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**GULF GROUND FISH ADVISORY COMMITTEE MEETING**  
**March 24 & 25, 2015**  
**Future Inns, Moncton, NB**

**RECORD OF PROCEEDINGS**

**Canada** 

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# 2015 Gulf Groundfish Advisory Committee Meeting

## March 24 & 25, 2015, Moncton (NB) Record of Proceedings

(See Annex I for list of people present and Annex II for the list of acronyms)

### INTRODUCTION

Frank Quinn, Director, Resource Management in the Gulf Region says a few words of introduction. He notes that there will be little time for debate, although comments from the table will be noted and reported.

A DFO representative notes a few minor changes on the tentative agenda and asks if there are any suggestions from members around the table. An industry member asks that the minutes from the meeting be sent faster after the meeting than the last time or recent years. Comment gets support from the table. Meeting chair indicates that DFO will send the minutes to members for review 30 days after the meeting.

### SUMMARY REPORT FROM 2013 GGAC MEETING

In 2013, as part of the multi-year management approach, this committee discussed TAC and management measures for Northern Gulf Cod, Atlantic Halibut, Greenland Halibut and Redfish. Following the 2013 meeting, ministerial decisions were announced, such as an increase in the Atlantic halibut TAC, status quo in the Northern Gulf cod TAC and Redfish Unit 1, and a decision on the progressive re-entry of mobile gear fleets in the Greenland halibut fishery when the 4RST TAC will be higher than 4,500 tons.

DFO also provided some updates on changes in the services and licences delivery, the at-sea observers program, and logbooks. We also discussed the status of the process regarding the possible listing of cod, redfish and American plaice in the Gulf of St. Lawrence on Schedule 1 of the *Species At Risk Act* (SARA).

No comments from the table on the 2013 summary report.

### MULTI-YEAR MANAGEMENT UPDATE

As part of the multi-year approach, species on the agenda are Northern and Southern Gulf cod, Atlantic and Greenland halibuts, and redfish. Scientific update will be provided for other species for which a TAC decision is not required this year, but that are still being monitored during the 'interim years'. A summary table for the multi-year approach is available at the end of these meeting minutes (Annex III)

There will be consultations with industry by other means than a meeting in person to address species like American plaice and yellowtail flounder, for which a TAC decision will be needed in 2016.

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### Feedback from members

A member asked that because of the impact on the shrimp fishery, will there be a special meeting on redfish? Another member indicates that as shrimp harvesters, they would like to be a member of the working group. An industry member makes a comment on the redfish fishing and the closed areas. He mentions the need to give back access to traditional fishing areas in order to have more information.

### Comments from DFO

There will be a working group meeting concerning this species.

The DFO representative also indicates that there will be discussions on these topics during the discussion on redfish planned at the agenda.

### **GGAC TERMS OF REFERENCE**

The chair gives a brief explanation of the issue related to membership and terms of reference of the GGAC: In February, DFO contacted the members of this table to ask if they supported a request for a New Brunswick organization with observer status to become a full member. But, several members of the advisory committee did not simply answer the question on the request for membership. Some came back with very strong opinions on the way the membership of this committee is organized. The chair asks for feedback around the table on this issue, in order to determine if the committee desires to work on this question, i.e. by reviewing the membership rules, or Terms of reference, through a working group or some other mechanism.

### Feedback from members

<b>Member</b>	<b>Comments</b>
Province of NB	We should establish a policy about managing advisory committees in a consistent manner. There should be a forum to allow everybody discuss issues (including non-members), suggests that a forum be organized a day in advance of the meeting in order to let everyone express their concerns even if they are not at the table.
RPPSG	Difficult to allow small groups to have access to the advisory committees, especially since DFO asked groups to regroup in order to participate to the committee. If we go and allow smaller groups to be represented at the table, requests will multiply and sub-organizations will start emerging. There is room for organizations to affiliate to other groups and be represented.
GNSFC	Things have changed. Suggest the forming of a working group to study this to study the subject of memberships in depth: who should be here, who should not... what are the accreditation processes in each province, etc.

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Member	Comments
ACPG	Supports a revision of the terms of reference, in order to see who represents what, following all the rationalizations.
APPFA	There should be some more sectorial consultations to start. The problem is that industry sectors have trouble reaching consensus. Regrets that at the regional level, there is no discussion prior to the meeting, everyone comes with their own agenda, and this is not productive. DFO should encourage discussions pre-committee.
Association des pêcheurs de la MRC Pabok	The DFO evolved and made a lot of changes since the first moratorium. DFO excluded some fish harvesters from certain fisheries, and some rationalizations took place, some fisheries were bycatch fisheries, and became directed fisheries, certain groups have less importance in some fisheries. But also, history should be considered as well.
ACPG	A lot of changes took place in the groundfish fisheries. But nobody with an access to the fishery should be excluded. Maybe there should be a representation relative (prorata) to the level of access to the fisheries. If not, there will be a multiplication of people around the table.
PEIGA	We all have a vested interest around this table. Let's straighten things, let's put the time for this.
FFAW	Not sure a review wouldn't be a zero-some gain. Fears that the table is going to be too small for all the interests that want to participate. Not sure changing the ToR will be easy task, or will be a satisfying exercise. If you change the ToR, we want to be part of the discussion.
North of Smokey Fishermen's Association	If you review the committee ToR, make sure all areas and all fleets and gear types are covered. Do not want to leave out a bunch of fishers out.
PEIFA	If you do a review of ToR, people around the table should be proportional to the number of people they represent.
FRAPP	If there is a review of ToR, we want to make sure shrimpers and crabbers are represented, as they also have groundfish licences historically speaking, and all adv committees did a review, maybe it is time for this committee to do it. We want to make sure to continue being represented.

