



2021

FISHERY AUDIT

Unlocking Our Potential for Abundant
Oceans: Canada's Performance from
2017-2021



Oceana Canada's fifth annual *Fishery Audit* assesses the current state of Canada's fisheries and fisheries management, tracks progress from 2017–2021 and provides recommendations to meet federal policy commitments to return wild fish populations to abundance in Canada's oceans.

2021

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CANADA IS FAILING OUR MARINE FISHERIES.



Credit: Alamy Stock Photo/Mauro Toccaceli



“Canada has a once-in-a-generation opportunity to undo the damage of overfishing, restore abundance to our oceans and drive our post-pandemic economic recovery. But we can’t do it without action where it counts: on the water.”

— Josh Laughren, Executive Director, Oceana Canada.

It’s been five years since Oceana Canada published its first *Fishery Audit* — an annual assessment of how well Fisheries and Oceans Canada (DFO) is managing the country’s commercially important wild fish.

In that time, we’ve seen some progress: greater transparency, substantial new investments in science, new national standards for monitoring and a modernized *Fisheries Act* that makes rebuilding depleted fisheries the law. More still needs to be done on this front. However, the biggest problem lies in implementing the policies that DFO has already put in place.

Year after year, Oceana Canada’s assessments reveal the government’s failure to significantly improve how Canada’s fisheries are managed. As a result, we haven’t seen measurable improvements in the health of wild fisheries.

Modernized laws, political commitments and much-needed investments are only as good as the government’s ability to successfully implement them, which, in the case of Canadian fisheries management, has demonstrably fallen short over the past half-decade.

Nearly one in five stocks are still critically depleted — and more than 80 per cent of them lack rebuilding plans, which outline how and when a population will be brought back to healthy levels. Indeed, DFO has yet to publish most of the rebuilding plans it promised to have completed by now. Those that have been released lack crucial components, like targets for healthy population sizes and timelines for reaching them.

Two years after the *Fisheries Act* became law, the government has not created regulations specifying the requirements for rebuilding plans and to which stocks they will apply. That means there is still no enforceable direction to rebuild depleted fisheries.

Meanwhile, the health status of a third of stocks remains uncertain, due to insufficient data. As a result, DFO is operating mostly in the dark when it makes critical decisions about these fish — like how much fishing to allow.

Data over the past five years also reveal declines in forage fish — which feed so many other species — putting entire ecosystems at risk.

Changing the trajectory of the health of Canada’s wild fish populations is more urgent than ever. Fisheries today face increasing pressure from climate change, pollution, habitat destruction and overfishing.

In the face of these major global threats, Canada must drastically speed up the implementation of modern, proven fisheries management approaches — in most cases already included in DFO policy — to help make marine ecosystems as resilient as possible. There’s too much on the line for us not to.

Canada’s seafood feeds millions of people here and around the world. It’s fundamental to the culture and livelihoods of coastal Indigenous Peoples. And it’s the largest contributor to the country’s massive marine sector GDP, a renewable source

of food and income that will play a key role in Canada's pandemic recovery. Without thriving wild fish, there is no thriving ocean-based economy.

We have the tools. Global best practices to restore abundance to our oceans already exist. The United States, the European Union and New Zealand have implemented progressive measures to restore depleted fisheries and are seeing the benefits through healthier fish populations and, in many cases, higher catches. Canada must do the same.

The key steps, though sometimes difficult, are clear: Implement strong *Fisheries Act* regulations to set the foundation for returning Canada's fish stocks to abundance.

Ensure decisions are based on the best available science. Incorporate Indigenous evidence, practice and knowledge systems. Work aggressively to restore forage fish like capelin, herring and mackerel. And track and report on how many fish are harvested by *all* sources of fishing, including bait and recreational fisheries.

Rebuilding wild fish populations can — and must — be a priority for the newly elected government. For our marine ecosystems. For Canadians. For reconciliation. For the future of our ocean-based economy. And for our ability to help feed the world's growing population.

97 per cent of people across Canada feel it's important that the government rebuilds depleted fish populations.*

* The poll was conducted by Abacus Data for Oceana Canada and surveyed 1,500 Canadians in late April 2021.

Credit: shutterstock/Atlantic Coast Images

THE 2017–2021 SCORECARD

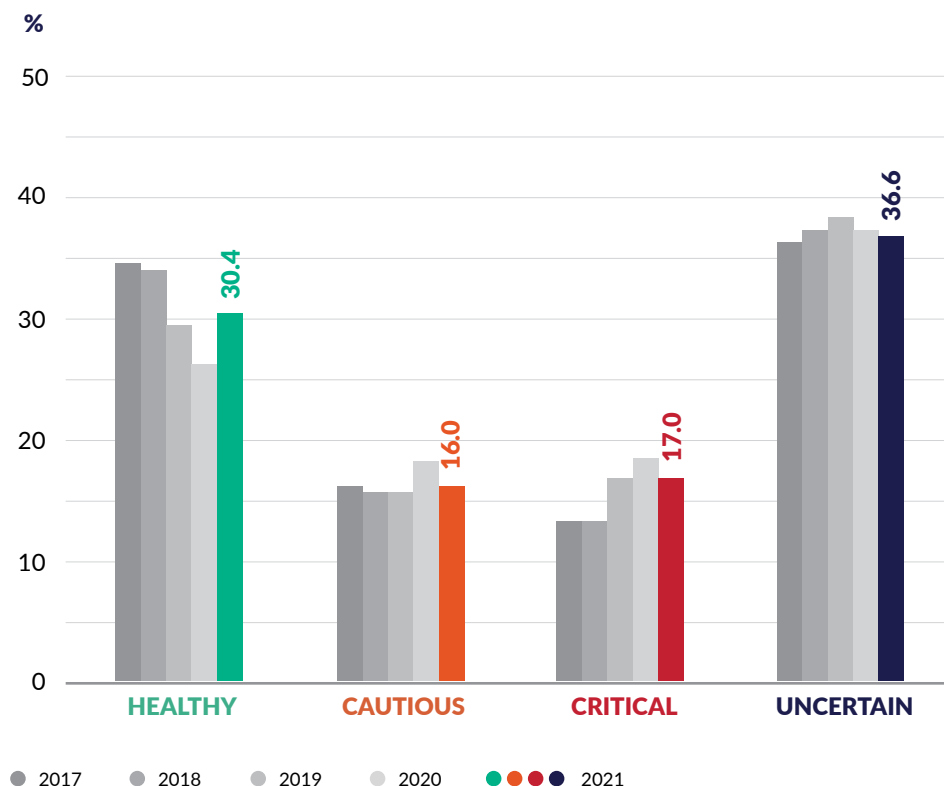
Rebuilding depleted fisheries and preventing healthy fish populations from declining requires good science, monitoring and management. This *Audit* takes a deep dive into each of these areas, examining key indicators to determine how well our country's fisheries are being managed and where improvements need to be made.

Overall Stock Health Status

Little Improvement After Half a Decade

The results of Oceana Canada's latest *Fishery Audit* reveal that little has changed in the water over the past five years. Less than a third of marine fish and invertebrate stocks can be confidently considered healthy, and nearly one in five are critically depleted. Meanwhile, the status of another third is uncertain, primarily due to a lack of data.

