

FISHERY AUDIT 2017

UNLOCKING CANADA'S POTENTIAL FOR ABUNDANT OCEANS

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Most of Canada's commercial fish stocks are depleted. Since 1970, an estimated 52 per cent* of their biomass has disappeared; half of this incredible resource that has sustained so many for so long, gone in one lifetime.

It doesn't need to be this way. In as little as 10 years, many Canadian fish populations could once again be healthy and thriving, strengthening the economy, sustaining coastal communities and helping feed the world's growing population.

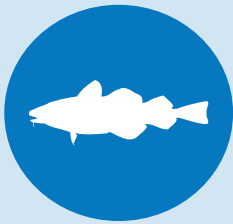
* Hutchings, J.A., Côté, I.M., Dodson, J.J., Fleming, I.A., Jennings, S., Mantua, N.J., Peterman, R.M., Riddell, B.E., Weaver, A.J. and VanderZwaag, D.L. 2012. Sustaining Canadian marine biodiversity: responding to the challenges posed by climate change, fisheries, and aquaculture. Expert panel report prepared for the Royal Society of Canada, Ottawa.

SOLUTION: THE TOOLS EXIST

Fisheries and Oceans Canada has identified the required steps for rebuilding stocks. Now, it needs to implement them, including by developing rebuilding plans for all Canadian fish stocks in a critical state of health.

In countries with some of the best managed fisheries, governments are legally obligated to do this, and as a result, fish populations have rebounded. In the United States, for example, rebuilding became mandatory 20 years ago. Since then, 43 stocks have been rebuilt, generating on average more than 50 per cent more revenue than when they were overfished.

Canada lags behind. Rebuilding is not legally mandated in Canada. The federal government has developed rebuilding plans for just three fish stocks in critical condition. That leaves 23 other dangerously depleted stocks without rebuilding plans in place.



A rebuilding plan for Northern cod has not been completed a full quarter of a century after this stock's economically and socially devastating collapse.

OCEANA CANADA'S APPROACH

In this assessment, Oceana Canada presents the most comprehensive report to date on fisheries health and the progress Fisheries and Oceans Canada has made toward meeting its public commitments. As well as offering an accurate assessment of the state of Canada's fisheries and fisheries management today, this report will serve as a baseline to measure future progress.

Each year, Oceana Canada will put out a new *Fishery Audit* that includes:

- The latest assessment by Fisheries and Oceans Canada of the health of Canada's commercial fisheries, combined with Oceana Canada's independent assessment and analysis;
- Progress on rebuilding those in greatest danger;
- Crucial gaps in the data;
- How well Fisheries and Oceans Canada is living up to its commitments to Canadians; and
- Priorities and key steps still needed to build sustainable and prosperous Canadian fisheries.

For complete details on the methodology and analysis used in this report, visit oceana.ca/FisheryAudit.

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.

Reducing the amount of fish removed from the ocean is the fastest way to rebuild fish stocks; however threats from other human activities and climate change also play a role. When reductions in fish removal are combined with favourable environmental conditions, rebuilding can be highly successful. Conversely, cumulative threats may impact rebuilding and more holistic management strategies need to be adopted. All factors that could influence rebuilding need to be considered in rebuilding plan development.



Photo: Denis Tangney Jr.

A school of fish swimming in blue water, with a green text box overlaid. The fish are of various species, including some with stripes and others with spots. The text box is a solid green rectangle with white text inside.

REBUILDING BECAME MANDATORY IN THE UNITED STATES 20 YEARS AGO. SINCE THEN, 43 STOCKS HAVE BEEN REBUILT, GENERATING ON AVERAGE MORE THAN 50 PER CENT MORE REVENUE THAN WHEN THEY WERE OVERFISHED.



Photo: StandardSight

DATA GAPS

Accurate assessments start with good data. However, for many years Canadians have lacked basic information on the state of our fisheries. Oceana Canada highlighted that dearth in its 2016 report *Here's the Catch: Restoring Abundance to Canada's Oceans*.