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## SPECIES AT RISK UPDATE

DFO Gulf Region gives an update on the species at risk files regarding groundfish:

- Public consultations for all groundfish (Atlantic Cod, American Plaice and Redfish) were carried out from November 2013 to May 2014 in Gulf, Maritimes, Québec and Newfoundland Regions. The voice of industry was heard during these consultations, as well as through the consultation books. A listing recommendation for each species is pending (no decision has been made yet). The Minister of DFO will advise the Minister of Environment (who has the overall responsibility of administering the Act) on making a recommendation to the Governor in Council as to whether or not a species should be added to the List of Wildlife Species at Risk. Next steps include the publication of the listing recommendation in the Canada Gazette I which is anticipated in the spring of 2016. There will be another 30 day consultation period at that time to express concerns. The final decision made by the Governor in Council will be published in the Canada Gazette II.

### Feedback from members

Members from the industry have concerns the redfish is becoming more abundant which is becoming a problem in shrimp fishery for example and the process should be stopped. It was also mentioned the socio-economic report used references years starting in 2008, but these are moratorium years, so the report doesn't reflect the real economics of this fishery when a fishery is open.

### Comments from DFO

The president answers that the committee is not the place to get input from the industry on these files, and advises the industry to participate to the next consultation exercise that will take place on a 30-day period following the publication of the recommendation in Gazette 1. GGAC members will be notified when Gazette 1 recommendation gets published, so they can participate in the consultation. The process on redfish listing was probably started before there was knowledge of the great abundance of young redfish in the Gulf. This abundance is factored in the current review process, and the fishing industry is advised to follow this file closely when the recommendations get published in the Canada Gazette.

An explanation is given on the difference between the redfish working group and the Species at Risk listing process and consultations. It is confirmed that recommendations from members of the fishing industry are detailed in the regional recommendation which are not finalized at this moment.

## INDICATORS UPDATE ON 5 GROUND FISH SPECIES

Review of the scientific updates available for the other species of groundfish that do not have a full review this year, and that have TACs set until 2016 or further.

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Multi-year TACs decisions or science reviews doesn't mean that the work stops in the in-between years.

### Summary from DFO Science (Doug Swain)

#### **White Hake in 4T**

*(This fishery is currently under moratorium)*

- The biomass index for commercial sizes has been very low since the mid 1990s
- The pre-commercial index has also been relatively low since the mid 1990s, except for high but uncertain values in 2000, 2007 and 2014.
- The high pre-commercial indices in 2000 and 2007 did not result in higher commercial biomass in subsequent years
- Shift in distribution out of inshore areas
- This offshore shift in distribution is thought to result from increasing risk of predation by grey seals in the inshore.
- Estimated SSB in 2013 was 3,800 t, the lowest on record and a 93% decline from the early 1980s
- Recruitment rate high
- Exploitation rate very low
- Natural mortality extremely high (80-90% annually for ages 4+)
- Predation by grey seals is considered a major cause of this high mortality.
- Under current productivity conditions, the stock is projected to continue to decline, even with no fishing.

#### **American Plaice (4T)**

*Current TAC is 250t for 4T valid until 2016. Next science review is in 2016.*

Status last reviewed in 2012 during a Recovery Potential Assessment and a review to establish the Limit Reference Point (LRP):

- Biomass indices were near the lowest levels observed.
- Natural mortality was high and accounted for most of total mortality.
- SSB was estimated to be 65% of the LRP
- RV Survey: The biomass indices for both pre-commercial and commercial sizes declined from the early 1990s to the early 2000s and have remained near record low levels since then.
- The commercial biomass indices in 2011-2014 average 26% of the 1984-1991 level and 9% of the 1976-1980 level.
- Sentinel mobile survey: Declining trend since 2003; 2013 and 2014 indices are the lowest observed, averaging 16% of the values observed in 2003 and 2004.

#### **Winter flounder 4T**

*Current TAC is set at 300t in 4RST until 2017. Next science review is in 2017.*

- Last assessed in 2012 using data up to 2011

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- The RV survey biomass index was the lowest on record in 2011
  - Pre-commercial sizes: intermediate level 1993-2010, low level since 2011
  - Commercial sizes: in decline since early 1990s, near the record-low 2012 value in 2014. the values in 2011-2014 average 24% of those in 1992-1995.
- The sentinel mobile indices indicate that abundance and biomass have declined since 2003. The 2012 – 2014 values are the lowest observed, averaging 4% of the 2003 value

### Yellowtail Flounder (4T)

*Current TAC is 300t for 4T valid until 2016. Next science review is in 2016.*

Last full assessment conducted in 2002, using data up to 2001

- RV survey: abundance index relatively stable from 1985 to 2001 over the whole 4T area. Pre-commercial sizes Increased from a low level in the mid-1980s to a high level in the 2000s. Commercial sizes at a high level from the mid-1980s to the mid-1990s. Decreased from the mid-1990s to record low levels in 2011 and 2012. Slight increase in 2013 and 2014, but remain low. The values in 2011-2014 average 15% of those in 1993-1996
- Biomass indices from the RV survey, Magdalen Islands area: Pre-commercial sizes Increased from a low level in 1990 to a high level in the 2000s. Commercial sizes at a high level in the mid-1990s to the early 2000s. Decreased from the mid-1990s to the mid-2000s. Record low level since 2007 at 17% of the long-term average (1971-2006)
- Sentinel mobile survey: 88% decline from 2003 to 2014

In the strata surrounding the Magdalen Islands, where the main fishery occurs, the abundance index increased from 1985 to 1993 and remained relatively stable from 1993 to 2001.