HEALTH STATUS OF CANADA'S FISHERIES, 2017–2021



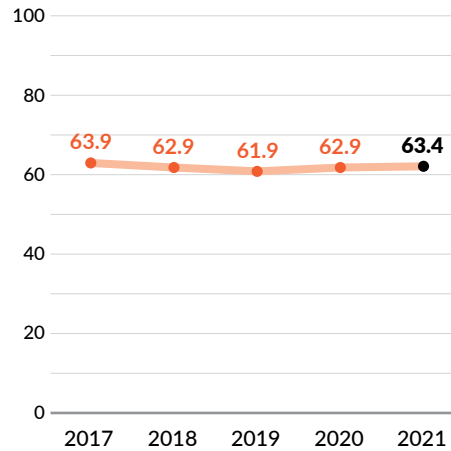
“Canada's efforts to sustain healthy oceans are harmed by how much decision-making discretion the Fisheries Minister has. Curtailing this would increase accountability and transparency, strengthen links between science and policy and limit government's ability to make decisions that hinder fisheries sustainability – such as setting fishing quotas when stocks are depleted.”

— Dr. Jeffrey Hutchings, Professor, Dalhousie University, and Chair of two Royal Society of Canada expert panels on sustaining Canada's marine biodiversity.

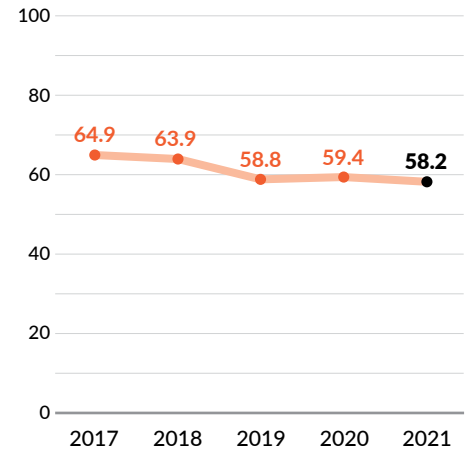
Crucial Data Still Missing

DFO has made some progress in tracking the data needed to manage fisheries well. We've seen modest gains in natural mortality estimates, which help the Fisheries Minister make better management decisions by determining the rate at which fish naturally die. There have been significant increases in the number of stocks with limit reference points (LRPs) — the point below which a stock is considered in serious danger. More stocks now also have upper stock references (USRs) — the boundary between the healthy and cautious zones — but half still lack this crucial reference point. Meanwhile, less than 10 per cent of DFO's science publications were released on time, reducing the transparency of decision-making.

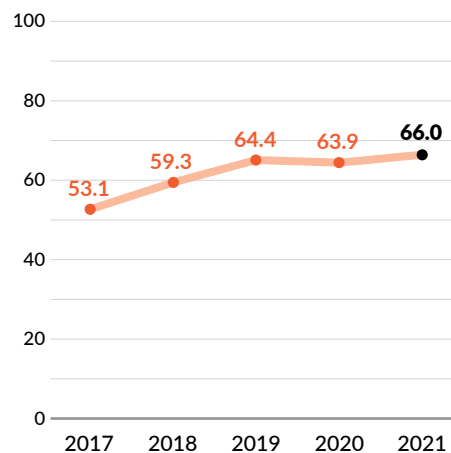
STOCKS WITH SUFFICIENT DATA TO ASSESS THEIR HEALTH STATUS (%)



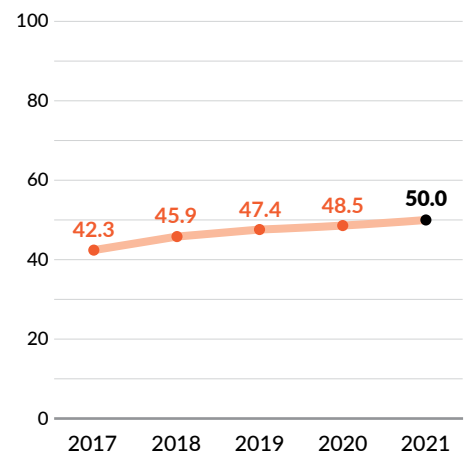
STOCKS WITH RECENT BIOMASS ESTIMATES (%)



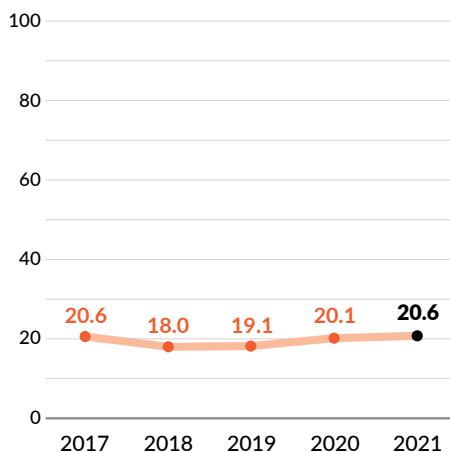
STOCKS WITH LIMIT REFERENCE POINTS (LRPs) ESTABLISHED (%)



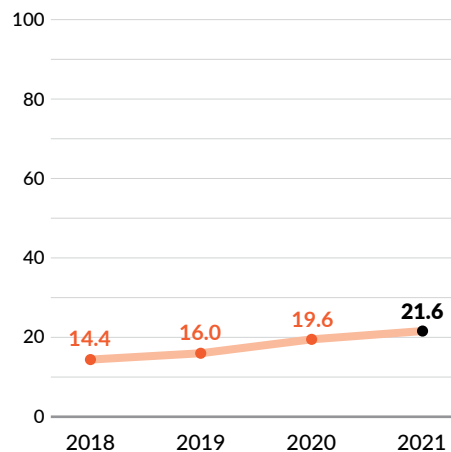
STOCKS WITH UPPER STOCK REFERENCES (USRs) ESTABLISHED (%)



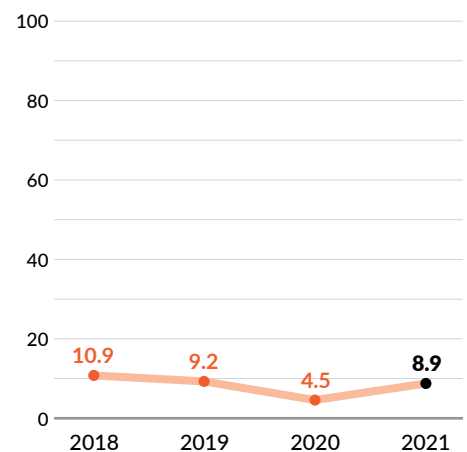
STOCKS WITH FISHING MORTALITY ESTIMATES (%)



STOCKS WITH NATURAL MORTALITY ESTIMATES* (%)



SCIENCE PUBLICATIONS RELEASED ON TIME* (%)



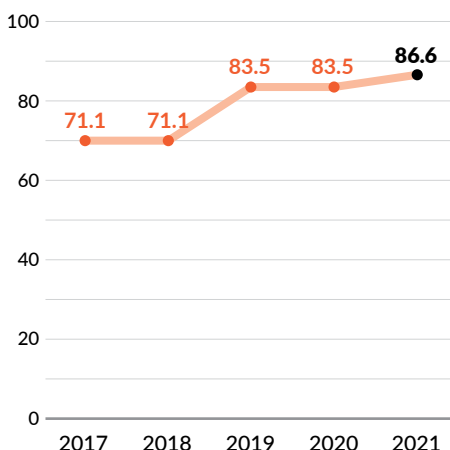
Monitoring

Strong Policy, Delayed Rollout

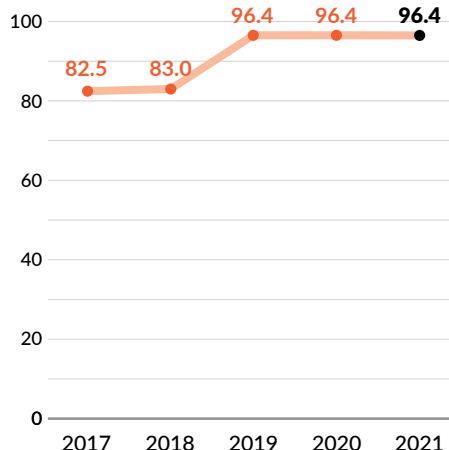
Realizing the full potential of the modernized *Fisheries Act* depends on effective monitoring. Over the past five years, we've seen greater clarity on the number of fisheries that require some form of monitoring — through logbooks, dockside monitoring

and at-sea monitoring. The federal Fishery Monitoring Policy released in 2019 introduced national standards and has the potential to fill important data gaps. Although it has yet to be fully implemented in any fishery, DFO listed implementing the policy as a priority in its 2021/22 Sustainable Fisheries Framework work plan.

