

## Fishery Checklist 2010-2011

The checklist is divided into three sections. Section I contains questions specific to the target stock. Section II contains questions about non-target species and effects on habitats and ecosystems. Section III focuses mainly on management systems. This Checklist is being used to gather information on DFO-managed stocks. The data collected will be housed in a database and used for analyzing trends in fishery resource stewardship and sustainability, creating gap analyses for associated programs and reporting on sustainability.

*Please read “How to Complete a Checklist” and “Fishery Checklist Guidance” before completing this Checklist.*

Stock name		Date (Y/M/D):	
Management zone		Science completed by:	
Species group		FM completed by :	
Science Advisory Report No. (year)		C&P completed by:	
Approx. annual landed tonnage (most recent year)		Additional input from (sector):	
Approx. annual landed value (most recent year)			
<b>Retained bycatch</b> - list ACROSS THEN DOWN - the most significant species caught with this fishery and retained (add quantity if known)			
<b>Discarded bycatch</b> - list ACROSS THEN DOWN - the most significant species caught with this fishery but discarded (add quantity if known)			

### Instructions for completing the checklist

- Each question is marked with “S” (Science), “FM” (Fisheries Management), “C&P” (Conservation and Protection) or a combination of these. While these indicate which group is primarily responsible for this question, **groups are strongly encouraged to fill out the Checklist together.**
- Answer every question **unless** your response to a question stipulates that you skip the next question(s).
- Please do not unlock the template or change it in any way. There is a rationale/comment box at the end of the Checklist where you can provide rationale/notes.
- If your preferred response is not available as an option, please choose the next most appropriate answer. Please do not check more than one response to a question. If necessary, the reasoning for your answer can be provided in the rationale/comment box at the end of the Checklist.
- N/A = “Not applicable”. Please provide an explanation in the rationale/comment box at the end of the Checklist every time that N/A is used to justify selecting this option. Note that most questions are considered to be applicable to most stocks/fisheries.
- Please direct your questions on the checklist to your regional coordinator.
- Questions marked with \* indicate that further explanation is provided in the Guidance Document.

## TARGET SPECIES

### Information / Monitoring

**1(FM)\*** For the purpose of managing this resource (e.g. quota management), how would you qualify the monitoring of removals from the following components of the fishery:

Commercial harvesting?	<input type="checkbox"/> Fully satisfactory	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Insufficient	<input type="checkbox"/> Unable to assess	<input type="checkbox"/> NA
Catches of this stock in other fisheries?	<input type="checkbox"/> Fully satisfactory	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Insufficient	<input type="checkbox"/> Unable to assess	<input type="checkbox"/> NA
Discards of target species?	<input type="checkbox"/> Fully satisfactory	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Insufficient	<input type="checkbox"/> Unable to assess	<input type="checkbox"/> NA
Subsistence/communal harvesting?	<input type="checkbox"/> Fully satisfactory	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Insufficient	<input type="checkbox"/> Unable to assess	<input type="checkbox"/> NA
Bait fisheries?	<input type="checkbox"/> Fully satisfactory	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Insufficient	<input type="checkbox"/> Unable to assess	<input type="checkbox"/> NA
Recreational harvesting?	<input type="checkbox"/> Fully satisfactory	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Insufficient	<input type="checkbox"/> Unable to assess	<input type="checkbox"/> NA

**2 (S/FM)\*** Was the following information evaluated through a formal scientific peer review process?

Stock status	<input type="checkbox"/> Fully	<input type="checkbox"/> Partially	<input type="checkbox"/> Not at all	<input type="checkbox"/> NA
Harvest rate used for management	<input type="checkbox"/> Fully	<input type="checkbox"/> Partially	<input type="checkbox"/> Not at all	<input type="checkbox"/> NA
Impacts/risks of removal levels	<input type="checkbox"/> Fully	<input type="checkbox"/> Partially	<input type="checkbox"/> Not at all	<input type="checkbox"/> NA
Impacts of management measures (e.g. mesh size, fish size, etc.)	<input type="checkbox"/> Fully	<input type="checkbox"/> Partially	<input type="checkbox"/> Not at all	<input type="checkbox"/> NA

**3 (S)\*** Are the following sources of information considered in the assessment of the status of this resource?

Fishery-dependent data (e.g. catch rates)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not Available
Independent surveys by fishermen	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not Available
Dedicated science-run surveys	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not Available
Tagging information	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not Available
Traditional Ecological Knowledge (TEK)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not Available

**4 (S)\*** Are there estimates of annual exploitation/harvest rates for this stock?

☐ Yes, and estimates are absolute    ☐ Yes, and estimates are relative    ☐ No    ☐ NA

**5 (S)\*** In support of this assessment, are there any outstanding issues (or concerns) with respect to **the quality of the data** for the following:

Age determination	<input type="checkbox"/> Major, urgent issues	<input type="checkbox"/> Notable issues	<input type="checkbox"/> Minor issues	<input type="checkbox"/> No issues	<input type="checkbox"/> NA
Size monitoring	<input type="checkbox"/> Major, urgent issues	<input type="checkbox"/> Notable issues	<input type="checkbox"/> Minor issues	<input type="checkbox"/> No issues	<input type="checkbox"/> NA
Research survey	<input type="checkbox"/> Major, urgent issues	<input type="checkbox"/> Notable issues	<input type="checkbox"/> Minor issues	<input type="checkbox"/> No issues	<input type="checkbox"/> NA
Assessment model	<input type="checkbox"/> Major, urgent issues	<input type="checkbox"/> Notable issues	<input type="checkbox"/> Minor issues	<input type="checkbox"/> No issues	<input type="checkbox"/> NA
Harvest rates	<input type="checkbox"/> Major, urgent issues	<input type="checkbox"/> Notable issues	<input type="checkbox"/> Minor issues	<input type="checkbox"/> No issues	<input type="checkbox"/> NA
Tag returns	<input type="checkbox"/> Major, urgent issues	<input type="checkbox"/> Notable issues	<input type="checkbox"/> Minor issues	<input type="checkbox"/> No issues	<input type="checkbox"/> NA
Other issues	<input type="checkbox"/> Major, urgent issues	<input type="checkbox"/> Notable issues	<input type="checkbox"/> Minor issues	<input type="checkbox"/> No issues	<input type="checkbox"/> NA

(e.g. size at sex change; size at terminal moult; etc)

GO TO QUESTION 7 IF ALL ANSWERS TO THE ABOVE QUESTION ARE "MINOR ISSUES", "NO ISSUES" OR "NA".

6 (S)\* If any major or notable issues were identified in the previous question, are they:  
 being addressed through research? ☐ Fully ☐ Partially ☐ Not at all  
 considered in the advice? ☐ Fully ☐ Partially ☐ Not at all  
 (i.e., is risk/uncertainty incorporated in the advice?)

7 (S) Is the science advice for managing the fishery documented through the Canadian Science Advisory Secretariat, or through a formal scientific advisory body (e.g. from an international organization)?  
☐ Yes, and advice is still current (go to question 8)  
☐ Yes, but advice needs updating (go to question 8)  
☐ No (go to question 9)

8 (S) Scientific advice on conservation requirements is:  
☐ widely/publicly available in a timely fashion  
☐ disseminated to interested parties in a timely fashion  
☐ available but not widely distributed

9 (S) To what degree does the current research program cover the knowledge gaps in the following areas?  
 Productivity of target species ☐ Fully satisfactory ☐ Satisfactory ☐ Insufficient  
 Habitat ☐ Fully satisfactory ☐ Satisfactory ☐ Insufficient  
 Ecosystems ☐ Fully satisfactory ☐ Satisfactory ☐ Insufficient

#### Stock Assessment

10 (FM)\*Is the following information sufficiently documented for the following fisheries:

For the **commercial fishery**:

Fishing effort?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Gear types?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Number of active licenses?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Current location of fisheries?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA

For the **recreational fishery**:

Fishing effort?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Gear types?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Number of active licenses?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Current location of fisheries?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA

For the **subsistence fishery**:

Fishing effort?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Gear types?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Number of active licenses?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Current location of fisheries?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA

11 (S)\* For the purpose of assessing the status of this resource or the impact of this fishery, how would you qualify the monitoring of removals from the following components of this fishery:

Commercial harvesting?	<input type="checkbox"/> Fully satisfactory	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Insufficient	<input type="checkbox"/> Unable to assess	<input type="checkbox"/> NA
Catches of this stock in other fisheries?	<input type="checkbox"/> Fully satisfactory	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Insufficient	<input type="checkbox"/> Unable to assess	<input type="checkbox"/> NA
Discards of target species?	<input type="checkbox"/> Fully satisfactory	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Insufficient	<input type="checkbox"/> Unable to assess	<input type="checkbox"/> NA
Subsistence/communal harvesting?	<input type="checkbox"/> Fully satisfactory	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Insufficient	<input type="checkbox"/> Unable to assess	<input type="checkbox"/> NA
Bait fisheries?	<input type="checkbox"/> Fully satisfactory	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Insufficient	<input type="checkbox"/> Unable to assess	<input type="checkbox"/> NA
Recreational harvesting?	<input type="checkbox"/> Fully satisfactory	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Insufficient	<input type="checkbox"/> Unable to assess	<input type="checkbox"/> NA

12 (S)\* How would you qualify the state of knowledge of the following biological characteristics of the stock:

Size at maturity?	<input type="checkbox"/> Fully satisfactory	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Insufficient
Fecundity?	<input type="checkbox"/> Fully satisfactory	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Insufficient
Growth?	<input type="checkbox"/> Fully satisfactory	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Insufficient
Spawning season?	<input type="checkbox"/> Fully satisfactory	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Insufficient
Location of spawning areas?	<input type="checkbox"/> Fully satisfactory	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Insufficient
Location of nursery areas?	<input type="checkbox"/> Fully satisfactory	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Insufficient
Seasonal migrations?	<input type="checkbox"/> Fully satisfactory	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Insufficient
Population/stock structure?	<input type="checkbox"/> Fully satisfactory	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Insufficient