### Witch Flounder (4RST)

*Current TAC is set at 300t in 4RST until 2017. Next science review is in 2017.*

Last assessment in 2012 using data up to 2011

- 90% decline in commercial biomass since 1960
- LRP = 10700 t
- 2011 biomass = 5000 t
- Biomass projected to increase with a catch of 300 t but with a 62% chance that it will remain below the LRP in 5 years
- A strong year-class was approaching commercial sizes and may promote rebuilding

The strong year-class noted in the 2009-2011 survey data has now recruited to commercial sizes. Survey catch rates of 30-40 cm fish have increased substantially.

RV biomass index:

- Increase in 30+ index to the level in 1999-2000 and 63% of 1987-1990 level
- Little improvement in 40+ biomass
- Consistent with strong recruitment to the 30-40 cm length class

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Sentinel biomass index (July + August sentinel surveys)

- Some increase in 2012-2014 relative to 2007-2011 but similar to 2004-2006 level
- Much weaker evidence for an increase compared to the RV index
- The RV data indicate an increase in biomass in the 30-40 cm length class, consistent with the recruitment of a strong year-class and low fishing mortality due to low catches
- Evidence of an increase is much weaker based on the sentinel mobile data
- A similar increase in the 1990s was reversed when landings increased from 325 t in 1995 to 1000 t in 2000.

### Feedback from members

- A member believes that predation by seals should not be accounted as ‘natural mortality’ and many members indicated the problem of seal predation must be addressed once and for all.
- Other members indicated the decline in flounders can be attributed to different factors like the use of smaller mesh size around the Magdalen Islands by lobster fish harvesters (to use as bait) and that poor flounder landings are not related to abundance, but to poor markets, leading to a disinterest from commercial harvesters.
- Some indicated the cod moratorium should be lifted because it is not working and fish harvesters need to go see what is going on.
- A representative from Newfoundland, supported by another member, indicates that witch flounder doesn’t seem to have the same problems as other species, and request the TAC to be increased to 500 t this year even if a TAC decision is not on the agenda.

### Comments from DFO

- Natural mortality includes everything that is not mortality by fishery. Natural doesn’t mean normal, as it is abnormally high. The high number of juvenile cod only shows their survival is very high.
- The deeper water species appear to not be as important a prey to grey seals. They stay in deeper water all year round and do not aggregate as much as cod.

### **REDFISH (Unit 1)**

*Current TAC (index fishery) is set at 2000 t in Unit 1. Next science review is in the fall of 2015.*

### Report from Redfish Unit 1 & 2 working group

A DFO Ottawa representative summarizes the latest discussions and recommendations from the redfish Unit 1 and 2 working group formed in 2014. Please see Annex IV for the presentation.

- Last slide of the presentation: On the issue of access to Unit 1 and equity regarding restrictions, the existing closed areas in the Gulf have been reflected in all licence conditions for 2015 and further. About the closed areas, DFO indicates that discussions are ongoing with region.

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### Feedback from members

- Telephone meetings are difficult to understand. Given the importance of this fishery and despite the costs, a solution acceptable to all should be found.
- Members of the mobile gear fleet want the portions of groundfish fishing areas 4T3 & 4T2 to reopen to mobile gear fishery in order to allow harvesters to catch their index fishery allocations. It is presently closed because of the incidence of turbot by-catch. The mobile gear sector is requesting a quota of turbot, not as a directed fishery but as by-catch in the redfish fishery.
- It is difficult to sell redfish because of the perception of markets that Unit 1 is under moratorium and not sustainable. The stock can sustain a higher fishing pressure.
- The abundance of juveniles can be explained by an abundance of adults that are located in the zones currently closed.
- There is a perception of markets that Unit 1 is under moratorium and not sustainable. The stock can sustain a higher fishing pressure
- Also, the redfish survey data is too old.
- A member representing a shrimp association wants to be included in the redfish working group because of the interactions between redfish and the shrimp fishery she represents.
- If both units are the same stocks, why is the fishery different in the two units?

### Comments/answers from DFO:

- Every year, DFO conducts a research survey that covers the most part of unit 1. This allows to update the abundance index for this species every year.
- There is a moratorium in Unit 1 because in this Unit there are more redfish of the *Sebastes mentella* species, which is more in trouble than the other species (*Sebastes fasciatus*) which is more prevalent in Unit 2.
- DFO will analyze all the data collected to have a complete stock update. The high incidence of young redfish in the Northern Gulf has not been seen since the past 30 years which may be due to favourable environmental conditions. We need the assessment next fall before being able to say if more fishing is possible. Until then, we think the status quo is a good way to allow the success of recent years to continue.

