocks, risking their recovery

- ✗ Capelin (2J3KL)
- ✗ Northern cod (2J3KL)⁴
- ✗ Atlantic herring (4VWX)⁵

³ Refers to the Northwest Atlantic Fisheries Organization (NAFO) Convention area corresponding to the stock management area. See map for more: <https://www.nafo.int/About-us/Maps>

⁴ There remains a moratorium in effect for the Northern cod commercial fishery, however, the Stewardship Fishery allowed a maximum authorized harvest level of 12,999 tonnes. This is a rollover from the 2021 amount, which does not follow scientific advice to keep fishing removals to the lowest possible level. There is also substantial, yet unaccounted for, fishing pressure from the ongoing recreational fishery.

⁵ The Total Allowable Catch (TAC) was reduced by 33 per cent from the previous year. However, this decision was not in line with the Precautionary Approach Framework and went against the result of the government's own management strategy evaluation which proposed a quota reduction of 63 per cent. Further, removals of bait are not accounted for and are largely uncertain. See link for more: <https://oceana.ca/en/blog/forage-fish-are-essential-to-the-marine-ecosystem/>

SIX YEARS OF ASSESSING FISHERIES MANAGEMENT



Credit: OCEANA/Carlos Minguell

As threats like climate change, overfishing, biodiversity loss and pollution accelerate, the need to rebuild depleted fish populations has never been more urgent.

Over the past six years of *Fishery Audits*, the federal government has made significant investments, enacted new policies and modernized Canada's *Fisheries Act* to require rebuilding plans for critically depleted stocks. **However, these important actions have yet to make a meaningful difference on the water. Most key indicators haven't changed since 2017.**

Today, one in five stocks continues to be critically depleted, and the majority of them lack rebuilding plans. Less than a third of stocks can be confidently considered healthy. And the health of more than one-third continues to be classified as "uncertain" due to a lack of reference points and stock status.

Most of the long-standing critically depleted stocks are found in Atlantic Canada. These include groundfish and flatfish, many of which have not recovered from widespread collapses in the 1990s. Moreover, none of the Atlantic forage fish stocks populations that serve as key linchpins in the ecosystem are considered healthy.

Alarmingly, there are no healthy shark or skate species anywhere in Canadian waters, and a growing number of invertebrate stocks — including economically important species such as snow crab and shrimp — are now classified in the critical or cautious zones.

There are some reasons for optimism. Bocaccio rockfish moved from the critical zone to the healthy zone. Meanwhile, DFO's closures of depleted Atlantic mackerel and 4T spring herring fisheries are giving these crucial forage stocks a chance to rebuild.

The biggest step forward was the release of new rebuilding regulations under the *Fisheries Act* in April 2022.

The first batch of stocks prescribed under the updated rules includes 30 major fish stocks, nearly half of which are in the critical zone. According to the regulations, DFO must develop

rebuilding plans for these depleted stocks within 24 months, with the option to extend by another 12 months if deemed necessary. As a result, we can expect a big increase in the number of rebuilding plans over the next two years.

The regulations also add new levels of transparency by requiring the Fisheries Minister to publish any decision to extend timelines for creating rebuilding plans, as well as any decision not to set a timeline for meeting rebuilding objectives. If the Minister allows any fishing on a stock while its rebuilding plan is under development, the level of fishing must be kept at a level that supports rebuilding.


Canada now has the legislative, regulatory and policy framework in place to make real improvements for marine ecosystems and coastal communities — but only if those policies are implemented with the urgency required by the current state of wild fisheries.

That means completing high-quality rebuilding plans that include targets for stock rebuilding and timelines to achieve them, as well as what actions will be required and the methods to track progress. It means transparent decision-making that is consistent with growing stocks out of the critical zone while plans are in development and publishing plans on time. It means determining the health status of all stocks using the best available information. It means ensuring that all remaining depleted stocks are subject to the rebuilding regulations as soon as possible. And it means revising existing rebuilding plans to comply with the new *Fisheries Act* requirements.^{6,7}

These actions will allow Canada to make significant progress toward rebuilding abundance in our oceans, putting us in line with other progressive fishing nations that follow globally accepted standards of fisheries management.

⁶ Jeffrey A. Hutchings, George A. Rose, and Peter A. Shelton (2021). "The Flawed New Plan to Rebuild Canada's Iconic Northern Cod." *Policy Options*, March 22, 2021. <https://policyoptions.irpp.org/magazines/march-2021/the-flawed-new-plan-to-rebuild-canadas-iconic-northern-cod/>

⁷ Bailey Levesque, Devan Archibald, and Robert Rangeley (2021). The Quality of Recently Created Rebuilding Plans in Canada. In: *Fishery Audit 2021*. Oceana Canada. <https://oceana.ca/en/publications/reports/fishery-audit-2021>



Less than 1/3 of stocks are considered healthy, and more fish are critically depleted than the government acknowledges.

The data in this report focuses exclusively on Canada's marine fisheries. This includes finfish, shellfish and other invertebrates but not freshwater fish or fish, like salmon, that spend part of their life in fresh water. The 2022 data in this report covers the period from July 2, 2021 to July 1, 2022. Note that each year, Oceana Canada corrects minor errors found during the update process. As a result, some of the values for previous years may differ slightly from past reports. Supplementary data for Pacific salmon were included this year and are reported separately from the main dataset.

