

## Canada's Progress towards Completing Commitments to Implement the Sustainable Fisheries Framework

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### Background

Canada's marine fisheries are highly valuable: they are a major driver of our economy, shape our culture and sustain our coastal communities. It is important that they are managed well, in ways that support conservation and sustainable use. However, a recent audit by the Commissioner of the Environment and Sustainable Development (CESD) found that although Fisheries and Oceans Canada (DFO) had identified key elements necessary for successful management in its Sustainable Fisheries Framework (SFF; DFO 2018a), it had failed to put these elements in place for many major stocks (CESD 2016).

A key tool for successful management is the Integrated Fisheries Management Plan (IFMP). An IFMP is both a process and a document, with the primary goal of providing the framework for conservation and sustainable use of fisheries resources, outlining how they will be managed for a given period of time (DFO 2013a). IFMPs are developed by DFO in consultation with the fishing industry, other stakeholders and partners such as Indigenous organizations and the provinces (CESD 2016, DFO 2013a). The CESD audit found that IFMPs were lacking or out of date for nearly a third of stocks examined, and those that were in place had vague objectives for measuring how well stocks were being managed and most often were not publicly available (CESD 2016).

Rebuilding plans are an extension of the IFMP process and document the objectives, timelines and management measures that are specific to growing depleted stocks out of the critical zone (DFO 2013b). According to policy, they have been required for depleted stocks since 2009 (DFO 2009). However, the CESD audit found rebuilding plans were missing for almost all critical zone stocks, increasing the risk that they may not recover (CESD 2016).

To successfully manage stocks, it is important to know how healthy they are. DFO does this by conducting stock assessments, where stock health status is determined, which in turn influences fisheries management decisions, such as catch limits. DFO has established three health status zones: the healthy zone, cautious zone and critical zone. In the critical zone serious harm is occurring to the stock (DFO 2009). Health status zones are created by defining a Limit Reference Point (LRP) at the boundary of the critical and cautious zones and an Upper Stock Reference point (USR) at the boundary of the cautious and healthy zones (Figure 1, DFO 2009). According to departmental policy for implementing the Precautionary Approach (PA) in fisheries management, all major fish stocks need defined reference points as well as harvest strategies or Harvest Control Rules (HCRs) that outline a pre-agreed approach to management in each health status zone (DFO 2009). The CESD audit found that, in part because of data availability and quality issues, DFO could not always define the reference points needed to assign health status zones, and reference points were missing for over half of the stocks examined (CESD 2016). Further, management measures for each health status zone were undefined for nearly half of the stocks, meaning that if stock health declines, management measures would be ad hoc, rather than planned (CESD 2016).

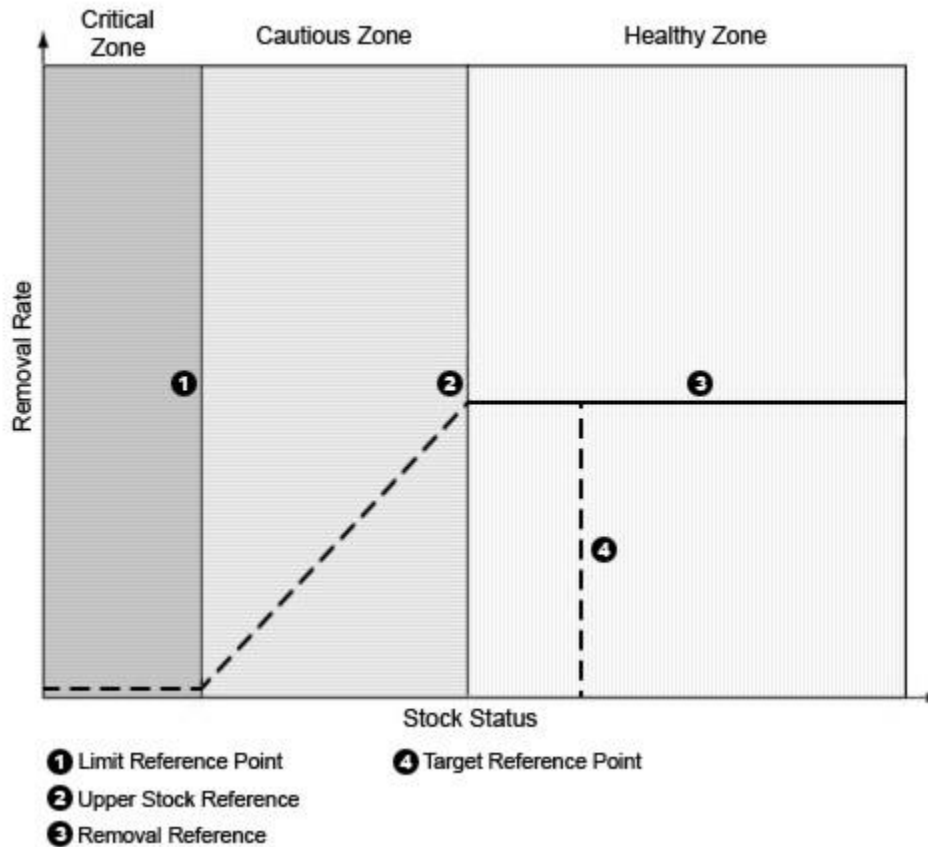


Figure 1. DFO's Precautionary Approach Framework establishes critical, cautious and healthy zones, determined by the Limit Reference Point (LRP), Upper Stock Reference Point (USR), Target Reference Point (TRP) and a Removal Reference point (e.g., Fref) for each status zone (DFO 2009).

In view of these findings, the CESD's recommendations included the following:

**CESD Recommendation (2.28):** "Fisheries and Oceans Canada should set out priorities, targets, and timelines for putting in place Integrated Fisheries Management Plans for all major fish stocks. These should include long-term, specific, measurable objectives, performance reviews, and rebuilding plans for stocks in the critical zone that are still being fished. These plans should also be made publicly accessible." CESD (2016).

**DFO response:** "Agreed. Fisheries and Oceans Canada will develop a plan with priorities, targets, and timelines for completing Integrated Fisheries Management Plans (IFMPs) for all major stocks that currently do not have these plans, and for updating existing plans that are out of date. Development of the IFMPs will be consistent with the Departmental guidance on IFMPs, which includes a requirement for clear fishery objectives and a performance review. The Department's plan will include priorities and timelines for making IFMPs not already posted accessible to the public through the Departmental website. The Department will also develop a plan with priorities, targets, and timelines for completing rebuilding plans that are in line with the Department's Guidance for the Development of Rebuilding Plans under the

*Precautionary Approach Framework for stocks that are in the critical zone. The Department will develop both plans by the end of the 2016–17 fiscal-year.” (CESD 2016).*

**CESD Recommendation (2.63):** *“Fisheries and Oceans Canada should set out priorities and timelines for establishing the reference points at which the major stocks it manages can be considered healthy, in the cautious zone, or in the critical zone.” (CESD 2016).*

**DFO response:** *“Agreed. Fisheries and Oceans Canada will develop a plan with priorities, targets, and timelines for establishing precautionary approach reference points, where technically feasible, for key stocks under the Department’s management control, where the reference points do not exist. A plan will be developed by the end of the 2016–17 fiscal-year.” (CESD 2016).*

**CESD Recommendation (2.65):** *“Fisheries and Oceans Canada should set out priorities and timelines for identifying the measures to be taken if a major stock falls below a certain level, where this has not yet been done, so that sustainable fishing limits can be determined with greater certainty.” (CESD 2016).*

**DFO response:** *“Agreed. Fisheries and Oceans Canada will develop a plan with priorities, targets, and timelines for establishing precautionary approach harvest control rules, where technically feasible, for key stocks under its management control, where the harvest control rules do not exist. The plan will be developed by the end of the 2016–17 fiscal-year.” (CESD 2016).*

In late November of 2017, DFO released a plan in response to the above recommendations (DFO 2017a). It included three workplans: 1) to develop PA-compliant reference points and HCRs for major stocks, 2) to develop rebuilding plans for depleted stocks that lacked plans and 3) to complete IFMPs for the major fish stocks that currently do not have one, to update IFMPs as needed and to make IFMPs accessible via the DFO website. Each workplan listed the stock or stock group, the DFO administrative region responsible for it and a description of deliverables for fiscal year 2017/18. DFO also committed to updating the three workplans at the end of 2017/18 fiscal year with new priority actions to be undertaken in the 2018/19 fiscal year, which was done and released in late March 2018 (DFO 2017a, DFO 2018b). In March 2019, DFO again updated its progress and released a 2019/20 fiscal year workplan (DFO 2019a). DFO also highlighted in the more comprehensive 2019/20 departmental workplan a commitment to continue to refine and publish the annual fiscal year workplans in response to the CESD audit until the work is complete (DFO 2019b). This allows DFO to increase the transparency of its priorities while ensuring a strategy is in place for ongoing work to continue in the years ahead.

Last year, Oceana Canada assessed the progress made toward the completion of 2017/18 fiscal year workplan and outlined the 2018/19 workplan expectations (Oceana Canada 2018). Results indicated that only 25 per cent (11 deliverables) of the first fiscal year workplan deliverables were completed and found in publicly available documentation, 23 per cent (10 deliverables) were still ongoing as expected and 48 per cent (21 deliverables) were delayed. A year later, this report assesses progress towards the remaining uncompleted 2017/18 workplan deliverables and the 2018/19 workplan deliverables and outlines the work expected in 2019/20.

## **Methods**

The assessment of completion status for deliverables was summarized by noting all the ultimate deliverable products in three fiscal year workplans and associated sub-workplans. Those deliverables (i.e., LRP, USR, HCR, IFMP, or rebuilding plan) were organized by stock (or stock group), with deliverable descriptions, completion status and details on progress. The evaluation of overall completion rate this year was conducted on work expected to occur in fiscal 2018/19 — work defined as remaining

uncompleted 2017/18 deliverables and all 2018/19 deliverables. This is because progress towards ultimate completion of some deliverables was broken down into steps by DFO, resulting in several stocks appearing in all three fiscal year plans associated with the same ultimate final product. Meanwhile, several deliverables assessed as delayed or ongoing last year only appear in the first 2017/18 fiscal year workplan.

All ultimate deliverable products (i.e., HCR, LRP, IFMP or rebuilding plan) for each stock or stock group in the three sub-workplans from both the 2017/18 and 2018/19 fiscal year responses were assigned a completion status as of July 1, 2019. This status was determined by searching for information in Canadian Science Advisory Secretariat (CSAS) website (e.g., published reports or meeting schedules for the development of reference points) and departmental websites (e.g., for new or updated IFMPs and rebuilding plans) and by personal communication with DFO officials. One of five completion statuses were assigned to each ultimate deliverable product:

1. **Completed:** Deliverable met and in publicly available documentation. Because it is important that fisheries management and scientific information in support of fisheries management is transparent and publicly accessible (DFO 2019c), we required evidence of the ultimate deliverable completion (i.e., HCR, LRP, IFMP or rebuilding plan) in publicly available documentation (i.e., management plans, science reports) but acknowledge that DFO did not commit to publishing every ultimate deliverable in the workplans. Note there was no attempt made to assess the quality of the final deliverable.<sup>1</sup>
2. **Previously completed:** As above; deliverable met and in publicly available documentation but evaluated last year as completed. Deliverables with this status were excluded from overall completion rate summaries for this year as they were acknowledged as completed last year.
3. **Ongoing:** Progress is still assumed to be ongoing; the deadline has not yet passed or the workplans called only for progress, not completion, in the fiscal year.
4. **Suspended:** Deliverable progress halted and DFO has no intention of continuing progress in the imminent future.
5. **Delayed:** Deliverable not completed by deadline date, deadline date was pushed forward or the updated fiscal year workplan indicates deliverable was not completed as anticipated.

The wording of deliverable descriptions in some of the fiscal year sub-workplans implies the deliverable may not be completed in the fiscal year and instead progress would be made (e.g., “Ongoing evaluation and potential revision of LRPs in FY 2018-19”). Most often, the stock or stock groups were included again in the following fiscal year workplans with the next steps outlined in the deliverable (e.g., deliverable noting online posting of an IFMP this year that was committed for updating in the previous year’s workplan) or with an indication the deliverable was not completed as anticipated. In other cases, deliverables are not included or acknowledged as incomplete. In these instances, if the stock did not reappear in the next fiscal year’s sub-workplan, completion status was assessed against any date mentioned in the deliverable description or the end of the fiscal year, whichever was later. All stock definitions remain as they appear in the DFO workplans (DFO 2017a, DFO 2018b, DFO 2019a), unless otherwise noted.

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<sup>1</sup> For an assessment of rebuilding plan quality, please see Oceana Canada (2019a).

To assess how completion of all workplans (2017/18, 2018/19 and 2019/20) would improve the management of Canada's marine fish and invertebrate stocks,<sup>2</sup> the 2019 Fishery Audit dataset of index stocks (Oceana Canada 2019b) was used to assess how the following indicators would improve:

1. Percentage of stocks with LRPs
2. Percentage of stocks with USRs
3. Percentage of stocks included in IFMPs
4. Percentage of critical zone stocks with rebuilding plans

All stocks included in the index stock dataset that were also included in the workplans were found and the relevant indicator fields adjusted as required when assuming the work was completed. Please note that the DFO fiscal year workplans include freshwater, diadromous and marine mammal stocks, which are excluded from the Fishery Audit dataset of marine fish and invertebrate stocks.

## Results

Progress toward deliverable completion<sup>3</sup> in the last year<sup>4</sup> has improved but is roughly split, with about equal numbers of deliverables completed and/or in progress as compared to delayed and/or suspended (Table 1). Out of all expected deliverables (n = 67 deliverables), 43.3 per cent (29) were completed, 9.0 per cent (six) are still ongoing as expected, 43.3 per cent (29) are delayed and 4.5 per cent (three) are suspended (Table 1). The most progress was made in completion of deliverables related to rebuilding plans in sub-workplan 2 (57.1 per cent completed) and IFMPs in sub-workplan 3 (51.7 per cent completed), while the most delays occurred in the completion of deliverables related to HCRs in sub-workplan 1 (57.1 per cent delayed).

Within sub-workplan 1, pertaining to the development of PA-compliant reference points and HCRs, it was expected that 24 stocks or stock groups would have LRP-related deliverables completed last year<sup>5</sup> and seven stocks or stock groups would have HCR-related deliverables completed.<sup>6</sup> Overall, 29.2 per cent (seven) of expected LRP-related deliverables were completed, 25.0 per cent (six) are ongoing as expected and 41.7 per cent (10) are delayed (Table 1; see Table 2 for details on deliverables by stock). One LRP-related deliverable was suspended due to data limitations (see Table 2). With HCR-related deliverables, overall 42.9 per cent (three stocks) were completed, with the rest delayed (Table 1; see Table 3 for details on deliverables by stock). In the 2019/20 fiscal year workplans, there is a new sub-workplan (1D) pertaining specifically to USR development, which was not assessed in this evaluation given anticipated completion dates have not passed (DFO 2019a). Anticipated work for the current fiscal year pertaining to USRs is outlined in Table 4.

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<sup>2</sup> Excluding marine mammals, diadromous fish and freshwater fish

<sup>3</sup> The definition of completion used here (i.e., description in public document) and the unit of assessment (i.e., ultimate product; the final IFMP, rebuilding plan, LRP, USR or HCR per stock/stock group) differs from DFO internal reporting on workplans (i.e., interim steps towards ultimate products with evaluated regardless of public documentation, often with multiple steps per stock/stock group). This, combined with differing evaluation end dates (i.e., July 1 versus March 31), may result in different statistics regarding deliverable completion.

<sup>4</sup> Including all 2018/19 fiscal year workplan deliverables and remaining uncompleted 2017/18 fiscal year deliverables.

<sup>5</sup> Five stocks or stock groups with deliverables remaining uncompleted from the 2017/18 fiscal year workplans not included in the 2018/19 fiscal year workplan, two stocks or stock groups with deliverables remaining uncompleted from the 2017/18 fiscal year workplans appearing in both fiscal year workplans, and 17 stocks or stock groups appearing only in the 2018/19 fiscal year workplan.

<sup>6</sup> Five stocks or stock groups with deliverables remaining uncompleted from the 2017/18 fiscal year workplans and appearing in both fiscal year workplans, and two stocks or stock groups appearing only in the 2018/19 fiscal year workplan.

Within sub-workplan 2, pertaining to the development of rebuilding plans for depleted stocks, DFO has prioritized 19 stocks for inclusion in rebuilding plans and includes all 19 in both fiscal year workplans evaluated (2017/18 and 2018/19). Completion status determinations were only assessed for the deliverables of seven stocks originally slated to be included in rebuilding plans by the end of fiscal year 2018/19. Overall, 57.1 per cent (four) of expected deliverables were completed (four stocks are included in new rebuilding plans available online), with 28.6 per cent delayed (1) (Table 1; see Table 5 for details on deliverables by stock). The rebuilding plan for northern cod (Atlantic cod in Northwest Atlantic Fisheries Organization [NAFO] 2J3KL) is delayed, while the rebuilding plans for two redfish stocks are suspended, as they are noted as not being required in the 2019/20 fiscal year workplan update (see Table 5).

Within sub-workplan 3, pertaining to completion, updating and publication of IFMPs, it was expected that 29 stocks or stock groups would have IFMP-related deliverables completed last year.<sup>7</sup> Overall, 51.7 per cent (15) of expected IFMP-related deliverables were completed and 48.3 per cent (14) were delayed (Table 1; see Table 6 for details on deliverables by stock).

If all deliverables outlined in all three fiscal year workplans (2017/18, 2018/19 and 2019/20) are completed, the percentage of marine fish and invertebrate stocks included in the Oceana Canada Fishery Audit index dataset with LRPs would increase from 64.4 per cent to 73.3 per cent and the percentage of stocks with USRs would increase from 46.4 per cent to 58.2 per cent. Similarly, the percentage of stocks included in IFMPs would increase from 89.7 per cent to 92.8 per cent and all would be available online. Finally, the percentage of critical zone stocks with rebuilding plans would increase from 18.2 per cent to 45.5 per cent.

However, given much of the work outlined for the 2019/20 fiscal year workplan is not all slated for completion in 2019/20,<sup>8</sup> at this time next year we expect these indicators to rise less. At this time next year, the percentage of marine fish and invertebrate stocks included in our Fishery Audit index dataset with LRPs should increase to at least 71.1 per cent and the percentage of stocks with USRs should increase slightly to 46.9 per cent. If IFMPs included in this year's sub-workplan 3C<sup>9</sup> are completed and posted as indicated and those delayed from previous workplans (but not included this year) are likewise completed and posted, it is expected that at this time next year the percentage of stocks included in IFMPs should rise to 92.2 per cent. Two more rebuilding plans are expected in 2019/20,<sup>10</sup> which will increase the percentage of critical zone stocks with rebuilding plans at this time next year to 24.2 per cent.

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<sup>7</sup> Six stocks or stock groups remaining with deliverables remaining uncompleted from the 2017/18 fiscal year workplan not included in the 2018/19 fiscal year workplan, 11 stocks or stock groups with deliverables remaining uncompleted from the 2017/18 fiscal year workplan appearing in both fiscal year workplans, and 12 stocks or stock groups appearing only in the 2018/19 fiscal year workplan.

<sup>8</sup> For example, in sub-workplan 1D titled "Work scheduled in fiscal year 2019-20 determining Upper Stock Reference Points (USR)" only one of the ten deliverables indicates that the USR development will be completed, with the rest stating "Will begin to update..." or "Will begin to develop..." or "Will continue to develop..." implying they will not be completed within the fiscal year.

<sup>9</sup> DFO has three sub-workplans related to IFMPs: one pertaining to new IFMP development (3A), one for updating IFMPs (3B) and one for posting them online (3C). Some, but not all, stocks from 3A or 3B are listed in 3C for posting. However, this and last year's evaluations have found many stock groups included in 3A or 3B but not included in 3C for posting are actually posted once completed or updated. Thus, it is anticipated this indicator could rise up to the 92.8 per cent noted above if all outstanding and current IFMP deliverables were completed and the IFMPs made available on the DFO website.

<sup>10</sup> The completion and publication of the delayed rebuilding plan for northern cod (Atlantic cod in NAFO 2J3KL) and the scheduled completion of the rebuilding plan for Atlantic mackerel (NAFO sub-areas 2 and 3).

## Discussion

DFO can be commended for meeting the CESD audit (2016) recommendations of setting priorities, targets and timelines for putting in place IFMPs, rebuilding plans, reference points and harvest strategies for all major fish stocks and making this plan public (recommendations 2.28, 2.63 and 2.65). This is a big step towards increased transparency in fisheries management in Canada, making clear what the priorities are and when we can expect improvements. DFO is continuing to meet its commitment to update this plan annually and has recently committed to continue to refine and publish it until the work is complete (DFO 2019b).

The development of IFMPs, rebuilding plans, reference points and HCRs are not insignificant tasks. IFMPs and rebuilding plans are developed in close consultation with the rights-holders and stakeholders. USRs are also developed in consultation with rights-holders and stakeholders and with advice and input from scientists, while LRPs are based on biological criteria and established by scientists through a peer reviewed process (DFO 2009). Thus, given the number of meetings and coordination of people required, it is not surprising DFO did not meet all anticipated deliverables. Progress toward deliverable completion<sup>11</sup> in the last year<sup>12</sup> was nearly split, with slightly less than half delayed or suspended (47.8 per cent; 43.3 per cent delayed and 4.5 per cent suspended) and slightly more than half completed or in progress (52.3 per cent; 43.3 per cent completed and 9.0 per cent ongoing as expected). Nevertheless, more was completed or ongoing than not, and the overall completion rate this year (43.3 per cent) was much higher than the 25.0 per cent reported last year (Oceana Canada 2018), indicating important improvements. However, given the rate of delayed deliverables remains roughly similar (43.3 per cent this year, 47.7 per cent last year), this is likely in part related to the completion of deliverables assigned as ongoing from last year. The percentage of deliverables classified as ongoing has dropped from 23 to nine per cent in this year's evaluation.

### ***DFO made the most progress on management and rebuilding plans***

It is encouraging that the highest rate of progress in the last year was made with rebuilding plans and Integrated Fisheries Management Plans (IFMPs). IFMPs provide the framework for conservation and sustainable use of fisheries resources, outlining how they will be managed for a given period of time (DFO 2013a). They combine science and Indigenous traditional knowledge on fish species with industry data to determine best practices for the management of stocks with the goal of maintaining them in the healthy zone (DFO 2019d). Just over half of the work expected pertaining to the development and publication of IFMPs in the last year was completed, and the majority of stocks are now included in one. Rebuilding plans are an extension of the IFMP and are supposed to outline the specific objectives, timelines and management measures required to grow the stock above the LRP, reflecting the unique requirements for rebuilding. Both are important tools for sustainable fisheries management and healthy ocean ecosystems, and having more of these plans in place also has the benefit of facilitating industry achievement and retention of eco-certifications.