### **TAC recommendations from the GGAC members**

Member	Comment	Advice
PEIFA:	No TAC recommendation	No TAC recommendation
PEIGA:		2000 t
MCPEI:	No vested interest	No TAC recommendation

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Member	Comment	Advice
Province of Newfoundland & Labrador	Status quo until we have an updated from Science	2,000 t
FFAW:		2000 t
Province of New Brunswick	Status quo until we have an updated from Science	2000 t
APPFA	Open closed areas to mobile gear	5000 t
65-100 mobile gear user (member of GEAC)		2000 t
FRAPP	Open closed areas to mobile gear	2000 t
Province of Nova Scotia		2000 t
North of Smokey Fishermen's Ass.		No TAC recommendation
GNSFC		No TAC recommendation
Ass. des pêcheurs de la MRC Pabok	Open closed areas to mobile gear	5000 t
ACPG	Open closed areas to mobile gear	5000 t
MAPAQ :	TAC allowing a commercial fishery	
ACPG	Open closed areas to mobile gear	2,000 t
RPPNG	If opening closed areas, it must be done cautiously, as turbot harvesters can be affected by that opening. There are harvesters fishing turbot in this area, although less than in the past. There should be rules on using mobile gears in areas that are used by other gears users.	No TAC recommendation
AMTG		2,000 t
ACPG	Open closed areas to mobile gear	5000 t

### **GREENLAND HALIBUT (TURBOT)**

*Current TAC is 4,500 t in 4RST*

Summary from DFO Science

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- Greenland Halibut landings reached 2,753 t in 2013-2014 and 2,986 t (preliminary as of December 31) in 2014-2015, out of an allocation of 3,751 t. The fishing season will run until May 14, 2015.
- Landings and fishing effort have significantly dropped in northern Anticosti and in Esquiman since 2012, but have increased in the western Gulf.
- Catch per unit of effort (CPUE) from fishing decreased significantly across the Gulf in 2013. The CPUE for the western Gulf improved in 2014, while it continued to drop in northern Anticosti and in Esquiman. Overall, the CPUE of 2014 is comparable to the average between 1999 and 2014.
- Biomass indices from research surveys for fish over 40 cm increased in 2014 and were higher than average, though they had decreased in 2013. Fish from 30 to 40 cm, pre-recruits to the fishery, are low in abundance. The 2012 and 2013 cohorts are very strong and will begin to recruit to the fishery in 2018.
- The condition index for fish over 30 cm increased in 2013 and 2014 and is higher than average. This increase could be explained by the arrival of new redfish cohorts in the Gulf, an important prey for large Greenland Halibut.
- Deep water temperature significantly increased in northern of Anticosti and in Esquiman. Fish were found on average at temperatures over 6°C, which is more than 1°C above the average between 1990 and 2014. The temperature increase is lower in the western Gulf.
- Locally, in northern Anticosti and at the head of Esquiman, we observe a decrease in catches, CPUE and biomass. A combination of factors could explain these decreases, such as the increased exploitation rate from previous years and higher deep water temperature.
- A new population dynamic model (SCALE) was presented and identified a slight decrease in exploitable biomass since 2010. The value observed in 2014 remains high compared to the average of 1990-2013. The arrival of 2012 and 2013 cohorts should contribute to increase exploitable biomass starting in 2018.
- In the short term, there is likely to be a slight decrease in abundance for commercial size fish, but in the medium term, the forecast is more optimistic. The landings of the past 10 years have helped maintain a stable exploitation rate. The SCALE model projection indicates that exploitation biomass will remain stable, with an annual landing of 3,750 t for the next two seasons.

### Feedback from members

Members asks a few questions related to the involvement of fishing industry in the stock assessment, regretting the fact that since fishing is closed to many members of industry, there is a lack of knowledge. Some also ask about the possibility that certain areas where there was a decline in abundance would be closed to fishing.

Member saying he represents majority of turbot harvesters says that turbot discussion on management should take place in Mont-Joli since the majority of turbot harvesters are located in this area. Also comments that the gear soaking time issues that used to exist in the past are no

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longer a concern, thanks to action from the Turbot Management Committee, and to existing management measures regarding this fishery (hail out, hail in, VMS, etc.). A mobile gear industry member says that fixed gear users are not the only stakeholders in this fishery.

Another member wants to know when we are going to start discussion on the Precautionary Approach (PA) and harvest decision rules.

### Comments/answers from DFO:

The stock assessment uses data from the fishery and also from the research surveys. Science did not recommend the closure of zones where abundance declined in the last assessment. The indices are updated every year, in order to take action if the situation deviates from the predictions.

DFO will contact stakeholders regarding the PA in the Greenland halibut fishery when it is ready to proceed.

### **Greenland halibut TAC advice from GGAC members to DFO**

<b>Member</b>	<b>Comments</b>	<b>Advice</b>
PEIFA :		No TAC recommendation
PEIGA		5 000t
Province of Newfoundland & Labrador	Status quo for next two years	4,500t
FFAW	Status quo	4,500t
Province of New Brunswick	Some fleets are excluded from turbot fishing. We should explore to see if turbot is present in 4T. Suggests a pilot project with stakeholders, in order to see if science findings in 4T can be confirmed by commercial harvesters.	Suggests an increase but only starting next year (2016).
APPFA	No TAC recommendation, but requests access to their bycatch allocation of turbot in order to be able to conduct their redfish fishery.	No TAC recommendation
65-100 mobile gear user (member of GEAC)		4,501 t
FRAPP	Re-entry of the mobile gear fishery.	5,000 t