Canada's fisheries management performance is assessed using indicators developed from globally accepted best practices and from DFO's policy framework and is based on data from 194 index stocks[†] published on DFO websites.

For full details about the methodology and analysis, visit oceana.ca/FisheryAudit2022.

[†] The index stock list (194 stocks) was created for the 2017 Fishery Audit. It is based on marine fish and invertebrate stocks included in Oceana Canada's report *Canada's Marine Fisheries: Status, Recovery Potential and Pathways to Success*, combined with those included in the first public release of the DFO's Sustainability Survey for Fisheries and any stocks with newly available information from government reports that year.

Many Fundamentals of Fishery Management Remain Missing

Although the Canadian government has invested heavily and committed to strengthening fisheries science, it has fallen short in collecting a better picture of the health status of wild fish populations. This is reflected by persistent knowledge gaps in science indicators over the past six years.

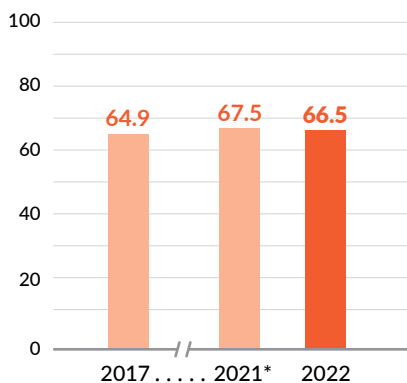
There are other issues as well. The percentage of stocks with a recent stock assessment declined over the past year. No progress was made in defining reference points, leaving more than a quarter of stocks in the critical and cautious zones without upper stock references (USRs). Although there was a slight increase in the number of stocks with estimates of natural mortality rates, the overall percentage remains low. And because most fishing mortality estimates fail to consider all sources – including bait and recreational fisheries – managers are not fully accounting for all removals.

New tools and resources, along with available knowledge, can be used to bridge data gaps and strengthen effective management.

INDICATOR:

Stocks with sufficient data to assign health status (%)

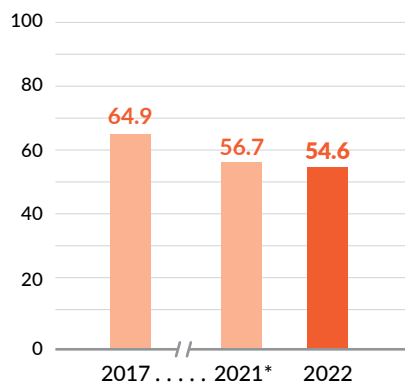
Purpose: Allow scientists to make robust estimates of how many fish are in the water and assign stock health status.



INDICATOR:

Stocks with recent biomass estimates (%)

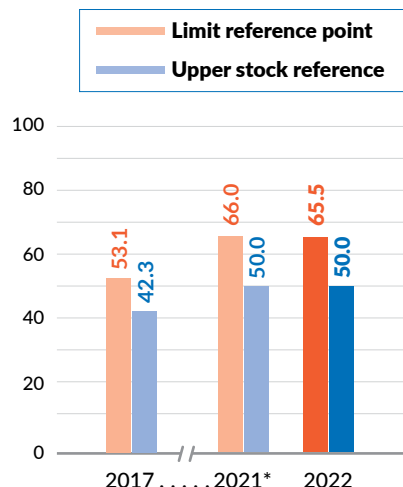
Purpose: Help managers make decisions based on recent estimates (i.e., within the last five years) of how many fish are in the water.



INDICATOR:

Stocks with reference points established (%)

Purpose: Allow managers to assess whether a stock is in healthy, cautious or critical condition, set appropriate harvest levels and gauge the success of management measures.



* 2018 to 2020 data available at [Oceana.ca/FisheryAudit2022](https://oceans.ca/fisheryaudit2022)



An **upper stock reference** (USR) identifies the boundary above which a fishery can be considered healthy, while a **limit reference point** (LRP) identifies the boundary below which it can be considered in a critical state. Ideally, corrective action should be taken before a stock reaches the limit reference point. A **target reference point** (TRP) refers to the desired state of a stock, based on productivity goals, broader ecological considerations and socio-economic objectives for the fishery. The TRP is often set at or above the USR.



Marine ecosystems are complex, with large, predatory fish usually eating smaller and highly abundant fish and invertebrates. For many years, Canada overfished those predatory fish, like cod and other groundfish, leading to their collapse. Since then, the country's seafood economy has shifted to their prey.

Today, just four invertebrate groups make up most of the value of Canada's wild-caught fisheries: lobster, crab, shrimp and scallops.⁸ But the size of some of these stocks have been shrinking. When Oceana Canada published its first *Fishery Audit* in 2017, one invertebrate stock was critically depleted. Today, that number has grown to 11, while most forage fish stocks are also depleted.

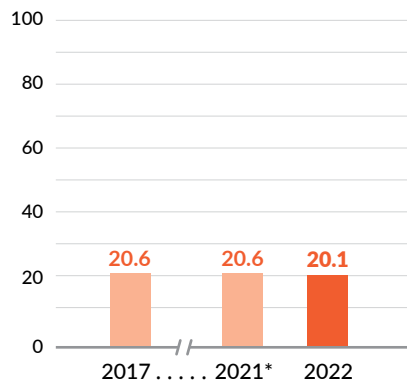
A lack of basic science is compounding the problem. Many highly lucrative shellfish fisheries are still missing fundamental components needed for effective management. Forty-one per cent lack limit reference points (LRPs), while half lack USRs.