Rebuilding plans are vital, providing the best chances for restoring the health of Canada's oceans and maintaining and strengthening our coastal communities that depend on them. Over half of the seven

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<sup>11</sup> The definition of completion used here (i.e., description in public document) and the unit of assessment (i.e., ultimate product: the final IFMP, rebuilding plan, LRP, USR or HCR per stock/stock group) differs from DFO internal reporting on workplans (i.e., interim steps towards ultimate products evaluated regardless of public documentation, often with multiple steps per stock/stock group). This, combined with differing evaluation end dates (i.e., July 1 versus March 31), may result in different statistics regarding deliverable completion.

<sup>12</sup> Including all 2018/19 fiscal year workplan deliverables and remaining uncompleted 2017/18 fiscal year deliverables.

expected rebuilding plans over the last year were completed as anticipated. Two of the four rebuilding plans completed were either completed or close to completion internally at this time last year and are now available publicly on the DFO website (Atlantic cod on the Scotian shelf/Bay of Fundy, NAFO 4X5Y, and northern shrimp off the northeast coast of Newfoundland in Shrimp Fishing Area 6). The other two completed rebuilding plans this year (Atlantic cod on eastern Georges Bank and yellowtail flounder on Georges Bank) were completed internally on time according to the fiscal year workplan deadline and published on the DFO website quicker than those completed internally last year (i.e., within a few months versus many months).

There is one rebuilding plan that was delayed: the urgently needed rebuilding plan for northern cod (Atlantic cod off the northeastern coast of Newfoundland and Labrador in NAFO 2J3KL). The 2019/20 deliverable description for this plan (released in March 2019) indicated divergent stakeholder views were limiting progress to define an HCR. A draft plan was presented by DFO to stakeholders in spring of 2018, but adoption or further development of the plan was put on hold pending a review of the LRP, which was held in January 2019.<sup>13</sup> The next steps for the rebuilding plan were to be determined (DFO 2019a). At the most recent 2J3KLMNO Groundfish Advisory Committee meeting in April 2019, the DFO scientists indicated the approach to developing the LRP was peer reviewed and would remain the same. Management indicated the next steps towards the rebuilding plan and associated HCR were still to be determined, and that the Region was seeking guidance from the Minister. No further updates on deliverable completion status were available from DFO staff consulted for this report in June 2019. DFO needs to decide how to move forward and complete the development of a rebuilding plan for this stock. The rebuilding plans for two other stocks continue to be suspended and are newly noted as not being required in the 2019/20 fiscal year workplan update.<sup>14</sup>

### ***Workplan improvements in 2019/20***

There are noticeable improvements in the 2019/20 fiscal year workplan. To fully meet recommendation 2.63 pertaining to reference points, DFO now includes a sub-workplan (1D) dedicated to the development of USRs, in addition to LRPs. Without a USR there is no boundary to mark the separation between the healthy and cautious zone, meaning without them the status of many stocks remains uncertain and managers must continue to make decisions without this important benchmark. Furthermore, for those stocks that are not doing well, without a USR there is no benchmark for rebuilding to a healthy state. When the USRs identified in this year's fiscal year workplan are completed, the percentage of Oceana Canada index stocks with USRs will increase by more than 10 percentage points, from less than half (46.4 per cent) to 58.2 per cent. This will be a big improvement. Since Oceana Canada's first annual Fishery Audit in 2017, the increase in the percentage of marine fish and invertebrate index stocks with USRs has been just 4.1 per cent. Over the same time the percentage with LRPs increased by over 10 per cent (Oceana Canada 2019a), likely largely driven by the work outlined in these annual workplans. It is expected that the inclusion of USR development in the annual workplans will start to increase the rate of USR development. It is concerning, however, that only one of the 10 USR-related deliverables in this fiscal year workplan indicates that the USR development will be actually be completed by the end of

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<sup>13</sup> DFO (2019). Terms of Reference. Evaluation of the Limit Reference Point (LRP) for 2J3KL Atlantic Cod. Regional Peer Review Process - Newfoundland and Labrador Region. January 22-23, 2019. St. John's, NL. [http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2019/01\\_22-23-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2019/01_22-23-eng.html)

<sup>14</sup> According to newly revised reference points used in the management strategy evaluation, both species of redfish are now out of the critical zone in units 1+2 combined and a rebuilding plan is not required by policy. This change in biomass is largely due to a few recent large cohorts (2011–13), and Acadian redfish remain in the cautious zone. Currently, there is no fisheries management plan (rebuilding plan or IFMP) that covers both species in the entire stock area. These stocks need a management plan (rebuilding plan or IFMP) to guide a rebuilding fishery.



March 2020. The rest includes statements like “*Will begin to update...*” or “*Will begin to develop...*” or “*Will continue to develop...*”, implying they may not be completed by next year. Hopefully work will progress quickly and the number of stocks with an USR will rise sooner rather than later.

Another improvement included in the 2019/20 fiscal year workplan is the addition of new stocks for the development of rebuilding plans. Unlike the other sub-workplans, where new stocks are added each year (e.g., for new IFMP development, workplan 3A), the rebuilding plan development sub-workplan (workplan 2) has had the same 19 stocks since the inaugural 2017/18 fiscal year workplan. But in this year’s fiscal year workplan rebuilding plans for four additional stocks are discussed. This is a positive development, as many more critically depleted stocks require rebuilding plans.<sup>15</sup> Encouragingly, these new stocks include witch flounder in NAFO area 23KL, a critically depleted stock (not included as a “major” stock in DFO’s Sustainably Survey for Fisheries (SSF; DFO 2019e)), and Gulf of St. Lawrence shrimp, a stock group not currently in the critical zone but which is expected could be there soon. The third stock is one for which a rebuilding plan recently expired (May 2018) and that requires updating (Atlantic cod in the northern Gulf of St. Lawrence or NAFO 4RS3Pn). The workplan indicates that the fourth (bocaccio rockfish in the Pacific) is already complete, since it has actually been included in a rebuilding plan since 2014 (DFO 2014).<sup>16</sup>

### ***Future progress***

Although this year there have been improvements in the development of rebuilding plans, it is concerning that the majority of deadlines for rebuilding plan development are at the end of fiscal 2020/21. In addition to the delayed rebuilding plan for northern cod (Atlantic cod in NAFO 2J3KL), there is only one more rebuilding plan expected in 2020: the rebuilding plan for Atlantic mackerel on the Atlantic coast (NAFO areas 2 and 3). With the majority of the work on rebuilding plans outlined for later years, it is important that DFO intensifies efforts to make the resources available to work on developing meaningful rebuilding plans. Inclusion in a plan is not enough. It is important that the plans developed when meeting these commitments are consistent with internationally recognized best practices and include elements that ensure depleted populations are given the best chance to recover to a healthy level of abundance (see Oceana Canada 2019a for an assessment of the quality of existing rebuilding plans and recommendations for the future). Environmental conditions will pose challenges to the recovery of some stocks. To promote the best chances of recovery, rebuilding plans will need to be developed, and these plans must consider climate change and the cumulative impact of human activities on marine ecosystems.

All elements to be developed in the fiscal year workplans are part of the SFF, which was intended to be implemented over time starting in 2009 (DFO 2019).<sup>17</sup> Significant progress has been made to implement the framework, with recent improvements in the rate at which this is occurring, but a decade later much work remains. Nearly 40 per cent of marine fish and invertebrate stocks still require LRPs, over half still need USRs, and over 80 per cent of critically depleted stocks still lack a rebuilding plan (Oceana Canada 2019a). DFO has clearly laid out its priorities; it now must complete them and fully implement the SFF. If

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<sup>15</sup> 82 per cent of critically depleted stocks in Oceana Canada’s 2019 index stock dataset (26 of 33) are not included in publicly available rebuilding plans (Oceana Canada 2019b).

<sup>16</sup> By including this stock, the department includes all stocks currently included in rebuilding plans except the now dated (2013) but apparently evergreen rebuilding plan for the Southwest Nova Scotia / Bay of Fundy Herring Spawning Component (available online here: <http://www.dfo-mpo.gc.ca/fisheries-peches/ifmp-gmp/herring-hareng/herring-hareng-2013-eng.html>)

<sup>17</sup> Many components of the framework, such as references points, have been part of policy in some regions prior to 2009 (e.g., since 2004 as part of the Atlantic Fisheries Policy Review — A Policy Framework for the Management of Fisheries on Canada’s Atlantic Coast (DFO 2004)).

all deliverables in all fiscal year workplans were completed, it would result in important increases in the percentage of marine fish and invertebrate stocks with these important management elements. The percentage of stocks with LRPs and USRs would both increase by about ten percentage points, and nearly all stocks would be included in IFMPs, all of which would be available online. Importantly, the number of critical zone stocks included in rebuilding plans would rise from just over 18 per cent to just under 50 per cent.<sup>18</sup> It is encouraging to know that these improvements are underway.

Canada's marine fisheries are highly valuable and sustain our coastal communities, yet they are clearly in trouble, with fewer than one-third currently healthy (Oceana Canada 2019a). The fisheries management shortcomings in Canada have been identified, and the response by DFO has been promising. While the Department is still underperforming relative to commitments and fisheries management best practices, performance is getting better, and priorities have been set and workplans developed. DFO needs to guarantee the work is completed and the SSF fully implemented, to ensure the stability of healthy fisheries and to promote the rebuilding of depleted stocks for the benefit of marine ecosystems, coastal communities and the fishing industry.

## References

1. Commissioner of the Environment and Sustainable Development (CESD) (2016). Report 2 – Sustaining Canada's Major Fish Stocks. Fisheries and Oceans Canada. [http://www.oag-bvg.gc.ca/internet/English/parl\\_cesd\\_201610\\_02\\_e\\_41672.html](http://www.oag-bvg.gc.ca/internet/English/parl_cesd_201610_02_e_41672.html)
2. DFO (2004). Atlantic Fisheries Policy Review — A Policy Framework for the Management of Fisheries on Canada's Atlantic Coast. <http://www.dfo-mpo.gc.ca/reports-rapports/regs/afpr-rppa/framework-cadre-eng.htm#toc7.2.4>
3. DFO (2009). A Fishery Decision-Making Framework Incorporating the Precautionary Approach. <http://www.dfo-mpo.gc.ca/reports-rapports/regs/sff-cpd/precaution-eng.htm>
4. DFO (2013a). Preparing an Integrated Fisheries Management Plan (IFMP). Guidance Document January 30, 2013. No longer available online.
5. DFO (2013b). Guidance for the Development of Rebuilding Plans under the Precautionary Approach Framework: Growing Stocks out of the Critical Zone. <http://www.dfo-mpo.gc.ca/reports-rapports/regs/sff-cpd/precautionary-precaution-eng.htm>
6. DFO (2014). Appendix 9: Rebuilding Plans for Groundfish Species. *In* Pacific Region Integrated Fisheries Management Plan, Groundfish, Effective February 21, 2014, Version 1.0. <http://waves-vagues.dfo-mpo.gc.ca/Library/365005.pdf>
7. DFO (2017a). Fisheries and Oceans Canada's Workplans for Fiscal from 2017 to 2018 in Response to Recommendation 2.28, 2.63 and 2.65 in the Commissioner of the Environment and Sustainable Development's (CESD) October 2016 Report 2: Sustaining Canada's major fish stocks: Fisheries and Oceans Canada. <http://www.dfo-mpo.gc.ca/ae-ve/audits-verifications/16-17/work-plan-travail-eng.html>
8. DFO (2018a). Sustainable Fisheries Framework. <http://www.dfo-mpo.gc.ca/reports-rapports/regs/sff-cpd/overview-cadre-eng.htm>
9. DFO (2018b). Workplans for Fiscal 2018-19. Fisheries and Oceans Canada's Workplans for Fiscal 2018-19 in Response to Recommendation 2.28, 2.63 and 2.65 in the Commissioner of the Environment and Sustainable Development's (CESD) October 2016 Report 2 — Sustaining Canada's Major Fish Stocks — Fisheries and Oceans Canada. <http://www.dfo-mpo.gc.ca/ae-ve/audits-verifications/18-19/work-plan-travail-eng.html>
10. DFO (2019a). Fisheries and Oceans Canada's Workplans for fiscal 2019-20 in Response to Recommendation 2.28, 2.63 and 2.65 in the Commissioner of the Environment and Sustainable

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<sup>18</sup> Assuming all rebuilding plans outlined in workplan 2 are completed, including those with deadlines in 2020/21.

- Development's (CESD) October 2016 Report 2 – Sustaining Canada's Major Fish Stocks – Fisheries and Oceans Canada. <http://www.dfo-mpo.gc.ca/ae-ve/audits-verifications/18-19/CESD-2019-2020-eng.html>
11. DFO (2019b). Departmental Plan 2019-20. <http://www.dfo-mpo.gc.ca/rpp/2019-20/dp-eng.html>
  12. DFO (2019c). Evaluation of the Canadian Science Advisory Secretariat (CSAS). Project Number: 96175. Final Report. March 4th, 2019. <https://www.dfo-mpo.gc.ca/ae-ve/evaluations/18-19/96175-eng.html>
  13. DFO (2019d). Integrated Fisheries Management Plans. <https://www.dfo-mpo.gc.ca/fisheries-peches/ifmp-gmp/index-eng.html>
  14. DFO (2019e). Sustainability Survey for Fisheries. <https://www.dfo-mpo.gc.ca/reports-rapports/regs/sff-cpd/survey-sondage/index-en.html>
  15. Oceana Canada (2018). Canada's Progress Towards Completing Commitments to Implement the Sustainable Fisheries Framework. [https://www.oceana.ca/sites/default/files/canadas\\_progress\\_towards\\_completing\\_commitments\\_final\\_2018nov05.pdf?\\_ga=2.156419195.1729337202.1563889714-805272845.1468604505](https://www.oceana.ca/sites/default/files/canadas_progress_towards_completing_commitments_final_2018nov05.pdf?_ga=2.156419195.1729337202.1563889714-805272845.1468604505)
  16. Oceana Canada (2019a). The Quality of Current and Future Rebuilding Plans in Canada. <http://www.oceana.ca/FisheryAudit2019>
  17. Oceana Canada (2019b). Fisheries Rebuilding Success Indicators: 2019. <http://www.oceana.ca/FisheryAudit2019>

## Tables

Table 1. **Summary of workplan deliverable completion:** Total number (and percentages) of deliverables for the 2018/19 workplans combined with remaining uncompleted 2017/18 workplan deliverables, and number of deliverables falling into each completion status category. See Tables 2–6 for details on each workplan deliverable by stock or stock group.

Fiscal year workplan		Number of deliverables expected to be completed in 2018/19 <sup>19</sup>	Number of deliverables in each completion status category			
			Completed	Ongoing	Delayed	Suspended
Workplan 1: Reference points and harvest control rules	Limit reference points	24	7 (29.2%)	6 (25.0)	10 (41.7%)	1 (4.2%)
	Upper stock reference points <sup>20</sup>	-	-	-	-	-
	Harvest control rules	7	3 (42.9%)	0	4 (57.1%)	0
Workplan 2: Rebuilding plans		7	4 (57.1%)	0	1 (14.3%)	2 (28.6%)
Workplan 3: Integrated fisheries management plans		29	15 (51.7%)	0	14 (48.3%)	0
<b>TOTAL</b>		<b>67</b>	<b>29 (43.3%)</b>	<b>6 (9.0%)</b>	<b>29 (43.3%)</b>	<b>3 (4.5%)</b>

Table 2. **Workplan 1A, 1B, and 1C; Precautionary Approach Limit Reference Points (LRPs) to be developed, be updated/revised or make progress in their development:** In annual workplan 1, Fisheries and Oceans Canada (DFO) prioritizes stocks or stock groups for which it will develop precautionary approach reference points and harvest control rules (DFO 2017a, DFO 2018b, DFO 2019a). Workplan 1 is broken down into five sub-workplans. In 2019/20, three of these pertain to LRPs:<sup>21</sup> To develop LRPs (1A), to update or revise LRPs (1B) or make progress towards developing LRPs (1C). The table below summarizes all three fiscal year workplan 1 LRP deliverables<sup>22</sup> by stock or stock group with health status<sup>23</sup> and status towards completion as assessed by Oceana Canada. Stocks with new or revised LRPs in documentation available online are noted as completed, stocks that have had deadlines shifted or remain uncompleted are noted as delayed, and stocks for which the deadline has not yet passed or for which the workplan deliverable was only to make progress are noted as ongoing. (Please note that the table does not include an assessment of LRP quality.) Details on status determinations are provided for stocks included in the 2017/18 and 2018/19 workplans. Stocks appearing after the bold line separating rows appear only in the 2019/20 workplan and were not evaluated for status completion.

#	Region	Stock and health status zone	Develop LRP	Update or revise LRP	Begin to develop or update LRP	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status	Details
1	Gulf	Atlantic salmon –	✓2017/18			Develop LRP by March 31, 2018.			Previously completed (2018)	River-specific LRPs were developed for most rivers in the southern Gulf of St. Lawrence during a CSAS process

<sup>19</sup> The number of deliverables expected to be completed in 2018/19 include the 2018/19 workplan deliverables as well as any 2017/18 workplan deliverables assessed as uncompleted last year.

<sup>20</sup> The 2019/20 fiscal year workplan separates USR deliverables into its own sub-table for the first time. For a couple of stocks, the 2017/18 and 2019/20 fiscal year workplans include work for USR in the LRP sub-tables. The deliverable descriptions for these stocks identify work to be conducted towards the development or updating of USR. These were evaluated as per the deliverable's description (for the presence of new or updated USRs) but appear summarized here with LRP deliverables since that is where they were included in the DFO fiscal year workplans evaluated. All USR deliverables will be summarized and evaluated in their own table moving forward, as per the 2019/20 fiscal year workplan.

<sup>21</sup> In the 2017/18 and 2018/19 fiscal year workplans there were only two sub-workplans pertained to LRPs: to develop LRPs (1A) and to update and revise or begin to develop LRPs (1B). In 2019/20 the latter sub-plan was broken down further into two sub-plans: to update or revise LRPs (1B) and to make progress in developing LRPs (1C), with the latter clearly indicating that stocks within it are not necessarily expected to have LRPs finalized in 2019/20. In this table, stocks previously appearing in the older merged classification were assigned to the "Update or revise LRP" field and completion status was evaluated based on wording in the deliverable description.

<sup>22</sup> As stated in DFO workplans.

<sup>23</sup> Health status was assigned primarily using Oceana Canada's Fishery Audit dataset (Oceana Canada 2019b), with † denoting assignments for marine mammals, diadromous fish and freshwater fish using the 2017 Sustainability Survey for Fisheries results (DFO 2019e) and †† denoting uncertain status assigned when stocks were not included in either dataset. As some records represent multiple stocks that appear as more than one record in the datasets used to assign status, all unique statuses for stocks within stock groups are included when applicable.

#	Region	Stock and health status zone	Develop LRP	Update or revise LRP	Begin to develop or update LRP	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status	Details
		Gulf Region; <b>Critical</b> <sup>†</sup>								held in February 2018, and details are available online in the CSAS Science Response document. <sup>24</sup>
2	Maritimes	Lobster – inshore LFA 27-33; <b>Healthy</b>		✓2017/18		Refine LRP by March 31, 2018. Following this the IFMP will be updated by March 31, 2019. <sup>25</sup>			<b>Previously completed (2018)</b>	New reference points were accepted at a framework meeting for LFAs 27–33 in January 2018, according to documents available from a stock status update process held in February 2018 <sup>26</sup> (the documents expected to be published from the January meeting are still not available as of July 1, 2019).
3	Maritimes	Lobster – offshore LFA 41; <b>Healthy</b>		✓2017/18 ✓2018/19		Refine LRP by March 31, 2018. Following this the IFMP will be updated by March 31, 2019.	Update on progress in developing the Precautionary Approach Framework; update to reference points. Some minor updates and corrections. The offshore lobster were previously noted for completion in 2017/18.		<b>Previously completed (2018)</b>	It is noted in the 2018/19 workplan that work to update reference points was not completed and continues into 2018/19. However, two CSAS processes were held in 2017: a framework assessment in January and a stock assessment in September. The research document produced from the framework assessment indicates that attempts to develop reference points based on biomass dynamic modelling were not possible, but several survey and landings-based options to develop reference point indicators were developed. <sup>27</sup> Four pairs of upper stock indicators and limit stock indicators were recommended. The second process assessed the stock against these reference indicators. <sup>28</sup> According to the 2018/19 workplan, further minor updates and corrections remain to be conducted on reference points. A CSAS Science Response process was held in October 2018 to update the stock status against reference points. <sup>29</sup>

<sup>24</sup> DFO (2018). Limit Reference Points for Atlantic Salmon Rivers in DFO Gulf Region. DFO Can. Sci. Advis. Sec. Sci. Res. 2018/015. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ScR-RS/2018/2018\\_015-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ScR-RS/2018/2018_015-eng.html)

<sup>25</sup> The 2017/18 deliverables statement for this section of the workplan (workplan 1) indicates the IFMP will be updated by March 31, 2019, which contradicts the deliverables statement in the IFMP section of the workplan (workplan 3) for the same fiscal year, where it is stated that the inshore lobster IFMP was to be posted online in 2017/18. This statement here is however consistent with the 2018/19 workplan.

<sup>26</sup> DFO (2018). Stock Status Update of American Lobster (*Homarus americanus*) in Lobster Fishing Areas (LFAs) 27–33. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2018/030. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ScR-RS/2018/2018\\_030-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ScR-RS/2018/2018_030-eng.html)

<sup>27</sup> DFO (2017). Framework Assessment of the Offshore American Lobster (*Homarus americanus*) in Lobster Fishing Area (LFA) 41. DFO Can. Sci. Advis. Sec. Res. Doc. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2017/2017\\_065-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2017/2017_065-eng.html)

<sup>28</sup> DFO (2018). Assessment of Lobster (*Homarus americanus*) in Lobster Fishing Area 41 (4X + 5Z) for 2016. DFO Can. Sci. Advis. Sec. Sci. Adv. Rep. 2018/004. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018\\_004-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018_004-eng.html)

<sup>29</sup> DFO (2018). Terms of Reference. Stock Status Update of American Lobster in Lobster Fishing Area (LFA) 41. Regional Science Response Process – Maritimes Region. November 16, 2018, Dartmouth, NS. [http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2018/11\\_16b-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2018/11_16b-eng.html)

#	Region	Stock and health status zone	Develop LRP	Update or revise LRP	Begin to develop or update LRP	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status	Details
4	Maritimes	Gaspereau – Maritimes Region; Cautious†		✓2017/18		Refine reference points based on new scientific information.			Previously completed (2018) <sup>30</sup>	Alewife ( <i>Alosa pseudoharengus</i> ) and blueback herring ( <i>Alosa aestivalis</i> ) are diadromous fish that are collectively referred to as river herring and are fished together as “gaspereau.” <sup>31</sup> In February 2016 a CSAS process was held, in part to determine how to develop reference points. <sup>32</sup> A CSAS report indicates that an LRP was developed for alewife but not blueback herring due to data deficiencies, and the development of reference points for blueback herring were deferred until more population-specific data are available. <sup>33</sup>
5	Quebec and National Capital Region	Acadian and deepwater redfish – Units 1 and 2; <sup>34</sup> Cautious, Healthy		✓2017/18		LRP refinements will be completed in conjunction with the management strategy evaluation (MSE), which is anticipated to be completed by late spring 2018.			Previously completed (2018)	The LRP for Acadian redfish in units 1 and 2 combined and the LRP for deepwater redfish in units 1 and 2 combined were completed in conjunction with the MSE. <sup>35</sup>
6	Central and Arctic	Arctic char – Cumberland Sound; Uncertain†	✓2017/18			Develop LRP by March 31, 2018.			Completed	Two CSAS processes were held in February 2017 to assess the stock status and sustainable harvest levels for Arctic char in Ijaruvung Lake, Iqalujjuaq Fiord and Irvine Inlet, and Naulinniarvik Lake, Cumberland Sound, Nunavut. Although LRP development was not indicated as

<sup>30</sup> This deliverable has a completion status of “Delayed” assigned last year when it should have been assessed as “Completed.” Scientists did refine reference points (in February 2016) for alewife and clearly indicated more data is required to develop reference points for blueback herring in a publicly available report (published April 2018).