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Member	Comments	Advice
Association des pêcheurs de la MRC Pabok	Suggests that mobile gear allocation be all given to fixed gear users if mobile gear re-entry does not occur.	
RPPSG	Status quo	4,500t
ACPG	Re-entry of the mobile gear fishery as a by-catch fishery	4,000t
MAPAQ :	Status quo to keep biomass at stable level until an increase is possible	4,500t
ACPG	In the future, mobile gear bycatch allocation will be necessary in the context of reopening of certain fisheries (cod, redfish) or areas. There is a bycatch protocol in place, observers, etc. no reason to think mobile gear harvesters will destroy the resource. We need turbot bycatch in order to conduct our groundfish fisheries.	No TAC recommendations
RPPNG	We were never able to catch the whole quota so it is not a good idea to increase it. Status quo.	4,500t
AMTG	Status quo for the next two years, hoping TAC increase after that	4,500t
ACPG :	Status quo	4,500t
Regroupements des pêcheurs professionnels de la basse-côte nord.	Patrick Vincent reads a statement from Paul Nadeau of the Lower North Shore. This organization recommends measures to ensure an appropriate distribution of fishing effort. Also recommends status quo in TAC and that it remains a fixed gear fishery.	4,500t

### ATLANTIC HALIBUT

*Current TAC is 864 t in 4RST*

#### Summary from DFO Science

- Atlantic halibut landings have been increasing since the early 2000s. For management years 2013–2014 and 2014–2015, preliminary landings were 802 t and 834 t (TAC of 864 t), the highest since 1952.
- Landing from undirected Atlantic Halibut fishing represent 18% and 15% of total landings for 2013–2014 and 2014–2015. The directed Greenland Halibut gill net fishery contributed to more than half of those catches.

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- In the past 10 years, the proportion of Atlantic Halibut under 85 cm decreased by half in catches sampled at sea. In the last two management years, this proportion was about 40% in the gill net fishery and 24% in the longline fishery.
- There is no reliable indicator of spawning biomass for this stock. Consequently, current approaches do not provide data on spawning biomass levels or trends.
- Catches per unit effort for the directed Atlantic Halibut longline fishery demonstrate an estimated annual increase of 11% for the entire historical series (1997 to 2014). This trend corresponds to a 300% increase in the fishery's standardized performance since 2005.
- For catches sampled at sea, the proportion of fish larger than 130 cm, i.e. size at 50% maturity for females, increased from under 5% to about 20% in the past 10 years.
- Pre-recruit abundance indicators based on fishery-independent survey data reached among the highest levels on record, and recent trends are stable or rising.
- The size frequency distributions suggest that the cohorts that will reach legal size in the next two years will be less abundant than in previous years.
- The fished component of the stock is at high levels and rising. However, the harvest levels for the fished component are unknown. Pre-recruit indicators suggest high recruitment to the fishery over a five-year horizon, although more limited in the short term.

### Feedback from members

- A member has an issue with the assessment regarding maturity of fish, which is different in Gulf compared to Maritimes: why is there such a difference? This has effect on estimation of fishable biomass. Also indicates that the CPUEs are artificially lower than they should be for Gulf Nova Scotia fish harvesters, because they are limited in where they can go. It also has effect on the size of fish.
- On the size of fish from fishery indicators: the fishery is very concentrated close to shore because the time for fishing is extremely limited. It doesn't mean that there are no fish further away. Also, harvesters want to avoid catching too big fish, for market reasons. So harvesters adapt their gear and fishing strategy. Also comments that his organization cannot attend RAPs because it is too costly to travel. Congratulates DFO science on their proactive attitude with this species.
- A provincial representative requests a precision on the survival of released halibut.
- A member's observation: found a great number of small halibut in Danish seine by-catch, in greater numbers than before. Also asks about the bycatch allocation for mobile gear users.
- A member from a mobile gear fleet indicates they are seeing a lot of Atlantic halibut in the shrimp fishery and indicated DFO left the mobile gear fleet outside of this fishery. The mobile gear fleet would also like to have an Atlantic halibut allocation.

### Comments/answers from DFO:

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- Length at maturity is different in the Gulf Region compared to the Maritimes Region from the available data. But size at maturity is not used to establish legal sizes, rather just to assess what mature fish are left in the water. The indicators DFO have are positive for this stock. DFO has a survey and sentinel data for the Northern Gulf, but also from the Southern Gulf with the Gulf Region Science survey.
- DFO needs more information on the reproductive biomass. But the fishery or the scientific survey cannot provide proper information on this component as of now.
- There some survival with longline as opposed to when using gillnets.
- DFO Science confirms his first observation: fish under 75 cm are in greater numbers than before. There are a bit less fish over 75 cm right now. DFO answer on the bycatch quota: 85% is transferred to fixed gear now.

### Atlantic halibut Advice and Recommendations on sharing from GGAC Members to DFO

(Note: in preparation of the GGAC meeting, several industry members requested that a discussion on the halibut regional fleet shares be conducted during the advisory meeting. Indicating that the sharing of this resource was announced as stabilized in 2013, DFO acknowledged the request for discussion and invited the members to provide their comments on the issue of sharing while providing their TAC advice. Some members also provided their views regarding science (more on that aspect on day 2 report of discussions). The table below summarizes their recommendations.