Predator species, like cod, can't recover if they don't have enough prey to eat. Further, as pollution and climate change add to the pressure, it's more urgent than ever to rebuild Canada's forage fish and invertebrates to ensure the foundations of our marine ecosystem are as resilient as possible and can support diverse seafood economies.

INDICATOR:

Stocks with fishing mortality estimates (%)

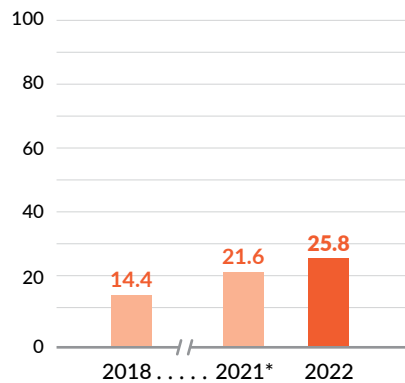
Purpose: Help determine the rate of fish removal and sustainable fishing limits.



INDICATOR:

Stocks with natural mortality estimates (%)**

Purpose: Help make better fisheries management decisions by determining the rate at which fish naturally die.



* 2018 to 2020 data available at [Oceana.ca/FisheryAudit2022](https://oceans.ca/fisheryaudit2022)

** New indicator in 2018



Nearly 80% of Canada's wild marine fish populations lack an estimate of fishing mortality, the rate at which fish are being harvested.



A third of stocks still lack LRPs and half lack USRs. According to the 1995 United Nations Fish Stocks Agreement, fisheries must have limit and target reference points.



33.5% of stocks don't have sufficient data to assign them a health status.

According to the new *Fisheries Act* rebuilding regulations, DFO must establish LRPs for all prescribed stocks, and there are guidelines on how fisheries managers should develop them. However, the same is not true for USRs and target reference points (TRPs). To manage fisheries responsibly, DFO must prioritize establishing USRs for critical stocks and both upper and limit reference points for uncertain stocks, using the best available science.



⁸ <https://www.dfo-mpo.gc.ca/stats/commercial/land-debarq/sea-maritimes/s2020pv-eng.htm>

Incremental Progress, but Room for Improvement

What gets monitored gets managed. Until we know how much of each stock is harvested as commercial catch, recreational catch, bait and bycatch, we can't establish accurate mortality rates – and without mortality rates, we can't make confident management decisions that support long-term healthy fisheries.

Canada's Fishery Monitoring Policy, released in 2019, has the potential to dramatically improve the quality of stock assessments and public confidence in fisheries management. The policy is now included in the Sustainable Fisheries Framework work plan, which outlines priorities for DFO. However, it has yet to be fully implemented in any fishery.

Since last year, there have been incremental increases in the number of fisheries with full dockside monitoring as well as logbooks to report bycatch, but the levels of at-sea and electronic monitoring remain the same as 2021. The federal government needs to ensure all fisheries have sufficient monitoring to provide dependable estimates of fishing mortality from all sources – including bait and recreational.

Knowing how many fish are harvested and discarded each year is key to preventing overfishing and controlling bycatch.

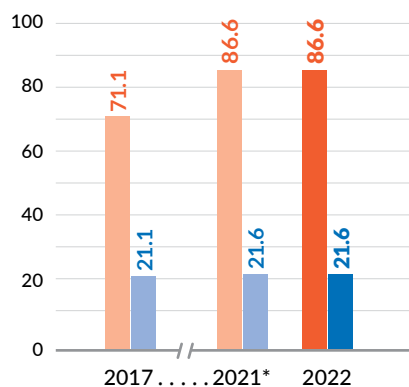
INDICATOR:

Stocks with fisheries that have catch monitoring in place (%)

Purpose: Help prevent overfishing, control bycatch and collect scientific information for stock assessments.

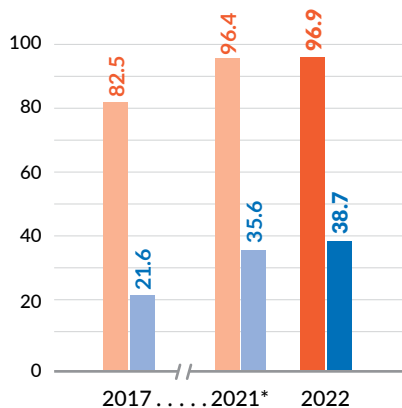
AT-SEA MONITORING

- Some level of at-sea or electronic monitoring (%)
- At-sea or electronic monitoring with 100% coverage (%)



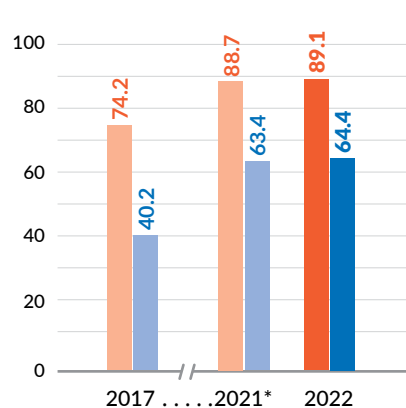
LOGBOOKS

- Some level of mandatory logbooks (%)
- Mandatory logbooks that record the entire catch (%)



DOCKSIDE MONITORING

- Some level of dockside monitoring (%)
- Independent dockside monitoring of 100% of landings (%)



* 2018 to 2020 data available at [Oceana.ca/FisheryAudit2022](https://oceans.ca/fisheryaudit2022)

MONITORING GAPS JEOPARDIZE MACKEREL RECOVERY EFFORTS

This year, DFO closed the commercial and bait fishery for Atlantic mackerel, apart from a small exception for bluefin tuna operators. It was a difficult but necessary decision. Mackerel has been in the critical zone for more than a decade. Failure to rebuild these crucially important forage fish means that countless other species and nearby coastal communities will continue to be negatively affected.