In late 2016, Fisheries and Oceans Canada released the *Sustainability Survey for Fisheries*, providing data on 159 stocks selected for their economic, ecological and/or cultural importance. This is a big step forward in transparency.

That information was used to update Oceana Canada's 2016 assessment of fisheries health, resulting in the current report.



MISSING DATA

Although the data released by Fisheries and Oceans Canada fills some gaps, other information simply isn't collected. Some of the biggest data gaps are highlighted in this report with a "missing data" icon.



The federal government has allocated funding to update the *Sustainability Survey for Fisheries* each year. It has also committed new resources to science and fisheries management. As a result, Oceana Canada expects that Canadians will have an increasingly clear picture in the coming years of how Canada is managing our fisheries and how healthy our fish stocks really are.



Photo: Mysticenergy



FISHERY AUDIT 2017

ASSESSMENT: HOW WELL IS CANADA MANAGING ITS FISHERIES?

When Oceana Canada published *Here's the Catch* in 2016, the limited amount of up-to-date data that was publicly available meant that only 125 fish stocks could be assessed. Since then, Fisheries and Oceans Canada has released data on 159 stocks. For this assessment, Oceana Canada pooled those two sets of data, eliminated overlap and searched for newly available data to arrive at a more complete picture of the state of Canada's fisheries.

This current assessment is based on data from 194 stocks, representing all major Canadian marine fisheries.

OVERALL ASSESSMENT: 26 STOCKS IN CRITICAL CONDITION

The results reveal fisheries in trouble. As the graph on the next page indicates, only a third of Canada's stocks are classified as healthy. Meanwhile, 13 per cent are in critical condition.

Photo: LaraStock, Nikolay Ivashchenko





MISSING DATA

There is insufficient information to provide a rating for 70 stocks – more than one-third of all those Oceana Canada assessed.



Photo: shaunl



Photo: R Larocque. Source: Fisheries and Oceans Canada

HEALTHY, CAUTIOUS AND CRITICAL

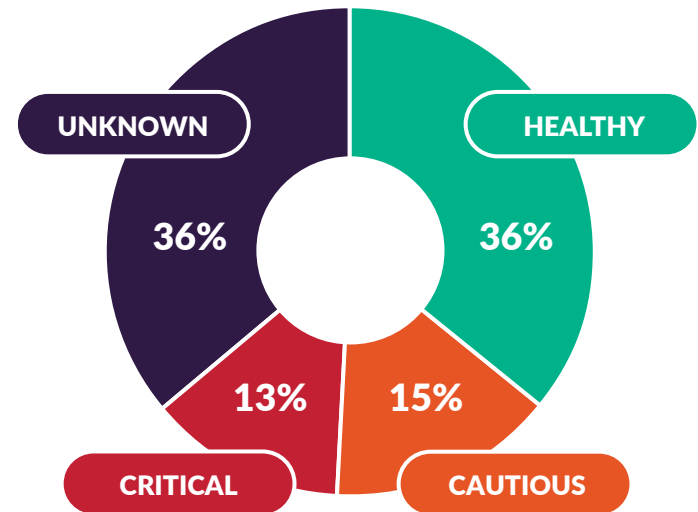
Fisheries and Oceans Canada has three categories of fish stock health, defined using reference points. These reference points are often based on how many tonnes of fish can be theoretically harvested without

reducing the size of the stock over the long term. This upper limit on harvest is known as the maximum sustainable yield. If maximum sustainable yield cannot be determined, or is inappropriate for the type of fish, other suitable proxies can be used to determine where serious harm could occur.

INDICATOR

HEALTH STATUS

Purpose: Help prioritize management actions, including identifying where rebuilding plans are needed.



A stock is considered *healthy* if its biomass is greater than 80 per cent of the amount that can support maximum sustainable yield. When a stock is in this zone, fisheries management decisions are designed to keep it there.

A stock falls in the *cautious zone* if its biomass is between 40 and 80 per cent of the amount that supports maximum sustainable yield. If a stock falls into this zone, harvesting rates should be reduced in order to avoid serious harm to the stock and to promote rebuilding to the healthy zone.