13 (S)\* Are estimates available for:

Stock size?	<input type="checkbox"/> Yes, and estimates are absolute	<input type="checkbox"/> Yes, and estimates are relative	<input type="checkbox"/> No
Spawning stock?	<input type="checkbox"/> Yes, and estimates are absolute	<input type="checkbox"/> Yes, and estimates are relative	<input type="checkbox"/> No
Recruitment?	<input type="checkbox"/> Yes, and estimates are absolute	<input type="checkbox"/> Yes, and estimates are relative	<input type="checkbox"/> No

14 (S) Are there measures of precision for:

Stock size estimates?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Spawning stock estimates?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA
Recruitment estimates?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA

15 (S)\* Has there been an evaluation of the assessment framework for this stock (with a look at alternative hypotheses and approaches?)

☐ Yes (go to question 16) ☐ No (go to question 17)

16 (S)\* Has the assessment been shown to be robust?

☐ Yes ☐ No

### Reference Points

17 (S)\* Have the following stock status reference points (expressed in terms of biomass or other metrics) been identified for this stock:

Upper Stock Reference (point where stock enters the healthy zone)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Limit Reference Point (point below which serious harm is occurring)	<input type="checkbox"/> Yes	<input type="checkbox"/> No (go to question 20)

18 (S) Was the Limit Reference Point evaluated through a formal scientific peer review process?

☐ Fully ☐ Partially ☐ Not at all

19 (S) If limit reference points have been established:

the relationship of the stock status reference points to impaired reproductive capacity is  
the metric used to establish impaired reproductive capacity is based on

☐ assumed ☐ demonstrated  
☐ spawning biomass ☐ other metric

#### Harvest Strategy

20 (S)\* Have removal reference levels been identified for when the stock is in the:

Critical Zone	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Cautious Zone	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Healthy Zone	<input type="checkbox"/> Yes	<input type="checkbox"/> No

21 (S)\* What is the harvest rate (or harvest level) in relation to the removal reference (or the maximum acceptable removal rate or level for the stock)?

☐ Harvest rate above removal reference for zone occupied ☐ Harvest rate at or below removal reference for zone occupied ☐ Unknown

22 (FM) When there is increased uncertainty of stock size estimates, management actions are: ☐ More cautious ☐ Unchanged ☐ Less cautious

#### Harvest Control Rules and Tools

23 (S/FM)\* For this stock, harvest rules/decision rules which aim to control exploitation:

☐ have not been developed (go to question 27)  
☐ are in place but are informal and may not be compliant with the precautionary approach  
☐ are well-defined and compliant with the precautionary approach

24 (S/FM) Do these harvest rules imply that the reference removal rate is reduced (as a function of stock abundance) when the stock shows evidence of decline but not yet depleted (i.e. is in the Cautious Zone)? ☐ Yes ☐ No

25 (S/FM)\* When the stock shows evidence of depletion (i.e. in the Critical Zone), do these harvest rules imply that stock growth is promoted by keeping catches to the lowest possible level until the stock has shown evidence of rebuilding (i.e. has cleared the Critical Zone)? ☐ Yes ☐ No

26 (S/FM)\* How effective is the harvest rule in reducing exploitation as the limit reference point is approached?

☐ Very effective ☐ Somewhat effective ☐ Not effective

27 (FM)\* How would you qualify the effectiveness of the following management tools in promoting sustainability of the fishery?

TAC (escapement based or harvest rate based)

☐ Not used/NA ☐ Proven effective ☐ Believed effective ☐ Ineffective ☐ Effectiveness unknown

Individual quotas or individual transferable quotas

☐ Not used/NA ☐ Proven effective ☐ Believed effective ☐ Ineffective ☐ Effectiveness unknown

Measures to control competitive fisheries

☐ Not used /NA ☐ Proven effective ☐ Believed effective ☐ Ineffective ☐ Effectiveness unknown

Effort control (number of licenses, amount of gear, etc.)

☐ Not used/NA ☐ Proven effective ☐ Believed effective ☐ Ineffective ☐ Effectiveness unknown

Time and area closures

☐ Not used/NA ☐ Proven effective ☐ Believed effective ☐ Ineffective ☐ Effectiveness unknown

Gear selectivity

☐ Not used/NA ☐ Proven effective ☐ Believed effective ☐ Ineffective ☐ Effectiveness unknown

Size limits

☐ Not used/NA ☐ Proven effective ☐ Believed effective ☐ Ineffective ☐ Effectiveness unknown

### Stock Status and Rebuilding

28 (S)\* What is the status of this stock?

Critical (*serious harm likely*)

☐

Cautious (*serious harm possible*)

☐

Healthy (*serious harm unlikely*)

☐

Unknown

☐ (If «Unknown », go to question 34)

29 (S) Is your evaluation of stock status based on a quantitative assessment or is it based on a qualitative appreciation of what the situation is?