<sup>31</sup> Gibson, A.J.F., Bowlby, H.D., & Keyser, F.M. (2016). A Framework for the Assessment of the Status of River Herring Populations and Fisheries in DFO’s Maritimes Region. DFO Can. Sci. Advis. Sec. Res. Doc. 2016/105. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2016/2016\\_105-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2016/2016_105-eng.html)

<sup>32</sup> DFO (2016). Terms of Reference. Maritimes Region River Herring Framework and Case Study Application to the Tusket River Fishery. Regional Peer Review – Maritimes Region. February 9–11, 2016, Dartmouth, NS. [http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2016/02\\_09-11-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2016/02_09-11-eng.html)

<sup>33</sup> Gibson, A.J.F., Bowlby, H.D., and Keyser, F.M. (2017). A Framework for the Assessment of the Status of River Herring Populations and Fisheries in DFO’s Maritimes Region. DFO Can. Sci. Advis. Sec. Res. Doc. 2016/105. vi + 69 p. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2016/2016\\_105-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2016/2016_105-eng.html)

<sup>34</sup> Included in 2017/18 workplan 1 as species combined, units combined.

<sup>35</sup> DFO (2018). Units 1+2 Redfish Management Strategy Evaluation. DFO Can. Sci. Advis. Sec. Sci. Adv. Rep. 2018/033. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018\\_033-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018_033-eng.html)

#	Region	Stock and health status zone	Develop LRP	Update or revise LRP	Begin to develop or update LRP	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status	Details
										a deliverable in the terms of reference for these processes, <sup>36,37</sup> departmental officials indicated last year that the LRPs for these stocks were developed but that the CSAS documents were not yet posted as they were in the process of completing quality control and translation (N. Schjott, personal communication, June 29, 2018). One of the two expected publications is now available online in CSAS Science Advisory Report with details on the LRPs. Limit reference points have been developed for Arctic char in Ijaruvung Lake, Iqalujuaq Fiord and Irvine Inlet, Cumberland Sound, <sup>38</sup> but are still not available for the Naulinniarvik Lake Arctic char fishery, Cumberland Sound.
7	Maritimes	American eel – adult; Uncertain†	✓2017/18			Develop LRP by March 31, 2018.			<b>Suspended</b>	A framework stock assessment for American eels and elvers was held in October 2016. The proceedings from the process indicate reference points were discussed but does not indicate a final decision was made. <sup>39</sup> Other than the proceedings, no further documentation is available on the CSAS website from the framework process. An assessment of eels in the Maritimes Region occurred in September of 2018. According to the terms of reference, reference points would be discussed, although it is unclear if this included an LRP, <sup>40</sup> and no reports are available from this process. Departmental officials indicate a Science Advisory Report will be published imminently summarizing the assessment based on American eel in the Maritimes Region (elvers and adults; DFO Science, personal communication, June 28, 2019). At the assessment, removal reference points were developed. Spawner per recruit (SPR) analyses were used to define mortality reference points for all directed fisheries and hydroelectric facilities. The mortality rate that results in a 70% loss of

<sup>36</sup> DFO (2017). Terms of Reference. Stock Status and Sustainable Harvest Levels for the Naulinniarvik Lake Arctic Char Fishery, Cumberland Sound, Nunavut. Regional Peer Review – Central and Arctic Region. February 16, 2017, Iqaluit, Nunavut. [http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2017/02\\_16-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2017/02_16-eng.html)

<sup>37</sup> DFO (2017). Terms of Reference. Stock Status and Sustainable Harvest Levels for Arctic Char in Ijaruvung Lake, Iqalujuaq Fiord and Irvine Inlet, Cumberland Sound, Nunavut. Regional Peer Review – Central and Arctic Region. February 14–15, 2017, Iqaluit, NU. [http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2017/02\\_14-15-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2017/02_14-15-eng.html)

<sup>38</sup> DFO (2018). Stock Status and Sustainable Harvest Levels for Arctic Char in Ijaruvung Lake, Iqalujuaq Fiord and Irvine Inlet, Cumberland Sound, Nunavut. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2018/021. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018\\_021-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018_021-eng.html)

<sup>39</sup> DFO (2017). Proceedings of the Regional Peer Review of the Stock Framework for American Eel (*Anguilla rostrata*) and Elvers. DFO Can. Sci. Advis. Sec. Proc. 2017/048. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/Pro-Cr/2017/2017\\_048-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/Pro-Cr/2017/2017_048-eng.html)

<sup>40</sup> DFO (2018). Terms of Reference. Assessment of American Eel in the Maritimes Region. Regional Peer Review – Maritimes Region. September 5–7, 2018, Dartmouth, NS. [http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2018/09\\_05-07-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2018/09_05-07-eng.html)

#	Region	Stock and health status zone	Develop LRP	Update or revise LRP	Begin to develop or update LRP	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status	Details
										<p>spawning biomass relative to the population without losses from human activities (SPR30) was recommended as the limit removal reference (i.e., the maximum acceptable human-induced mortality rate). The mortality rate that results in a 50% loss of spawning biomass would be the target value (SPR50). However, the assessment of current human-induced mortality relative to reference points is limited to the elver fishery. Mortality relative to reference points could not be assessed for large eel fisheries or for large eel mortality following downstream transit through hydroelectric facilities because of data limitations. Due to these data limitations, this deliverable was classified as “suspended” here. Given the limited geographic scope of the assessment when compared to the overall size of the panmictic American eel range, it was not possible to develop biomass reference points, the focus has changed to removal reference points and no LRP is expected to be developed or published from the September meeting (DFO Science, personal communication, June 28, 2019). According to departmental officials there will be a CSAS process this fall (Oct 29-31; DFO Science, personal communication, June 28, 2019) which will be a first step towards a range-wide assessment. Although the development of biological reference points is not planned, it will be a step closer to evaluating the status of eels in Canadian waters. The recently published (August 2018) IFMP for elvers in the Maritimes Region indicates that the development of Precautionary Approach reference points for the elver fishery and for American eel fisheries at all life history stages remains a regional goal.<sup>41</sup></p>
8	Maritimes	American eel – elvers; Uncertain†	✓2017/18			Develop LRP by March 31, 2018.			<b>Delayed</b>	<p>A framework stock assessment for American eels and elvers was held in October 2016. The proceedings from the process indicate reference points were discussed but does not indicate a final decision was made.<sup>42</sup> Other than the proceedings, no further documentation is available on the CSAS website from the framework process.</p>

<sup>41</sup> DFO (2018). Elver Integrated Fisheries Management Plan (Evergreen) Maritimes Region. <http://www.dfo-mpo.gc.ca/fisheries-peches/ifmp-gmp/elver-anguille/index-eng.html>

<sup>42</sup> DFO (2017). Proceedings of the Regional Peer Review of the Stock Framework for American Eel (*Anguilla rostrata*) and Elvers. DFO Can. Sci. Advis. Sec. Proc. 2017/048. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/Pro-Cr/2017/2017\\_048-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/Pro-Cr/2017/2017_048-eng.html)



#	Region	Stock and health status zone	Develop LRP	Update or revise LRP	Begin to develop or update LRP	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status	Details
										<p>Departmental officials indicate a Science Advisory Report will be published imminently summarizing the assessment based on American eel in the Maritimes Region (elvers and adults; DFO Science, personal communication, June 28, 2019). At the assessment, removal reference points were developed. Spawner per recruit (SPR) analyses were used to define mortality reference points for all directed fisheries and hydroelectric facilities. The mortality rate that results in a 70% loss of spawning biomass relative to the population without losses from human activities (SPR30), was recommended as the limit removal reference (i.e., the maximum acceptable human-induced mortality rate). The mortality rate that results in a 50% loss of spawning biomass would be the target value (SPR50). Given the limited geographic scope of the assessment when compared to the overall size of the panmictic American eel range, it was not possible to develop biomass reference points, the focus has changed to removal reference points and no LRP is expected to be developed or published from the September meeting (DFO Science, personal communication, June 28, 2019). Given the rationale provided for the shift in focus, once the removal references for elvers are published this deliverable will be scored as <i>completed</i>. According to departmental officials there will be a CSAS process this fall (Oct 29-31; DFO Science, personal communication, June 28, 2019) which will be a first step towards a range-wide assessment. Although the development of biological reference points is not planned, it will be a step closer to evaluating the status of eels in Canadian waters. The recently published (August 2018) IFMP for elvers in the Maritimes Region indicates that the development of Precautionary Approach reference points for the elver fishery and for American eel fisheries at all life history stages remains a regional goal.<sup>43</sup></p>

<sup>43</sup> DFO (2018). Elver Integrated Fisheries Management Plan (Evergreen) Maritimes Region. <http://www.dfo-mpo.gc.ca/fisheries-peches/ifmp-gmp/elver-anquille/index-eng.html>

#	Region	Stock and health status zone	Develop LRP	Update or revise LRP	Begin to develop or update LRP	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status	Details
9	Maritimes	Lobster – Inshore LFA 34; <b>Healthy</b>		✓2017/18		Work planned to refine LRP. The work is expected to be finalized in the 2018 to 2019 fiscal-year. Following this the IFMP will be updated by March 31, 2020. <sup>25</sup>			<b>Delayed</b>	In June 2018 a CSAS Science Response process was held to update the status of lobster in LFA 34. The report published from this process indicates the LRP previously developed (in 2013) was still in use. <sup>44</sup> A framework stock assessment is on the CSAS schedule website for March 2019, at which it was indicated reference points would be refined (N. Schjott, personal communication, June 29, 2018; no terms of reference available on the website), but this was postponed and will now occur in September 2019 (N. Schjott, personal communication, June 25, 2019).
10	Maritimes	Lobster – Inshore LFA 35–38; <b>Healthy</b>		✓2017/18		Work planned to refine LRP. The work is expected to be finalized in the 2018 to 2019 fiscal-year. Following this the IFMP will be updated by March 31, 2020. <sup>25</sup>			<b>Delayed</b>	In September 2018 a CSAS Science Response process was held to update the status of lobster in LFA 35–38. The report published from this process indicates the LRP previously developed (in 2013) was still in use. <sup>45</sup> A framework stock assessment is on the CSAS schedule website for March 2019, at which it was indicated reference points would be refined (N. Schjott, personal communication, June 29, 2018; no terms of reference available on the website), but this was postponed and will now occur in September 2019 (DFO Science, personal communication, June 28, 2019).

<sup>44</sup> DFO (2018). Stock Status Update of American Lobster (*Homarus americanus*) in Lobster Fishing Area 34. DFO Can. Sci. Advis. Sec. Sci. Resp. 2018/044. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ScR-RS/2018/2018\\_044-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ScR-RS/2018/2018_044-eng.html)

<sup>45</sup> DFO (2019). Stock Status Update of American Lobster (*Homarus americanus*) in Lobster Fishing Areas 35–38. DFO Can. Sci. Advis. Sec. Sci. Resp. 2018/049. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ScR-RS/2018/2018\\_049-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ScR-RS/2018/2018_049-eng.html)

#	Region	Stock and health status zone	Develop LRP	Update or revise LRP	Begin to develop or update LRP	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status	Details
11	Newfoundland and Labrador and National Capital Region	Northern shrimp – SFA 0–7; <b>Critical</b> , <b>Cautious</b> , <b>Healthy</b> , <b>Uncertain</b>		✓ 2017/18 ✓ 2018/19 ✓ 2019/20		New assessment model under development which may lead to the review of reference points.	SFA 4-6 only: Ongoing evaluation and potential revision of LRPs in FY 2018-/9.	SFA 4-6 only: Will begin update of LRP in 2019/20.	Ongoing	The 2017/18 fiscal year workplan indicated the deliverable applied to northern shrimp in SFA 0–7, while subsequent workplans have indicated it applies only to SFA 4–6, the areas for which the department is the primary provider of science advice. <sup>46</sup> In 2017/18 two CSAS processes were held (in February 2018). The first provided an update of the status of northern shrimp ( <i>Pandalus borealis</i> ) and striped shrimp ( <i>Pandalus montagui</i> ) in the Eastern and Western Assessment Zones (EAZ and WAZ, respectively, which combined cover the same areas as the former SFAs 2 and 3), and striped shrimp in SFA 4. It does not appear that reference points were adjusted in this process, and they were still missing for striped shrimp in SFA 4 and for both species in the WAZ. <sup>47,48</sup> The second process assessed northern shrimp in SFAs 4, 5 and 6, and the documentation produced indicates the values of the reference points were revised slightly in 2018, in accordance with refinements in the biomass estimation method. <sup>49</sup> In 2018/19 one CSAS process was held to assess the status of northern shrimp in SFAs 4 to 6, striped shrimp in SFA 4 and both species in the EAZ and WAZ. <sup>50</sup> Documentation for the EAZ and WAZ <sup>51</sup> indicates previously established reference points were utilized for both species in the EAZ, although these should be utilized with caution. <sup>52</sup> In the WAZ neither species was assessed under a PA framework, but the report indicated that work is underway to establish the PA framework within the next

<sup>46</sup> DFO provides science advice for SFAs 4, 5, 6 and the Eastern and Western Assessment Zones (EAZ and WAZ, respectively, which combined cover the same areas as the former SFA 2 and 3). The Northwest Atlantic Fisheries Organization (NAFO) Scientific Council (SC) provides science advice for SFAs 0, 1 and 7.

<sup>47</sup> DFO (2018). Update of Stock Status Indicators for Northern Shrimp, *Pandalus borealis*, and Striped Shrimp, *Pandalus montagui*, in the Western and Eastern Assessment Zones, February 2018. DFO Can. Sci. Advis. Sec. Sci. Res. 2018/012. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ScR-RS/2018/2018\\_012-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ScR-RS/2018/2018_012-eng.html)

<sup>48</sup> DFO (2018). Stock Status Update of Striped Shrimp (*Pandalus montagui*) in SFA 4. DFO Can. Sci. Advis. Sec. Sci. Res. 2018/011. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ScR-RS/2018/2018\\_011-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ScR-RS/2018/2018_011-eng.html)

<sup>49</sup> DFO (2018). An Assessment of Northern Shrimp (*Pandalus borealis*) in Shrimp Fishing Areas 4–6 in 2017. DFO Can. Sci. Advis. Sec. Sci. Adv. Rep. 2018/018. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018\\_018-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018_018-eng.html)

<sup>50</sup> DFO (2018). Terms of Reference. Northern and Striped Shrimp Assessment. Zonal Peer Review - Newfoundland and Labrador, and Central and Arctic Regions. February 12-14, 2019. St. John's, NL. [http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2019/02\\_12-15-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2019/02_12-15-eng.html)

<sup>51</sup> DFO (2019). Assessment of Northern Shrimp, *Pandalus borealis*, and Striped Shrimp, *Pandalus montagui*, in the Eastern and Western Assessment Zones, February 2019. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2019/011. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2019/2019\\_011-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2019/2019_011-eng.html)

<sup>52</sup> Page 21 of the document states “The PA reference points in the EAZ should be viewed with caution and most likely need to be re-evaluated. Reference points were based on the former shrimp fishing areas (SFA2 and SFA3) which are different than the current assessment zones; thus, the biomass levels used to define the reference points may no longer be appropriate. In addition, the survey time series that were used to determine the reference points are much shorter than in other SFAs. For the EAZ, the time series included two years of data which is now not considered comparable with the rest of the series.”

#	Region	Stock and health status zone	Develop LRP	Update or revise LRP	Begin to develop or update LRP	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status	Details
										<p>two years. Documentation for SFAs 4 to 6<sup>53</sup> indicates that in 2019 the reference points for northern shrimp in SFA 4 were modified to exclude the Hatton Basin Marine Refuge, which was not surveyed beginning in 2018, but otherwise the assessment followed the previously established reference point framework first published in 2007. Due to data limitations, there are no reference points for striped shrimp in SFA 4. The document highlights uncertainty in the appropriateness of the reference points<sup>54</sup> but also notes that there was no scientific basis on which to change them as at the time there was no quantitative model of the resource. It further reiterates the conclusions from the January 2017 process held specifically to review SFA 6 reference points, where it was concluded that the current biomass reference points used would remain unchanged because of the high level of uncertainties, and that lowering them would involve a high amount of risk to the ecosystem and to the resource. A CSAS process was scheduled for May 2019 with the key objective of reviewing the proposed population models and define LRPs, consistent with the PA, for northern shrimp in SFAs 4–7.<sup>55</sup> The documents resulting from this process are not yet available, but departmental officials indicate that while a new model was accepted, more work is required. Consequently, reference points were not determined at the meeting, and their development will occur later (N. Schjott, personal communication, June 25, 2019). The recently published (November 2018) IFMP for northern shrimp includes the previously developed LRP for northern shrimp in SFA 4, SFA5, SFA 6 and EAZ and striped shrimp in EAZ. It also indicates reference points are in the process of being developed for striped shrimp in SFA 4 and both</p>

<sup>53</sup> DFO (2019). An Assessment of Northern Shrimp (*Pandalus borealis*) in Shrimp Fishing Areas 4–6 and of Striped Shrimp (*Pandalus montagui*) in Shrimp Fishing Area 4 in 2018. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2019/027. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2019/2019\\_027-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2019/2019_027-eng.html)

<sup>54</sup> Page 19 of the document states: “There is uncertainty in the appropriateness of the reference points as it is unknown how the time periods selected to generate proxies (which differ by SFA) relate to the biomass of maximum sustainable yield (BMSY). However, there is no scientific basis on which to change the current reference points as there is no quantitative model of this resource; historical shrimp survey data will be incorporated into models wherever possible.”

<sup>55</sup> DFO (2019). Terms of Reference. Development of a new Precautionary Approach Framework for Northern Shrimp in the Newfoundland and Labrador Region. Regional Peer Review – Newfoundland and Labrador Region. May 15–17, 2019. [http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2019/05\\_15-17-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2019/05_15-17-eng.html)

#	Region	Stock and health status zone	Develop LRP	Update or revise LRP	Begin to develop or update LRP	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status	Details
										species in the WAZ, and it contains much discussion on the pending revision of the LRP for SFA 6. <sup>56</sup>
12	Pacific	Coho salmon – southern inside; Uncertain <sup>††</sup>		✓2017/18 ✓2018/19		Undertake work to refine reference points based on new science information.	Management reference points will be evaluated and implemented by March 31, 2019.		<b>Delayed</b>	In 2017/18 work was undertaken to refine reference points. A CSAS process was held in September 2017, in part to determine reference points for Canadian Pacific Salmon Treaty Southern Coho management units. The resulting documentation indicates that the determination of management reference points cannot be determined solely from the scientific advice provided and the ultimate choice of management reference points requires input from government, First Nations and stakeholders on acceptable probabilities of achieving conservation outcomes given known data gaps and uncertainties <sup>57</sup> . In 2018/19, there were no Coho-salmon-specific CSAS processes, <sup>58</sup> and none are yet planned for 2019/20. Departmental officials indicate a workshop was held in May 2018 to use the science information from the 2017 CSAS process to develop management reference points, which are planned to be incorporated in the 2019/20 IFMP (N. Schjott, personal communication, June 25, 2019).