Member	Comments	TAC advice
PEIFA :	Increase of shares and TAC for science only, per province, with equal shares. PEIFA is not interested to take quota from other fleets. But want their adjacency to the stock to be taken into account.	20% increase of quota for the next 2 years. (1,036t)
MCPEI	Issues with fleet shares, and the history that was used to establish them. Also, issues with economy viability, ease of access, equity between fleets, capacity building for First Nations, and Science methodology using aboriginal and non-aboriginal knowledge.	no recommendation on quota,
Province of Prince Edward Island	Would like to see a review of the shares. Additional shares should be divided more fairly, based on increases to those who have not as opposed to those who have. Also, more science is required.	20% increase (1,036t)

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Member	Comments	TAC advice
Province of Newfoundland and Labrador	Continue with established shares, supports a use of fish project Gulf wide.	20% increase (1,036t)
FFAW	Organization just finished a rationalisation program. We are not happy with our shares. But the decision is made. We have to live with those shares. Leave the shares where they are. Harvesters are in a very difficult economic situation on the West coast, especially the Great northern Peninsula. Changing arrangements would take some resource from them. Scientific survey should be done, but along the lines of the sharing as well. Considering what fishers are seeing in the water, doubling the quota would not put a dent in the stock. Need a dedicated survey to continue with this fishery.	Recommending an increase of 25%. (1,080t)
MFU	Sharing was a political decision, that did not take in account the proximity of resource (adjacency). Our members want to fish, for more than 10 hours. The more you restrict them, the more they catch. We will not be able to fish unless you double the quota. We want to get back to the 2011 formula: all TAC over 600 t should be equally shared between the eight regional fleets. Then we can think of rationalization.	We are not allowed to fish, so why ask us for a TAC recommendation? No TAC recommendation
Province of New Brunswick	We need a better formula for the fishing as well, as right now it hurts the markets. Supports the 2011 formula. NB never endorsed the current sharing, because history was calculated during closed times.	No TAC recommendation.
65-100 mobile gear user (member of GEAC)		No TAC recommendation.
Province of Nova Scotia	No position on sharing. Support the use of fish for science because it was a success for the Scotian Shelf area as it helped to increase the TAC. Indices are quite positive despite serious bumps up in TAC recently.	Recommends a 20% increase. (1,036t)
North of Smokey Fishermen's Association	Not happy with sharing arrangement. The resource is there, and we have to be limited to a 12 hours fishery. People who live adjacent to the resource	(1,728t)

## 2015 Gulf Groundfish Advisory Committee Meeting

Member	Comments	TAC advice
	should have fair access to it. Doubling the TAC wouldn't hurt the stock.	
GNSFC	We should go back to 2011 sharing formula which is much fairer. Science: not fair that industry should bear the entire cost of science. We need to think about it. Could live with a pilot project approach, not a permanent approach. Let's not make permanent decision on this aspect yet.	Not an increase of 20% but rather twice that (= 40%). (1,209t)
RPPUM	Not in favour of changing the sharing formula. We had a rationalization, but participation is increasing. We cannot lose fish.	1 200 t.
RPPSG	Do not review the shares because you would open a door to revising shares in all fisheries in the Gulf.	An increase of a minimum of 20% (1,036 t or more)
Association des pêcheurs de la MRC Pabok	Respect current fleet shares, and integrate mobile gear harvesters if there is a TAC increase and individual allocations.	1,200 t
ACPG	Supports the current sharing arrangements. Would like mobile gears to be considered for the fishery.	20% increase (1,036 t)
MAPAQ	Québec historic shares established in 2007 must be respected.	20% increase (1,036 t)
ACPG	Give halibut to everyone; do not limit them to fixed gears. Biomass is here, let's take advantage of it. Let the harvesters bear responsibility for their decisions. Follow their advice, and let them sort out problems when biomass goes away.	No TAC recommendation.
RPPNG	Our harvesters have rationalized; we implemented IQ programs to avoid waste of fish. We demonstrated a fair way of fishing this resource. We want to keep our historical share.	TAC: +20 or 25% or one or two years.
AMTG	Don't change provincial shares. Or we will need to do it for all species.	1 200 t.
ACPG	This is our main source of income. Do not touch the sharing	1, 200 t.
Regroupement des pêcheurs professionnels de la basse-côte nord	Give more consideration to economical dependency and adjacency to the resource. When the traditional fishers with larger quotas reach viability, open the access to groundfish fleets in	25% increase in the TAC (1,080 t)

## 2015 Gulf Groundfish Advisory Committee Meeting

Member	Comments	TAC advice
(through Patrick Vincent)	difficulty, which have significant history in groundfish. A sharing formula for special access should be applied with consideration for economic dependency, adjacency and history.	

### Day 2 - Wednesday, March 25.

#### ATLANTIC HALIBUT – Use of fish

The co-chair opens the second day on a precision about the proposed science project to assess Atlantic halibut with the cooperation of industry, by taking a portion of the overall quota (TAC) in order to finance the science project, noting that the Minister will be the person approving this project. Also indicating that the project will not start in 2015, but as the halibut is on a multi-year management schedule, comments from this committee will be used in 2016 if possible to start the project then. During the discussion, and following questions and comments from the table, DFO indicates that research can also be supported by other programs (i.e. sentinel fisheries). Most members around the table (with some exceptions, see below in the feedback section) indicate their general support to work further on a dedicated science project, some mention as soon as possible. It is difficult for some industry members to say what quantity of fish would be needed for a science project, as it would be science's role to establish a first estimate on which industry could comment. Other members say that they would support any quantity as long as the project can go ahead. Science indicates that this quantity could be in the range of 50 to 100 t. This project can also be supported by other means of financing like the sentinel fishery or the provinces. DFO can ask the Minister to put aside an additional quota for science.