☐ Quantitative

☐ Best Appreciation

30 (S) If this stock is low in the **Cautious Zone**, has a rebuilding plan been developed?

☐ Yes

☐ No

☐ NA

31 (S) If this stock is in the **Critical Zone**, has a rebuilding plan been implemented?

☐ Yes

☐ No (go to question 33)

☐ NA (go to question 33)

32 (S)\* How likely is the rebuilding plan to successfully rebuild the species/stock within a reasonable time frame?

☐ Highly likely

☐ Likely with evidence

☐ Likely

☐ Possible

☐ Unlikely

33 (S) Is the advice formulated in relation to a formal Precautionary Approach framework?

☐ Yes

☐ No

**34 (S)** Are there provisions in the fishing plan for maintaining the distribution or sub-population structure (could include spawning aggregations) of the stock being fished?

☐ Yes ☐ No

**35 (S)** What is the likelihood that fishing at current levels will seriously harm reproductive capacity by disrupting the following population processes or biological characteristics?

Migration	<input type="checkbox"/> Likely	<input type="checkbox"/> Possible	<input type="checkbox"/> Unlikely	<input type="checkbox"/> Evidence of unlikely	<input type="checkbox"/> Unknown
Spawning or reproductive activities	<input type="checkbox"/> Likely	<input type="checkbox"/> Possible	<input type="checkbox"/> Unlikely	<input type="checkbox"/> Evidence of unlikely	<input type="checkbox"/> Unknown
Age composition	<input type="checkbox"/> Likely	<input type="checkbox"/> Possible	<input type="checkbox"/> Unlikely	<input type="checkbox"/> Evidence of unlikely	<input type="checkbox"/> Unknown
Sex composition	<input type="checkbox"/> Likely	<input type="checkbox"/> Possible	<input type="checkbox"/> Unlikely	<input type="checkbox"/> Evidence of unlikely	<input type="checkbox"/> Unknown
Spawning components	<input type="checkbox"/> Likely	<input type="checkbox"/> Possible	<input type="checkbox"/> Unlikely	<input type="checkbox"/> Evidence of unlikely	<input type="checkbox"/> Unknown
Genetic diversity	<input type="checkbox"/> Likely	<input type="checkbox"/> Possible	<input type="checkbox"/> Unlikely	<input type="checkbox"/> Evidence of unlikely	<input type="checkbox"/> Unknown

## BYCATCH - RETAINED SPECIES

**Retained Bycatch:** corresponds to species retained for commercial purposes that are not the initial targeted species (i.e., the subject of this checklist).

**36 (FM)** Is there retained bycatch (of species for which there is no separate checklist) in this fishery? ☐ Yes ☐ No (go to question 42)

Only fisheries with retained bycatch AND for which there is no separate checklist should answer the remaining questions in this section. As authorization is required to retain bycatch, most species retained for commercial purposes should have their own separate checklists. Refer to the master list to find out which retained bycatch species have its own checklist. However, in the "Retained Bycatch" box on Page 1 of this document, identify all the other species or stocks caught with the target species whether or not they have their own checklist.

**37 (FM)** How would you qualify the monitoring of retained bycatch? ☐ Complete ☐ Partial ☐ Marginal ☐ None

**38 (FM)** Are the following measures in place to manage the retained bycatch?

Bycatch limits	<input type="checkbox"/> for all species	<input type="checkbox"/> for most species	<input type="checkbox"/> for some species	<input type="checkbox"/> for no species
Monitoring through observers	<input type="checkbox"/> for all fleets	<input type="checkbox"/> for most fleets	<input type="checkbox"/> for some fleets	<input type="checkbox"/> for no fleets
Monitoring through logbooks	<input type="checkbox"/> for all fleets	<input type="checkbox"/> for most fleets	<input type="checkbox"/> for some fleets	<input type="checkbox"/> for no fleets
Quota trading system	<input type="checkbox"/> for all fleets	<input type="checkbox"/> for most fleets	<input type="checkbox"/> for some fleets	<input type="checkbox"/> for no fleets
Gear selectivity measures	<input type="checkbox"/> for all fleets	<input type="checkbox"/> for most fleets	<input type="checkbox"/> for some fleets	<input type="checkbox"/> for no fleets
Season/Area closures	<input type="checkbox"/> for all fleets	<input type="checkbox"/> for most fleets	<input type="checkbox"/> for some fleets	<input type="checkbox"/> for no fleets
Fishing protocols based on maximum discard limit	<input type="checkbox"/> for all fleets	<input type="checkbox"/> for most fleets	<input type="checkbox"/> for some fleets	<input type="checkbox"/> for no fleets

**39 (FM)** A comprehensive harvest strategy on retained bycatch is in place for:  
☐ all species ☐ most species ☐ some species ☐ no species

**40 (FM)** The comprehensive harvest strategy on retained bycatch is documented in an Integrated Fisheries Management Plan or fishing plan for:  
☐ all species ☐ most species ☐ some species ☐ no species

**41 (S)\*** How would you qualify the chances of this fishery causing serious or irreversible harm to any species in the retained bycatch?  
☐ Negligible ☐ Very low ☐ Low ☐ Medium/high ☐ Unknown

## BYCATCH - DISCARDED

**Discarded Non-target Bycatch:** Answer the following questions for non-target species only. The following section will address discards of the target species.