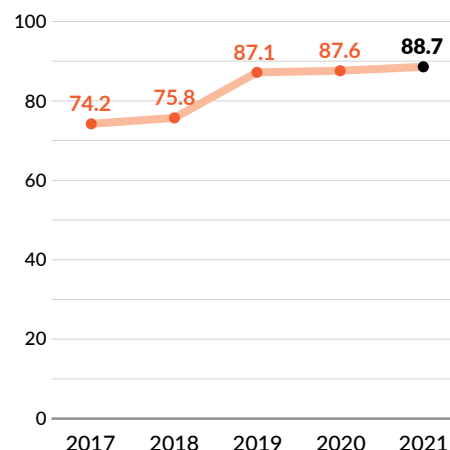
SOME LEVEL OF AT-SEA OR ELECTRONIC MONITORING (%)



SOME LEVEL OF MANDATORY LOGBOOKS (%)



SOME LEVEL OF DOCKSIDE MONITORING (%)



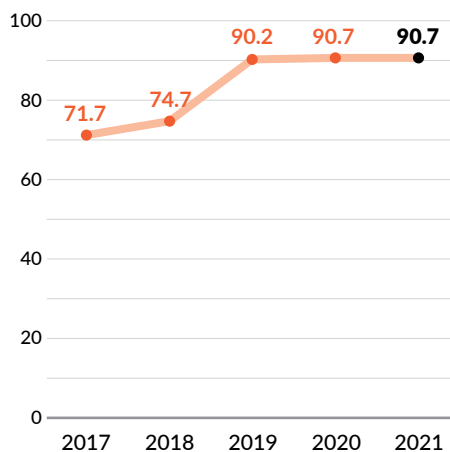
Management

More and Better Rebuilding Plans Required

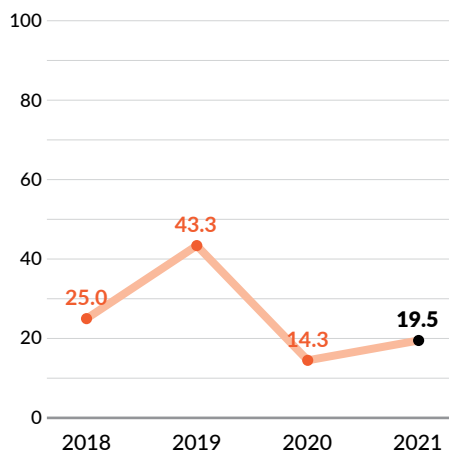
All fisheries must have Integrated Fisheries Management Plans (IFMPs) to provide the framework for conservation and sustainable use. In addition, critically depleted stocks require a rebuilding plan. Today, while the vast majority of Canada's fish stocks are included in IFMPs, there has been limited progress

with rebuilding plans. Nearly 80 per cent of stocks in the critical zone are still being managed without a plan, and the plans that have been released fall short of global standards, such as the identification of targets and timelines to rebuild stocks to healthy levels. Overall, DFO completed only a fraction of these and other work plan deliverables. While the pandemic contributed to some of the recent delays, the underlying issues date back much further.

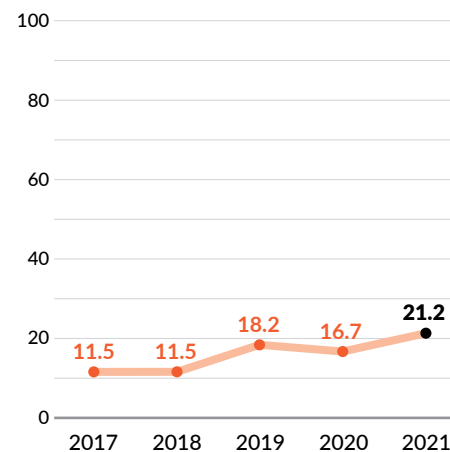
STOCKS INCLUDED IN IFMPs (%)



DFO WORK PLAN DELIVERABLES COMPLETED* (%)



CRITICAL STOCKS WITH REBUILDING PLANS (%)



* New indicator in 2018

Healthy, Cautious and Critical

DFO has three categories of fish stock health. They are defined relative to the stock biomass that would produce maximum sustainable yield or (B_{MSY}). Maximum sustainable yield (MSY) is the largest volume of fish that can theoretically be harvested without reducing the size of the population over the long term.¹

HEALTHY

A stock is considered healthy if its biomass is greater than 80 per cent of 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.

¹ MSY is a globally accepted standard for fisheries management. The Food and Agriculture Organization's (FAO) 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, which are designed to maintain or restore stocks at levels capable of producing maximum sustainable yield.
<https://www.fao.org/publications/card/en/c/e6cf549d-589a-5281-ac13-766603db9c03>



Change in Health Status

In the past five years, little has changed in the overall health of our fisheries. But a deeper dive reveals that the status of about two dozen stocks changes each year. Some have consistently improved, like deepwater redfish in the Gulf of St. Lawrence. Others have steadily declined, like North Coast Haida Gwaii razor clams. And some, like snow crab on the western Scotian shelf, improve one year only to decline the next.

Some fluctuation is normal. For example, many forage fish go through natural boom-and-bust cycles. But when overfishing happens during those bust periods, it can make the lows lower and longer lasting. That's why precautionary management is so crucial: we must proceed carefully in the face of uncertainties. With it, wild fish should be more resilient to natural changes in ecosystems and make a strong comeback when conditions are favourable — allowing catches to increase in the process.

For full details, see the appendices at oceana.ca/FisheryAudit2021.



FIVE YEARS OF ASSESSING FISHERIES MANAGEMENT



Credit: Nick Hawkins

The overall status of Canada's marine fish and invertebrates remains poor. DFO continues to fall short of implementing its own policies and commitments, all of which are necessary to address well-documented fisheries management challenges.

Since Oceana Canada's first *Fishery Audit* in 2017, the health of Canada's fish stocks has not improved. What has changed is the composition of depleted stocks. An increasing number of invertebrates are now in the critical or cautious zones, including populations of economically important species like snow crab and shrimp. Meanwhile, there are few healthy forage fish stocks, and no healthy shark or skate stocks.

Overall assessment: 33 stocks in critical condition, 71 uncertain

Climate change is affecting ocean ecosystems and putting further pressure on species that are already vulnerable. For example, British Columbia's intense heatwave this year drove up the temperature of coastal waters, resulting in die-offs of sea cucumbers, starfish and crabs. As climate change continues to accelerate, DFO's plans must take these impacts into account, starting with an increased investment to assess species vulnerability.

Encouragingly, some elements of Canadian fisheries management have improved over the past five years. In 2018, the government committed more than \$100 million to assess and rebuild fish stocks. There have been significant increases in the percentage of stocks with LRPs over the past five years. Meanwhile, transparency has improved, with nearly all stocks now included in publicly available IFMPs.

Although those achievements are laudable, there have been no significant increases in the percentage of stocks with USRs. Many of Canada's most valuable seafood species — lobster, snow crab and scallop — are still missing these key reference points needed to protect them.