#### Feedback from members

*After having seen the first version of these minutes, two member organizations contacted the Department to clarify that they do not support the use of halibut quota for a science project. They rather support adding a halibut component to the existing sentinel fisheries.*

A member mentions that some research must be done on conversion factors between round and dressed weights.

Another member asks why the management cycle for cod is different between the Southern and Northern Gulf cod (4 years versus 2 years). Some comments of support around the table.

#### Comments from DFO

The chair commits to inspecting this and coming back to the committee with an answer.

#### GEAC PROPOSAL (Bruce Chapman)

## 2015 Gulf Groundfish Advisory Committee Meeting

Bruce Chapman presents a project that the Groundfish Enterprise Allocation Council (GEAC) is proposing to DFO regarding how the Enterprise Allocation shares are displayed in quota tables. **See appendix V for details.**

### Results of discussions

- This does not address how transfers are done; it is only about how it is displayed in the quota tables. This proposal would benefit the members of GEAC by making it easier to get financing.
- The Maritimes Region started 5 years ago showing the GEAC quota differently on the quota table. GEAC now wants this introduced in other regions.
- Some members requested more time before making a formal comment. FFAW and the Province of Newfoundland and Labrador indicated they would get back to DFO in writing.

### NORTHERN GULF COD

*Current TAC is 1,500t in 3Pn, 4RS*

### Summary from DFO Science (Claude Brassard)

- The total allowable catch (TAC) for the 2012 to 2014 period was 1,500 t per year. Landings for those 3 years totaled 1,311t, 1,206t and 1,229 t. Recreational fishery landings are unknown.
- The performance indicators for the commercial fishery estimated from fishers' logbooks (longline and gillnet) show an increase from 2010 to 2013 and a slight decrease in 2014. In 2014 they were at average levels (1997–2013). Results from a survey of fishers concerning their fishing yields paints a similar picture.
- Sentinel fishery catch rates (longline and gillnet) increased from 2010 to 2012 or 2013, then decreased to reach the series average (1995–2013) in 2014.
- In 2014, abundance indices from the DFO research survey and the Sentinel fishery trawl survey are higher than average for their respective series. This increase is attributed largely to the abundance of age groups from 2011 and 2012. The spatial distribution of cod has expanded in Division 4S and is now similar to that observed in the early 1990s.
- Natural mortality estimated by sequential population analysis (SPA) has increased substantially between 2002 and 2014. Possible causes are seal predation and unaccounted fishing mortality.
- The estimated exploitation rates from the tagging program and SPA diminished significantly between 2008 and 2014.
- Recruitment at age 3 estimated based on the SPA since 1990 is higher in 2007, 2008 and 2009 (2004 and 2006 cohorts) as well as in 2014 and 2015.
- The abundance of spawning stock is in the critical zone, well below the limit reference point for the last 25 years. Catches in 2015 and 2016 should be kept at the lowest possible level.

## 2015 Gulf Groundfish Advisory Committee Meeting

- Projections for 2016 and 2017 indicate that with an annual harvest of 1,500 t (2015–2016 and 2016–2017), the mature biomass should increase. This increase will largely be related to the abundance of recent 2011 and 2012 cohorts. Their abundance must, however, be confirmed over the coming years.
- SPA diagnostic tools reveal some uncertainties in age estimates. This has been a problem for several years. However, these uncertainties do not cast any doubt on the fact that stock remains in the critical zone. New analytical approaches could be considered.

At the end of the stock assessment summary, the co-chair introduces the topic of a draft Northern Gulf cod rebuilding plan, developed in cooperation between DFO and the Quebec and Newfoundland & Labrador fishing industry. DFO Quebec Science presents the plan. In the current context, the plan focuses mostly on harvest decision rules when the stock is in the critical zone. The objective is to double the biomass in 10 years, taking in account socio-economic factors. The plan would be valid for 5 years. The table below summarizes the main aspects of the plan.

The short term objective is to double the SSB  
in ten years (i.e., to ~40,000t).

SSB (t)	Harvest Control Rule (TAC (t) or F)	Corresponding measure (TAC (t) or F or other measure)
<12,000		Moratorium
12,000 < 15,000	F <sup>1</sup> =.075	Stewardship/Bycatch
15,000 < 18,000	F <sup>1</sup> =.075	Variable (1200 < 1500)
18,000 < 25,000	TAC=1,500t	1,500
25,000 < 30,000	1,800 t	~F <sup>1</sup> =.067
30,000 < 40,000	3,185 t	~F <sup>1</sup> =.101

### Feedback from members

A representative of the mobile gear fleet sector asks a precision on the triggers established for re-entry of mobile gear fleets in the cod fishery.

A mobile gear fleet representative indicates his intention to withdraw immediately from the table, and to submit a request to DFO to hold a special meeting with the mobile gear sector and the minister of Fisheries and Oceans to discuss of the future of mobile gear fishing, as clarity is needed. He mentioned that, with the cooperation of other mobile gear fleets, he could look at

## 2015 Gulf Groundfish Advisory Committee Meeting

suings the Department over this question. The request for a special meeting is supported by several mobile gear fleet representatives around the table. One member specifically asks that it be noted in the GGAC minutes that the mobile gears users are asking that the re-entry of mobile gears becomes effective immediately. On behalf of all mobile gear users, he asks that the Department organizes a special meeting between DFO regions and the mobile gear industry. Does not support the rebuilding plan as he says the mobile gears users were not involved at all. However, at the request of the meeting chair, he refused to submit a written request.