Unfortunately, the existing Atlantic mackerel rebuilding plan fails to meet international standards and DFO's own policy guidance. This underscores the importance of the decision to include Atlantic mackerel in the first batch of stocks subject to new rebuilding regulations. As a result, DFO must provide a more robust plan with abundance targets and scientifically informed timelines.

To do that, it needs to know how much mackerel is being pulled out of the water. And that's where this fishery falls short, with DFO estimating that 2,000 to 5,000 tonnes of catches could be unreported each year.

In 2021, DFO established daily recreational catch limits to help address previously unregulated and unlimited fishing. However, there is still no mechanism for reporting catches in

the recreational fishery, and a requirement to submit landings records was only recently introduced for bait harvesters in some areas.

Further complicating matters is the transboundary nature of this fishery, with both Canada and the U.S. fishing a portion of the stock. The two countries must coordinate on strong and consistently applied management measures and monitoring — particularly for the bait and recreational fisheries.

To rebuild Atlantic mackerel, DFO needs to rigorously manage and limit all sources of fishing on this vulnerable and valuable species.

Mackerel mortality might be twice as high as this critically depleted stock can withstand. But without good monitoring data, scientists can't develop reasonable estimates.



Canadian harvesters and consumers both benefit from fisheries monitoring and increased transparency across the seafood supply chain. Monitoring fishing activities not only helps minimize bycatch and prevent overfishing, but it enables the story of where your seafood comes from to be told, which allows people to make more sustainable choices.

— Sonia Strobel, Co-founder and CEO, Skipper Otto Community Supported Fishery

Canada Has the Policy Framework – Now We Need Action

In 2019, Canada amended the *Fisheries Act* to require rebuilding plans for depleted fish stocks. In April 2022, it released new regulations that specify the legal requirements for those rebuilding plans, including targets and timelines. It also released the first batch of stocks prescribed under the new regulations. Of the 30 included in that list, nearly half are in the critical zone. Those stocks now require a rebuilding plan to be developed or revised to meet the legal requirements within 24 months, unless the Fisheries Minister deems that an additional 12-month extension is necessary.

As a result, Canada has the legal tools it needs to ensure critically depleted populations get the rebuilding plans needed to help return abundance to our oceans. The regulations also add new levels of transparency. The Fisheries Minister is now required to publish any decision to extend timelines to create rebuilding plans, as well as any decision not to set a timeline for meeting rebuilding objectives.

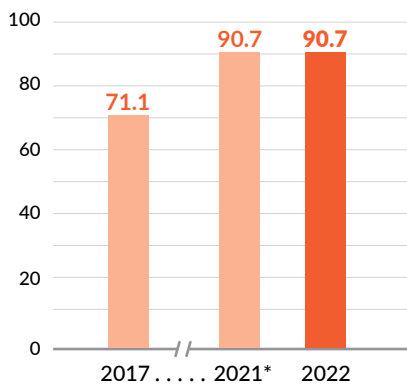
Those changes were urgently needed. Although the vast majority of stocks are now included in Integrated Fisheries Management Plans, stocks in the critical zone need rebuilding plans that provide a clear pathway back to abundance. However, only six of Canada’s 33 critically depleted stocks currently have such plans in place – and many of them are insufficient.

Clearly there is more work to do. All critical and cautious stocks should be listed under the regulations as soon as possible. At the same time, other policies committing Canada to the Precautionary Approach and the principles of ecosystem-based fisheries management – including the Fishery Monitoring Policy – need to be implemented swiftly.

INDICATOR:

Stocks included in Integrated Fisheries Management Plans (IFMPs) (%)

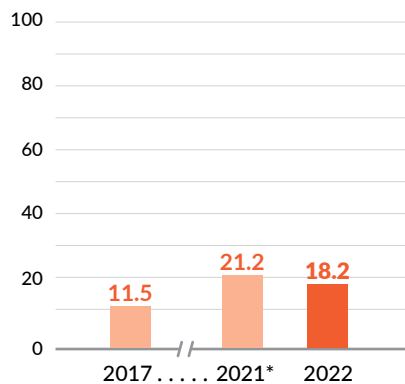
Purpose: Provide a planning framework for the conservation and sustainable use of Canada’s fisheries, clearly outlining how a fishery will be managed over a given period.