Most concerningly, almost 80 per cent of critical stocks still lack rebuilding plans. For more than a decade, DFO has had

a policy that requires rebuilding plans for critically depleted stocks. Now, the 2019 *Fisheries Act* makes it the law. But the rebuilding requirements under the new law don't apply to stocks until the regulations are in place — and those haven't yet been finalized.

To realize the *Fisheries Act*'s potential to increase the abundance of our wild fish stocks, this government must implement strong regulations that require plans to include timelines and targets for rebuilding depleted wild fish to healthy levels.

Five years should be enough time to see a reversal in decline for some depleted stocks. It is definitely enough time to make measurable progress on implementing policy commitments and international best practices for rebuilding depleted stocks. That hasn't happened. To reduce significant risks to Canada's economy and ecosystems, the pace of progress must accelerate — and quickly.

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 freshwater. The 2021 data in this report covers the period from July 2, 2020 to July 1, 2021. 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.

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/FisheryAudit2021.

[†] The *Fishery Audit* 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.

PROGRESS SINCE 2017

Over the past five years, the federal government has taken important steps to improve fisheries management in Canada. This includes establishing a national Fishery Monitoring Policy, modernizing the *Fisheries Act* and committing more than \$100 million to assess and rebuild critically depleted stocks. Transparency has also increased. For the fifth year in a row, DFO released its work plans to the public in 2021, while nearly all stocks are now included in publicly available IFMPs.

Meanwhile, DFO incorporated implementing the Fishery Monitoring Policy into its annual work planning. This is a positive development and the first time the policy has appeared in DFO work plans since its release in 2019. However, the work outlined only includes a few stocks, and none will have the policy completely implemented this fiscal year.

Finally, since Oceana Canada's last *Fishery Audit*, DFO has published rebuilding plans for northern cod and Atlantic mackerel. Disappointingly, they both fall short of international best practices, lacking a target to rebuild stocks to healthy levels and lacking science-based timelines for rebuilding. Unfortunately, these were the only two completed of 14 rebuilding plans expected, according to DFO's work plans.

Credit: iStock/RLSPHOTO

REBUILDING STOCKS AND ENSURING HEALTHY FISHERIES REQUIRES:



Sound science

to understand how healthy stocks are today and how different factors will affect them in the future



Effective monitoring

to determine how many fish are harvested and discarded each year



Good management decisions

based on data that consider the entire ecosystem and prioritize long-term health and abundance over short-term and dwindling profits

Fisheries Management Decisions Are Being Made in the Dark

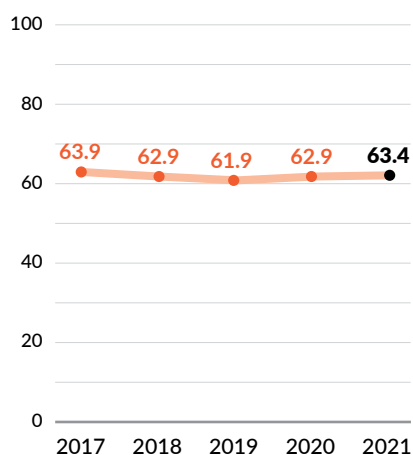
Over the past five years, the federal government has made significant financial investments and commitments to strengthen fisheries science. Where DFO has fallen short is in translating that into a better understanding of the status of Canada's fish. We've seen a slow rise in the number of stocks with limit reference points. But the number of stocks with recent biomass estimates remains stagnant at roughly 60 per cent, and the number of stocks with enough data to assess their health status hasn't improved. Furthermore, only half have upper stock reference points: a key management tool needed to help depleted species recover to healthy levels. And although DFO is obliged to publish the results of its science meetings, the vast majority of documents are published late or never made publicly available. Indeed, some publications expected from meetings in 2017 are still not available.

Good fisheries management decisions are based on the best available science, as well as local and Indigenous Knowledge.

INDICATOR:

Stocks with sufficient data to assign health status (%)

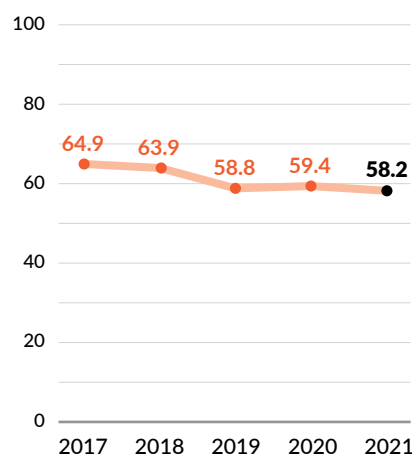
Purpose: Allow scientists to make robust estimates of how many fish are in the water and assign stock health status.



INDICATOR:

Stocks with recent biomass estimates (%)

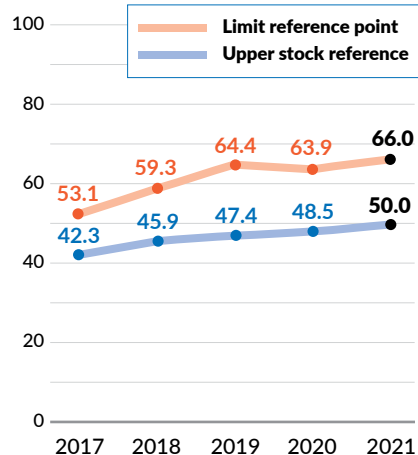
Purpose: Help managers make decisions based on recent estimates (i.e., within the last five years) of how many fish are in the water.



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.



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 to be in a critical state. Ideally, corrective action should be taken before a stock reaches the limit reference point.



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



71 stocks don't have sufficient data to assign them a health status.

WHY TARGETS ARE CRUCIAL



Effective fisheries management depends on clearly defined harvesting targets based on the best available science. The USR is a key reference point, marking the boundary between the cautious and healthy zones.

To establish a USR for a particular population, DFO considers the biomass that can support maximum sustainable yield (MSY): the total amount of fish that can be routinely harvested without risking long-term depletion. Canadian fisheries policy also calls for target reference points (TRPs) for each stock, which can be, and often are, the same as the USR.

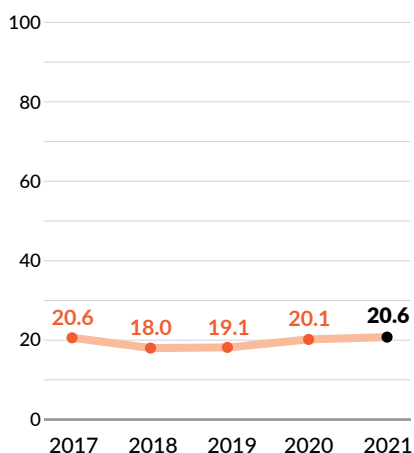
Maintaining the biomass capable of producing MSY is required by the Food and Agriculture Organization's (FAO) Code of Conduct for Responsible Fisheries, to which Canada is a signatory. Currently, however, Canada often sets its USRs at lower levels — often much lower — than the level that can support MSY. That means a stock could be classified in the healthy zone even when it's being overfished.²

To ensure sustainability, DFO must set rebuilding targets well above the USR. Leaving more fish in the water will help re-establish healthy ecosystems — and produce higher fisheries returns in the future.

INDICATOR:

Stocks with fishing mortality estimates (%)

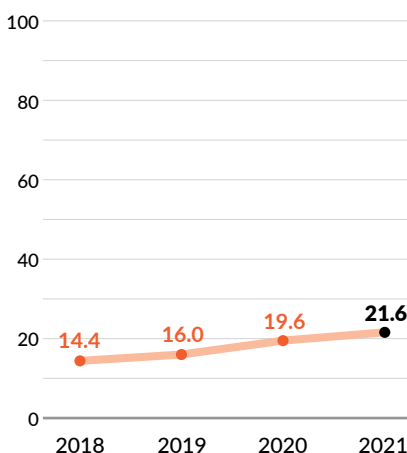
Purpose: Help determine the rate of fish removal and sustainable fishing limits.