**42 (FM)** Are there discards of other species in this fishery?  
☐ Yes (go to question 43) ☐ No (go to question 48) ☐ Unknown (go to question 48)

**43 (FM)** How would you qualify the monitoring of these discards? ☐ Complete ☐ Partial ☐ Marginal ☐ None ☐ Unknown



44 (FM) Has scientific advice been provided to assess the impact of discards of other species in this fishery? ☐ Yes ☐ No

45 (FM) Are there measures in place for the explicit purpose of managing discards, such as:

Discards monitored through observers?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Discards monitored through logbooks?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Quota trading system?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Gear selectivity measures?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Season/Area closures?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Fishing protocols based on maximum discard limit?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Other measures (such as avoidance strategies)?	<input type="checkbox"/> Yes	<input type="checkbox"/> No

46 (FM) What is the likelihood that the discarded catch survives when returned to the water? ☐ Good ☐ Fair ☐ Poor / Nil

47 (S)\* How would you qualify the chances of this fishery causing serious or irreversible harm to any species in the discarded bycatch?  
☐ Negligible ☐ Very low ☐ Low ☐ Medium-high ☐ Unknown

**Discarded Target Bycatch:** Answer the following questions for discards of the target species only, ( i.e., the species which is the subject of this checklist.)

48 (FM) Are there discards of the target species in this fishery?

Small or young fish?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unknown
Large or old fish (i.e., crab)?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unknown
Other?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unknown

IF NO TO ALL IN QUESTION 48, GO TO "BYCATCH – ENDANGERED, THREATENED OR SPECIES OF SPECIAL CONCERN" (question 53).

49 (FM) How would you qualify the monitoring of these discards? ☐ Complete ☐ Partial ☐ Marginal ☐ None ☐ Unknown

50 (FM) Has scientific advice been provided to assess the impact of target species discards on this fishery? ☐ Yes ☐ No

51 (FM)\* Are there measures in place for the explicit purpose of managing target species discards, such as:

Discards monitored through observers?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Gear selectivity measures?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Season/Area closures?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Small fish protocols?	<input type="checkbox"/> Yes	<input type="checkbox"/> No

52 (FM) What is the likelihood that the discarded catch survives when returned to the water? ☐ Good ☐ Fair ☐ Poor / Nil

#### **BYCATCH – ENDANGERED, THREATENED, OR SPECIES OF SPECIAL CONCERN**

53 (FM) Do any species captured in the context of this fishery correspond to one of the following situations?

Subject to a moratorium	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Currently assessed by COSEWIC as endangered, threatened or special concern	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Listed under the Convention on International Trade of Endangered Species (CITES)	<input type="checkbox"/> Yes	<input type="checkbox"/> No

**54 (FM)** Is there bycatch of Species-at-Risk (listed under SARA as endangered, threatened or special concern) in this fishery?

- ☐ Yes (go to 55)  
☐ No (go to 57)  
☐ Unknown (go to 57)

**55 (FM)** Is the bycatch of Species-at-Risk (under SARA) monitored for all such species?

☐ Yes ☐ No

**56 (FM)** The fishery is operating within the bounds of SARA requirements for:

☐ all SARA species ☐ some SARA species ☐ none of the SARA species

## **HABITAT**

### **Benthic Habitat**

**57(FM)\*** In this fishery, does gear contact the bottom?

☐ Yes ☐ No (go to 65)

**58 (FM)\*** Is there a strategy in place consistent with the Sensitive Benthic Areas policy to ensure that the fishery does not pose a risk of serious or irreversible harm to sensitive benthic areas within the geographic extent of this fishery?

☐ Yes ☐ No

**59 (FM)** Has the location of fishing activity been mapped?

☐ Fully ☐ Partially ☐ Marginally / Not at all

**60 (FM)** Have sensitive benthic areas been mapped?

☐ Fully ☐ Partially ☐ Marginally / Not at all

**61 (FM)** Has a risk assessment been conducted?

☐ Fully ☐ Partially ☐ Marginally / Not at all (go to 63)

**62 (S)** How likely is it that this fishery is causing serious or irreversible harm to sensitive benthic habitat, communities or species?

☐ Evidence of unlikely ☐ Unlikely ☐ Possibly ☐ Unknown

**63 (FM)** Are there specific management measures in place to mitigate the impact of the fishery on sensitive benthic areas (i.e., closures under the Fisheries Act or other management measures)?

☐ Fully ☐ Partially ☐ Marginally / Not at all (go to 65)

**64 (FM)** Are the measures monitored to see if they are meeting objectives?

☐ Fully ☐ Partially ☐ Marginally / Not at all

### **Habitats of Significance (non-benthic)**

**65 (FM)\*** Is there a process in place to identify *non-benthic* habitats of significance (such as spawning areas, nursing areas, overwintering areas and migration routes) to this stock within the geographic extent of the fishery?