<sup>56</sup> DFO (2018). IFMP Northern Shrimp and Striped Shrimp – Shrimp Fishing Areas 0, 1, 4–7, the Eastern and Western Assessment Zones and North Atlantic Fisheries Organization (NAFO) Division 3M. Effective 2018. <http://www.dfo-mpo.gc.ca/fisheries-peches/ifmp-gmp/shrimp-crevette/shrimp-crevette-2018-002-eng.html>

<sup>57</sup> DFO (2018). Framework for Determination of Pacific Salmon Commission Reference Points for Status Determination and Associated Allowable Exploitation Rates for Select Canadian Southern Coho Salmon Management Units. DFO Can. Sci. Adv. Sec. Sci. Adv. Rep. 2018/016. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018\\_016-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018_016-eng.html)

<sup>58</sup> There was one CSAS process pertaining to wild salmon in general: a framework for reviewing and approving revisions to Wild Salmon Policy Conservation Units. Source: DFO (2018). Terms of Reference. Framework for reviewing and approving revisions to Wild Salmon Policy Conservation Units. Regional Peer Review Process – Pacific Region. October 25–26, 2018. [http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2018/10\\_25-26-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2018/10_25-26-eng.html)

#	Region	Stock and health status zone	Develop LRP	Update or revise LRP	Begin to develop or update LRP	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status	Details
13	Central and Arctic	Arctic char – Jayko Lake and Halovik River; Healthy†	✓2018/19				Develop LRPs by March 31, 2019.		Delayed	In 2016/17 work was undertaken to develop reference points. A CSAS process was held in January 2017, in part to determine reference points for Arctic char in Jayko and Halovik rivers. <sup>59</sup> The results from the CSAS process are available for use by Resource Management but are not yet posted online (DFO Science, personal communication, August 1, 2019).
14	Gulf	Sea scallop – southern Gulf of St. Lawrence (SFA 21a, b, c, 22, 23, 24); Uncertain		✓2018/19	✓2019/20		Stock assessment scheduled for May 2018. Present stock assessment and reference points to industry.	Will continue development of LRP in 2019/20.	Ongoing	A CSAS process was held in October 2018 at which scientists attempted to develop reference points for sea scallops in the southern Gulf of St. Lawrence. It was determined that there is insufficient data available to define abundance and removal rate reference points as per the Precautionary Approach and that there are no current indicators that could be used to signal if a significant unexpected change in stock status has occurred. <sup>60</sup> The report does discuss potential indicators that could be used to monitor status and the productive capacity of the stock and suggests that annual surveys of scallop beds that contribute the most to the fisheries effort and landings be considered to develop these. But the report does not indicate whether these would be pursued. According to the 2019/20 workplan, work on reference points will continue this year.
15	Quebec	Greenland halibut (turbot) –	✓2018/19				The limit reference LRP is established		Delayed	The LRP was defined at a CSAS process held in February 2017, and details are available online in a CSAS document. <sup>61</sup> Thus, it is unclear why this stock was

<sup>59</sup> DFO (2017). Terms of Reference. Estimated Abundance and Sustainable Harvest Levels for the Jayko and Halovik (30 Mile) Rivers in the Cambridge Bay Commercial Fishery, 2010–2015. Regional Peer Review – Central and Arctic Region. January 24–26, 2017, Winnipeg, MB. [http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2017/01\\_24-26b-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2017/01_24-26b-eng.html)

<sup>60</sup> DFO (2019). Fishery and Stock Status of the Sea Scallop (*Placopecten magellanicus*) from the Southern Gulf of St. Lawrence to 2016. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2019/006. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2019/2019\\_006-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2019/2019_006-eng.html)

<sup>61</sup> DFO (2018). Assessment of Greenland Halibut in the Gulf of St. Lawrence (4RST) in 2016. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2017/049. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2017/2017\\_049-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2017/2017_049-eng.html)

#	Region	Stock and health status zone	Develop LRP	Update or revise LRP	Begin to develop or update LRP	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status	Details
		4RST; Cautious					and an USR is suggested by Science. The latter will be set in 2018/19 following discussions with fisheries management and industry.			included in the 2018/19 workplan for LRP development. The deliverable details for the 2018/19 workplan indicate this as well and discuss that setting the USR would occur in fiscal 2018/19. USRs were not part of the first two fiscal year workplans, but there is a sub-workplan in 2019/20 pertaining to USR development where this stock is included, with a footnote indicating the work was not completed as indicated in 2018/19. Last year, this stock was assessed at a CSAS process held in March 2018, and resulting documentation indicates Science suggested a USR for management to consider adopting. <sup>62</sup> At the most recent Gulf Groundfish Advisory Committee meeting in March 2019, departmental officials indicated it was still proposed by Science but not yet accepted. Considering the intention of the deliverable appeared to be the implementation of a USR (the LRP was in place prior to the time of deliverable creation), the deliverable completion status for this stock was assigned as <i>delayed</i> , despite the LRP being in place. Next year this deliverable will be evaluated as part of the USR sub-workplan where it also appears.
16	Maritimes	Dogfish – Atlantic Canada 4VW NX-5; Uncertain		✓2018/19			Update to limit reference points (for Atlantic Canada), if Science determines that a change needs to be made (LRP will be reviewed by Science in 2018/19).		Delayed	Two CSAS processes were held in 2018 pertaining to dogfish in Atlantic Canada. The final part of a framework assessment that began in 2017 was held in June 2018, reviewing modelling approaches, and a second CSAS process was held in fall 2018 to update the status of the stock. The June meeting terms of reference indicate reference points were to be revised. <sup>63</sup> No documents are yet available from any of these processes. Departmental officials indicate that the framework assessment considered data to 2015 and a new modelling approach, but the proposed Canadian model was rejected (DFO Science, personal communication, June 28, 2019). The U.S. regularly undertakes assessments of the Northwest Atlantic spiny dogfish population to provide advice for their

<sup>62</sup> DFO (2018). Assessment of the Greenland Halibut stock in the Gulf of St. Lawrence (4RST) in 2017. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2018/035. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018\\_035-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018_035-eng.html)

<sup>63</sup> DFO (2018). Terms of Reference. Northwest Atlantic Spiny Dogfish Framework Part 2: Review of Modeling Approaches and Assessment. Regional Advisory Process – Maritimes Region. June 27–28, 2018. [http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2018/06\\_27-28-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2018/06_27-28-eng.html)

#	Region	Stock and health status zone	Develop LRP	Update or revise LRP	Begin to develop or update LRP	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status	Details
										directed fishery, and the index of abundance (adult females) uses data collected on the U.S. side of the Hague line. During the fall 2018 CSAS process it was agreed that until a joint or Canadian modelled approach could be developed, relying on the U.S. assessment would be more informative than reviewing the survey index of adult female abundance without the context of a population model. Adopting the U.S. reference points was considered to be appropriate under the Canadian Precautionary Approach Framework. The U.S. spawning stock biomass target (SSBtarget) was used as the upper stock reference (USR) given that SSBtarget represents a proxy for adult female biomass at maximum sustainable yield (MSY) under the U.S. assessment model. The USR becomes 159,288 mt. The LRP would be the U.S. SSBthreshold value, calculated as 50% of the USR, with a value of 79,644 mt. Using these values places dogfish in the cautious zone since 2015 (DFO Science, personal communication, June 28, 2019). Once reference points appear in a CSAS document or the IFMP, this deliverable will be considered “completed.”
17	Maritimes	Atlantic cod – 4X5Y; <b>Critical</b>		✓2018/19			Update to limit reference points, if Science determines that a change needs to be made (LRP will be reviewed by Science in 2018/19).		<b>Completed</b>	Three CSAS processes were held in 2018 pertaining to Atlantic cod in 4X5Y. Two of these pertained to the framework assessment, with the first part held in March, reviewing data inputs, and the second part in November, reviewing modelling approaches. The terms of reference for the latter indicate LRP revision would occur. <sup>64</sup> No documents are yet available from either process, but a revised LRP is included in the report <sup>65</sup> from the third process held in December 2018 to assess the stock using the new modelling framework.

<sup>64</sup> DFO (2018). Terms of Reference. Assessment Framework for 4X5Y Atlantic Cod: Part 2 – Review of Modelling Approaches. Regional Peer Review – Maritimes Region. November 6–8, 2018. [http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2018/11\\_06-08b-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2018/11_06-08b-eng.html)

<sup>65</sup> DFO (2019). Stock Assessment of Atlantic Cod (*Gadus morhua*) in NAFO Divisions 4X5Y. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2019/015. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2019/2019\\_015-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2019/2019_015-eng.html)



#	Region	Stock and health status zone	Develop LRP	Update or revise LRP	Begin to develop or update LRP	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status	Details
18	Maritimes	Atlantic herring – Maritimes Region; Cautious, Uncertain	✓2018/19				Development of USR in 2018/19.		Delayed	It is unclear why this stock was included in the 2018/19 workplan for LRP development, as the deliverable details discuss the development of an USR in 2018/19, and a limit reference point has been identified for the stock, recently revised to 316,313 t. <sup>45</sup> Upper stock reference points were not part of the first two fiscal year workplans. There is a sub-workplan in 2019/20 pertaining to USR development, but this stock is not included. There was a CSAS process held in April 2018 at which an objective was to propose an USR for 4VWX herring. <sup>66</sup> The report published from this process indicates a USR was proposed, but no consensus could be reached. It was agreed that no USR recommendation would be put forward from this meeting and that the discussion will be revisited at the next stock framework meeting. <sup>67</sup> According to the CSAS schedule website, part one of a framework meeting reviewing data inputs was held in February 2019 and a stock status update via a Science Response process was held in May 2019. Neither of these processes have publications available yet. The terms of reference for the second process in May 2019 indicate it used the previous modelling approach and the existing LRP. It does not mention a USR. <sup>68</sup> Although USR development typically involves management, the currently available IFMP for the stock is actually a rebuilding plan for one of four components (Southwest Nova Scotia/Bay of Fundy) published in 2013 and does not indicate an USR <sup>69</sup> . It is unclear if progress was made towards developing and implementing a USR. It is also unclear why this stock was not included in the 2019/20 workplans. Considering that the intention of the deliverable appeared to be the implementation of an USR, the deliverable completion status for this stock was assigned as <i>delayed</i> , despite the LRP being in place. Next year this deliverable will be

<sup>66</sup> DFO (2018). Terms of Reference. Assessment of Herring in NAFO Divisions 4VWX. Regional Peer Review – Maritimes Region. April 11–12, 2018, Dartmouth, NS. [http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2018/04\\_11-12-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2018/04_11-12-eng.html)

<sup>67</sup> DFO (2018). 2018 Assessment of 4VWX Herring. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2018/052. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018\\_052-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018_052-eng.html)

<sup>68</sup> DFO (2019). Terms of Reference. Stock Status Update of Herring in Northwest Atlantic Fisheries Organization (NAFO) Fishing Area 4VWX. Regional Science Response Process – Maritimes Region. May 8, 2019, Dartmouth, N.S. [http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2019/05\\_08-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2019/05_08-eng.html)

<sup>69</sup> DFO (2013). Canadian Atlantic Herring (*Clupea harengus*) - SWNS Rebuilding Plan - Atlantic Canada – 2013. <http://www.dfo-mpo.gc.ca/fisheries-peches/ifmp-gmp/herring-hareng/herring-hareng-2013-eng.html>

#	Region	Stock and health status zone	Develop LRP	Update or revise LRP	Begin to develop or update LRP	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status	Details
										evaluated as part of the USR sub-workplan where it should also appear.
19	Newfoundland and Labrador	Witch flounder – 2J+3KL; <b>Critical</b>	✓2018/19				Develop limit reference points by March 31, 2019		<b>Completed</b>	A CSAS process was held in May 2018 to assess witch flounder in 2J3KL, and details on the LRP and its development are available online in the CSAS Science Advisory Report. <sup>70</sup>
20	Newfoundland and Labrador	Greenland halibut (turbot) – 2+3KLMNO; Uncertain	✓2018/19				Ongoing evaluation and potential development of LRPs in 2018/19. Development of exceptional circumstances protocol (within NAFO) to monitor performance of recently adopted HCR.		<b>Delayed</b>	The recently published (2019) IFMP including this stock indicates it is assessed by the Northwest Atlantic Fisheries Association (NAFO). <sup>71</sup> The annual report from the NAFO Scientific Council Meeting for 2018 indicates precautionary approach reference points have not been determined for this stock at this time, <sup>72</sup> the latest assessment of stock trends (link provided in IFMP) does not indicate any reference points, <sup>73</sup> and the 2017 results of the DFO Sustainability Survey for Fisheries indicate there are no reference points for this stock. <sup>74</sup> Department officials indicate that while technically it is correct that no reference points have been defined, this is largely a reporting issue as the stock is managed using a harvest control rule (HCR; see entry for this stock in Table 4 below) that has been tested by management strategy evaluation (MSE). The testing performance statistics used in the MSE included reference points based on maximum sustainable yield (MSY); DFO Science, personal communication, June 28, 2019). The 2019 annual report from the NAFO Scientific Council Meeting, which will be available later this summer, will indicate that precautionary approach reference points have not been determined for this stock but will be investigated during the update of the assessment model in 2020.
21	Newfoundland and Labrador	Snow crab – 2J, 3KLNO		✓2018/19 ✓2019/20			Ongoing evaluation and	Will begin revision of	<b>Completed</b>	Two CSAS processes were held in 2018 pertaining to snow crab stocks off the coast of Newfoundland and

<sup>70</sup> DFO (2019). Stock Assessment of Witch Flounder (*Glyptocephalus cynoglossus*) in NAFO Divisions 2J3KL. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2018/053. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018\\_053-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018_053-eng.html)

<sup>71</sup> DFO (2019). IFMP Groundfish Newfoundland and Labrador Region NAFO Subarea 2 + Divisions 3KLMNO. [http://www.dfo-mpo.gc.ca/fisheries-peches/ifmp-gmp/groundfish-poisson-fond/2019/groundfish-poisson-fond-2\\_3klmno-eng.htm](http://www.dfo-mpo.gc.ca/fisheries-peches/ifmp-gmp/groundfish-poisson-fond/2019/groundfish-poisson-fond-2_3klmno-eng.htm)

<sup>72</sup> NAFO (2018). Northwest Atlantic Fisheries Organization Report of the Scientific Council Meeting 01-14 – June 2018, Halifax, Nova Scotia. Serial No. N6849. NAFO SCS Doc. 18-19. <https://www.nafo.int/Portals/0/PDFs/sc/2018/scs18-19.pdf>

<sup>73</sup> Morgan, M.J. (2018). Greenland halibut (*Reinhardtius hippoglossoides*) in NAFO Subarea 2 and Divisions 3KLMNO: Stock Trends Based on Annual Canadian Research Vessel Survey Results. SCIENTIFIC COUNCIL MEETING. Serial No. N6842. NAFO SCR Doc. 18/047. June 2018. <https://www.nafo.int/Portals/0/PDFs/sc/2018/scr18-047.pdf>

<sup>74</sup> DFO (2018). Sustainability Survey for Fisheries, 2017 CSV dataset. <https://open.canada.ca/data/en/dataset/49f25051-3946-426e-a589-b7063f75bbd5>

#	Region	Stock and health status zone	Develop LRP	Update or revise LRP	Begin to develop or update LRP	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status	Details
		and 3Ps; Uncertain					potential development of LRPs in FY 2018-19.	LRP in 2019-20.		Labrador. The first, in February, was a stock assessment. Reference point development was not in the terms of reference, <sup>75</sup> nor did any appear in the resulting report from the meeting. <sup>76</sup> The second process, in June 2018, was held to develop a Precautionary Approach framework for snow crab in the Newfoundland and Labrador Region and included the key objective of defining the LRP, <sup>77</sup> The research document published from this meeting indicate LRPs were established. <sup>78</sup> An additional CSAS process was held in February 2019, <sup>79</sup> but the reports from this process are not yet available. Departmental officials indicate there is currently no plan to revise the LRPs since their development in June 2018 (DFO Science, personal communication, June 28, 2019).
22	Newfoundland and Labrador	Lumpfish – 3KLPs; Uncertain		✓2018/19 ✓2019/20			Ongoing evaluation and potential development of LRPs in 2018/19.	Will continue revision of LRP in 2019-20.	Ongoing	A CSAS process was held in March 2019 to conduct a recovery potential assessment of lumpfish in the Atlantic Ocean. One of the objectives of this meeting was identifying recovery targets. <sup>80</sup> No documentation is yet available from this process. It is unclear if progress was made towards developing and implementing an LRP (or an equivalent reference point), but the 2019/20 workplan indicates this work will continue.
23	Newfoundland and Labrador	Monkfish – 3LNOPs; Cautious		✓2018/19 ✓2019/20			Ongoing evaluation and potential development	Will continue revision of LRP in 2019-20.	Ongoing	According to the recently published (2019) IFMP, <sup>81</sup> this stock has an LRP. It was established at a June 2017 CSAS process. <sup>82</sup> But according to the 2019/20 workplan, more work will be done to revise the LRP. Despite no CSAS processes scheduled for this stock yet in 2019/20,

<sup>75</sup> DFO (2018). Terms of Reference. Newfoundland and Labrador Snow Crab Assessment. Regional Peer Review Process - Newfoundland and Labrador Region. February 20–23, 2018, St. John's, NL. [http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2018/02\\_20-23-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2018/02_20-23-eng.html)

<sup>76</sup> DFO (2018). Assessment of Newfoundland and Labrador (Divisions 2HJ3KLNOP4R) Snow Crab. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2018/024. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018\\_024-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018_024-eng.html)

<sup>77</sup> DFO (2018). Terms of Reference. Development of a Precautionary Approach Framework for Snow Crab in the NL Region. Regional Peer Review – Newfoundland and Labrador Region. June 6–7, 2018. [http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2018/06\\_06-07b-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2018/06_06-07b-eng.html)

<sup>78</sup> Mallowney, D., Baker, K., Pedersen, E., & Osborne, D. (2018). Basis for A Precautionary Approach and Decision Making Framework for the Newfoundland and Labrador Snow Crab (*Chionoecetes opilio*) Fishery. DFO Can. Sci. Advis. Sec. Res. Doc. 2018/054. iv + 66 p. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2018/2018\\_054-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2018/2018_054-eng.html)

<sup>79</sup> DFO (2019). Terms of Reference. 2HJ3KLNOP4R Snow Crab Assessment. Regional Peer Review Process - Newfoundland and Labrador Region. February 19–21, 2019, St. John's, NL. [http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2019/02\\_19-21-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2019/02_19-21-eng.html)

<sup>80</sup> DFO (2019). Terms of Reference. Recovery Potential Assessment – Lumpfish, Atlantic Ocean. Zonal Peer Review Meeting – Newfoundland and Labrador, Maritimes, Gulf, Quebec, Central and Arctic Regions. March 12–13, 2019, St. John's, NL. [http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2019/03\\_12-13-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2019/03_12-13-eng.html)

<sup>81</sup> DFO (2019). IFMP Groundfish Newfoundland and Labrador Region NAFO Subarea 2 + Divisions 3KLMNO. [http://www.dfo-mpo.gc.ca/fisheries-peches/ifmp-gmp/groundfish-poisson-fond/2019/groundfish-poisson-fond-2\\_3klmno-eng.htm](http://www.dfo-mpo.gc.ca/fisheries-peches/ifmp-gmp/groundfish-poisson-fond/2019/groundfish-poisson-fond-2_3klmno-eng.htm)

<sup>82</sup> DFO (2018). Stock Assessment of Monkfish in NAFO Division 3LNO and Subdivision 3Ps. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2018/010. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018\\_010-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018_010-eng.html)

#	Region	Stock and health status zone	Develop LRP	Update or revise LRP	Begin to develop or update LRP	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status	Details
							of LRPs in 2018/19.			departmental officials indicate this work is continuing (DFO Science, personal communication, June 28, 2019).
24	Newfoundland and Labrador	Thorny skate – 3LNOPs; Cautious		✓2018/19			Ongoing evaluation and potential development of LRPs in 2018/19.		Delayed	Thorny skate in 3LNO and 3Ps is assessed by NAFO <sup>83</sup> and managed as thorny skate in 3LNO <sup>84</sup> and together with other skates in 3Ps. <sup>85</sup> Within 3LNO there is a NAFO Blim. <sup>86</sup> Departmental officials indicate that work will be ongoing during 2019/2020 to develop a quantitative model and Precautionary Approach framework that is anticipated to be presented at the NAFO meeting in June 2020, if progress is made (DFO Science, personal communication, June 28, 2019).
25	Newfoundland and Labrador	Haddock – 3Ps; Critical		✓2018/19			Ongoing evaluation and potential development of LRPs in 2018/19.		Completed	A CSAS process was held in December 2018 to assess haddock in 3Ps, during which an LRP was established. Details on the LRP and its development are available online in a CSAS report. <sup>87</sup>
26	Newfoundland and Labrador	Witch flounder – 3Ps; Uncertain	✓2018/19				Develop LRPs by March 31, 2019.		Completed	A CSAS process was held in December 2017 to assess witch flounder in 3Ps, during which an LRP was established. Details on the LRP and its development are available online in a CSAS report. <sup>88</sup> Considering the work was already completed in 2017/18, it was misleading to include it in the 2018/19 workplan.
27	Newfoundland and Labrador	Capelin – 23KLPs; Uncertain		✓2018/19 ✓2019/20			Ongoing evaluation and potential development of LRPs in 2018/19.	Will continue revision of LRP in 2019/20.	Ongoing	A CSAS process was held in March 2018 to assess capelin in 2+3K, but reference point development was not part of the terms of reference <sup>89</sup> and therefore an LRP was not identified from the process. <sup>90</sup> Another assessment was conducted in March 2019, but again reference points were not part of the terms of reference, <sup>91</sup> and therefore are not expected to be included in the resulting reports, which are

<sup>83</sup> Simpson, M.R., Miri, C.M., & Collins, R.K. (2018). Assessment of Thorny Skate (*Amblyraja radiata* Donovan, 1808) in NAFO Divisions 3LNO and Subdivision 3Ps. SCIENTIFIC COUNCIL MEETING. Serial No. N6811NAFO SCR Doc. 18/027. June 2018. <https://www.nafo.int/Portals/0/PDFs/sc/2018/scr18-027.pdf>

<sup>84</sup> DFO (2019). IFMP Groundfish Newfoundland and Labrador Region NAFO Subarea 2 + Divisions 3KLMNO. [http://www.dfo-mpo.gc.ca/fisheries-peches/ifmp-gmp/groundfish-poisson-fond/2019/groundfish-poisson-fond-2\\_3klmno-eng.htm](http://www.dfo-mpo.gc.ca/fisheries-peches/ifmp-gmp/groundfish-poisson-fond/2019/groundfish-poisson-fond-2_3klmno-eng.htm)

<sup>85</sup> DFO (2016). IFMP Groundfish (NAFO) Division 3Ps - Updated 2016. <http://www.dfo-mpo.gc.ca/fisheries-peches/ifmp-gmp/groundfish-poisson-fond/groundfish-poisson-fond-div3p-2016-eng.html>

<sup>86</sup> NAFO (2018). Thorny Skate in Divisions 3LNO and Subdiv. 3Ps – Advice June 2018 for 2019–2020. SC 01–14, June 2018. <https://www.nafo.int/Portals/0/PDFs/Advice/2018/Tskate3LNO.pdf>

<sup>87</sup> DFO (2019). Stock Assessment of Haddock (*Melanogrammus aeglefinus*) in NAFO Subdivision 3Ps. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2019/007. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2019/2019\\_007-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2019/2019_007-eng.html)

<sup>88</sup> DFO (2018). Stock assessment of Witch Flounder (*Glyptocephalus cynoglossus*) in NAFO Subdivision 3Ps. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2018/011. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018\\_011-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018_011-eng.html)

<sup>89</sup> DFO (2018). Terms of Reference. Status of Subarea 2 and Divisions 3KL Capelin. Regional Peer Review, Newfoundland and Labrador Region. March 7–8, 2018, St. John's NL. [http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2018/03\\_07-08-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2018/03_07-08-eng.html)

<sup>90</sup> DFO (2018). Assessment of Capelin in SA2 and Divs. 3KL in 2017. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2018/030. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018\\_030-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018_030-eng.html)

<sup>91</sup> DFO (2019). Terms of Reference. Assessment of Divisions 2J+3KL Capelin. Regional Peer Review - Newfoundland and Labrador Region. March 19–21, 2019, St. John's, NL. [http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2019/03\\_19-21-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2019/03_19-21-eng.html)

#	Region	Stock and health status zone	Develop LRP	Update or revise LRP	Begin to develop or update LRP	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status	Details
										not yet available. The recently published (2019) IFMP does not mention any reference points in place for this stock or any plans to develop them. <sup>92</sup> As indicated in the 2019/20 workplan, work towards LRP revision (or development, since there currently is no LRP) is expected to continue.
28	Pacific	Green sea urchin – Pacific Region; <b>Healthy</b>		✓2018/19			Analysis of provisional LRPs in 2018/19 for better alignment with the PA. Ongoing evaluation for fully PA compliant LRP possibly in 2020.		<b>Completed</b>	A CSAS process was held in April 2018 to assess green sea urchin in the Pacific Region. Details on LRPs and their development for two areas included in this stock group are available online in a CSAS report. <sup>93</sup>
29	Quebec	Snow crab – coastal (12A, 12B, 12C, 13, 14, 15, 16, 16A, 17); <b>Uncertain</b>	✓2019/20	✓2018/19			Preliminary work on the development of reference points will be re-examined and a new analysis of the dynamics of abundance cycles will be	Will complete the development of LRP in 2019-20.	<b>Ongoing</b>	A CSAS process was held in February 2018 to assess snow crab in the estuary and northern Gulf of St. Lawrence, but reference point development was not part of the terms of reference, <sup>94</sup> nor, as expected, do LRPs appear in the resultant reports from the process. <sup>95</sup> Another assessment was conducted in February 2019, but again reference points were not part of the terms of reference, <sup>96</sup> and therefore are not expected to be included in the resulting reports, which are not yet available. As indicated in the 2019/20 workplan, work towards LRP revision is expected to be ongoing, and departmental officials

<sup>92</sup> DFO (2019). Capelin Newfoundland & Labrador Region 2+3 (Capelin Fishing Areas 1-11). <http://www.dfo-mpo.gc.ca/fisheries-peches/ifmp-gmp/capelin-area1-11-zone-capelan/capelin-capelan-2018-eng.html>

<sup>93</sup> DFO (2018). Stock Status Update for Green Sea Urchin (*Strongylocentrotus droebachiensis*) in British Columbia and Harvest Options for the Fishery in 2018 to 2021. DFO Can. Sci. Advis. Sec. Sci. Resp. 2018/054. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ScR-RS/2018/2018\\_054-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ScR-RS/2018/2018_054-eng.html)

<sup>94</sup> DFO (2018). Terms of Reference. Assessment of the Estuary and Northern Gulf of St. Lawrence Snow Crab Stocks. Regional Peer Review - Quebec Region. February 13–14, 2018, Mont-Joli, Québec. [http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2018/02\\_13-14-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2018/02_13-14-eng.html)

<sup>95</sup> DFO (2018). Assessment of the Estuary and Northern Gulf of St. Lawrence (Areas 13 to 17, 12A, 12B, 12C and 16A) Snow Crab Stocks in 2017. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2018/047. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018\\_047-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018_047-eng.html)

<sup>96</sup> DFO (2019). Terms of Reference. Assessment of the Estuary and Northern Gulf of St. Lawrence Snow Crab Stocks. Regional Peer Review - Quebec Region. February 12–13, 2019, Mont-Joli, Québec. [http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2019/02\\_12-13-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2019/02_12-13-eng.html)

#	Region	Stock and health status zone	Develop LRP	Update or revise LRP	Begin to develop or update LRP	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status	Details
							performed on units where biological information is more complete (i.e., Area 17). The analysis will be used to define the indicators used to determine reference points. The reference points will be determined in 2019/20.			indicate a coordination meeting is anticipated in August 2019 to facilitate LRP development (N. Schjott, personal communication, June 25, 2019).
30	Quebec	Atlantic halibut – 4RST; Healthy	✓2019/20					Will complete the development of LRP in 2019-20.		
31	Central and Arctic	Greenland halibut – Cumberland Sound; Uncertain	✓2019/20					Will complete the development of LRP in 2019-20.		
32	Pacific	Red sea urchin – Pacific Region; Healthy	✓2019/20					Will complete the development of LRP in 2019-20.		
33	Pacific	Albacore tuna – north Pacific; Healthy		✓2019/20				Will begin update of LRP in 2019-20.		