INDICATOR:

Stocks with natural mortality estimates* (%)

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

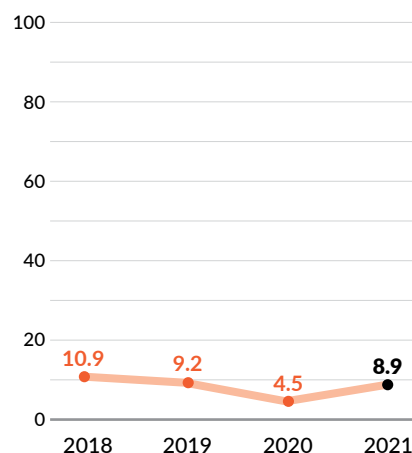


* New indicator in 2018

INDICATOR:

Science publications released on time* (%)

Purpose: Enable better transparency of fisheries management decision-making by making the most up-to-date information publicly available.



* New indicator in 2018



DATA GAP

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



Credit: Shutterstock/Volodymyr Kyrylyuk

² For example, the Food and Agricultural Organization, in its report on the status of global fish populations classifies stocks having biomass lower than the level that can produce MSY as overfished. (<http://www.fao.org/documents/card/en/c/19540EN/>)



Credit: Alamy Stock Photo/Kevin Galvin

Good Policy But Little Action

To avoid overfishing and guide rebuilding efforts, fisheries managers need to know how many fish are being caught. Over the past five years, more information has been made publicly available on the monitoring tools intended to be in place for each fishery, such as logbooks, at-sea monitoring, dockside monitoring or a combination of each. While some monitoring tools have been widely implemented, DFO acknowledges that monitoring targets are inconsistent across regions and fisheries. Moreover, no information is publicly available on how targets are set, whether they are met or whether they provide the information needed for science-based fisheries management.

DFO must prioritize implementing its Fishery Monitoring Policy, which sets national standards for catch monitoring objectives, methods and expectations. To date, this hasn't been done in any fishery. There are some recent signs of progress, however: this year, for the first time, implementing the policy was included as a priority in DFO's 2021/22 Sustainable Fisheries Framework work plan.

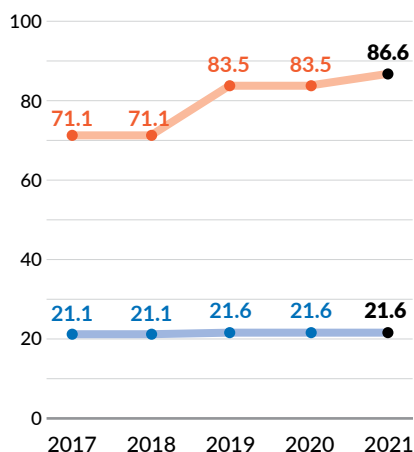
INDICATOR:

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

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

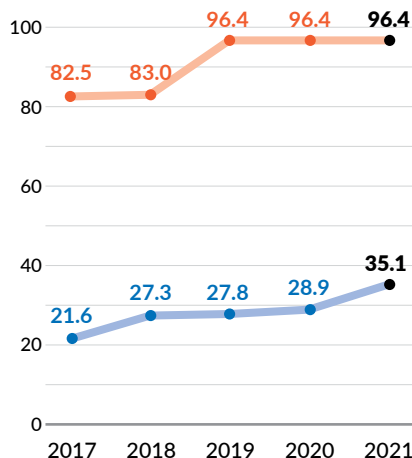
AT-SEA MONITORING

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



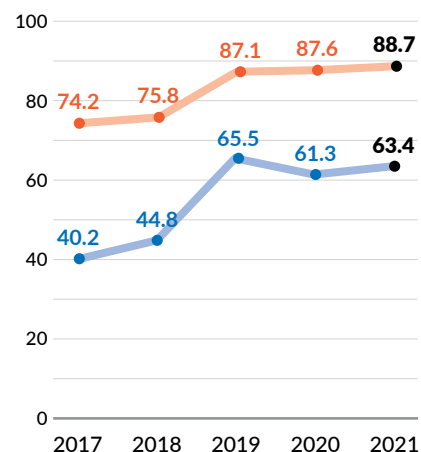
LOGBOOKS

- 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 (%)





It's time to implement Canada's Fishery Monitoring Policy – so we have dependable data on where, when and how many fish are harvested.

Credit: iStock/shaunl

ATLANTIC MACKEREL: MONITORING FAILURES UNDERMINE REBUILDING VALUABLE AND DEPLETED SPECIES

Atlantic mackerel is a forage, or prey, species, providing food for other fish, marine mammals and seabirds. It's a culturally important food, social and ceremonial fishery for Indigenous communities; a recreational fishery in the Maritimes; and valuable bait in lucrative lobster fisheries.

And it's critically depleted.

DFO's attempts to rebuild the population are severely hindered by the fact that we do not know how much mackerel is being fished. There are no fishery monitoring or reporting requirements and no estimates of removals for the recreational fishery. Only recently have bait harvesters in some areas been required to submit landings records.

The resulting uncertainty around total removals limits DFO's ability to set meaningful timelines and targets for rebuilding the stock. To rigorously manage this vulnerable and valuable species and limit all sources of fishing mortality, we need the data that comes from stronger monitoring.

Learn more at www.oceana.ca/en/publications/reports/counting-fish-why-fisheries-monitoring-matters.

Only Two Rebuilding Plans Released in 2021

Integrated Fisheries Management Plans outline the objectives for fisheries and how fisheries should be managed to meet these targets. Today, 91 per cent of Canada's stocks are included in IFMPs — a significant jump from 71 per cent five years ago. But it's a different story for rebuilding plans. Although they are required for all critically depleted stocks, the plans developed to date cover a mere 21 per cent of them.

In 2017, DFO committed to completing 19 rebuilding plans by the end of March 2021. They've fallen far short of that goal, publishing less than half. Two of those were released this year: one was for Atlantic mackerel, a stock that has spent nearly a decade in the critical zone, while the other was a long-awaited rebuilding plan for critically depleted northern cod, which has been under a fishing moratorium since 1992. But these plans have significant flaws.

These plans — like all rebuilding plans released to date — fail to establish adequate timelines. Moreover, the rebuilding target established for northern cod is set well below the critical zone boundary. As a result, even if the rebuilding plan is successful in meeting this rebuilding target the stock will remain dangerously depleted.

Strong regulations to support the new *Fisheries Act* should include requirements to improve the timeliness and quality of rebuilding plans. Unfortunately, the draft regulations released for public comment don't require clear, measurable actions to rebuild depleted populations to healthy levels — the globally accepted standard of fisheries management. Instead, they go out of their way to avoid setting any enforceable standards. DFO has committed to developing and implementing eight more rebuilding plans by the end of March 2022.



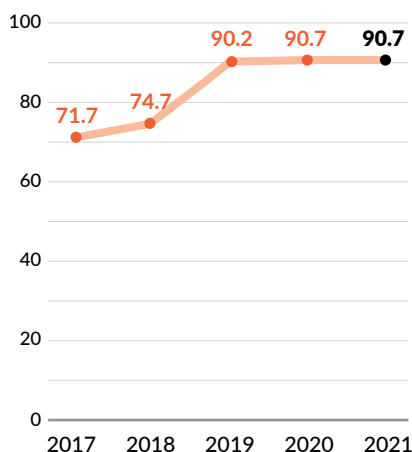
“Canadian fisheries management must emphasize rebuilding depleted fish populations to healthy levels, particularly if we want to maintain our place as a top fishing nation in the coming decades. This means ensuring at least half of the unexploited population biomass³ is left in the water to reduce the risk of unintentional overfishing, maximize the economic benefits from fisheries and sustain functional food webs.”