INDICATOR:

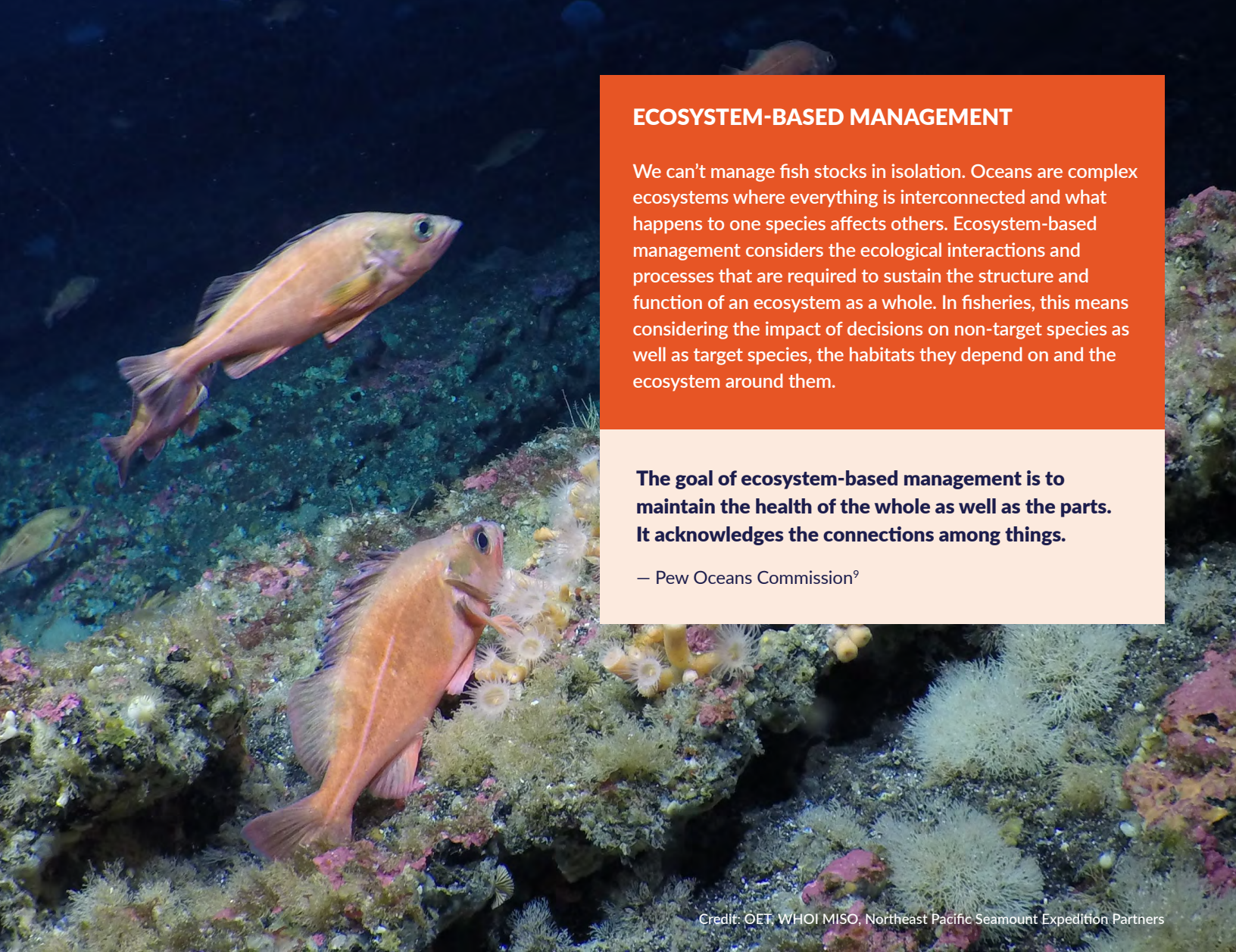
Stocks in the critical zone with rebuilding plans in place (%)

Purpose: Provide a planning framework to rebuild stocks out of the critical zone. Serious harm is occurring to stocks in the critical zone, and conservation actions are crucial.



* 2018 to 2020 data available at [Oceana.ca/FisheryAudit2022](https://oceans.ca/fisheryaudit2022)

Canada must improve fisheries management to help halt biodiversity loss, advance reconciliation with Indigenous Peoples and protect against climate change.



ECOSYSTEM-BASED MANAGEMENT

We can't manage fish stocks in isolation. Oceans are complex ecosystems where everything is interconnected and what happens to one species affects others. Ecosystem-based management considers the ecological interactions and processes that are required to sustain the structure and function of an ecosystem as a whole. In fisheries, this means considering the impact of decisions on non-target species as well as target species, the habitats they depend on and the ecosystem around them.

The goal of ecosystem-based management is to maintain the health of the whole as well as the parts. It acknowledges the connections among things.

— Pew Oceans Commission⁹

Credit: OET, WHOI MISO, Northeast Pacific Seamount Expedition Partners

GOVERNMENT ACTIONS FALLING SHORT FOR FORAGE FISH

Despite some opposition from industry, DFO followed science advice in closing the Atlantic mackerel and 4T spring herring fisheries this year. These forage fish play a crucial role in the Northwest Atlantic ecosystem, feeding many other species, including cod, tuna, seabirds and whales.

However, DFO failed to do the same for other key forage fisheries: 2J3KL capelin and 4VWX Atlantic herring. Maintaining high quotas for these depleted populations is a short-sighted decision that undermines the long-term socio-economic value of the fishery and fails to protect the health and abundance of the ocean.