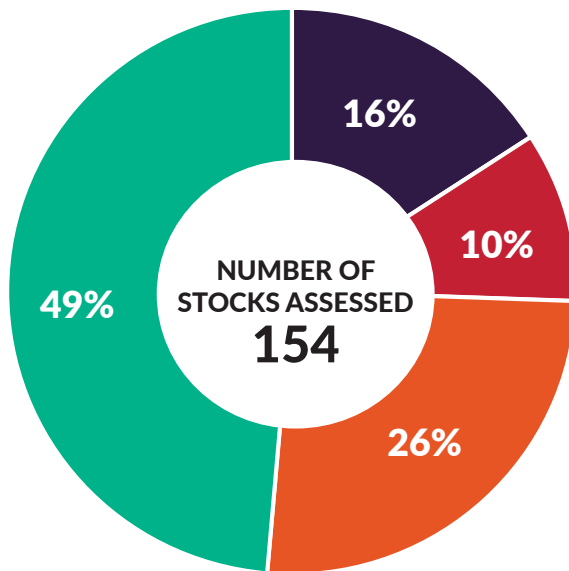
A stock falls in the *critical zone* if its biomass is less than 40 per cent of the amount that supports maximum sustainable yield. If a stock moves into the critical zone, serious harm is occurring and conservation actions become crucial.

DIFFERENT DATA SETS, DIFFERENT NUMBERS

Over the years, different assessments have painted differing pictures of fish stock health in Canada:

- When Environment and Climate Change Canada evaluated 2014 data from Fisheries and Oceans Canada, it suggested 10 per cent of stocks were in critical condition.
- Oceana Canada's 2016 assessment of 125* stocks put this number at 16 per cent.
- Now, Oceana Canada's current and most comprehensive assessment of 194 stocks indicates that 13 per cent fall in the critical zone.

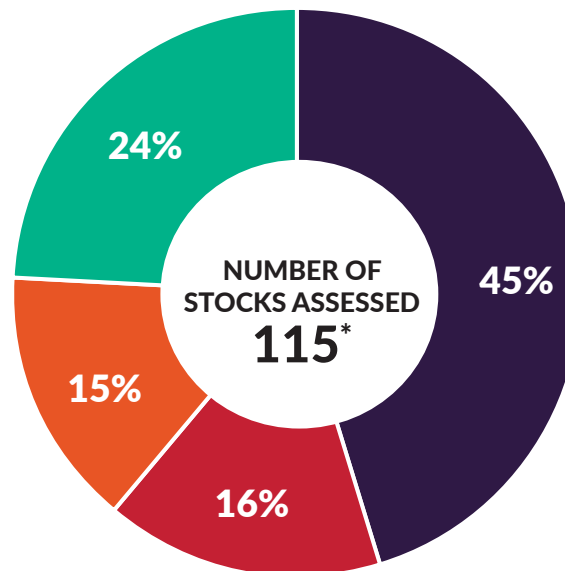
ENVIRONMENT AND CLIMATE CHANGE CANADA 2014