— Dr. Daniel Pauly, Professor & Principal Investigator, Sea Around Us, The University of British Columbia and Oceana Board Member.

INDICATOR:

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

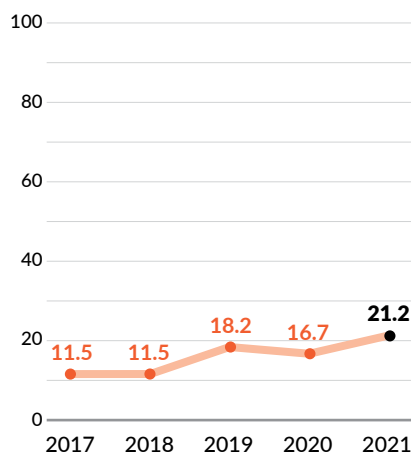
Purpose: Provide a planning framework for the conservation and sustainable use of Canada's fisheries, clearly outlining how a fishery will be managed over a given period.




INDICATOR:

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

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



³ The biomass level that supports MSY is often defined as 50 per cent of the unexploited biomass approximating the carrying capacity of a population. Source: D. Pauly and R. Froese (2021). “MSY needs no epitaph—but it was abused.” *ICES Journal of Marine Science*, 78(6), 2204–2210.



The two rebuilding plans released since the last *Fishery Audit* fail to include the targets and science-based timelines to bring the populations out of the critical zone and return them to a healthy level.

THE SAD STATE OF WILD PACIFIC SALMON

Challenges related to fisheries health and management extend beyond the marine stocks analyzed in this report. Consider wild Pacific salmon—species managed by DFO. Pacific salmon are undeniably important fish in this country, economically, culturally and as a food source for many other species, from humans to orcas. Despite their importance, the same fisheries management issues exist for salmon as with other wild fish populations, with an absence of reference points, inadequate monitoring and slow policy implementation.⁴ Currently, the status of most salmon populations is unknown. And of those populations that do have enough data, few are considered healthy.⁵

⁴ Michael H.H. Price, Karl K. English, Andrew G. Rosenberger, Misty MacDuffee and John D. Reynolds (2017). "Canada's Wild Salmon Policy: an assessment of conservation progress in British Columbia." *Canadian Journal of Fisheries and Aquatic Sciences*, 74: 1507–1518. <https://doi.org/10.1139/cjfas-2017-0127>

⁵ Salmon Watersheds Program (2020). Pacific Salmon Explorer. Available online at: <https://www.salmonexplorer.ca/#/>

Work Plan Deliverables

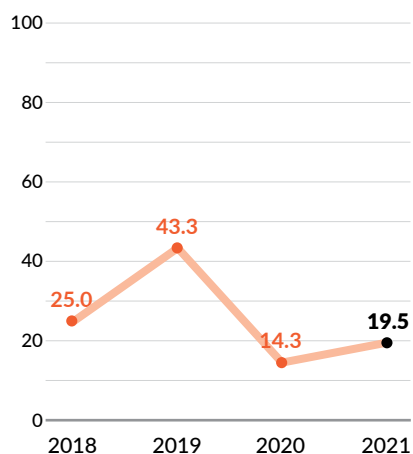
Big Commitments, Little Action

Over the past five years, the federal government has announced many commitments to improve fisheries management and backed those up with significant investments. However, it has been slow to implement them. DFO work plans make this clear. On average, DFO has only completed a quarter of the deliverables laid out in its work plans each year since Oceana Canada began its annual audits. As a result, progress on the water has been limited. To ensure robust fisheries management and better support rebuilding depleted stocks, DFO must address the systemic issues preventing it from meeting its commitments.

INDICATOR:

DFO work plan deliverables completed* (%)

Purpose: Achieve the department's own priorities set out each year, including developing LRPs, IFMPs and rebuilding plans.

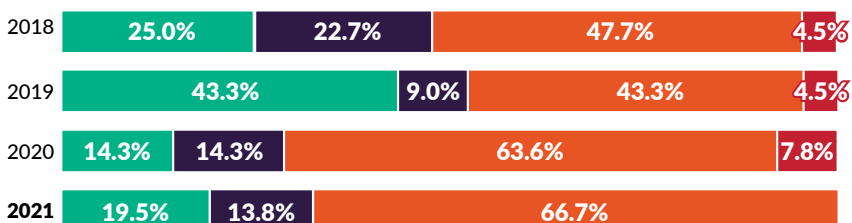


* New indicator in 2018

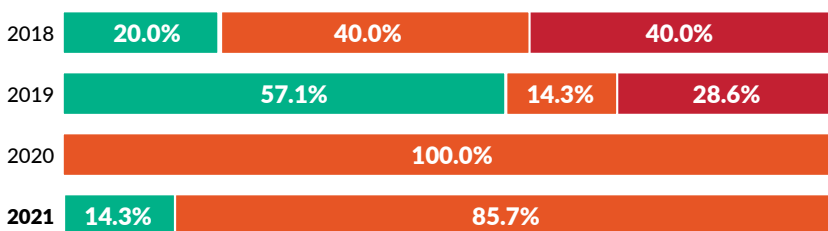
Status of Work Plan Deliverables



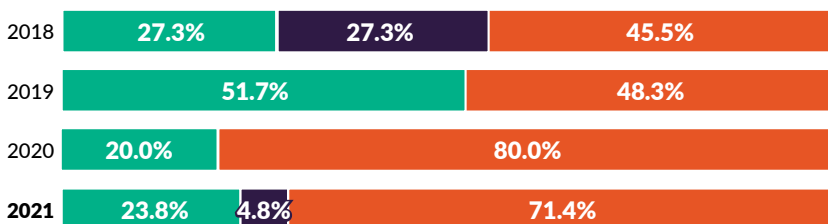
Overall



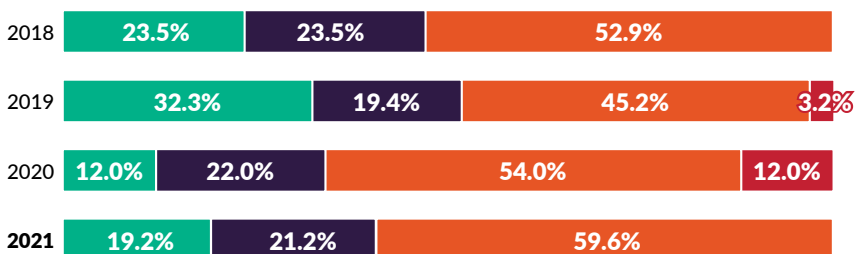
Rebuilding plans



Integrated fisheries management plans



Reference points and harvest control rules



IF COMMITMENTS WERE MET, WE WOULD SEE CHANGE

If DFO completed all deliverables outlined in all five of its fiscal-year work plans (2017/18 to 2021/22), we'd see a big jump in the number of critically depleted stocks with rebuilding plans, as well as appreciable gains in the number of stocks with LRPs and USRs.