#	Region	Stock and health status zone	Develop LRP	Update or revise LRP	Begin to develop or update LRP	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status	Details
34	Pacific	Giant red sea cucumber – Pacific; Healthy		✓2019/20				Will begin update of LRP in 2019-20.		
35	Newfoundland and Labrador	White hake – 3NOPs; Uncertain			✓2019/20			Will continue revision of LRP in 2019-20. New LRP proposed to Northwest Atlantic Fisheries Organization (NAFO) in June 2019.		
36	Gulf	Rock crab – 23, 24, 25, 26A; Uncertain			✓2019/20			Will begin to develop LRP in 2019-20.		

† denotes status assignments for marine mammals, diadromous fish and freshwater fish using the 2017 Sustainability Survey for Fisheries results.

†† denotes uncertain status assignments when stocks were not included in either the Sustainability Survey for Fisheries dataset or Oceana Canada's Fishery Audit dataset.

Table 3. **Workplan 1E; determining precautionary approach harvest control rules (HCRs):** In annual workplan 1, Fisheries and Oceans Canada (DFO) prioritizes the stocks or stock groups for when it will develop precautionary approach reference points and harvest control rules (DFO 2017a, DFO 2018b, DFO 2019a). In 2019/20, workplan 1 is broken down into five sub-workplans, one of which pertains to determining Precautionary Approach HCRs (1E). The table below summarizes all three fiscal year workplan 1 HCR deliverables<sup>97</sup> by stock or stock group with health status<sup>98</sup> and status towards completion as assessed by Oceana Canada. Stocks with new or recently evaluated HCRs in documentation available online are noted as completed, stocks that have had deadlines shifted or remain uncompleted are noted as delayed, and stocks for which the deadline has not yet passed or for which the workplan's deliverable was only to make progress are noted as ongoing. (Please note that the table does not include an assessment of HCR quality.) Details on status determinations are provided for stocks included in the 2017/18 and 2018/19 workplans. Stocks appearing after the bold line separating rows appear only in 2019/20 workplan and were not evaluated for status completion.

#	Region	Stock and health status zone	Develop/ evaluate HCR	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status	Details
1	Gulf	Atlantic herring – 4T fall spawner (fixed gear); <b>Cautious</b>	✓2017/18 ✓2018/19 ✓2019/20	HCRs will be evaluated and implemented by March 31, 2018.	Meetings with working groups are planned to reconvene and to revisit HCR with stakeholders. HCRs for the herring 4T stocks were previously noted for completion in 2017-18.	Will continue to develop HCR in 2019-20. Deliverable previously noted for completion in 2018-19.	<b>Delayed</b>	A CSAS process was held in March 2018 to assess Atlantic herring ( <i>Clupea harengus</i> ) from the southern Gulf of St. Lawrence (NAFO Div. 4T-4Vn) to 2017 and provide advice for the 2018 and 2019 fisheries, <sup>99</sup> but it did not evaluate potential HCRs. <sup>100,101</sup> No further CSAS processes occurred in 2018/19, but resource management meetings with working groups did occur as planned on December 13, 2018 and February 20, 2019 (N. Schjott, personal communication, August 1, 2019). As noted in both 2018/19 and 2019/20 workplans, this HCR is delayed. The 2019/20 workplan indicates work to develop and implement an HCR continues into 2019/20. Departmental officials indicate a CSAS process may occur in February 2020 and implementation is currently planned for fall 2020 (N. Schjott, personal communication, June 25, 2019).
2	Gulf	Atlantic herring – 4T fall spawner (mobile)	✓2017/18 ✓2018/19 ✓2019/20	HCRs will be evaluated and implemented	Implement HCR compliant with precautionary	Will continue to develop HCR in 2019/20.	<b>Delayed</b>	A CSAS process was held in March 2018 to assess Atlantic herring ( <i>Clupea harengus</i> ) from the southern Gulf of St. Lawrence (NAFO Div. 4T-4Vn) to 2017 and provide advice for the

<sup>97</sup> As stated in DFO workplans.

<sup>98</sup> Health status was assigned primarily using Oceana Canada's Fishery Audit dataset (Oceana Canada 2019e), with † denoting assignments for marine mammals, diadromous fish and freshwater fish using the 2017 Sustainability Survey for Fisheries results (DFO 2019e) and †† denoting uncertain status assigned when stocks were not included in either dataset. As some records represent multiple stocks that appear as more than one record in the datasets used to assign status, all unique statuses for stocks within stock groups are included when applicable.

<sup>99</sup> DFO (2018). Terms of Reference. Assessment of Stock Status of Atlantic Herring (*Clupea harengus*) from the Southern Gulf of St. Lawrence (NAFO Div. 4T-4Vn) to 2017 and Advice for the 2018 and 2019 Fisheries Regional Science Peer Review – Gulf Region. March 14–15, 2018, Moncton, New Brunswick. [http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2018/03\\_14-15b-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2018/03_14-15b-eng.html)

<sup>100</sup> DFO (2018). Assessment of the Southern Gulf of St. Lawrence (NAFO Div. 4T) Spring and Fall Spawner Components of Atlantic Herring (*Clupea harengus*) with Advice for the 2018 and 2019 Fisheries. DFO Can. Sci. Advis. Sec. Sci. Adv. Rep. 2018/029. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018\\_029-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018_029-eng.html)

<sup>101</sup> McDermid, J.L., Swain, D.P., Turcotte, F., Robichaud, S.A., & Surette, T. (2018). Assessment of the NAFO Division 4T Southern Gulf of St. Lawrence Atlantic Herring (*Clupea harengus*) in 2016 and 2017. DFO Can. Sci. Advis. Sec. Res. Doc. 2018/052. xiv + 122 p. [http://dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2018/2018\\_052-eng.html](http://dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2018/2018_052-eng.html)



#	Region	Stock and health status zone	Develop/ evaluate HCR	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status	Details
		gear); <sup>102</sup> <b>Cautious</b>		by March 31, 2018.	approach. HCRs for the herring 4T stocks were previously noted for completion in 2017/18.	Deliverable previously noted for completion in 2018/19.		2018 and 2019 fisheries, <sup>103</sup> but it did not evaluate potential HCRs <sup>104,105</sup> . No further CSAS processes occurred in fiscal year 2018/19, but resource management meetings with working groups did occur as planned (N. Schjott, personal communication, August 1, 2019). As noted in both 2018/19 and 2019/20 workplans, this HCR is delayed. The 2019/20 workplan indicates work to develop and implement an HCR continues into 2019/20. Departmental officials indicate a CSAS process may occur in February 2020 and implementation is currently planned for fall 2020 (N. Schjott, personal communication, June 25, 2019).
3	Gulf	Atlantic herring – 4T spring spawner; <b>Critical</b>	✓ <sup>2017/18</sup> ✓ <sup>2018/19</sup> ✓ <sup>2019/20</sup>	HCRs will be evaluated and implemented by March 31, 2018.	Meetings are planned with stakeholders to develop HCR. The herring 4T stocks were previously noted for completion in 2017/18.	Will continue to develop HCR in 2019/20. Deliverable previously noted for completion in 2018/19. The precautionary approach will be addressed in the rebuilding plan.	<b>Delayed</b>	A CSAS process was held in March 2018 to assess Atlantic herring ( <i>Clupea harengus</i> ) from the southern Gulf of St. Lawrence (NAFO Div. 4T-4Vn) to 2017 and provide advice for the 2018 and 2019 fisheries, <sup>106</sup> but it did not evaluate potential HCRs. <sup>107,108</sup> No further CSAS processes occurred in 2018/19 but resource management meetings with working groups did occur as planned (N. Schjott, personal communication, August 1, 2019). As noted in both 2018/19 and 2019/20 workplans, this HCR is delayed. The 2019/20 workplan indicates work to develop and implement an HCR continues into 2019/20. Departmental officials indicate a CSAS process may occur in February 2020 and implementation is currently planned for fall 2020 (N. Schjott, personal communication, June 25, 2019).
4	Gulf	Lobster – southern Gulf LFA 23,	✓ <sup>2017/18</sup> ✓ <sup>2018/19</sup>	Harvest control rules will be evaluated and	HCR to be implemented pending approval.		<b>Completed</b>	No CSAS processes for this stock were held in fiscal 2017/18. As noted in the 2018/19 workplan, work to develop and implement HCRs was not completed and continued into 2018/19. One CSAS process was held in November 2018 to update the status of lobster in the southern Gulf of St. Lawrence, but HCRs were not noted in the terms or reference <sup>109</sup> or

<sup>102</sup> This stock is incorrectly listed in the 2017/18 workplan 1 as 4T spring spawner (mobile gear), but departmental officials indicated it was meant to read 4T fall spawner (mobile gear) (M. Clemens, personal communication, June 7, 2018).

<sup>103</sup> DFO (2018). Terms of Reference. Assessment of Stock Status of Atlantic Herring (*Clupea harengus*) from the Southern Gulf of St. Lawrence (NAFO Div. 4T-4Vn) to 2017 and Advice for the 2018 and 2019 Fisheries Regional Science Peer Review – Gulf Region. March 14–15, 2018, Moncton, New Brunswick. [http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2018/03\\_14-15b-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2018/03_14-15b-eng.html)

<sup>104</sup> DFO (2018). Assessment of the Southern Gulf of St. Lawrence (NAFO Div. 4T) Spring and Fall Spawner Components of Atlantic Herring (*Clupea harengus*) with Advice for the 2018 and 2019 Fisheries. DFO Can. Sci. Advis. Sec. Sci. Adv. Rep. 2018/029. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018\\_029-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018_029-eng.html)

<sup>105</sup> McDermid, J.L., Swain, D.P., Turcotte, F., Robichaud, S.A., & Surette, T. (2018). Assessment of the NAFO Division 4T Southern Gulf of St. Lawrence Atlantic Herring (*Clupea harengus*) in 2016 and 2017. DFO Can. Sci. Advis. Sec. Res. Doc. 2018/052. xiv + 122 p. [http://dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2018/2018\\_052-eng.html](http://dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2018/2018_052-eng.html)

<sup>106</sup> DFO (2018). Terms of Reference. Assessment of Stock Status of Atlantic Herring (*Clupea harengus*) from the Southern Gulf of St. Lawrence (NAFO Div. 4T-4Vn) to 2017 and Advice for the 2018 and 2019 Fisheries Regional Science Peer Review – Gulf Region. March 14–15, 2018, Moncton, New Brunswick. [http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2018/03\\_14-15b-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2018/03_14-15b-eng.html)

<sup>107</sup> DFO (2018). Assessment of the Southern Gulf of St. Lawrence (NAFO Div. 4T) Spring and Fall Spawner Components of Atlantic Herring (*Clupea harengus*) with Advice for the 2018 and 2019 Fisheries. DFO Can. Sci. Advis. Sec. Sci. Adv. Rep. 2018/029. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018\\_029-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018_029-eng.html)

<sup>108</sup> McDermid, J.L., Swain, D.P., Turcotte, F., Robichaud, S.A., & Surette, T. (2018). Assessment of the NAFO Division 4T Southern Gulf of St. Lawrence Atlantic Herring (*Clupea harengus*) in 2016 and 2017. DFO Can. Sci. Advis. Sec. Res. Doc. 2018/052. xiv + 122 p. [http://dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2018/2018\\_052-eng.html](http://dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2018/2018_052-eng.html)

<sup>109</sup> DFO (2018). Terms of Reference. Update of the Indicators of the American Lobster (*Homarus americanus*) Stocks of the Southern Gulf of St. Lawrence. Regional Science Response Process – Gulf Region. November 21, 2018, Moncton, New Brunswick. [http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2018/11\\_21b-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2018/11_21b-eng.html)

#	Region	Stock and health status zone	Develop/ evaluate HCR	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status	Details
		24, 25, 26A, 26B; <b>Healthy</b>		implemented by March 31, 2018.	HCRs for the lobster Southern Gulf stocks were previously noted for completion in 2017/18.			the resulting published report. <sup>110</sup> This is surprising, considering they appear to have been developed prior to the CSAS process. A joint DFO and industry working group was convened in 2017/18 to develop HCRs and submitted a recommendation to the southern Gulf of St. Lawrence (sGSL) Lobster Advisory Committee, which supported the approach during the meeting in January 2017 (N. Schjott, personal communication, June 25, 2019). The Minister approved the HCRs for implementation in June 2018 and published them on the DFO website, with the indication that they will be incorporated in the next update of the IFMP. <sup>111</sup> The IFMP for lobster in the Gulf Region that is currently available is dated <sup>112</sup> (2014), and the updated IFMP scheduled to be developed in 2018/19 is delayed.
5	Newfoundland and Labrador	Atlantic cod – 2J3KL; <b>Critical</b>	✓2017/18 ✓2018/19	Current timelines anticipate being able to develop HCRs in 2017/18 to inform the 2018 fishery management decisions. Targeting to complete work early in the 2018/19 early fiscal year.	Continued evaluation of HCR. HCRs for the Atlantic cod 2J3KL stock were previously noted for completion in 201/18.		<b>Delayed</b>	As noted in the 2018/19 workplan, work to develop and implement an HCR was not completed and continued into 2018/19. A working group made up of a subset of the 2J3KLMNO Groundfish Advisory Committee has been established and tasked with the development of a rebuilding plan and associated HCR. DFO presented a draft HCR at the groundfish advisory meeting in April 2018, but it was still in draft form and not used to inform the 2018 management decisions. In January 2019 a science process was held to re-evaluate the LRP, where it was concluded the previous approach to adopting the LRP (as well as the LRP itself) remains valid. At the most recent 2J3KLMNO Groundfish Advisory Committee meeting in April 2019, the department indicated the next steps towards the rebuilding plan and associated HCR were to be determined.
6	Newfoundland and Labrador	Greenland halibut (turbot) – 2+3KLMNO; <b>Uncertain</b>	✓2018/19		Development of exceptional circumstances protocol (within NAFO) to monitor		<b>Completed</b>	According to the recently published (2019) IFMP, this stock is assessed by the Northwest Atlantic Fisheries Association (NAFO). <sup>113</sup> The 2017 results of the DFO Sustainability Survey for Fisheries indicate there is an HCR in place for this stock. <sup>114</sup> The annual report from the NAFO commission in 2017 indicated a working group intended to meet in August 2018 to finalize the exceptional circumstances protocol for adoption at the 2018 annual meeting. <sup>115</sup>

<sup>110</sup> DFO (2019). Update of the Stock Status Indicators of the American Lobster (*Homarus americanus*) Stock of the Southern Gulf of St. Lawrence to 2018. DFO Can. Sci. Advis. Sec. Sci. Resp. 2019/008. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ScRS/2019/2019\\_008-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ScRS/2019/2019_008-eng.html)

<sup>111</sup> DFO (2018). Precautionary Approach Harvest Decision Rules for the Lobster Fishery in the Southern Gulf of St. Lawrence: Lobster Fishing Areas 23, 24, 25, 26A, 26B. <https://www.dfo-mpo.gc.ca/fisheries-peches/commercial-commerciale/atl-arc/lobster-precaution-homard-eng.html>

<sup>112</sup> DFO (2014). Integrated Fisheries Management Plan. Lobster in the Southern Gulf of St. Lawrence. Lobster Fishing Areas 23, 24, 25, 26A, 26B. March 2014. <http://www.glf.dfo-mpo.gc.ca/Gulf/FAM/IFMP/2014-Lobster-Gulf-Region>

<sup>113</sup> DFO (2019). IFMP Groundfish Newfoundland and Labrador Region NAFO Subarea 2 + Divisions 3KLMNO. [http://www.dfo-mpo.gc.ca/fisheries-peches/ifmp-gmp/groundfish-poisson-fond/2019/groundfish-poisson-fond-2\\_3klmno-eng.htm](http://www.dfo-mpo.gc.ca/fisheries-peches/ifmp-gmp/groundfish-poisson-fond/2019/groundfish-poisson-fond-2_3klmno-eng.htm)

<sup>114</sup> DFO (2018). Sustainability Survey for Fisheries, 2017 CSV dataset. <https://open.canada.ca/data/en/dataset/49f25051-3946-426e-a589-b7063f75bbd5>

<sup>115</sup> NAFO (2017). Northwest Atlantic Fisheries Organization Report of the Commission and its Subsidiary Bodies (STACTIC and STACFAD). 39th Annual Meeting of NAFO18–22 September 2017, Montréal, Québec, Canada. Serial No. N6766. NAFO/COM Doc. 17-29 (Revised) <https://www.nafo.int/Portals/0/PDFs/com/2017/comdoc17-29.pdf>

#	Region	Stock and health status zone	Develop/ evaluate HCR	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status	Details
					performance of recently adopted HCR.			According to the 2018 NAFO annual report, this was accomplished, and the exceptional circumstances adopted. <sup>116</sup>
7	Pacific	Pacific herring – Strait of Georgia; <b>Healthy</b> Pacific herring – west coast of Vancouver Island; <b>Cautious</b>	✓2018/19		Development of USRs and evaluation of PA-aligned HCR for the west coast of Vancouver Island and Strait of Georgia stocks in 2018/20.		<b>Completed</b>	A CSAS processes was held in January 2018 to evaluate management procedures for Pacific herring in the Strait of Georgia (SOG) and the west coast of Vancouver Island (WCVI) management areas, including the testing of various HCR in a Management Strategy Evaluation (MSE) framework. <sup>117</sup> The report published from this process indicates no USR was selected for adoption, but candidate USRs are presented. <sup>118</sup> Importantly, the report provides the relative performance of 10 management procedures (with HCRs) in achieving objectives developed by management, rights-holders and stakeholders. The most recent complete IFMP (2019) indicates the consistent use of one candidate USR across all five major Pacific herring stocks. <sup>119</sup> For the SOG and WCVI stocks, catch limits for 2019/20 were calculated based on the best-performing management procedure.
8	Quebec	Greenland halibut (turbot) – 4RST; <b>Cautious</b>	✓2019/20			Will complete development of HCR in 2019/20.		
9	Maritimes	Lobster – inshore LFA 27–33; <b>Healthy</b>	✓2019/20			Will complete HCR for 8 LFAs (27–33) in 2019/20.		
10	Gulf	Atlantic salmon – Gulf Region; <b>Critical</b> <sup>†</sup>	✓2019/20			Will continue to develop HCR in 2019/20. Development of PA framework will continue in 2019/20 with consultations on proposed		

<sup>116</sup> NAFO (2018). NAFO Annual report 2018. <https://www.nafo.int/Portals/0/PDFs/ar/ar2018/AR-2018.pdf>

<sup>117</sup> DFO (2018). Terms of Reference. Evaluation of Management Procedures for Pacific Herring (*Clupea pallasii*) in the Strait of Georgia and the West Coast of Vancouver Island Management Areas of British Columbia Regional Peer Review Process – Pacific Region. July 25–26, 2018, Nanaimo, B.C. [http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2018/07\\_25-26-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2018/07_25-26-eng.html)

<sup>118</sup> DFO (2019). Evaluation of Management Procedures for Pacific Herring (*Clupea pallasii*) in the Strait of Georgia and the West Coast of Vancouver Island Management Areas of British Columbia. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2019/001. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2019/2019\\_001-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2019/2019_001-eng.html)

<sup>119</sup> DFO (2019). Pacific Region Integrated Fisheries Management Plan – Pacific Herring. November 7, 2018–November 6, 2019. Updated February 12, 2019. <https://waves-vagues.dfo-mpo.gc.ca/Library/40762713.pdf>

#	Region	Stock and health status zone	Develop/ evaluate HCR	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status	Details
						USR and decision rules for the recreational fishery in the Miramichi River system. Deliverable previously noted for completion in 2018/19. <sup>120</sup>		
11	Newfoundland and Labrador	Snow crab – 2J, 3KLNO and 3Ps; Uncertain	✓2019/20			Will begin to develop HCR in 2019/20.		
12	Quebec	Snow crab – coastal (12A, 12B, 12C, 13, 14, 15, 16, 16A, 17); Uncertain	✓2019/20			Will begin to develop HCR in 2019/20. Development may be completed in 2020/21.		
13	Quebec	Atlantic halibut – 4RST; Healthy	✓2019/20			Will begin to develop HCR in 2019/20. Development may be completed in 2020/21.		
14	Pacific	Red sea urchin – Pacific Region; Healthy	✓2019/20			Will begin to update HCR in 2019/20.		