Number of stocks

- Healthy - 75
- Cautious - 40
- Critical - 15
- Unknown - 24

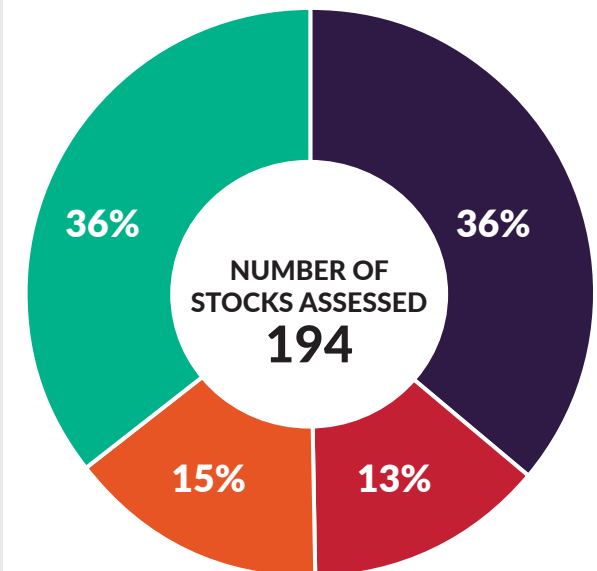
OCEANA CANADA REPORT 2016



Number of stocks

- Healthy - 28
- Cautious - 17
- Critical - 18
- Unknown - 52

OCEANA CANADA REPORT 2017



Number of stocks

- Healthy - 69
- Cautious - 29
- Critical - 26
- Unknown - 70

* In 2016, Oceana Canada analyzed 125 stocks; however the health status of 10 of these were 'not applicable.' These 10 stocks were assessed by Regional Fisheries Management Organizations, which do not use the same health status zones as Fisheries and Oceans Canada's Precautionary Approach.

SCIENCE INDICATORS: A THIRD OF STOCKS LACK DATA

To track Canada's progress in improving fish stock health, Oceana Canada identified a set of key science indicators. According to government policy, Fisheries and Oceans Canada should have these indicators in place to assess and manage fish stocks.

FISHING MORTALITY

Fishing mortality is an important factor that contributes to stock health. It estimates the rate at which fish are taken from the stock. Ideally it takes into account all the ways that fishing has removed fish from the stock. In addition to commercial and recreational fishing and bycatch (the incidental catch of non-target fish), this also includes what is used as bait, for personal consumption and for social and ceremonial purposes.



MISSING DATA

In 2017, only 21 per cent of stocks had some estimate of fishing mortality. Moreover, most estimates that did exist did not include all sources of removal.

INDICATOR

Stocks with enough data to confidently assign a health status

Purpose: Stocks need enough data to allow robust estimates of how many fish are in the water. Without good data, scientists remain uncertain about stock health status.

64%

INDICATOR

Stocks with recent biomass estimates (within the past five years)

Purpose: Help managers make decisions based on recent estimates of how many fish are in the water.

66%

INDICATOR

Stocks with reference points established

An upper reference point identifies when a fishery can be considered healthy, while a lower reference point identifies when it can be considered to be in a critical state. Ideally, corrective action should be taken before a stock reaches the lower reference point.

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

lower reference points

54%

upper reference points

43%

GOVERNMENT COMMITMENT:

Fisheries and Oceans Canada has committed to developing reference points for all major commercial fish stocks.

MONITORING INDICATORS: KEEPING TRACK OF HOW MUCH IS CAUGHT

Catch monitoring provides a crucial indicator of how well or poorly Canadian fisheries are managed. To effectively manage stocks, stop overfishing, control bycatch and restore depleted stocks, Canada needs accurate estimates of how much of each species is caught and how much is discarded. These estimates are based primarily on data collected in three ways:

- at-sea via observers or electronic monitoring;
- dock-side monitoring; and
- logbooks.

According to Oceana Canada research, 71 per cent of stocks have some level of at-sea or electronic monitoring. Eighty-one per cent have at least some level of logbook monitoring, and 73 per cent have some level of dockside monitoring.

Fisheries and Oceans Canada has committed to releasing a national catch monitoring policy to address these challenges. Oceana Canada has developed a set of recommendations for ensuring that policy is effective, accessible at oceana.ca/FisheryAudit.



How adequate is current monitoring? That's difficult to assess. Some stocks are monitored with more than one method, but some may not be monitored at all. The results presented below were drawn from a number of different, incomplete sources that varied in the levels of detail they provided, making the level of monitoring in many stocks unclear.

INDICATOR

Catch monitoring in place

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

At-sea observer or electronic monitoring



Stocks that have fisheries with at-sea or electronic monitoring

Mandatory logbooks

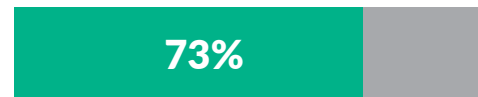


Stocks that have fisheries with mandatory logbooks



Stocks that have mandatory logbooks where the entire catch is recorded

Dockside monitoring



Stocks that have fisheries with some level of dockside monitoring.