☐ Yes (go to 66) ☐ No (go to 70)

**66 (FM)\*** Are there non-benthic habitats of particular significance to the stock within the geographic extent of the fishery?

☐ Yes (go to 67) ☐ No (go to 70) ☐ Unknown (go to 70)

- 67 (FM)\* Is there a strategy in place to ensure that the fishery does not pose a risk of serious or irreversible harm to habitats of significance to the stock? ☐ Yes ☐ No
- 68 (FM)\* Are there specific measures (i.e., closures) to mitigate the impact of the fishery on these habitats? ☐ Yes ☐ No (go to 70)
- 69 (FM)\* Are the fishery operations adhering to these measures? ☐ Yes ☐ Partially ☐ No
- 70 (FM/S)\* How likely is it that this fishery is causing serious or irreversible harm to *non-benthic* (spawning areas, migration routes) habitats of significance to the stock?  
☐ Evidence of unlikely ☐ Unlikely ☐ Possibly ☐ Unknown
- 71 (FM)\* Are there Marine Protected Areas (MPAs), National Marine Conservation Areas (NMCAs) or Marine Parks within the geographic extent of the fishery?  
☐ Yes (go to 72) ☐ No (go to 73) ☐ Unknown (go to 73)
- 72 (FM) Are the fishery operations consistent with the conservation framework established for these MPAs, NMCAs and/or Marine Parks?  
☐ Yes ☐ Partially ☐ No

## ECOSYSTEMS

- 73 (S) Are the following elements sufficiently understood to provide advice on their impacts on population dynamics of the target species?
- |   |                              |                                    |                             |
|---|------------------------------|------------------------------------|-----------------------------|
| Physical conditions                                 |                              |                                    |                             |
| Of habitat or seafloor structure                    | <input type="checkbox"/> Yes | <input type="checkbox"/> Partially | <input type="checkbox"/> No |
| Of water properties (temperature, salinity, etc.)   | <input type="checkbox"/> Yes | <input type="checkbox"/> Partially | <input type="checkbox"/> No |
| Biological components                               |                              |                                    |                             |
| Primary productivity                                | <input type="checkbox"/> Yes | <input type="checkbox"/> Partially | <input type="checkbox"/> No |
| Secondary productivity                              | <input type="checkbox"/> Yes | <input type="checkbox"/> Partially | <input type="checkbox"/> No |
| Species interactions                                |                              |                                    |                             |
| Predator/prey interactions                          | <input type="checkbox"/> Yes | <input type="checkbox"/> Partially | <input type="checkbox"/> No |
| Environmental changes arising from human activities | <input type="checkbox"/> Yes | <input type="checkbox"/> Partially | <input type="checkbox"/> No |
| The role of the target species in the ecosystem     | <input type="checkbox"/> Yes | <input type="checkbox"/> Partially | <input type="checkbox"/> No |
- 74 (FM)\* Has advice on the following been taken into account in establishing TACs or other management controls:
- |                           |                              |                             |
|---------------------------|------------------------------|-----------------------------|
| Oceanographic conditions? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Freshwater conditions?    | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
- 75 (FM)\* Is there an incidence of lost gear in this fishery? ☐ Yes ☐ No (see guidance) ☐ Unknown (go to 80)
- 76 (S/FM) Has the loss of fishing gear been quantified? ☐ Yes ☐ Partially ☐ No
- 77 (S/FM) Has the impact of the loss of fishing gear been studied? ☐ Yes ☐ Partially ☐ No
- 78 (S/FM)\* The occurrence of lost gear is considered to be:  
☐ Significant ☐ Moderate ☐ Negligible ☐ Unknown

79 (S/FM)\* The impact of lost gear on biodiversity (ghost fishing) is considered to be:

☐ Significant ☐ Moderate ☐ Negligible ☐ Unknown

80 (S/FM)\* Do the fishing practices and management measures minimize the loss of fishing gear? ☐ Yes ☐ Partially ☐ No

81 (S/FM)\* Are there effective measures in place to mitigate the impact of lost gear (e.g. biodegradable components, programs for recovery of lost gear)?

☐ Yes ☐ Partially ☐ No

82 (S) How likely is it that the fishery is causing serious or irreversible harm to the ecosystem structure and function?

☐ Evidence of Unlikely ☐ Unlikely ☐ Possible ☐ Likely ☐ Unknown

83 (FM) Are there measures in place to ensure that the fishery does not cause serious or irreversible harm to the ecosystem structure and function?