<sup>120</sup> Although the 2019/20 workplan has a footnote indicating this deliverable was previously noted for completion in 2018/19, this is not the case. Atlantic salmon is listed in both 2017/18 and 2018/19 fiscal year workplans, but deliverables were related to LRP development (2017/18), IFMP updating (2017/18) and IFMP posting (2018/19), and not HCR development.

#	Region	Stock and health status zone	Develop/ evaluate HCR	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status	Details
15	Pacific	Albacore tuna – north Pacific; Healthy	✓2019/20			Will begin update of HCR in 2019/20.		
16	Pacific	Pacific herring – Haida Gwaii; Critical Pacific herring – Prince Rupert District; Critical Pacific herring – Central Coast; Cautious	✓2019/20			Will begin update of HCR in 2019/20.		
17	Pacific	Giant red sea cucumber – Pacific; Healthy	✓2019/20			Will begin to update HCR in 2019/20.		
18	Pacific	Yelloweye rockfish – outside; Critical	✓2019/20			Will begin update of HCR in 2019/20.		
19	Pacific	Sablefish – Pacific; Cautious	✓2019/20			Will begin update of HCR in 2019/20.		
20	Pacific	Hake – Pacific; Healthy	✓2019/20			Will begin development of HCR in 2019/20.		

† denotes status assignments for marine mammals, diadromous fish and freshwater fish using the 2017 Sustainability Survey for Fisheries results.

†† denotes uncertain status assignments when stocks were not included in either the Sustainability Survey for Fisheries dataset or Oceana Canada's Fishery Audit dataset.

Table 4. **Workplan 1D, determining Upper Stock Reference Points (USRs):** In annual workplan 1, Fisheries and Oceans Canada (DFO) prioritizes the stocks or stock groups for which it will develop precautionary approach reference points and harvest control rules (DFO 2017a, DFO 2018b, DFO 2019a). In 2019/20, workplan 1 is broken down into five sub-workplans, which for the first time has explicitly prioritized stocks for which USRs are to be determined in a sub-workplan (1E). The table below summarizes the 2019/20 workplan 1 USR deliverables<sup>121</sup> by stock or stock group with health status.<sup>122</sup> All stocks or stock groups appear only in the 2019/20 workplan and were not evaluated for status completion.

#	Region	Stock and health status zone	Develop USR	2019/20 deliverables
1	Gulf	Atlantic salmon – Gulf Region; <b>Critical</b> †	✓2019/20	Will continue to develop USR in 2019/20.  Development of PA framework will continue in 2019/20 with consultations on the proposed USR and decision rules for the recreational fishery in the Miramichi River system.
2	Newfoundland and Labrador and National Capital Region	Northern shrimp – SFAs 4–6; <b>Critical</b> , <b>Cautious</b>	✓2019/20	Will begin to develop USR in 2019-20.
3	Quebec	Greenland halibut (turbot) – 4RST; <b>Cautious</b>	✓2019/20	Will complete development of USR in 2019/20. Deliverable previously noted for completion in 2018/19. <sup>123</sup>
4	Newfoundland and Labrador	Snow crab – 2J, 3KLNO and 3Ps; <b>Uncertain</b> ††	✓2019/20	Will begin to develop USR in 2019/20.
5	Pacific	Pacific herring – Haida Gwaii; <b>Critical</b>	✓2019/20	Will begin to develop USR in 2019/20.
		Pacific herring – Prince Rupert District; <b>Critical</b>		
		Pacific herring – Central Coast; <b>Cautious</b>		
6	Quebec	Snow crab – coastal (12A, 12B, 12C, 13, 14, 15, 16, 16A, 17); <b>Uncertain</b>	✓2019/20	Will begin to develop USR in 2019/20. Possibility of completion in 2020/21.
7	Quebec	Atlantic halibut – 4RST; <b>Healthy</b>	✓2019/20	Will begin to develop USR in 2019-20. USR may be established in 2020/21.
8	Pacific	Red sea urchin – Pacific Region; <b>Healthy</b>	✓2019/20	Will begin to develop USR in 2019/20.
9	Pacific	Albacore tuna – north Pacific; <b>Healthy</b>	✓2019/20	Will begin to develop USR in 2019/20.
10	Pacific	Giant red sea cucumber – Pacific; <b>Healthy</b>	✓2019/20	Will begin to update USR in 2019/20.

† denotes status assignments for marine mammals, diadromous fish and freshwater fish using the 2017 Sustainability Survey for Fisheries results.

†† denotes uncertain status assignments when stocks were not included in either the Sustainability Survey for Fisheries dataset or Oceana Canada’s Fishery Audit dataset.

<sup>121</sup> As stated in DFO workplans.

<sup>122</sup> Health status was assigned primarily using Oceana Canada’s Fishery Audit dataset (Oceana Canada 2019b), with † denoting assignments for marine mammals, diadromous fish and freshwater fish using the 2017 Sustainability Survey for Fisheries results (DFO 20119e) and †† denoting uncertain status assigned when stocks were not included in either dataset. As some records represent multiple stocks that appear as more than one record in the datasets used to assign status, all unique statuses for stocks within stock groups are included when applicable.

<sup>123</sup> The deliverable details for the 2018/19 workplan 1A (LRP to be developed) indicated that the LRP was in place but that USR would be set in 2018/19. Upper stock reference points were not part of the first two fiscal year workplans, but there is now a specific USR sub-workplan in the 2019/20 workplan (1D). As indicated here, the USR was not set in 2018/19.

Table 5: **Workplan 2, rebuilding plans:** In annual workplan 2, Fisheries and Oceans Canada (DFO) updates the progress on the development of rebuilding plans for 19 fish stocks and in the 2019/20 fiscal year plan identifies four more stocks for inclusion in rebuilding plans (DFO 2017a, DFO 2018b, DFO 2019a). The table below summarizes all three fiscal year workplan 2 deliverables<sup>124</sup> by stock or stock group with health status<sup>125</sup> and status towards completion as assessed by Oceana Canada. Stocks with completed rebuilding plans that are available online are noted as completed, stocks that have had deadlines shifted or remain uncompleted are noted as delayed, and stocks for which the deadline has not yet passed are noted as ongoing. (Please note that the table does not include an assessment of plan quality.) Details on status determinations are provided for stocks noted to be completed in the 2017/18 and 2018/19 workplans. Stocks appearing after the bold line separating rows have expected dates of completion in 2019/20 or 2020/21 and were not evaluated for status completion.

#	Region	Stock and health status zone	2017/18 deliverables	Deadline	2018/19 deliverables	2019/20 deliverables	Status	Details
1	Pacific	Yelloweye rockfish, inside/outside; <b>Critical</b>	The rebuilding plan for the outside stock will be revised to include measures for yelloweye rockfish: inside.	By end of 2017/18	Completed in 2017/18.	Completed. Note: Outside yelloweye rebuilding plan to be updated in 2019-20. Inside yelloweye rebuilding plan may be updated in 2019/20 dependent on funding.	<b>Previously completed (2018)</b>	The yelloweye rockfish – inside population was added to the Pacific Region multi-species groundfish rebuilding plan that already included the outside population and bocaccio in 2017/18. The first version of this rebuilding plan can be found as an appendix (9) of the 2018 Pacific Groundfish IFMP, which is not posted on the DFO website in its entirety but can be found via a search of the <a href="#">federal science library</a> . The plan (available on page 252 of <a href="#">the electronic version of the IFMP</a> ) documents existing measures taken to minimize fishing mortality since 2012 and timelines, target and probabilities that appear to have been estimated at the last stock assessment, which used data up until 2009. <sup>126,127</sup> In early 2019, the complete IFMP for 2019 was made available via a search of the federal science library, and it includes a nearly identical version of the rebuilding plan (on page 259 of <a href="#">the electronic version of the IFMP</a> ). <sup>128</sup> It would increase transparency if the rebuilding plan and complete IFMP were available to be downloaded directly from the <a href="#">IFMP summary page</a> . <sup>129</sup>
2	Maritimes	Atlantic cod – 4X5Y; <b>Critical</b>	Develop a rebuilding plan. The plan will document measures taken to minimize fishing mortality	By end of 2017/18	Completed in 2017-18.	Completed.	<b>Completed</b>	In 2017/18 a rebuilding plan was developed and approved for Atlantic cod in 4X5Y, but it was not available online by the end of the fiscal year (P. Doherty, personal communication, June 12, 2018). The rebuilding plan for Atlantic cod - NAFO Division 4X5Y is now <a href="#">available on the DFO website</a> , with a date last modified on the webpage of January 9, 2019 and containing information up to and including 2017. It documents existing measures taken to minimize fishing mortality and outlines a generic harvest strategy but

<sup>124</sup> As stated in DFO workplans.

<sup>125</sup> Health status was assigned primarily using Oceana Canada's Fishery Audit dataset (Oceana Canada 2019b), with † denoting assignments for marine mammals, diadromous fish and freshwater fish using the 2017 Sustainability Survey for Fisheries results (DFO 2019e) and †† denoting uncertain status assigned when stocks were not included in either dataset. As some records represent multiple stocks that appear as more than one record in the datasets used to assign status, all unique statuses for stocks within stock groups are included when applicable.

<sup>126</sup> DFO (2011). Stock Assessment for the Inside Population of Yelloweye Rockfish (*Sebastes ruberrimus*) in British Columbia, Canada for 2010. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2011/084. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2011/2011\\_084-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2011/2011_084-eng.html).

<sup>127</sup> DFO (2018). Pacific Region Integrated Fisheries Management Plan, Groundfish, Effective February 21, 2018, Version 1.01. <http://waves-vagues.dfo-mpo.gc.ca/Library/40657814.pdf>

<sup>128</sup> DFO (2019). Pacific Region Integrated Fisheries Management Plan, Groundfish, Effective February 21, 2019, Version 1.1. <http://waves-vagues.dfo-mpo.gc.ca/Library/40765167.pdf>

<sup>129</sup> As is now occurring for some Pacific Region IFMPs. For example, the summary page for the Southern Pacific Salmon IFMP includes a link to the complete IFMP in PDF format for download (<http://www.pac.dfo-mpo.gc.ca/fm-gp/mplans/smon-sc-cs-ifmp-pgip-sm-eng.html>).

#	Region	Stock and health status zone	2017/18 deliverables	Deadline	2018/19 deliverables	2019/20 deliverables	Status	Details
			including the harvest strategy and multiple year quotas.					does not include multiple year quotas beyond those previously put in place for 2017/18 and 2018/19. <sup>130</sup> This rebuilding plan is currently under review and revisions are anticipated following the stock assessment completed in fall 2018.
3	National Capital Region	Acadian redfish – Units 1 and 2; <sup>131</sup> <b>Cautious</b>	By the end of March 2018: management strategy evaluation (MSE) will be available. The MSE is a simulation computer model that is used to make predictions about the stock status and to test different harvest strategies. By the end of April 2018: MSE and rebuilding plan will be tabled at special meeting of the Gulf Groundfish Advisory Committee (GGAC). By the end of May 2018: MSE and rebuilding	June in the 2018/19 fiscal year*  <i>*previously committed to be completed by end of fiscal 2017/18</i>	<b>New deadline:</b> By end of 2018/19.  Management strategy evaluation (MSE) and rebuilding plan will be completed in 2018-19.	No longer required.	<b>Suspended</b>	The MSE process passed scientific peer review in late April 2018 <sup>132</sup> but no management procedure was chosen and implemented by management. At the newly formed Redfish Advisory Group meeting in early May 2018, DFO announced it will no longer be pursuing a rebuilding plan for redfish in units 1 and 2. Based on reference points and stock status developed in the MSE, both species are now out of the critical zone in units 1 and 2 combined, so a plan is not required by policy. However, this is largely due to a few recent large cohorts (2011–13), and Acadian redfish remain in the cautious zone. DFO and industry recognize they need to figure out the best means to determine the species split in the catches; identify ways to mitigate impacts on small redfish, bycatch and habitat; and include an HCR to guide catch level decisions. How this will be done is not clear, as currently there is no single fisheries management plan (rebuilding plan or IFMP) that covers both species in the entire stock area. A single management plan (rebuilding plan or IFMP) should be developed for this rebuilding fishery.

<sup>130</sup> DFO (2019). Rebuilding plan for Atlantic cod - NAFO Division 4X5Y. <http://www.dfo-mpo.gc.ca/fisheries-peches/ifmp-gmp/cod-morue/cod-morue-2018-eng.html>

<sup>131</sup> Included in 2017/18 and 2018/19 workplan 2 as both redfish species combined, with unit 1 separate from unit 2, whereas here we list each redfish species separate within unit 1 and 2 combined, as per the science definition of the stock.

<sup>132</sup> DFO (2018). Units 1+2 Redfish Management Strategy Evaluation. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2018/033. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018\\_033-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018_033-eng.html)



#	Region	Stock and health status zone	2017/18 deliverables	Deadline	2018/19 deliverables	2019/20 deliverables	Status	Details
			plan will be submitted for approval.					
4	National Capital Region	Deepwater redfish – Units 1 and 2, <sup>133</sup> Healthy	By the end of March 2018: management strategy evaluation (MSE) will be available. The MSE is a simulation computer model that is used to make predictions about the stock status and to test different harvest strategies. By the end of April 2018: MSE and rebuilding plan will be tabled at special meeting of the Gulf Groundfish Advisory Committee (GGAC). By the end of May 2018: MSE and rebuilding plan will be	June in the 2018/19 fiscal year*  * <a href="#">previously committed to be completed by end of fiscal 2017/18</a>	<b>New deadline:</b> By end of 2018/19.  Management strategy evaluation (MSE) and rebuilding plan will be completed in 2018/19.	No longer required.	Suspended	The MSE process passed scientific peer review in late April 2018, <sup>134</sup> but no management procedure was chosen and implemented by management. At the newly formed Redfish Advisory Group meeting in early May 2018, DFO announced it will no longer be pursuing a rebuilding plan for redfish in units 1 and 2. Based on reference points and stock status developed in the MSE, both species are now out of the critical zone in units 1 and 2 combined, so a plan is not required by policy. However, this is largely due to a few recent large cohorts (2011–13), and Acadian redfish remain in the cautious zone. DFO and industry recognize they need to figure out the best means to determine the species split in the catches; identify ways to mitigate impacts on small redfish, bycatch and habitat; and include an HCR to guide catch level decisions. How this will be done is not clear, as currently there is no single fisheries management plan (rebuilding plan or IFMP) that covers both species in the entire stock area. A single management plan (rebuilding plan or IFMP) should be developed for this rebuilding fishery.

<sup>133</sup> Included in 2017/18 and 2018/19 workplan 2 as both redfish species combined, with unit 1 separate from unit 2, whereas here we list each redfish species separate within unit 1 and 2 combined, as per the science definition of the stock.

<sup>134</sup> DFO (2018). Units 1+2 Redfish Management Strategy Evaluation. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2018/033. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018\\_033-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2018/2018_033-eng.html)

#	Region	Stock and health status zone	2017/18 deliverables	Deadline	2018/19 deliverables	2019/20 deliverables	Status	Details
			submitted for approval.					
5	National Capital Region	Northern shrimp, SFA 6; <b>Critical</b>	Rebuilding plan currently in draft form.	2017/18 fiscal year	Completed in 2017/18.	Completed in 2018/19.	<b>Completed</b>	Although this plan is noted as completed in the 2018/19 deliverables, departmental officials indicated it was not completed in the 2017/18 fiscal year (N. Schjott, personal communication, June 7, 2018). In 2017/18 DFO formed a working group to develop a plan, a subset of the Northern Shrimp Advisory Committee, with representatives from all allocation holders from SFA 6 involved. A science process was held in January 2017 to assess the reference points, where it was determined that there was insufficient evidence to recommend a change to the current lower stock reference point until a new assessment model can be developed. <sup>135</sup> A draft plan was completed in fiscal 2017/18 and was awaiting approvals and anticipated to be posted online at the same time as the updated IFMP, sometime in summer or fall of 2018 (L. Edgar, personal communication, June 18, 2018). The rebuilding plan for northern shrimp SFA 6 is <a href="#">available on the DFO website</a> as Annex J of the IFMP for northern shrimp and striped shrimp – shrimp fishing areas 0, 1, 4–7, the Eastern and Western Assessment Zones and North Atlantic Fisheries Organization (NAFO) Division 3M, effective 2018. The IFMP has a date last modified on the webpage of November 1, 2018 and contains information up to and including 2018. The rebuilding plan provides relevant context about the current state of the stock and impediments to rebuilding. It focuses on a new assessment model as the priority and summarizes current management measures in place for the stock. Although the plan mentions surpassing the LRP and eventually rebuilding to the healthy zone is indicated, it states long-term objectives are “to be determined” and will only be implemented once the modelling exercise has been completed and the draft objectives may be modified. Therefore, the rebuilding plan lacks an abundance target, associated timelines and probability estimates. The plan does clearly indicate that the current PA framework and associated harvest strategy applies and will be monitored, appropriately providing explicit guidance for harvest level decisions. But, the current validity of the exploitation rates outlined for the health status zones for this stock was questioned by departmental scientists in the 2017 science process. DFO has allocated resources towards developing a model for this stock by 2020, which may inform a rebuilding plan update (L. Edgar, personal communication, June 18, 2018).

<sup>135</sup> DFO (2017). Review of Reference Points Used in the Precautionary Approach for Northern Shrimp (*Pandalus borealis*) in Shrimp Fishing Area 6. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2017/009. [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ScR-RS/2017/2017\\_009-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ScR-RS/2017/2017_009-eng.html)

#	Region	Stock and health status zone	2017/18 deliverables	Deadline	2018/19 deliverables	2019/20 deliverables	Status	Details
6	Maritimes	Atlantic cod – 5Zjm; <b>Critical</b>	DFO will start work to develop a rebuilding plan. 5Z cod is an international stock, managed through international science (Transboundary Resource Assessment Committee, TRAC) and management (Transboundary Management Guidance Committee, TMGC). The rebuilding plan will identify the harvest strategies and approaches taken to rebuild the stock. It is expected that the plan will be completed by the end of 2018/19. This plan will not require joint approval from	By end of the 2018/19 fiscal year	Continue to work with U.S. and draft rebuilding plan by end of 2018-19.	Completed.	<b>Completed</b>	The rebuilding plan for Atlantic cod – 5Zjm is now <a href="#">available on the DFO website</a> , with a date last modified on the webpage of June 27, 2019 <sup>136</sup> and containing information up to and including 2018. It documents existing measures taken to minimize fishing mortality and outlines the existing harvest strategy using fishing mortality reference levels that are no longer usable without a new assessment, which is not scheduled until 2020. Work on developing this plan began in 2017 when DFO officials began to draft a rebuilding plan based on the DFO guidance document. This was informed by a literature search of information relating the stock and several science and management meetings held in 2018 (including the TRAC and TMGC meetings) (K. Spence, personal communication, June 14, 2018). In November 2018 departmental officials sought feedback on a draft rebuilding plan from members and observers of the Gulf of Maine Advisory Committee (GOMAC) (including Oceana Canada) via email, providing 17 days for completion. At a meeting of GOMAC in April 2019, DFO indicated that the rebuilding plan was completed and would be posted online in the spring or summer (C. Karbowski, personal communication, April 16, 2019).

<sup>136</sup> It should be noted that this rebuilding plan was not actually available to the public on the website as of July 17, 2019. The June 26, 2019 “date last modified” on the website indicates that the date last modified on DFO websites may not reflect when the webpages are made public but instead may reflect when the content was last edited by an IT specialist (i.e., web master). However, given there is often no other means to assess the date when management plans are published, Oceana Canada’s analysis uses the date last modified to assess the timeliness of most management plans.

#	Region	Stock and health status zone	2017/18 deliverables	Deadline	2018/19 deliverables	2019/20 deliverables	Status	Details
			the U.S., but would be communicated as part of an open and transparent relationship.					
7	Maritimes	Yellowtail flounder – 5Z; <b>Critical</b>	DFO will start work to develop a rebuilding plan. 5Z yellowtail is an international stock, managed through international science (Transboundary Resource Assessment Committee, TRAC) and management (Transboundary Management Guidance Committee, TMGC). The rebuilding plan will identify the harvest strategies and approaches taken to rebuild stock. It is expected that the plan will be completed by the end of	By end of the 2018/19 fiscal year	Current rebuilding measures are included in the overarching Groundfish IFMP, developed in 2017/18. Refinement analysis ongoing.	Completed.	<b>Completed</b>	The rebuilding plan for yellowtail flounder in 5Z is now <a href="#">available on the DFO website</a> , with a date last modified on the webpage of June 27, 2019 <sup>136</sup> and containing information up to and including 2018. It documents existing measures taken to minimize fishing mortality and documents a recently developed harvest strategy for the Canadian portion of the fishery using the upper bound of an exploitation rate recommended by scientists for the entire fishery (U.S. and Canada). This rebuilding plan includes an undefined target (i.e., LRP), which the plan indicates will be established in 2020/21. Work on developing this plan began in 2017 when DFO officials began to draft a rebuilding plan based on the DFO guidance document. This was informed by a literature search of information relating the stock and several science and management meetings held in 2018 (including the TRAC and TMGC meetings) (K. Spence, personal communication, June 14, 2018). In November 2018 departmental officials sought feedback on a draft rebuilding plan from members and observers of the Gulf of Maine Advisory Committee (GOMAC) (including Oceana Canada) via email, providing 17 days for completion. At a meeting of GOMAC in April 2019, DFO indicated that the rebuilding plan was completed and would be posted online in the spring or summer (C. Karbowski, personal communication, April 16, 2019).