Today, none of the Atlantic forage fish stocks are healthy. Yet more than half of forage stocks lack LRPs, and more than a third don't have USRs. Meanwhile, DFO categorizes the status of 42 per cent of forage stocks as "uncertain."

Healthy ecosystems depend on healthy forage fish. That's why DFO must apply ecosystem-based principles, consistently implement widely accepted best practices outlined in the Policy on New Fisheries for Forage Species and make decisions based on the best available science for the sustainability of these fisheries and the communities they support.¹⁰

⁹ https://www.pewtrusts.org/-/media/assets/2003/06/02/poc_summary.pdf

¹⁰ Reba McIver, Robert Rangeley, and Devan Archibald (2021). Small Fish, Big Influence: The Case for Rebuilding Capelin. Oceana Canada. <https://oceana.ca/en/publications/reports/small-fish-big-influence-case-rebuilding-capelin>

Isabelle Jubinville, Rebecca Schijns, and Robert Rangeley (2022). Capelin in Crisis. Oceana Canada. https://oceana.ca/wp-content/uploads/sites/24/Capelin-in-Crisis-2022_final.pdf

FAILING TO CONSIDER CLIMATE CHANGE



Climate change and ocean acidification are affecting fisheries around the world, raising water temperatures and changing water chemistry, impacting biological processes, altering migratory patterns and disrupting habitats. Looking ahead, these impacts will only intensify.

However, Canada's current approach to fisheries management fails to adequately consider the effects of climate change. Although we have an abundance of knowledge about how climate change affects marine populations, that information is often missing from DFO's science and advisory documents.

In fact, the science and management documents for nearly three-quarters (72 per cent) of fish stocks do not formally consider climate change, despite the availability of scientific evidence.

This number includes forage fish, groundfish and large pelagic fish like tunas, which may have wider ecosystem implications. When climate considerations are included, they tend to be for healthier, less-vulnerable stocks instead of depleted stocks facing higher risks from climate effects.

Consider eight critically depleted shrimp stocks in the Pacific region that serve as a useful indicator of wider ecosystem changes.¹¹ Elevated temperatures, shifts in predator distributions and ocean acidification could have a significant impact on these highly vulnerable populations. However, the effects of climate change are not considered in their official scientific stock assessments and management plans.

Meanwhile, important scientific tools have yet to be consistently applied across all fisheries. These include vulnerability and risk assessments, risk-based frameworks, ecosystem-based fisheries management and a National Climate Change Adaptation Framework.

We can't ignore climate change. With each passing year, it will put more pressure on vulnerable stocks. We need to strengthen the resilience of marine ecosystems — and that means minimizing cumulative impacts, assessing the most vulnerable populations and adapting management plans accordingly.

To fully address climate change effects in fisheries science and management, Oceana Canada has recommended several improvements,¹² outlined in the Recommendations section on page 23.

¹¹ Northern shrimp in the following four Shrimp Management Areas: Fraser River, Georgia Strait East, 16, 18–19; as well as pink shrimp in the following four Shrimp Management Areas: Georgia Strait East, 14, 16, 18–19.

¹² Schijns, R. & Rangeley, R. (2022a). Are climate change impacts being evaluated in Canadian fisheries management? In: Fishery Audit 2022: Unlocking Canada's Potential for Abundant Oceans. Oceana Canada. [Oceana.ca/FisheryAudit2022](https://oceana.ca/FisheryAudit2022)



To restore ocean abundance in the face of climate change, more conservation-focused fisheries management is required, but it should not stop there. To rebuild overfished stocks, it is imperative to fully account for species vulnerability to climate change and urgently employ adaptive management strategies.

— Dr. William Cheung, Director at the Institute for the Oceans and Fisheries, Canada Research Chair in Ocean Sustainability and Global Change

SAVING THE SALMON



Credit: iStock/edb3_16

For generations, wild Pacific salmon have played a crucial role in the lives of Indigenous Peoples living on the North Pacific Coast. But today, overfishing, climate change and habitat destruction have led to less predictable returns and serious declines in many stocks.

“For the first time in millennia, we can no longer reliably depend on salmon as a food source,” says Christine Smith-Martin, CEO of Coastal First Nations. “The legendary runs of wild sockeye, Chinook, pinks, chum and coho that once filled our inlets, bays and estuaries are severely depleted.”¹³

Alarming, less than one-sixth of B.C.’s salmon populations have a stock status under the Wild Salmon Policy that Canada introduced in 2005. Meanwhile, habitat assessments for watersheds show that the spawning grounds of nearly half (47.5 per cent) of all salmon populations are at high risk from cumulative pressures.¹⁴

The status quo is not working. The management issues that apply to other wild fish populations also apply to salmon. These include an absence of reference points, inadequate monitoring and slow policy implementation. Currently, the status of most salmon populations is unknown. And of those populations that do have enough data, few are considered healthy.¹⁵ The recommendations in this *Audit* apply to Pacific salmon, including the need for the federal government to work collaboratively with Indigenous Peoples to develop lasting solutions.