☐ Yes ☐ Partially ☐ No

84 (S/FM) How would you qualify the chances of this fishery causing serious or irreversible harm to the following non-target species groups:

fish species?	<input type="checkbox"/> Negligible	<input type="checkbox"/> Unlikely	<input type="checkbox"/> Possible	<input type="checkbox"/> Likely	<input type="checkbox"/> Unknown
invertebrate species?	<input type="checkbox"/> Negligible	<input type="checkbox"/> Unlikely	<input type="checkbox"/> Possible	<input type="checkbox"/> Likely	<input type="checkbox"/> Unknown
corals?	<input type="checkbox"/> Negligible	<input type="checkbox"/> Unlikely	<input type="checkbox"/> Possible	<input type="checkbox"/> Likely	<input type="checkbox"/> Unknown
marine mammals?	<input type="checkbox"/> Negligible	<input type="checkbox"/> Unlikely	<input type="checkbox"/> Possible	<input type="checkbox"/> Likely	<input type="checkbox"/> Unknown
sea turtles?	<input type="checkbox"/> Negligible	<input type="checkbox"/> Unlikely	<input type="checkbox"/> Possible	<input type="checkbox"/> Likely	<input type="checkbox"/> Unknown
sea birds?	<input type="checkbox"/> Negligible	<input type="checkbox"/> Unlikely	<input type="checkbox"/> Possible	<input type="checkbox"/> Likely	<input type="checkbox"/> Unknown

## GOVERNANCE, POLICY AND FISHERY-SPECIFIC MANAGEMENT SYSTEMS

85 (FM) Is the directed fishery on this stock currently under moratorium or closed? ☐ Yes ☐ No

86 (FM)\* Are the management decisions related to conservation objectives (e.g. harvest controls, escapement and effort controls) and their rationale clearly documented?

☐ Yes ☐ No (go to 88)

87 (FM)\* Are these decisions and their rationale made available publicly?

☐ Yes ☐ No

88 (FM)\* Is there an Integrated Fisheries Management Plan (IFMP)?

☐ Yes, current using new template (go to 90) ☐ Yes, current using old template (go to 90) ☐ Yes, but out-of-date (go to 90) ☐ No (go to 89)

89 (FM) Is there a harvest plan in place (i.e., Conservation Harvesting Plans, fishing plans within an IFMP, or fishing plans not associated with an IFMP)?

☐ Yes, current (go to 90) ☐ Yes, but out-of-date (go to 90) ☐ No (go to 94)

90 (FM)\* Is the IFMP or harvest plan widely available and easily accessible?

☐ Yes ☐ No

- 91 (FM)** Does the IFMP or harvest plan:  
 Identify clear short- and long- term objectives:
- |  |                              |                             |
|--|------------------------------|-----------------------------|
| For target species?  | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| For by-catch species?  | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| For sensitive areas/habitat within the geographic extent of the fishery? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| For monitoring and stock assessment requirements?                        | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| For ecosystem structure and function                                     | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
- Include concrete measurements of the degree to which these objectives are met:
- |  |                              |                             |
|--|------------------------------|-----------------------------|
| For target species?  | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| For by-catch species?  | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| For sensitive areas/habitat within the geographic extent of the fishery? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
- Incorporate a research plan with information needs:
- |  |                              |                             |
|--|------------------------------|-----------------------------|
| For target species?  | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| For by-catch species?  | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| For sensitive areas/habitat within the geographic extent of the fishery? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Reference Traditional Ecological Knowledge?                              | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
- Explicitly reference the science advice:
- |  |                              |                             |
|--|------------------------------|-----------------------------|
| For target species?  | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| For by-catch species?  | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| For sensitive areas/habitat within the geographic extent of the fishery? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
- 92 (FM)** Are there outstanding allocation issues that significantly impede our ability to implement the IFMP or harvest plan? ☐ Yes ☐ No
- 93 (FM)** Is there an annual process to review the performance of this plan, i.e., to assess management measures against objectives? ☐ Yes ☐ No
- 94 (FM)** Do stakeholders have an opportunity to play a role in:
- |  |                              |                                    |                             |
|--|------------------------------|------------------------------------|-----------------------------|
| The collection of information on the fishery (landing, bycatch, discard) | <input type="checkbox"/> Yes | <input type="checkbox"/> Partially | <input type="checkbox"/> No |
| Decision making  | <input type="checkbox"/> Yes | <input type="checkbox"/> Partially | <input type="checkbox"/> No |
| Stock assessment process   | <input type="checkbox"/> Yes | <input type="checkbox"/> Partially | <input type="checkbox"/> No |
- 95 (FM)** Do stakeholders actively participate in:
- |  |                              |                                    |                             |
|--|------------------------------|------------------------------------|-----------------------------|
| The collection of information on the fishery (landing, bycatch, discard) | <input type="checkbox"/> Yes | <input type="checkbox"/> Partially | <input type="checkbox"/> No |
| Decision making  | <input type="checkbox"/> Yes | <input type="checkbox"/> Partially | <input type="checkbox"/> No |
| Stock assessment process   | <input type="checkbox"/> Yes | <input type="checkbox"/> Partially | <input type="checkbox"/> No |

**96 (FM)\*** How would you qualify the engagement of the following groups in the development of the IFMP or harvest plan?