#	Region	Stock and health status zone	2017/18 deliverables	Deadline	2018/19 deliverables	2019/20 deliverables	Status	Details
			2018/19. This plan will not require joint approval from the U.S., but would be communicated as part of an open and transparent relationship.					
8	Newfoundland and Labrador	Atlantic cod – 2J3KL; <b>Critical</b>	DFO is currently engaged in a process involving industry, the Government of Newfoundland and Labrador and NGOs to develop a rebuilding plan. It is anticipated that the rebuilding plan will be in place in 2018/19 to inform the 2018 fishery management decisions.	2018/19 fiscal year	Continue to evaluate model and HCR to inform 2018 management decision. Rebuilding plan to be completed by end of 2018/19.	Delayed.  Divergent stakeholder views limited progress in defining a harvest decision rule; draft plan presented by DFO to stakeholders (spring 2018); adoption / further development of the plan was put on hold pending LRP review (January 2019); next steps to be determined.	<b>Delayed</b>	A working group made up of a subset of the 2J3KLMNO Groundfish Advisory Committee has been established and tasked with the development of a rebuilding plan and associated HCR. DFO presented a draft HCR at the groundfish advisory meeting in April 2018, but it was still in draft form and not used to inform the 2018 management decisions. In January 2019 a science process was held to re-evaluate the LRP, <sup>137</sup> where it was concluded the previous approach to adopting the LRP (as well as the LRP itself) remains valid. At the most recent 2J3KLMNO Groundfish Advisory Committee meeting in April 2019, the department indicated the next steps toward the rebuilding plan and associated HCR were to be determined.
9	Pacific	Pacific herring – Haida	A meeting with stakeholders will be held to begin	By end of the 2018/19 fiscal year	<b>New deadline:</b> 2020/21. <sup>138</sup>	Complete operating model and begin		

<sup>137</sup> DFO (2019). Terms of Reference. Evaluation of the Limit Reference Point (LRP) for 2J3KL Atlantic Cod. Regional Peer Review Process - Newfoundland and Labrador Region. January 22–23, 2019, St. John's, NL. [http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2019/01\\_22-23-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2019/01_22-23-eng.html)

<sup>138</sup> The 2018/19 workplan indicates expected date of completion as end of fiscal 2018/19, but departmental officials indicate the description in the deliverables is accurate and 2020/21 is the expected date of completion (N. Schjott, personal communication, June 7, 2018). The 2019/20 workplan reflects this anticipated completion date.

#	Region	Stock and health status zone	2017/18 deliverables	Deadline	2018/19 deliverables	2019/20 deliverables	Status	Details
		Gwaii (Pacific QCI); <b>Critical</b>	discussion on the rebuilding plan. The summary report from the workshop will aid in the development of a draft outline of the rebuilding plan.		Expected date of completion revised from 2018/19 to 2020-21. Draft rebuilding plan developed preliminary simulations to evaluate draft objectives to begin. Hold meetings with Haida to discuss results of simulations and refine objectives.	simulation testing of management procedures against rebuilding objectives.		
10	National Capital Region	Mackerel – (Atlantic) NAFO 3 and 4; <b>Critical</b>	Departmental working group meeting to consider draft objectives and components of a rebuilding plan.	2019/20 fiscal year	Departmental working group formed and management strategy evaluation (MSE) process initiated to draft objectives and develop a harvest control rule (HCR).	In progress. Completion expected by end of fiscal 2019/20.		
11	Newfoundland and Labrador	Atlantic cod – 3Ps; <b>Cautious</b>	Begin process to conduct a science framework assessment for the stock.	2020/21 fiscal year	Benchmark assessment process in advance of rebuilding plan development. HCR to inform 2020 management decision. Rebuilding plan to	Framework assessment to be completed in fall 2019. Outcome will inform development of rebuilding plan. Remains on track for 2020/21 deliverable.		

#	Region	Stock and health status zone	2017/18 deliverables	Deadline	2018/19 deliverables	2019/20 deliverables	Status	Details
					be completed by 2020/21.			
12	Quebec	Icelandic scallop – SFA 16ef, 18a; Uncertain	Submit request to DFO Science for advice on the state of the stock to support development of the plan.	2020/21 fiscal year	A scientific survey will be carried out in the management units. A choice of indicators to determine reference points will be made based on the analysis of available biological data and the precautionary approach developed for scallop of an adjacent management unit.	In progress. Awaiting Science report.		
13	Quebec	Beluga – Northern (Nunavik); Uncertain†	A meeting is planned with harvesters to discuss the development of a rebuilding plan.	2020/21 fiscal year	Two meetings are planned with Aboriginal communities to discuss the development of the rebuilding plan.	In progress. A revision to target completion date may be required. This may be determined based on progress made in 2019/20.		
14	Pacific	Chinook salmon – WCVI; Uncertain†	Known rebuilding factors and threats will be summarized and later reviewed with stakeholders to begin discussion	2020/21 fiscal year	Hold workshops to determine issues and potential actions for Clayoquot chinook. Address knowledge gaps in outmigration and hatchery	Continue workshops and outmigration and hatchery return work to address knowledge gaps. Begin compiling draft local/area sub-plans and risk		

#	Region	Stock and health status zone	2017/18 deliverables	Deadline	2018/19 deliverables	2019/20 deliverables	Status	Details
			on development of a rebuilding plan.		return information (field studies, data collection and reporting).	assessments into WCVI-wide plan.		
15	Gulf	Atlantic cod – southern Gulf of St. Lawrence, 4TVn; <b>Critical</b>	Develop a workplan that includes compilation of data on the stock and fisheries on the stock to support the development of a rebuilding plan.	To be determined, pending completion of workplan in 2017/18 fiscal year	<b>New deadline:</b> By end of 2020/21.  2018/19 Meetings with industry to discuss rebuilding objectives. Draft rebuilding plans will be prepared.	Consultant will be hired to draft rebuilding plan in 2019/20.		
16	Gulf	Atlantic herring – 4T spring spawner; <b>Critical</b>	Develop a workplan that includes compilation of data on the stock and fisheries on the stock to support the development of a rebuilding plan.	To be determined, pending completion of workplan in 2017/18 fiscal year	<b>New deadline:</b> By end of 2020/21.  2018/19: Meetings with industry to discuss rebuilding objectives. Draft rebuilding plans will be prepared.	Rebuilding plan will be completed in 2020/21.		
17	Gulf	American plaice – southern Gulf of St. Lawrence, 4T; <b>Critical</b>	Develop a workplan that includes compilation of data on the stock and fisheries on the stock to support the development of a rebuilding plan.	To be determined, pending completion of workplan in 2017/18 fiscal year	<b>New deadline:</b> By end of 2020/21.  2018/19: Meetings with industry to discuss rebuilding objectives. Draft rebuilding plans will be prepared.	Consultant will be hired to draft rebuilding plan in 2019/20.		



#	Region	Stock and health status zone	2017/18 deliverables	Deadline	2018/19 deliverables	2019/20 deliverables	Status	Details
18	Gulf	White hake – 4T; <b>Critical</b>	Develop a workplan that includes compilation of data on the stock and fisheries on the stock to support the development of a rebuilding plan.	To be determined, pending completion of workplan in 2017/18 fiscal year	<b>New deadline:</b> By end of 2020/21.  2018/19: Meetings with industry to discuss rebuilding objectives. Draft rebuilding plans will be prepared.	Consultant will be hired to draft rebuilding plan in 2019/20.		
19	Gulf	Winter flounder – 4T; <b>Critical</b>	Develop a workplan that includes compilation of data on the stock and fisheries on the stock to support the development of a rebuilding plan.	To be determined, pending completion of workplan in 2017/18 fiscal year	<b>New deadline:</b> By end of 2020/21.  2018/19: Meetings with industry to discuss rebuilding objectives. Draft rebuilding plans will be prepared.	Consultant will be hired to draft rebuilding plan in 2019/20.		
20	New-foundland and Labrador	Witch flounder – 2J+3KL; <b>Critical</b>		By end of 2020/21 (newly added to workplan in 2019/20)		Identified as a potential stock for development of rebuilding plan but no specific deliverables identified. Working group established and discussions initiated with stakeholders.		
21	New-foundland and Labrador	Atlantic cod – 4RS3PN; <b>Critical</b>		By end of 2020/21 (newly added to workplan in 2019/20)		The existing plan (developed jointly by NL and Quebec Regions) was initially		

#	Region	Stock and health status zone	2017/18 deliverables	Deadline	2018/19 deliverables	2019/20 deliverables	Status	Details
	and Quebec					implemented for a period of 5 years and scheduled for review in 2018/19. Stock assessment taking place in the winter of 2019. Regions to collaborate on workplan for review / update beginning in 2019.		
22	Quebec	Northern shrimp – Gulf of St. Lawrence; <b>Cautious</b>		N/A (newly added to workplan in 2019/20)		Target date to be determined. The stock is not currently in the critical zone; however, it is anticipated to enter that zone soon. Work will begin immediately.		
23	Pacific	Bocaccio – Pacific; <b>Critical</b>		By end of 2017/18 (newly added to workplan in 2019/20)		Completed. <sup>139</sup>		

† denotes status assignments for marine mammals, diadromous fish and freshwater fish using the 2017 Sustainability Survey for Fisheries results.

†† denotes uncertain status assignments when stocks were not included in either the Sustainability Survey for Fisheries dataset or Oceana Canada's Fishery Audit dataset.

<sup>139</sup> The rebuilding plan for bocaccio was completed in 2014. It is misleading to include this stock in the list of stocks for which rebuilding plans will be developed with an expected date of completion of 2017/18 and a status of completed. While the latter is true, it is not work that was completed in response to the 2016 CESD audit, since this stock was included in a rebuilding plan in 2014. Source: DFO (2014). Pacific Region Integrated Fisheries Management Plan, Groundfish, Effective February 21, 2014, Version 1.0. <http://waves-vagues.dfo-mpo.gc.ca/Library/365005.pdf>

Table 6. **Workplan 3A, 3B and 3C, Integrated Fisheries Management Plans (IFMPs)**: In annual workplan 3, Fisheries and Oceans Canada (DFO) prioritizes the stocks or stock groups to be included in new IFMPs (3A), have their IFMPs updated (3B), and/or have their IFMPs made available on the departmental website (3C) (DFO 2017a, DFO 2018b, DFO 2019a). The table below summarizes all three fiscal year workplan 3 deliverables<sup>140</sup> by stock or stock group with health status<sup>141</sup> and status towards completion as assessed by Oceana Canada. Stocks with completed IFMPs that are available online are noted as completed, stocks that have had deadlines shifted or remain uncompleted are noted as delayed, and stocks for which the deadline has not yet passed are noted as ongoing. (Please note that the table does not include an assessment of plan quality.) Details on status determinations are provided for stocks included in the 2017/18 and 2018/19 workplans. Stocks appearing after the bold line separating rows appear only in 2019/20 workplan and were not evaluated for status completion.

#	Region	Stock or stock group and health status zone	New IFMP	IFMP update	IFMP online	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status in 2019	Details
1	Central and Arctic	Atlantic walrus – Baffin Bay (High Arctic); <i>Uncertain</i> <sup>†</sup> Atlantic walrus – Northern Foxe basin; <i>Uncertain</i> <sup>†</sup>		✓ <sup>2017/18</sup>	✓ <sup>2017/18</sup>	Final version of the IFMP for Atlantic walrus ( <i>Odobenus rosmarus rosmarus</i> ) in the Nunavut Settlement Area to be sent to Nunavut Wildlife Management Board for final approval in the 2017/18 fiscal year. Signing of the final IFMP expected in the 2017/18 fiscal year.  IFMP will be made accessible online after approval, in the 2017 to 2018 fiscal year.			<b>Previously completed (2018)</b>	The Atlantic walrus in the Nunavut Settlement Area IFMP was approved by the NWMB on December 22, 2017 and by DFO on February 1, 2018. The IFMP is <a href="#">available on the DFO website</a> , with a last modified date on the webpage of April 3, 2018.
2	Maritimes	Sea scallop – inshore SFA 28 (Bay of Fundy); <i>Healthy</i> Sea scallop – inshore SFA 29W; <i>Healthy</i>	✓ <sup>2017/18</sup>			New IFMP: One “Inshore scallop IFMP” covering both stocks is in the final stages and will be finalized and posted on the DFO website in the 2017/18 fiscal year.			<b>Previously completed (2018)</b>	The Inshore Scallop – Maritimes Region – 2015 IFMP is <a href="#">available on the DFO website</a> , with a date last modified on the webpage of February 9, 2017. It is unclear if this is the new IFMP being referred to in the 2017/18 workplan. If it is, then the workplan was misleading in listing it for fiscal 2017/18, as the work

<sup>140</sup> As stated in DFO workplans.

<sup>141</sup> Health status was assigned primarily using Oceana Canada’s Fishery Audit dataset (Oceana Canada 2019b), with † denoting assignments for marine mammals, diadromous fish and freshwater fish using the 2017 Sustainability Survey for Fisheries results (DFO 2019e) and †† denoting uncertain status assigned when stocks were not included in either dataset. As some records represent multiple stocks that appear as more than one record in the datasets used to assign status, all unique statuses for stocks within stock groups are included when applicable.

#	Region	Stock or stock group and health status zone	New IFMP	IFMP update	IFMP online	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status in 2019	Details
										was already completed in fiscal 2016/17.
3	Newfoundland and Labrador	Atlantic herring – 2J3KLPs; Uncertain	✓2017/18		✓2017/18	New IFMP: IFMP will be finalized in fiscal the 2017/18 fiscal year.  IFMP will be made accessible online, after completion of update, by March 31, 2018.			Previously completed (2018)	The Herring – Newfoundland and Labrador Region 2+3 (Herring Fishing Areas 1–11) IFMP (effective 2017) is <a href="#">available on the DFO website</a> , with a last modified date on the webpage of March 28, 2018 and containing information up to and including 2017.
4	Newfoundland and Labrador	Capelin – SA2+3KLPs; Uncertain Capelin – 4RST; Uncertain			✓2017/18	IFMP will be made accessible, after completion of update, by March 31, 2018.			Previously completed (2018)	The Capelin Northwest Atlantic Fisheries Organization Divisions 4RST (Capelin Fishing Areas 12–16) IFMP (effective 2017) is <a href="#">available on the DFO website</a> , with a last modified date on the webpage of 2018 (the day and month were missing when last accessed May 14, 2019) and containing information up to and including 2017. The Capelin Newfoundland & Labrador Region 2+3 (Capelin Fishing Areas 1–11) IFMP (effective 2017) is <a href="#">available on the DFO website</a> , with a last modified date on the webpage of March 18, 2019. The previous link provided last year in this details field is now broken, but it had a date last modified of March 26, 2018. The new link contains information up to and including 2018, indicating it was updated and re-posted.
5	Newfoundland and Labrador	Atlantic herring – 4R; Healthy, Critical	✓2017/18		✓2017/18	New IFMP: IFMP will be finalized in the 2017/18 fiscal year.			Previously completed (2018)	The Herring – Newfoundland and Labrador Region 4R3Pn IFMP (effective 2017) is <a href="#">available on the DFO website</a> , with a last modified date on the webpage of March 27,

#	Region	Stock or stock group and health status zone	New IFMP	IFMP update	IFMP online	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status in 2019	Details
						IFMP will be made accessible online, after completion of update, by March 31, 2018.				2018 and containing information up to and including 2017.
6	Quebec	Lobster – 19, 20, 21; <b>Healthy</b>	✓2017/18 ✓2018/19		✓2018/19	New IFMP: IFMP will be finalized and posted on the DFO website in the 2017/18 fiscal year. IFMP will be made accessible online by March 31, 2018.	Lobster – 19, 20 and 21 IFMP will be completed and posted by end of 2018/19. Lobster 19, 20 and 21 was previously noted for completion in 2017/18.  Completed and posted by end of 2018-19.		<b>Previously completed (2018)</b>	The new IFMP was not completed in the 2017/18 fiscal year. As indicated in the 2018/19 workplan, it was anticipated it would be completed and posted by the end of fiscal. The Lobster fishery – Areas 19, 20 and 21 IFMP is now completed and <a href="#">available on the DFO website</a> , with a last modified date on the webpage of June 6, 2018 and containing information up to and including 2018.
7	Central and Arctic	Dolly Varden – North Slope Dolly Varden; Big Fish, Firth, Babbage, Vittrekwa; <b>Cautious</b> <sup>†</sup>		✓2017/18	✓2018/19 ✓2019/20	The IFMP for Dolly Vardon will be updated by March 31, 2018.	Posted online by end of 2018-19.	Will post IFMP in 2019/20. Deliverable previously noted for completion in 2018/19.	<b>Delayed</b>	The IFMP was updated in 2017/18 but was not approved, as there were delays in the final review. In 2018/19 it was anticipated that the IFMP would be approved and posted (N. Schjott, personal communication, June 29, 2018). As noted in the 2019/20 workplan, this was not completed. These stocks are co-managed and require approvals from partners (e.g. Nunavut Wildlife Management Board, Gwich'in Renewable Resources Board) in addition to approvals within DFO (N. Schjott, personal communication, June 25, 2019). As such, the IFMP approval is dependent on the capacity, availability and decisions of co-management partners. It is anticipated the IFMP will be approved and posted online in 2019/20.

#	Region	Stock or stock group and health status zone	New IFMP	IFMP update	IFMP online	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status in 2019	Details
8	Gulf	Atlantic salmon – Gulf of St. Lawrence; <b>Critical</b> <sup>†</sup>		✓2017/18 ✓2019/20	✓2018/19 ✓2019/20	An update to be completed in the 2017/18 fiscal year.	Posted online by end of 2018-19.	Will update IFMP in 2019/20. Deliverable previously noted for completion in 2018/19.  IFMP will be updated and posted in 2019-20. Deliverable previously noted for completion in 2018-19.	<b>Delayed</b>	The IFMP update was completed in 2017/18 but was still awaiting approvals as the end of fiscal (N. Schjott, personal communication, July 27, 2018). The IFMP was to be posted online in 2018/19. As noted in the 2019/20 workplan, this was not completed, and it is now anticipated the IFMP will be posted online in 2019/20.
9	Gulf	Atlantic halibut – (4RST); <b>Healthy</b> Atlantic cod – northern Gulf of St. Lawrence (3Pn, 4RS); <b>Critical</b> Atlantic cod – southern Gulf of St. Lawrence, 4TVn; <b>Critical</b> American plaice – southern Gulf of St. Lawrence, 4T; <b>Critical</b> White hake – 4T; <b>Critical</b> Winter flounder – 4RST; <b>Critical</b> Witch flounder – 4RST; <b>Cautious</b> Yellowtail flounder – 4T; <b>Critical</b> Greenland halibut (turbot) – 4RST; <sup>142</sup> <b>Cautious</b>		✓2019/20	✓2017/18 ✓2018/19	Gulf of St. Lawrence groundfish IFMP will be made accessible online by March 31, 2018.	Posted online by end of 2018/19. Gulf of St. Lawrence Groundfish IFMP previously noted for completion in 2017/18.	Will update IFMP in 2019/20. Deliverable previously noted for completion in 2018-19.	<b>Delayed</b>	The IFMP was updated in 2017/18 but was not approved for posting by the end of fiscal. It was anticipated that final approvals would be obtained and the IFMP posted by the end of fiscal 2018/19 (C. Lavoie, personal communication, July 6, 2018). As noted in the 2019/20 workplan, this was not completed, and it is now anticipated the IFMP will be posted online in 2019/20.

<sup>142</sup> This stock is listed in workplan 3 of the 2017/18 and 2018/19 fiscal year workplans twice, once with the Gulf Region under the multi-stock groundfish IFMP and once for the Quebec Region as a single-stock IFMP. Quebec Region leads the science on this stock, while management falls under both regions. Last year Oceana Canada only included one record for this stock, under the Gulf Region groundfish IFMP. But, it has since been clarified that this stock is likely to be included in two IFMPs, the Gulf Region Groundfish IFMP and a single-stock IFMP developed by the Quebec Region. The latter IFMP will be specific to harvesters based in Quebec and will likely contain more detailed information on the stock than the multi-species groundfish IFMP for the Gulf Region.

#	Region	Stock or stock group and health status zone	New IFMP	IFMP update	IFMP online	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status in 2019	Details
		Acadian and deepwater redfish – Unit 1; <sup>143</sup> <b>Cautious, Healthy</b>								
10	Gulf	Atlantic herring – 4T fall spawner (fixed gear)/(mobile gear); <b>Cautious</b> Atlantic herring – 4T spring spawner; <b>Critical</b>			✓2017/18 ✓2018/19	The IFMP herring in the southern Gulf of St. Lawrence herring fishing areas 16A to 16G will be made available online in fall 2017.	Posted online by end of 2018-19. Southern Gulf of St. Lawrence-Herring Fishing Areas 16A to 16G (Herring 4T) were previously noted for completion in 2017/18.		<b>Delayed</b>	As noted in the 2018/19 workplan, posting did not occur in 2017/18 but was anticipated to occur in 2018/19. The IFMP is still not posted online. Even though this stock is not included in the 2019/20 workplan, it is anticipated the IFMP will be posted online in 2019/20.
11	Gulf	Rock crab – LFAs 23–26 (LFA 23, 24, 25, 26A and 26B); <sup>144</sup> <b>Uncertain</b>	✓2017/18	✓2019/20	✓2018/19	New IFMP: “Rock crab in the southern Gulf, LFA 24, 25, 26A and 26B IFMP” will be finalized in the 2017/18 fiscal year.	Posted online by end of 2018-19.	Will complete and post online in 2019-20.	<b>Delayed</b>	The previously existing IFMP was updated in fiscal 2017/18, but final comments were pending from industry at the end of the fiscal year, delaying approvals. It was anticipated that the IFMP would be approved and posted in fiscal 2018/19 (N. Schjott, personal communication, June 29, 2018). As noted in the 2019/20 workplan, this was not completed, and it is now anticipated the IFMP will be updated again and posted online in 2019/20.
12	Gulf	Scallop – southern Gulf of St. Lawrence (SFA 21a, b, c, 22, 23, 24); <b>Uncertain</b>	✓2017/18	✓2019/20	✓2018/19 ✓2019/20	New IFMP: “Giant scallops in the southern Gulf of St. Lawrence, SFA 21 to 24 IFMP” will be finalized in the 2017/18 fiscal year.	Posted online by end of 2018/19.	Will complete and post online in 2019-20. Deliverable previously noted for completion in 2018/19. IFMP will be updated and posted in 2019/20. Deliverable previously	<b>Delayed</b>	The IFMP was updated in fiscal 2017/18 but was still awaiting approvals at fiscal year end. It was anticipated that the IFMP would be approved and posted in fiscal 2018/19 (N. Schjott, personal communication, June 29, 2018). As noted in the 2019/20 workplan, this was not

<sup>143</sup> This stock is incorrectly listed in the 2017/18 workplan 3 as unit 2, but the Gulf Region has traditionally been responsible for the management of unit 1. Departmental officials indicated it was meant to read unit 1 (M. Clemens, personal communication, June 7, 2018).

<sup>144</sup> The 2019/20 workplan includes further detail on stock area included here in brackets, but it is assumed it was meant to read CFA and not LFA and include CFA 23 as per the LRP deliverable stock definition in the 2019/20 workplan.