GOVERNMENT COMMITMENT:

Fisheries and Oceans Canada has committed to releasing a national catch monitoring policy.

MANAGEMENT INDICATORS: WHERE'S THE PLAN?

Plans are a requisite for maintaining and restoring fish stocks to a healthy level of abundance. Yet as this indicator reveals, Canada falls far short on this front. Management plans are in place for only 69 per cent of stocks overall.

INDICATOR

Stocks included in Integrated Fisheries Management Plans

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.

69%

GOVERNMENT COMMITMENT:

Fisheries and Oceans Canada has committed to including all major commercial fish stocks in Integrated Fisheries Management Plans.

REBUILDING PLANS: RESTORING ABUNDANCE

Of the 26 stocks identified in the critical zone, Fisheries and Oceans Canada has only developed rebuilding plans for three – a mere 12 per cent.

Fisheries and Oceans Canada has committed to developing five additional plans: four by March 2018 and another by March 2019. Even if the government meets these commitments, more than two-thirds of stocks in the critical zone will still lack a plan for recovery.

To access Oceana Canada's recommendations and priorities for rebuilding critical fisheries, visit oceana.ca/FisheryAudit.

INDICATOR

Rebuilding plans in place for stocks in the critical zone

Purpose: Provide a planning framework to rebuild stocks out of the critical zone.

12%

GOVERNMENT COMMITMENT:

Fisheries and Oceans Canada has committed to developing five more plans by 2019.







Photo: wrangel

REBUILDING CANADA'S MOST DANGEROUSLY DEPLETED STOCKS

As this map shows, the greatest need for rebuilding plans lies in the Gulf and Newfoundland regions, where there are the highest numbers of stocks in critical health and the fewest plans in place.

PACIFIC REGION

-  Yelloweye rockfish (outside waters population)
-  Boccaccio rockfish (B.C. waters)
-  Yelloweye rockfish (inside waters population)
-  Pink shrimp (SMA18-19)

 PLAN IN PLACE

 COMMITMENT TO DEVELOP PLAN

 NO PLAN



GULF REGION

- Atlantic herring (4T, spring spawners)
- Yellowtail flounder (4T)
- Winter skate (4T)
- White hake (4T)
- American plaice (4T)
- Atlantic cod (4TVn)
- Witch flounder (4RST)

NATIONAL CAPITAL REGION

- Atlantic mackerel (Sub area 3 and 4)[^]

QUEBEC REGION

- Atlantic cod (3Pn, 4RS)
- Deepwater redfish (Unit 1 and 2)^{*}
- White hake (4RS)

MARITIMES REGION

- Atlantic cod (4X5Y)
- Atlantic cod (5Zjm)[†]
- White hake (4VW)

NEWFOUNDLAND REGION

- Acadian redfish (Unit 1 and 2)^{*}
- Atlantic cod (2J3KL)
- American plaice (3LNO)[†]
- American plaice (3Ps)
- Deepwater redfish (2+3K)
- Acadian redfish (2+3K)
- Atlantic cod (3NO)[†]
- American plaice (23K)

^{*} Redfish in Units 1 and 2 are co-managed by a number of regions and the National Capital Region is leading the development of these rebuilding plans.

[†] These stocks are co-managed with other jurisdictions and will require collaboration for rebuilding plan development.

[^] Mackerel has Atlantic-wide distribution and is managed in Ottawa.

CONCLUSIONS: CRUCIAL ISSUES REMAIN

MISSING DATA

Good management starts with good data. Yet of the 194 stocks Oceana Canada assessed – Canada's most comprehensive assessment to date – the lack of data meant it was only possible to assign a health status to 124.

Nearly half of all stocks assessed lacked the reference points that allow managers to judge the health of a stock and gauge how well their measures are working. Meanwhile, although the catch of most fish stocks is reported, variations in the level of monitoring make it difficult to know what is being recorded and with what degree of accuracy.

UNHEALTHY STOCKS

Of the 194 stocks assessed, only 69 were found to be healthy. Meanwhile, 26 stocks—13 per cent—were in critical health, and all but one are finfish.