Aboriginal groups?	<input type="checkbox"/> Formal / planned	<input type="checkbox"/> As needed	<input type="checkbox"/> Rare	<input type="checkbox"/> NA
Commercial sector?	<input type="checkbox"/> Formal / planned	<input type="checkbox"/> As needed	<input type="checkbox"/> Rare	<input type="checkbox"/> NA
Recreational sector?	<input type="checkbox"/> Formal / planned	<input type="checkbox"/> As needed	<input type="checkbox"/> Rare	<input type="checkbox"/> NA
Environmental NGOs?	<input type="checkbox"/> Formal / planned	<input type="checkbox"/> As needed	<input type="checkbox"/> Rare	<input type="checkbox"/> NA
Other NGOs?	<input type="checkbox"/> Formal / planned	<input type="checkbox"/> As needed	<input type="checkbox"/> Rare	<input type="checkbox"/> NA
Local communities?	<input type="checkbox"/> Formal / planned	<input type="checkbox"/> As needed	<input type="checkbox"/> Rare	<input type="checkbox"/> NA
Processing sector?	<input type="checkbox"/> Formal / planned	<input type="checkbox"/> As needed	<input type="checkbox"/> Rare	<input type="checkbox"/> NA
Wildlife Management Boards?	<input type="checkbox"/> Formal / planned	<input type="checkbox"/> As needed	<input type="checkbox"/> Rare	<input type="checkbox"/> NA
General public?	<input type="checkbox"/> Formal / planned	<input type="checkbox"/> As needed	<input type="checkbox"/> Rare	<input type="checkbox"/> NA
Fish farmers / aquaculture?	<input type="checkbox"/> Formal / planned	<input type="checkbox"/> As needed	<input type="checkbox"/> Rare	<input type="checkbox"/> NA
Other users?	<input type="checkbox"/> Formal / planned	<input type="checkbox"/> As needed	<input type="checkbox"/> Rare	<input type="checkbox"/> NA
Provincial/Territorial governments?	<input type="checkbox"/> Formal / planned	<input type="checkbox"/> As needed	<input type="checkbox"/> Rare	<input type="checkbox"/> NA
Other federal departments?	<input type="checkbox"/> Formal / planned	<input type="checkbox"/> As needed	<input type="checkbox"/> Rare	<input type="checkbox"/> NA

**97 (FM)\*** Is there a process in place to evaluate the performance of the formal engagement with stakeholders?

☐ Yes ☐ No

## COMPLIANCE AND ENFORCEMENT

This section should be completed by C&P, in consultation with FM. Please refer to the Guidance document for explanation for each question. For C&P responses, a scale from 0 – 10 is provided where 0 is the most negative response and 10 is the most positive.

**98 (C&P)\*** To what extent has a risk-based compliance management plan been developed for this fishery?

0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ NA ☐

**99 (C&P)\*** How would you rate the C&P education and engagement activities aimed at increasing the level of understanding and buy-in in this fishery?

0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ NA ☐

**100 (C&P)\*** How would you rate the effectiveness of the following controls in the fishery:

At Sea or Field Observers	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>	9 <input type="checkbox"/>	10 <input type="checkbox"/>	NA <input type="checkbox"/>
Dockside Monitoring	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>	9 <input type="checkbox"/>	10 <input type="checkbox"/>	NA <input type="checkbox"/>
Mandatory Logbooks	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>	9 <input type="checkbox"/>	10 <input type="checkbox"/>	NA <input type="checkbox"/>
Hailing in	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>	9 <input type="checkbox"/>	10 <input type="checkbox"/>	NA <input type="checkbox"/>
Hailing out	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>	9 <input type="checkbox"/>	10 <input type="checkbox"/>	NA <input type="checkbox"/>
VMS (Vessel Monitoring System)	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>	9 <input type="checkbox"/>	10 <input type="checkbox"/>	NA <input type="checkbox"/>
Video Monitoring	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>	9 <input type="checkbox"/>	10 <input type="checkbox"/>	NA <input type="checkbox"/>
Other (please specify in comments section)	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>	9 <input type="checkbox"/>	10 <input type="checkbox"/>	NA <input type="checkbox"/>

**101 (C&P)\*** What is the current level of coverage by Fishery Officers in the following three categories?

**Air surveillance** 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ NA ☐

**At-Sea surveillance** (program vessels and CCG ships) 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ NA ☐

**Land Based surveillance** (dockside or other) 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ NA ☐

**102 (C&P)\*** To what extent are enforcement actions taken when violations are detected?  
0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ NA ☐

**103 (C&P)\*** To what extent are deterrents (sanctions) effective at dealing with non-compliance in this fishery?  
0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ NA ☐

**104 (C&P)\*** What is the level of compliance with regulations, license conditions and management measures in this fishery?  
0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ NA ☐

**105 (C&P)\*** Are there processes in place to detect and/or measure unreported/misreported catches for this fishery?  
0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ NA ☐

**106 (C&P)\*** To what extent is the level of unreported/misreported catches in this fishery considered to be significant?  
0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐ NA ☐

Comments or rationale related to any of the compliance and enforcement questions above.

**RATIONALE/COMMENT BOX:** Please provide rationale and comments in the field provided below, clearly indicating the question to which the comment refers.