#	Region	Stock or stock group and health status zone	New IFMP	IFMP update	IFMP online	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status in 2019	Details
								noted for completion in 2018/19.		completed, and it is now anticipated the IFMP will be updated again and posted online in 2019/20.
13	Maritimes	American eel (elvers) – Maritimes Region; Uncertain†		✓2017/18		An update of the elvers IFMP is anticipated to be completed by March 31, 2018.			Completed	The IFMP was updated in fiscal 2017/18, and it was anticipated that it would be posted in 2018/19, which unfortunately was not captured in the 2018/19 workplan (N. Schjott, personal communication, June 29 <sup>th</sup> , 2018). The elver IFMP (evergreen) Maritimes Region is now <a href="#">available on the DFO website</a> , with a date last modified on the webpage of August 7, 2018 and containing information up to and including 2016.
14	Maritimes	Dogfish – Atlantic Canada 4VWNX-5; Uncertain	✓2017/18	✓2018/19	✓2017/18	New IFMP: One “Groundfish IFMP” for these 10 stocks is under development. Anticipated completion by March 31, 2018.  Groundfish IFMP will be made accessible online, after completion by March 31, 2018.	Update to LRPs (for Atlantic Canada [dogfish]), if Science determines that a change needs to be made (LRPs will be reviewed by Science in 2018/19). <sup>145</sup>  Update to limit reference points, if Science determines that a change needs to be made (limit reference points will be reviewed by Science in 18/19). <sup>145</sup>		Completed	The multi-stock groundfish IFMP for the Maritimes Region was completed and approved by the end of fiscal 2017/18 but was not posted online (P. Doherty, personal communication, May 3, 2018). It was anticipated that the IFMP would be posted in fall 2018/19. The 4VWX5 groundfish - Maritimes Region IFMP is now <a href="#">available on the DFO website</a> , with a date last modified on the webpage of December 21, 2018 and containing information up to and including 2017.
		Atlantic cod – 4X5Y; <b>Critical</b>								
		Atlantic cod – 5Zjm; <b>Critical</b>								

<sup>145</sup> The 2018/19 deliverables description for dogfish in Atlantic Canada and Atlantic cod in NAFO 4X5Y are a description of updates to the section of IFMP pertaining to these stocks that may be required if it is determined the limit reference points need to be changed (N. Schjott, personal communication, June 29, 2018).



#	Region	Stock or stock group and health status zone	New IFMP	IFMP update	IFMP online	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status in 2019	Details
		Atlantic halibut – 3NOPs4VWX+5; <b>Healthy</b>								
		Haddock – 4X5Y; <b>Uncertain</b>								
		Haddock – 5Zjm; <b>Healthy</b>								
		Pollock – 4X5 (western component); <b>Uncertain</b>								
		Redfish – unit 3; <b>Healthy</b>								
		Silver hake – 4VWX; <b>Healthy</b>								
		Yellowtail flounder – 5Z; <b>Uncertain</b>								
15	Maritimes	Lobster – inshore LFA 27–33; <b>Healthy</b>		✓2018/19	✓2017/18 ✓2019/20	Inshore lobster IFMP will be made accessible online, after completion, by March 31, 2018.	Update on progress in developing the Precautionary Approach Framework; update to reference points. Some minor updates and corrections. <sup>146</sup>	LFA 27–38 IFMP will be updated and posted in 2019-20. Will include new LFA 27–33 reference points (developed in 2018/19).	<b>Delayed</b>	The updated inshore lobster IFMP was not posted online in fiscal 2017/18 or 2018/19. The Integrated Fishery Management Plan Lobster Fishing Areas 27 – 38 Scotia-Fundy Sector - Maritimes Region – 2011 is now <a href="#">available on the DFO website</a> , with a date last modified on the website of August 7 <sup>th</sup> , 2018. DFO put the 2011 IFMP online for public access while the updates were taking place (N. Schjott, personal communication, June 25, 2019). The 2019/20 workplan deliverables indicate new reference points were developed for LFAs 27–33 in 2018/19 and that work continues to update and post the IFMP online this fiscal year.
		Lobster – inshore LFA 34; <b>Healthy</b>								
		Lobster – inshore LFA 35–38; <b>Healthy</b>								

<sup>146</sup> The 2018/19 deliverables description for LFAs 27–33 is a description of updates to the section of IFMP pertaining to this stock that may be required if it is determined the reference points need to be changed (N. Schjott, personal communication, June 29, 2018).

#	Region	Stock or stock group and health status zone	New IFMP	IFMP update	IFMP online	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status in 2019	Details
16	Maritimes	Sea scallop – offshore SFA 26, German, Browns; <b>Uncertain</b> Sea scallop – offshore SFA 27 Georges; <b>Healthy</b>		✓2017/18	✓2017/18	An update of the offshore scallop IFMP is anticipated to be completed by March 31, 2018.  The offshore scallop IFMP is under development. Anticipated to be made accessible online by March 31, 2018.			<b>Completed</b>	The offshore scallop IFMP was not posted online in fiscal 2017/18. There were some delays in preparing IFMP in a way that met the required accessibility standards required to post online, but these revisions were underway, and it was anticipated to be posted online in summer 2018(C. Bernier, personal communication, August 8, 2018). The Offshore Scallop - Maritimes Region IFMP is <a href="#">available on the DFO website</a> , with a date last modified on the webpage of July 31, 2018 and containing information up to and including 2017.
17	National Capital Region	Bluefin tuna – western Atlantic; <b>Uncertain</b>		✓2017/18		Western Atlantic Bluefin Tuna IFMP will be updated in the 2017/18 fiscal year.			<b>Completed</b>	The IFMP was updated in fiscal 2017/18, and it was anticipated that it would be posted in 2018/19, which unfortunately was not captured in the 2018/19 workplan (N. Schjott, personal communication, June 29, 2018). The Canadian Atlantic Bluefin Tuna ( <i>thunnus thynnus</i> ) - NAFO Fishing Areas 3KLNOP, 4RSTVWX and 5YZ - 2017 IFMP is now <a href="#">available on the DFO website</a> , with a date last modified on the webpage of January 10, 2019 and containing information up to and including 2017.
18	Newfoundland and Labrador	Lobster – LFA 3, 4, 6–9,12,13AB,14C; <b>Uncertain</b> Lobster – LFA 5,10,11,14A–B; <b>Uncertain</b>		✓2017/18	✓2018/19	NL Lobster IFMP will be updated with a target of fall 2017.	Posted online by end of 2018/19.		<b>Completed</b>	The IFMP update was completed in 2017/18 (N. Schjott, personal communication, July 27, 2018), but it was not posted online that year. As the 2018/19 workplan indicates, the intention was to

#	Region	Stock or stock group and health status zone	New IFMP	IFMP update	IFMP online	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status in 2019	Details
										post it online in 2018/19 (DFO 2018a). The American lobster - Lobster fishing area 3-14C IFMP is now <a href="#">available on the DFO website</a> , with a last modified date on the webpage of January 7, 2019 and containing information up to and including 2017.
19	National Capital Region	Northern shrimp SFAs 0–7; <b>Critical</b> , <b>Cautious</b> , <b>Healthy</b> , <b>Uncertain</b>		✓2017/18	✓2018/19	Northern shrimp IFMP will be updated in the 2017/18 fiscal year.	Northern shrimp: Posted online by end of 2018/19.		<b>Completed</b>	The IFMP was updated in 2017/18, but it was not approved by the end of the fiscal year. It was to be approved and posted online in 2018/19 (L. Edgar, personal communication, June 18, 2018), as per the 2018/19 workplan. The IFMP for northern shrimp and striped shrimp – Shrimp fishing areas 0, 1, 4–7, the Eastern and Western Assessment Zones and North Atlantic Fisheries Organization (NAFO) Division 3M is now <a href="#">available on the DFO website</a> , with a last modified date on the webpage of November 1, 2018 and containing information up to and including 2018.
20	Pacific	Eulachon; <b>Uncertain</b> †		✓2017/18		Update to IFMP by end of the 2017/18 fiscal year.			<b>Completed</b>	The IFMP was updated in the 2017/18 fiscal year (N. Schjott, personal communication, June 29, 2018) but not posted online that year. The Fraser River Eulachon 2019 IFMP summary is now <a href="#">available on the DFO website</a> , with a last modified date on the webpage of January 23, 2019 and the indication it covers January 1, 2019 to December 31, 2019. Importantly, there is also a link to a <a href="#">PDF file of the complete</a>

#	Region	Stock or stock group and health status zone	New IFMP	IFMP update	IFMP online	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status in 2019	Details
										<a href="#">IFMP</a> provided at the bottom of the summary webpage.
21	Quebec	Northern shrimp – Gulf of St. Lawrence SFA 8, 9, 10, 12; <b>Cautious</b>			✓ <sup>2017/18</sup>	IFMP will be made accessible online by March 31, 2018.			<b>Completed</b>	There were delays in the approvals process in 2017/18, but the IFMP was approved in 2018/19 and it was expected it would be posted online in fall of 2018 (C. Bernier, personal communication, August 8, 2018). The IFMP for northern shrimp – Areas 8, 9, 10 and 12 (Estuary and Gulf of St. Lawrence) is <a href="#">available on the DFO website</a> , and although the last modified date on the webpage is May 8, 2014, it contains information up to and including 2017.
22	Quebec	Lobster – LFA 22; <b>Healthy</b>			✓ <sup>2017/18</sup>	IFMP will be made accessible online by March 31, 2018.			<b>Completed</b>	The IFMP update was completed in fiscal 2017/18 but was still awaiting approvals as the end of the fiscal year (N. Schjott, personal communication, July 27, 2018). The Lobster Fishing Area 22 (Quebec Region - Magdalen Islands Area) IFMP is now completed and <a href="#">available on the DFO website</a> , with a last modified date on the webpage of August 24, 2018 and containing information up to and including 2018.
23	Quebec	Greenland halibut – 4RST; <sup>147</sup> <b>Cautious</b>		✓ <sup>2018/19</sup>	✓ <sup>2017/18</sup> ✓ <sup>2018/19</sup> ✓ <sup>2019/20</sup>	IFMP will be made accessible online by March 31, 2018.	Updated and posted by end of 2018/19.  Updated and posted by end of 2018/19.	Will complete and post IFMP in 2019/20. Deliverable previously noted for completion in 2018/19.	<b>Delayed</b>	The 2019/20 workplan indicates work continues to complete and post the IFMP online this fiscal year. The IFMP is now drafted and awaiting approvals (N.

<sup>147</sup> This stock is listed in workplan 3 of the 2017/18 and 2018/19 fiscal year workplans twice, once with the Gulf Region under the multi-stock groundfish IFMP and once for the Quebec Region as a single-stock IFMP. Quebec Region leads the science on this stock, while management falls under both regions. Last year Oceana Canada only included one record for this stock, under the Gulf Region groundfish IFMP. But, it has since been clarified that this stock is likely to be included in two IFMPs, the Gulf Region Groundfish IFMP and a single-stock IFMP developed by the Quebec Region. The latter IFMP will be specific to harvesters based in Quebec and will likely contain more detailed information on the stock than the multi-species groundfish IFMP for the Gulf Region.

#	Region	Stock or stock group and health status zone	New IFMP	IFMP update	IFMP online	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status in 2019	Details
										Schjott, personal communication, June 25, 2019).
24	Central and Arctic	Greenland halibut – NAFO Division 0A/0B; <b>Healthy</b>		✓2018/19	✓2018/19 ✓2019/20		Updated and posted by end of 2018/19.  Updated and posted by end of 2018/19.	Will post IFMP in 2019/20.	<b>Delayed</b>	The updated IFMP for Greenland halibut – NAFO Division 0A/0B IFMP was not posted online in fiscal 2018/19. The IFMP for Greenland Halibut ( <i>Reinhardtius hippoglossoides</i> ) - Northwest Atlantic Fisheries Organization Subarea 0 - effective 2014 is <a href="#">available on the DFO website</a> , but it has an old date last modified on the website (July 25, 2014) and only contains information up to and including 2014, indicating it is still the old IFMP. The 2019/20 workplan indicates work continues to post the IFMP online this fiscal year. DFO is working towards completing and posting as indicated in the workplan (N. Schjott, personal communication, June 25 <sup>th</sup> , 2019).
25	Central and Arctic	Narwhal – High Arctic and northern Hudson Bay; <b>Uncertain†</b>			✓2018/19		Completed and posted by end of 2018/19.		<b>Completed</b>	The 2018/19 workplan simply indicates the intention to post the IFMP online, although the deliverable description includes “completed and posted,” implying an up-to-date IFMP would be completed prior to being posted. The integrated fisheries management plan for narwhal in the Nunavut Settlement Area ( <i>Monodon monoceros</i> ) Effective April 1, 2013 is <a href="#">available on the DFO website</a> , with a date last modified on the website of March 26, 2019. DFO did meet their commitment to post an IFMP online, but the IFMP only contains

#	Region	Stock or stock group and health status zone	New IFMP	IFMP update	IFMP online	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status in 2019	Details
										<p>information up to and including 2013, indicating it is old. This is because the 5-year review of the IFMP was postponed until new DFO Science advice is published (N. Schjott, personal communication, June 25, 2019). This stock is co-managed. In October 2018, DFO met with co-management partners (Nunavut Wildlife Management Board, Nunavut Tunngavik Inc. and the Regional Wildlife Organizations) to discuss ongoing narwhal management in the Nunavut Settlement Area. There was consensus among the co-management partners to postpone the five-year review of the IFMP until the new DFO Science advice is published on the connectivity between the Admiralty Inlet and Eclipse Sound stocks, as well as the Eclipse Sound stock population estimate, which is expected in 2019/20. This Science advice is required by the Nunavut Wildlife Management Board's decision-making process for modifying the total allowable harvests for the Admiralty Inlet and Eclipse Sound narwhal stock. The IFMP will be reviewed once all co-management partners have the information required to complete updates (N. Schjott, personal communication, June 25, 2019).</p>

#	Region	Stock or stock group and health status zone	New IFMP	IFMP update	IFMP online	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status in 2019	Details
26	Gulf	Lobster – southern Gulf LFA 23, 24, 25, 26A, 26B; <b>Healthy</b>		✓2018/19			Gulf of St. Lawrence Lobster, Southern Gulf - LFA 23, 24, 25, 26A and 26B IFMP will be updated by end of 2018/19.		<b>Delayed</b>	The updated IFMP for Gulf of St. Lawrence Lobster, Southern Gulf - LFA 23, 24, 25, 26A and 26B was not posted online in fiscal 2018/19. The IFMP currently <a href="#">available on the DFO website</a> has an old date last modified on the website (January 20, 2015) and only contains information up to and including 2014, indicating it is still the old IFMP. Even though this stock is not included in the 2019/20 workplan, it is anticipated the updated IFMP will be posted online in 2019/20 (N. Schjott, personal communication, June 25, 2019).
27	Maritimes	Offshore clam; <b>Healthy</b>		✓2018/19 ✓2019/20			Update to be completed by end of 2018/19.	Will update IFMP in 2019/20. Deliverable previously noted for completion in 2018/19.	<b>Delayed</b>	The IFMP for Offshore Clams - Maritimes and Newfoundland Regions - June 2014 is <a href="#">available on the DFO website</a> . But it has an old date last modified on the website (November 15, 2017) and only contains information up to and including 2014, indicating it is still the old IFMP. As noted in the 2019/20 workplan, the IFMP update was not completed in fiscal 2018/19. The IFMP was stalled due to decisions regarding a new entrant in the fishery; work on the IFMP has started again for 2019/20 (N. Schjott, personal communication, June 25, 2019). As indicated in the 2019/20 workplan, it is anticipated the IFMP update will be completed in 2019/20.

#	Region	Stock or stock group and health status zone	New IFMP	IFMP update	IFMP online	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status in 2019	Details
28	Newfoundland and Labrador	American plaice – 2+3K and 3NLO; <b>Critical</b> Redfish – 2+3K; <b>Critical</b> Grenadier – 2+3KL; <b>Uncertain</b> Winter flounder – 2+3KL; <b>Uncertain</b> Witch flounder – 2+3KL; <b>Critical</b> Greenland halibut (Turbot) – 2+3K; <b>Uncertain</b> Greenland halibut (Turbot) – 3LMNO; <b>Uncertain</b> Atlantic cod – 2GH; <b>Uncertain</b> Lumpfish – 2GHL & 3KL; <b>Uncertain</b> Haddock – 3LNO; <b>Uncertain</b> Skates – 3LNO; <b>Uncertain</b> Yellowtail – 3NLO; <b>Healthy</b> Atlantic cod – 2J3KL (northern); <b>Critical</b>	✓2018/19		✓2018/19		Groundfish 2+3KLMNO IFMP will be completed and posted by end of 2018/19.  Completed and posted by end of 2018/19.		<b>Completed</b>	The IFMP for Groundfish Newfoundland and Labrador Region NAFO Subarea 2 + Divisions 3KLMNO IFMP is now completed and <a href="#">available on the DFO website</a> , with a last modified date on the webpage of April 26, 2019 and containing information up to and including 2019.
29	Newfoundland and Labrador	Snow crab – NL Region; <b>Uncertain</b>		✓2018/19	✓2018/19		Updated and posted by end of 2018/19.  Updated and posted by end of 2018/19.		<b>Completed</b>	The IFMP for Snow Crab - Newfoundland and Labrador Region is now completed and <a href="#">available on the DFO website</a> , with a last modified date on the webpage of May 15, 2019 and containing information up to and including 2019.
30	Newfoundland and Labrador	Sea cucumber – 3Ps; <b>Uncertain</b>	✓2018/19		✓2018/19		3Ps Sea Cucumber IFMP will be completed		<b>Completed</b>	The IFMP for Sea Cucumber Newfoundland and Labrador



#	Region	Stock or stock group and health status zone	New IFMP	IFMP update	IFMP online	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status in 2019	Details
							and posted by end of 2018/19.  Completed and posted by end of 2018/19.			Region 3Ps is now completed and <a href="#">available on the DFO website</a> , with a last modified date on the webpage of June 25, 2019 and containing information up to and including 2019.
31	Newfoundland and Labrador	Atlantic salmon – recreational in NL Region; Uncertain†	✓2018/19		✓2018/19		Recreational Salmon IFMP will be completed and posted by end of 2018/19.  Completed and posted by end of 2018/19.		<b>Delayed</b>	The new IFMP for Atlantic salmon – Recreational in NL Region was not posted online in fiscal 2018/19. Even though this stock is not included in the 2019/20 workplan, it is anticipated the IFMP will be posted online in 2019/20. Departmental officials indicate the IFMP is complete and awaiting approvals (N. Schjott, personal communication, June 25, 2019).
32	Newfoundland and Labrador	Sea scallop – NL Region; Uncertain		✓2018/19	✓2018/19		Updated and posted by end of 2018/19.  Updated and posted by end of 2018/19.		<b>Completed</b>	The IFMP for Scallop - Newfoundland and Labrador Region is now completed and <a href="#">available on the DFO website</a> , with a last modified date on the webpage of April 2, 2019 and containing information up to and including 2019.
33	Newfoundland and Labrador	Sea urchin – NL Region; Uncertain	✓2018/19		✓2018/19		Completed and posted by end of 2018/19.  Completed and posted by end of 2018/19.		<b>Delayed</b>	The new IFMP for Sea Urchin – NL Region was not posted online in fiscal 2018/19. Even though this stock is not included in the 2019/20 workplan, it is anticipated the IFMP will be posted online in 2019/20. Departmental officials indicate the IFMP is complete and awaiting approvals (N. Schjott, personal communication, June 25, 2019).
34	Quebec	Atlantic herring – 4S; Uncertain		✓2018/19	✓2018/19		Updated and posted by end of 2018/19.		<b>Delayed</b>	The updated Atlantic herring – 4S was not posted online in fiscal 2018/19. Even though this stock

#	Region	Stock or stock group and health status zone	New IFMP	IFMP update	IFMP online	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status in 2019	Details
							Updated and posted by end of 2018/19.			is not included in the 2019/20 workplan, it is anticipated the IFMP will be posted online in 2019/20. Departmental officials indicate the IFMP is complete and awaiting approvals (N. Schjott, personal communication, June 25, 2019).
35	Quebec	Snow crab – coastal/inshore QC Region (12A, 12B, 12C, 13, 14, 15, 16, 16A, 17); Uncertain	✓2018/19		✓2018/19		Snow Crab Coastal areas 13 to 17, 12ABC and 16A IFMP will be completed and posted by end of 2018/19.  Snow Crab Inshore (13 to 17, 12 ABC, and 16A) completed and posted by end of 2018/19.		Completed	The Snow Crab - Estuary and Northern Gulf of St. Lawrence Inshore Areas (12A, 12B, 12C, 13, 14, 15, 16, 16A and 17) is now completed and <a href="#">available on the DFO website</a> , with a last modified date on the webpage of June 6, 2019 and containing information up to and including 2019.
36	Newfoundland and Labrador	Whelk – Newfoundland and Labrador Region; Uncertain	✓2019/20		✓2019/20			Will develop IFMP in 2019/20. IFMP will be developed and posted in 2019/20.		
37	Newfoundland and Labrador	Toad and rock crab – Newfoundland and Labrador Region; Uncertain	✓2019/20		✓2019/20			Will develop IFMP in 2019/20. IFMP will be developed and posted in 2019/20.		
38	Maritimes	Gaspereau and blueback herring – Maritimes Region; Cautious†	✓2019/20					Will complete IFMP in 2019/20.		
39	Central and Arctic Region	Bowhead whale – Eastern Canada - West Greenland; Healthy†	✓2019/20					Will complete IFMP in 2019/20.		
40	Maritimes	Atlantic herring – 4WX, 4Vn and 5Z; Cautious, Uncertain		✓2019/20				Will update IFMP in 2019/20.		
41	Maritimes	Lobster – offshore; Healthy		✓2019/20				Will update IFMP in 2019/20. Update to		

#	Region	Stock or stock group and health status zone	New IFMP	IFMP update	IFMP online	2017/18 deliverables	2018/19 deliverables	2019/20 deliverables	Status in 2019	Details
								IFMP, including addition of new reference points and HCRs (developed in 2017 and 2018).		
42	National Capital Region	Seals – Atlantic; <b>Healthy</b> <sup>†</sup>		✓ 2019/20	✓ 2019/20			Will update IFMP in 2019/20. Will update and post IFMP in 2019/20.		
43	National Capital Region	Mackerel – (Atlantic) NAFO 3 and 4; <b>Critical</b>		✓ 2019/20				Will update IFMP in 2019/20. Deliverable previously noted for completion in 2018/19. <sup>148</sup>		
44	Central and Arctic Region	Arctic char – Cambridge Bay; <b>Healthy</b> <sup>†</sup>		✓ 2019/20	✓ 2019/20			Will update existing (2014) IFMP in 2019/20. Will update and post IFMP in 2019/20.		
45	Quebec	Whelk – zones 1–15, except 10; <b>Uncertain</b>			✓ 2019/20			Will complete and post IFMP in 2019/20.		
46	Quebec	Lobster – zone 17; <b>Uncertain</b>			✓ 2019/20			Will complete and post IFMP in 2019/20.		

† denotes status assignments for marine mammals, diadromous fish and freshwater fish using the 2017 Sustainability Survey for Fisheries results.

†† denotes uncertain status assignments when stocks were not included in either the Sustainability Survey for Fisheries dataset or Oceana Canada's Fishery Audit dataset.

<sup>148</sup> Although the 2019/20 workplan has a footnote indicating this deliverable was previously noted for completion in 2018/19, this is not the case. Atlantic mackerel is listed in both 2017/18 and 2018/19 fiscal year workplans, but under workplan 2: fish stock rebuilding plans. The expected date of completion for this rebuilding plan has always been the end of fiscal year 2019/20.