¹³ <https://oceana.ca/en/blog/rebuilding-fisheries-and-wild-fish-stocks-for-coastal-first-nations-would-be-reconciliation-in-action/>

¹⁴ Salmon Watersheds Program (2020). Pacific Salmon Explorer. Available online at: <https://www.salmonexplorer.ca/#/>

¹⁵ Fishery Audit 2021: Unlocking Canada’s Potential for Abundant Oceans: Canada’s Performance from 2017-2021. Oceana Canada. [Oceana.ca/FisheryAudit2021](https://oceana.ca/FisheryAudit2021)



MOBILIZING INDIGENOUS PRIORITIES AND KNOWLEDGE



Credit: iStock/jimfeng

In the summer of 2021, Oceana Canada brought together participants from both Atlantic and Pacific coasts representing a number of First Nations, Treaty Tables and Indigenous research organizations to discuss Indigenous priorities and approaches for rebuilding wild fish populations.¹⁶ A clear message emerged from the workshop: shared decision-making and a new narrative are required.

Participants stressed that Indigenous Knowledge Systems and ways of knowing should be incorporated into fisheries management by being considered on an equal footing with DFO science contributions and with opportunities for separate Indigenous-led assessments.

The federal government must be mindful not to conduct “checkbox” consultations. Rather, it must meaningfully engage with Indigenous Peoples to make decisions — and those decisions must be informed by Indigenous Knowledge Systems and Two-Eyed Seeing. Indigenous Knowledge Systems emphasize localized knowledge that changes from place to place. They reflect the unique culture, histories and worldviews of Indigenous Peoples who have stewarded their local ecosystems for millennia. Two-Eyed Seeing combines the strengths of Indigenous knowledge and ways of knowing with those of the mainstream to ensure actions taken today don’t compromise the future of a species or ecosystem.

The recommendations in the report represent the views held by the workshop participants and are not the official positions of Oceana Canada or any Indigenous organization affiliated with this event.



The decline of culturally significant fish species is not only a loss of food but also a loss of identity and culture. Canada’s obligation to rebuilding fisheries is inextricably linked with its commitment toward reconciliation. This requires a balanced approach to fisheries management that embraces the unique knowledge systems held by Indigenous Peoples.

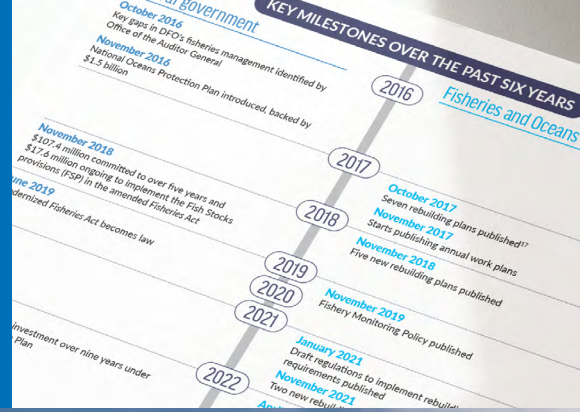
— Ken Paul, member of the Wolastoqey Nation

¹⁶ <https://oceana.ca/wp-content/uploads/sites/24/Indigenous-Fisheries-Priorities-2021-Workshop-Report-15September2022-FINAL.pdf>



Credit: Shutterstock/Dolores M. Harvey

PROGRESS SINCE 2017



The policies governing fisheries management have come a long way in the past six years. For the first time in 150+ years, Canada has put in place legal and regulatory requirements to rebuild depleted fisheries. But so far, that hasn't resulted in meaningful change on the water. To start rebuilding ocean abundance, key actions are still needed.

The timeline on the following page outlines some of the key milestones over the past six years, as well as what needs to happen next to establish healthier, abundant oceans.



KEY MILESTONES OVER THE PAST SIX YEARS

Federal government

October 2016

Key gaps in DFO's fisheries management identified by Office of the Auditor General

November 2016

National Oceans Protection Plan introduced, backed by \$1.5 billion

November 2018

\$107.4 million committed to over five years and \$17.6 million ongoing to implement the Fish Stocks provisions (FSP) in the amended *Fisheries Act*

June 2019

Modernized *Fisheries Act* becomes law

July 2022

Additional \$2 billion investment over nine years under the Oceans Protection Plan

Fisheries and Oceans Canada

2016

2017

2018

2019

2020

2021

2022

October 2017

Seven rebuilding plans published¹⁷

November 2017

Starts publishing annual work plans

November 2018

Five new rebuilding plans published

November 2019

Fishery Monitoring Policy published

January 2021

Draft regulations to implement rebuilding requirements published

November 2021

Two new rebuilding plans published

April 2022

Regulations published prescribing 30 major fish stocks to the FSP and establishing rebuilding plan requirements

October 2022

62 major fish stocks proposed and available for public comment

November 2022

One new rebuilding plan¹⁸

WHAT NEEDS TO HAPPEN NEXT

2023

June 2023 (Estimated)

All remaining critical and cautious stocks are added to the regulations under the *Fisheries Act*

2024

June 2024 (Estimated)

The Government of Canada conducts a five-year review of the *Fisheries Act*

January 2024 (Estimated)

Fishery Monitoring Policy is fully implemented in least five stocks in each DFO Region

All "uncertain" stocks are assigned a status and, as the *Fisheries Act* stipulates, those in the critical zone require rebuilding plans

April 2024 (Estimated)

All rebuilding plans for stocks listed in April 2022 are published, unless extensions are warranted

December 2024 (Estimated)

A final batch including all remaining fish stocks are listed in regulations

¹⁷ As reported in Oceana Canada's first annual *Fishery Audit*

¹⁸ Under the Fish Stock provisions, all existing rebuilding plans for critical stocks will require revisions to meet the new rebuilding requirements of the *Fisheries Act*. For prescribed stocks, revised rebuilding plans must be published within 24 months of being listed in the regulations, unless a 12-month extension is required.