A LACK OF PLANS

Without a clear plan to maintain or restore stock health, Canada's fisheries are unlikely to thrive. Fisheries and Oceans Canada lacks management plans for almost a third of the stocks assessed in this report, while rebuilding plans were in place for only three of the 26 most vulnerable stocks.

RECOMMENDATIONS: PRIORITIES FOR BUILDING ABUNDANT FISHERIES

By fully implementing its commitments to sustainable management tools, Fisheries and Oceans Canada can restore the health of Canada's oceans and fisheries and ensure they contribute to the economy of coastal communities and provide a vital source of protein for future generations.

Oceana Canada recommends Fisheries and Oceans Canada complete the following priorities by the end of 2018:

- Complete the rebuilding plans for the five stocks it has publicly committed to: Northern cod, yelloweye rockfish (inside waters population), southwest Nova Scotia cod and redfish units 1 and 2.
- Develop and release timelines and priorities for completing rebuilding plans for all stocks in the critical zone.
- Embed the duty to rebuild Canada's fish populations in the *Fisheries Act*.
- Complete and implement a national catch monitoring policy, making it mandatory for all commercial fisheries to have sufficient monitoring to ensure accurate estimates of all retained and discarded catches.
- Establish and release timelines and priorities for completing and sharing Integrated Fisheries Management Plans.

- Establish and release timelines and priorities for developing reference points, ensuring there is both an upper and a lower reference point for every stock.
- Continue to invest resources in conducting timely stock assessments using the best available information, including fishing mortality estimates from all sources.

TAKE ACTION

It's time to start managing fisheries much more responsibly.

- 1.** Add your voice to the urgent call to rebuild Canada's fish populations. Become an Oceana Canada *Wavemaker* at oceana.ca and join supporters from across the country who are committed to saving Canada's oceans.
- 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.



[Oceana Canada](http://oceana.ca)



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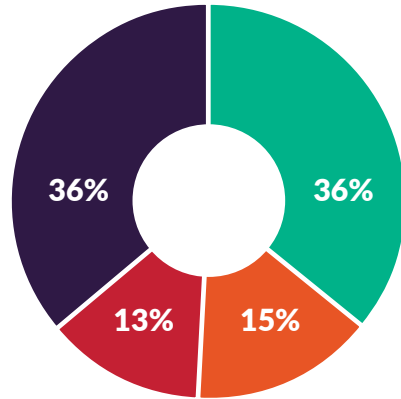


[oceana_canada](https://www.instagram.com/oceana_canada)

Oceana.ca

OVERVIEW OF INDICATORS

HEALTH STATUS



STOCKS WITH SOME LEVEL OF CATCH MONITORING



71%

AT-SEA
MONITORING



81%

LOGBOOK
MONITORING



73%

DOCK-SIDE
MONITORING

STOCKS WITH REFERENCE POINTS ESTABLISHED

LOWER
REFERENCE
POINT:

54%

UPPER
REFERENCE
POINT:

43%

STOCKS WITH ENOUGH DATA TO CONFIDENTLY ASSIGN A HEALTH STATUS

64%

CRITICAL STOCKS WITH REBUILDING PLANS IN PLACE

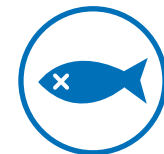
12%

STOCKS WITH RECENT BIOMASS ESTIMATES (WITHIN THE LAST 5 YEARS)

66%

STOCKS INCLUDED IN INTEGRATED FISHERIES MANAGEMENT PLAN

69%



STOCKS WITH FISHING MORTALITY ESTIMATES

21%

OCEANA CANADA: SAVING THE OCEANS TO 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.

Canada has the longest coastline in the world, with an ocean surface area of 7.1 million square kilometres, or 70 per cent of its landmass. Oceana Canada believes

that Canada has a national and global obligation to manage our natural resources responsibly and help ensure a sustainable source of protein for the world's growing population.

Oceana Canada works with civil society, academics, fishers, Indigenous Peoples and the federal 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.

 **OCEANA** Protecting the
World's Oceans