Stocks with LRPs:



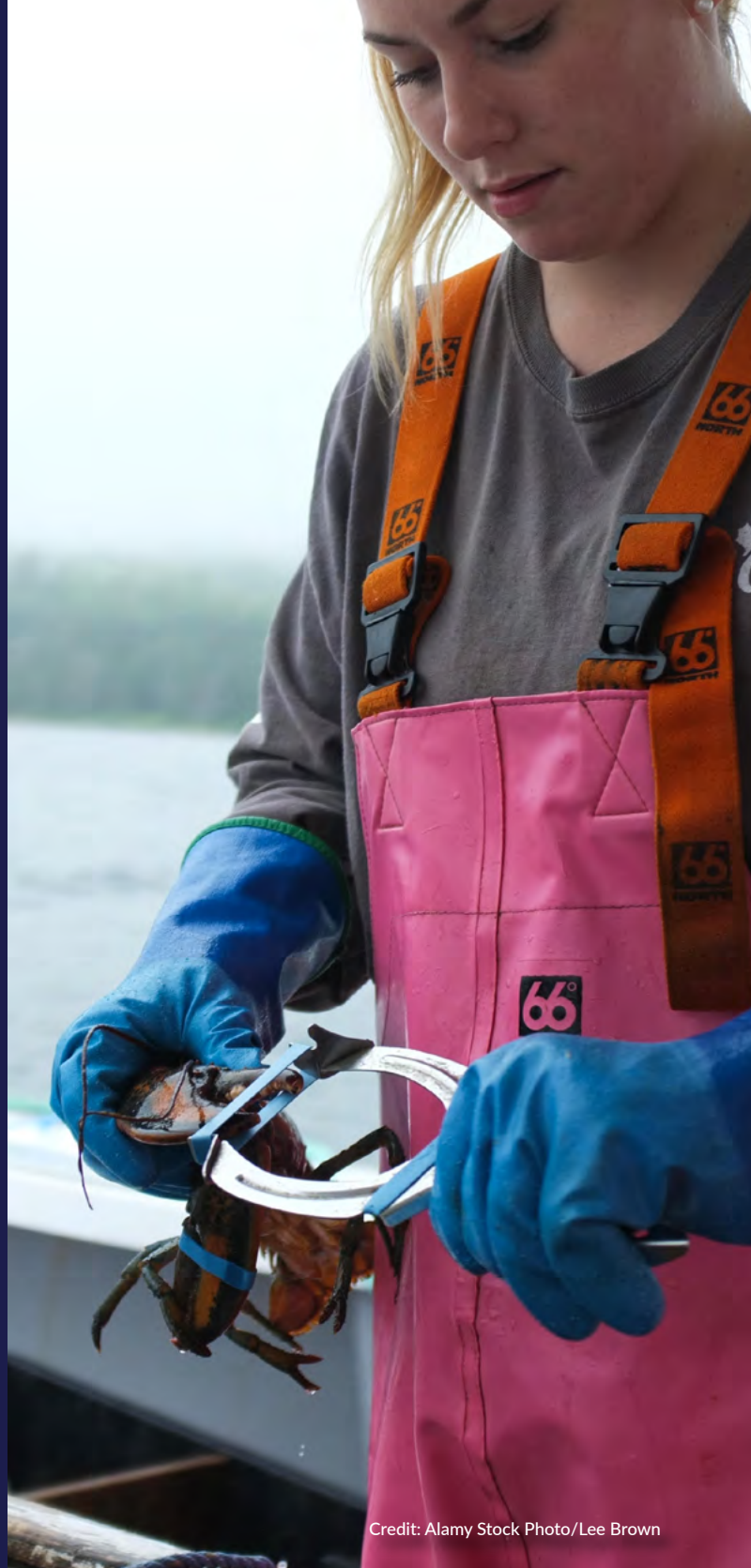
Stocks with USRs:



Stocks included in IFMPs:



Critical zone stocks with rebuilding plans:



Credit: Alamy Stock Photo/Lee Brown

Positive Pandemic Performance

This year, DFO cited the pandemic as a cause of one-third of delayed deliverables. Despite COVID-19 restrictions and policies that saw many people working remotely for the entire year, DFO increased the proportion of completed work plan deliverables from 14.3% in 2020 to 19.5% in 2021. Hopefully, this positive trend accelerates in the coming years.

SMALL FISH, BIG PROBLEMS



Credit: Shutterstock/Jef Combdon

Forage fish are a linchpin of marine food webs. These small schooling fish and invertebrates feed larger predators, including seabirds, marine mammals, cod, halibut and tuna. Forage species include bony fish, like sardines, anchovies, mackerel, herring and capelin, as well as invertebrates like krill and shrimp.

Together, they support some of the world's largest fisheries, either directly as a harvested species or indirectly as prey for commercially important fish. In fact, forage fish make up between 20 to 30 per cent of all wild-caught fish globally.⁶

These essential contributors to ocean ecosystems and Canada's ocean economy face serious threats. Of the forage fish that are harvested commercially in Canada, there are few healthy populations — and none in Atlantic Canada. Some of that is caused by environmental conditions. But a significant portion of the blame lies in overfishing. Over the past five years, quotas for depleted forage fish have been set too high, when lower fishing levels would have promoted rebuilding more quickly.

For example, capelin serves as an important food source for many species off the coasts of Newfoundland and Labrador, including northern cod, humpback whales and seabirds. Historically, the northeast Newfoundland and Labrador capelin stock sustained an abundant fishery, but it collapsed in the early 1990s. Today its population is at only six per cent of pre-collapse estimates. Despite those dangerously low numbers, DFO continues to allow a capelin fishery to operate.

Species like capelin, herring and mackerel are far more valuable in the ocean than in the net.

Meanwhile, Atlantic mackerel has been in the critical zone since 2011. However, because the widespread recreational and bait fisheries have little to no monitoring or reporting requirements, DFO simply doesn't know how much is being fished.⁷ This uncertainty makes it difficult to set meaningful targets or timelines for rebuilding.

The good news is that DFO does have a policy for managing forage fish that uses an ecosystem-based management approach. But the policy currently applies only to new fisheries, not existing ones like mackerel and capelin, leaving many major forage fish stocks without clear guidance for management decisions.

As it should for all stocks, DFO must stop harvesting depleted forage fish stocks. It must also set a minimum biomass threshold for the number of fish that must be left in the water and a maximum cap on harvest levels, informed by the best available science. And because forage fish support so many other fish, DFO must take a much more precautionary approach than it does for conventional fisheries.

“Forage fish such as capelin form the foundation of healthy ocean ecosystems as an important food source to many marine mammals, such as whales and seabirds, and larger fish, like cod. They are more valuable in the water than the net, so the Government of Canada must take extraordinary measures now to prevent overfishing.”

— Dr. Robert Rangeley, Oceana Canada Science Director



⁶ Reba McIver, Dr. 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>

⁷ Devan Archibald, Jennifer Whyte and Dr. Robert Rangeley (2021). *Counting Fish: Why Fisheries Monitoring Matters*. Oceana Canada. <https://oceana.ca/en/publications/reports/counting-fish-why-fisheries-monitoring-matters>

Canada has a *Fisheries Act* that now makes rebuilding depleted fisheries the law. But the regulations required to apply it are missing. Without strong regulations, we won't see a change on the water.



RISKY BUSINESS: TOO MUCH RELIANCE ON TOO FEW SPECIES

Failing to steward the forage fish that feed ocean ecosystems isn't the only thing that makes Canada's fisheries vulnerable. So does an economic overreliance on just four commercial species groups. Together, lobster, shrimp, snow crab and scallops represent 77 per cent of fisheries revenues in Canada.⁸ Many of these stocks lack fundamental tools for effective management. For example, more than half of snow crab and scallop stocks lack LRPs, and 79 per cent of snow crab stocks lack USRs. And that creates big economic risks.

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

Credit: Alamy Stock Photo/Yvette Cardozo

MAPPING THE MOST DANGEROUSLY DEPLETED STOCKS

In 2021, DFO published new rebuilding plans for two critically depleted stocks: Atlantic mackerel and the iconic northern cod. But, just like the other plans that were released from 2017–2021, the new plans lack adequate timelines and the targets required to help these populations recover to healthy levels. In fact, prominent scientists said the cod recovery plan was so riddled with scientific and policy weaknesses, it wasn't clear whether it will help or hinder recovery.⁹ Meanwhile, no rebuilding plans have been developed for 26 of the 33 stocks currently in the critical zone.