REGIONAL BREAKDOWN OF CANADA'S MOST DANGEROUSLY DEPLETED STOCKS



Credit: CSSF/ROPOS, Oceana Canada, Fisheries and Oceans Canada

Oceana Canada's first *Fishery Audit* revealed that only a small handful of stocks in the critical zone had rebuilding plans. Six years later, more than 80 per cent of critically depleted stocks still lack them. However, we expect both the pace and the quality of rebuilding plans to match the urgency for rebuilding thanks to the 2022 release of rebuilding regulations under the *Fisheries Act*.

As DFO fulfills its legal obligations under the regulations, there will be 14 new or revised rebuilding plans for critical stocks in the next two years. Looking ahead, the federal government must ensure that all critical stocks are given the best opportunity to rebuild by developing and implementing plans for the remaining 22 critical stocks.

Rebuilding Plan Status for Critical Stocks

REGION	TOTAL # OF CRITICAL STOCKS	HAS A PLAN	DELAYED ¹⁹	LEGALLY REQUIRED BY 2024
Pacific ²⁰	10	0	1	1
Gulf	7	0	5	5
Maritimes	5	3	0	0
Quebec	2	0	1	1
National Capital Region ²¹	2	2	0	2
Newfoundland and Labrador ²²	7	1	1	2
Arctic ²³	0	0	0	0

¹⁹ Delayed refers to the rebuilding plans identified by DFO in previous work plans (2021–2022) whose dates of completion have been revised in the latest work plan (2022–2023). In most cases, this is because these stocks have been listed in the new rebuilding regulations and legal requirements.

²⁰ Does not include critical salmon management units (three of which currently require rebuilding plans). Also note that two stocks with rebuilding plans (bocaccio rockfish and yelloweye rockfish, inside waters) have grown above their LRPs and out of the critical zone.

²¹ Includes two rebuilding plans that require revisions to comply with the regulations.

²² Includes one rebuilding plan that requires revisions to comply with the regulations.

²³ There are currently no critical stocks identified in the Arctic region. However, climate change may shift stock distributions poleward and deeper. It will be important to continue monitoring Arctic fish populations and adapt with effective management as needed.

RECOMMENDATIONS



Credit: Jason van Bruggen

In the year ahead, Oceana Canada calls on DFO to leverage the knowledge and policy tools already available to deliver on commitments and implement real change on the water. This means:

- 1** Prescribe all remaining stocks in the critical and cautious zones to the Fish Stocks provisions in the *Fisheries Act*, and make management decisions that are consistent with the rebuilding regulations.
- 2** Meaningfully engage with Indigenous communities and organizations to make decisions about wild fish that are informed by Indigenous Knowledge Systems, as well as the best available science.
- 3** Integrate ecosystem impacts into fisheries decisions, prioritizing rebuilding depleted forage fish and addressing vulnerabilities to climate change.
- 4** Count everything caught in a fishery – including for recreational and bait purposes – and make decisions that account for all sources of fishing mortality.



Credit: Ian Mcallister

To-Do Checklist

To address the high-level priorities listed on page 23, Oceana Canada calls on DFO to complete the following key actions within the next year:

SCIENCE

- Publish a work plan that includes priorities and timelines for assigning LRPs and a health status for all “uncertain” stocks.
- Assess and document the vulnerability and climate risk of all stocks to enable climate-resilient management.
- Ensure the effects of climate change are considered consistently by integrating environmental variability into both assessments and advice.

MONITORING

- Advance monitoring activities identified in the Sustainable Fisheries Framework Work Plan, prioritizing stocks suspected of having issues with the quality of fishery monitoring data.
- Fully implement the Fishery Monitoring Policy in at least five stocks in each DFO Region each year until the policy has been implemented for all major stocks.
- Publish an annual progress report to the Fisheries Minister.

MANAGEMENT

- Implement eight new rebuilding plans.
- Include all remaining critical and cautious stocks in upcoming batches subject to the Fish Stock Provisions.
- Implement a long-term national climate change adaptation strategy and risk-based frameworks.
- Implement management decisions and strategies for all forage fish that account for the role of forage fish in the ecosystem in line with the Policy on New Fisheries for Forage Species.

TAKE ACTION

It's time to stop mismanaging
Canada's fisheries.

- 1 Sign the petition and add your voice to the urgent call to rebuild Canada's fish populations at Oceana.ca/RebuildAbundance.
- 2 Connect and share your passion for ocean protection.



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WE CAN SAVE THE OCEANS AND FEED THE WORLD.

Oceana Canada was established as an independent charity in 2015 and is part of the largest international advocacy group dedicated solely to ocean conservation. Oceana Canada has successfully campaigned to ban single-use plastics, end the shark fin trade, make rebuilding depleted fish populations the law, improve the way fisheries are managed and protect marine habitat. We work with civil society, academics, fishers, Indigenous Peoples and the government to return Canada's formerly vibrant oceans to health and abundance. By restoring Canada's oceans, we can strengthen our communities, reap greater economic and nutritional benefits and protect our future.