PLAN IN PLACE



COMMITMENT TO DEVELOP PLAN



NO PLAN

* These stocks are co-managed with other jurisdictions.

† These stocks do not have rebuilding plans compliant with DFO's Precautionary Approach but do have interim rebuilding strategies developed by the Northwest Atlantic Fisheries Organization (NAFO).

^ Rebuilding plans for these stocks are being led by management in Ottawa.

++ Atlantic herring in 4VWX was included in a rebuilding plan in 2013/14 to rebuild the largest spawning component from the cautious to healthy zone, but the plan requires updating.

⁹ 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/>

PACIFIC REGION



Bocaccio rockfish (B.C. waters)

Completed in 2013/14



Intertidal clam (North Coast Haida Gwaii Razor)



Pink shrimp (Fraser River SMA)



Pink shrimp (Georgia Strait East SMA)



Pink shrimp (SMA 16)



Pink shrimp (SMA 18–19)



Sidestripe shrimp (Georgia Strait East SMA)



Sidestripe shrimp (SMA 14)



Sidestripe shrimp (SMA 16)



Sidestripe shrimp (SMA 18–19)

NATIONAL CAPITAL REGION

- ✓ Northern shrimp (SFA 6)[^] Completed in 2018/19
- ✓ Atlantic mackerel (subareas 3 and 4)[^] Completed in 2020/21

QUEBEC REGION

- ⚙ Atlantic cod (3Pn, 4RS) Delayed (was to be completed in 2020/21)
- ✗ White hake (4RS)

GULF REGION

- ⚙ American plaice (4T) Delayed (was to be completed in 2020/21)
- ⚙ Atlantic cod (4T+4Vn (Nov–April)) Delayed (was to be completed in 2020/21)
- ⚙ Atlantic herring (4T, spring spawner) Delayed (was to be completed in 2020/21)
- ⚙ White hake (4T) Delayed (was to be completed in 2020/21)
- ⚙ Winter flounder (4T) Delayed (was to be completed in 2020/21)
- ✗ Winter skate (4T)
- ✗ Yellowtail flounder (4T)

MARITIMES REGION

- ✓ Atlantic cod (4X5Y) Completed in 2019/20
- ✓ Atlantic cod (5Zjm)* Completed in 2019/20
- ✓ Atlantic herring (4VWX) Completed in 2013/14⁺⁺
- ✗ Snow crab (4X)
- ✗ White hake (4VW)

NEWFOUNDLAND AND LABRADOR REGION

- ✓ Atlantic cod (2J3KL) Completed in 2020/21
- ⚙ Atlantic cod (3Ps) Delayed (was to be completed in 2020/21)
- ✗ American plaice (2+3K)
- ✗ American plaice (3LNO)*[†]
- ✗ American plaice (3Ps)
- ✗ Atlantic cod (3NO)*[†]
- ✗ Haddock (3Ps)

REBUILDING ABUNDANT WILD FISH: A FIVE-YEAR VISION

Imagine a future where abundant oceans support all coastal communities, Indigenous Peoples and a thriving ocean-based economy. Canada has the tools to bring that vision to life — including significant investments, world-leading expertise and a modernized *Fisheries Act* with provisions that prioritize the health of marine ecosystems.

But there's no more time to waste. Dozens of fish stocks remain depleted decades after their collapse. Canada depends on only a handful of species for most of our seafood value, making us economically vulnerable to any downturns in those stocks. Coastal development and resource exploitation are on the rise. And climate change is adding pressure and uncertainty, shifting species distributions and changing marine ecosystems.

The need for precautionary science-based fisheries management has never been greater — to build resiliency, hedge against climate change risks and create a thriving ocean economy. This requires developing and implementing strong rebuilding plans, informed by science, Indigenous Knowledge and monitoring data.

We've seen some progress. Canada has many policy tools in place to help meet our international commitments. In 2017, DFO established the Sustainable Fisheries Framework Work Plan with a goal to implement these policies. In 2019, the federal government unveiled a new *Fisheries Act* and committed \$100 million over five years to assess and rebuild fish stocks.

But as Oceana Canada's indicators show, the government has been too slow to put those policies and dollars to work. These failures are having a significant impact. The past five years produced no improvement in the health status of Canadian stocks, and less than half of critical stocks have rebuilding plans.

Canada has the tools. Now we need action. By implementing ecosystem-based management approaches that already exist, we can rebuild bountiful wild fish populations. As a result, we'll create a future where abundant oceans support thriving coastal communities, contribute to Canada's post-pandemic prosperity and help to feed the world.

There are some things we can't control, like natural fluctuations in fish numbers. And some challenges like climate change will take generations to rein in. What the government can and needs to control today is our approach to managing fisheries, making ecosystems and wild fish populations as resilient as possible.





“ My family’s fishing enterprise was passed down from my grandfather, so if I stick with this, everything he worked for would stay in the family. The inshore fishery is passed down through generations. It’s a traditional practice, and things like climate change will impact our traditions. A lot of what they’ve taught me about the fishery, like weather patterns and fish behaviour, is already changing. ”

— Jasmine Paul, fisher, Come by Chance N.L.



RECOMMENDATIONS

MAKE THE NEXT FIVE YEARS COUNT



Credit: GettyImages/Brent Barnes

Canada has the tools to restore abundance to our oceans. But now we need to step up our efforts to use them — matching action with the urgency the situation demands. Because we simply can't afford another five years without meaningful progress on the water.

Real change for Canada's fisheries will require adopting globally accepted and proven best practices. At a minimum, Canada must:

- 1. Pass strong rebuilding regulations:** Canada's *Fisheries Act* now requires that DFO take action to rebuild depleted fisheries; however, it still lacks the regulations that define how rebuilding will be accomplished. These regulations must require that rebuilding plans include scientifically estimated timelines and targets in the healthy zone and take into account all sources of fishing mortality.
- 2. Make decisions about wild fish based on science and Indigenous Knowledge:** Fisheries management decisions must include Indigenous evidence, practice and knowledge systems and follow the best available science.
- 3. Integrate ocean ecosystem considerations:** DFO must take into account the ecosystem impacts of fisheries decisions, aggressively work to rebuild depleted forage fish and address the vulnerability of species to climate change impacts.
- 4. Count everything caught in a fishery** — including for recreational and bait purposes — and account for all sources of fishing in management decision-making.

To address these high-level priorities and accelerate the implementation of Canada's Sustainable Fisheries Framework, Oceana Canada calls on DFO to complete key actions outlined in a checklist at oceana.ca/FisheryAudit2021 within the next year. This includes fulfilling ongoing commitments or those that have been delayed from previous work plans, as well as those scheduled to be completed this fiscal year.



“We must integrate Indigenous perspectives into fisheries management through two-eyed seeing (Etuaptmuk in Mi'kmaw) that balances traditional Indigenous Knowledge with contemporary science for the benefit of all. This includes an understanding that we have a responsibility to take no action today that will compromise the ecological integrity of an area in the future. It is time to engage in a new narrative for our oceans.”

— Elder Albert Marshall, LLD, Moose Clan of the Mi'kmaw Nation



Credit: Alamy Stock Photo/Brian Atkinson

TAKE ACTION

- 1 Sign the petition at oceana.ca/RebuildAbundance and add your voice to the urgent call to rebuild Canada's fish populations.
- 2 Get breaking news and insights into vital ocean research, expeditions and campaigns at oceana.ca/Blog.
- 3 Share your passion for ocean protection with friends and family.

Acknowledgements

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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 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.