### Comments/Answers from DFO

The mobile gears re-entry strategy (for cod fishing in 4RS3Pn) has already been explained by the Department. A 9,000 t TAC threshold must be attained first. The person who asked the question reiterates that the mobile gears need to be included somewhere in the rebuilding plan. Mobile gears users have been rationalizing, at heavy costs, and they have rights. The DFO co-chair indicates he will get back to the committee after the meeting, with information previously released about the mobile gear re-entry. *Please find information concerning the re-entry of the mobile gear fleet in the Northern cod fishery in Annex VI.*

Winter fishing in 3Ps is not factored in the rebuilding plan because there is little cod caught in 3Ps, an answer corroborated by a member from the FFAW.

There is a high mortality rate is mostly for older fish. Environmental factors play a big role in the survival of juveniles and water temperature certainly plays a role which may be why there is a high incidence of young cod in the Northern Gulf.

DFO Science indicated that following a 2012 recommendation, CUPEs from large longline vessels were included in the stock assessment.

### **Northern Gulf Cod TAC advice from GGAC members to DFO**

<b>Member</b>	<b>Comments</b>	<b>Advice</b>
ACPG	Status quo	1,500 t
AMTG	Status quo	1,500 t
RPPNG	Status quo, wishing something was done to address seal predation in this area.	1,500 t
ACPG	Status quo provided there is a 3,000 t fishery in the southern Gulf stock	1,500 t
MAPAQ		1500 t

## 2015 Gulf Groundfish Advisory Committee Meeting

Member	Comments	Advice
RPPIM	Status quo, but depending on the TAC decision in the southern Gulf	1,500 t
Association des pêcheurs de la MRC Pabok	Status quo	1,500 t
RPPSG	Status quo	1,500 t
RPPUM	Status quo	1,500 t
North Cape Breton Vessel Associaton	Status quo	1,500 t
FRAPP	Status quo and have a special meeting about the future of mobile gear fishing	1,500 t
65-100 mobile gear user (member of GEAC)	Supports the request to have a special meeting about the future of mobile gear fishing	No TAC recommendation.
Province of New Brunswick		No TAC recommendation (no vested interest)
FFAW	Supports the rebuilding plan, but recommends 3,000 t.	3,000t
FFAW	Seeing more cod now than what was there in the 1980's. Only if we are fishing are we going to see if there are fish in the sea.	3,000 t
Province of Newfoundland & Labrador	Supporter of the rebuilding plan.	1,500 t
PEIFA	Asks DFO to address the grey seals predation problem.	No TAC recommendation.
ACAG	Reinstatement of mobile gear fishing. Would like to see the mobile gear fleet have access to their part of the quota, somehow, and maybe by using fixed gears.	3,000t

### **SOUTHERN GULF COD**

*Current TAC is 300 t in 4T*

Summary from DFO Science

## 2015 Gulf Groundfish Advisory Committee Meeting

- The cod-directed fishery has been closed since 2009, with a 300 t TAC in place to cover by-catch in other groundfish fisheries, a limited recreational fishery, scientific purposes, and negotiated Aboriginal food, social and ceremonial agreements.
- Annual landings since 2009 have varied between 103 and 172 t.
- Since 2009, the exploitation rate has averaged 0.2% for ages 5-8 and 0.7% for ages 9+. These low levels have a negligible impact on the population trajectory.
- The biomass index for commercial-sized cod ( $\geq 42$  cm) from the annual DFO research vessel survey was at the lowest level observed in the 44-year record in 2011 and 2012. The 2011 and 2012 indices were about 10% of the already low values in 1995-2002. The 2013 and 2014 indices were marginally higher, about 20% of the 1995-2002 level.
- The biomass index from the sentinel trawl survey was at the lowest level observed in 2012 and 2013, averaging 17% of the level at the start of this time series in 2003. The index in 2014 increased to 34% of the 2003 value, but was highly uncertain.
- The biomass index from the sentinel longline program steadily declined from 2004 to 2011. The 2011 value was 19% of the 1995-2004 average. The index remained low in 2012-2014.
- Cod have moved out of shallow inshore waters and into deeper offshore waters. This appears to result from the high and increasing risk of predation by grey seals in inshore waters in summer.
- Estimated spawning stock biomass (SSB) declined steadily between 1997 and 2014. SSB at the beginning of 2014 was 28,700 t, 28.7% of the level in 2000 and 9% of the level in 1985. SSB in 2015 was slightly higher at 34,000 t, 29.2% of the level in 2000.
- A limit reference point (LRP), the level below which the stock is considered to have suffered serious harm to its productivity, was estimated in 2003 to be 80,000 t. The SSB in 2015 is estimated to be 42% of the LRP. There is no chance that the stock is at or above the LRP.
- Year-class strength has been declining since the mid-1980s due to declining SSB. Year-classes produced since 2002 have been the weakest on record, except for the 2011 year-class. The 2011 year-class is estimated to be nearly twice the average size of other year-classes produced since 2002.
- Extremely high natural mortality of cod 5 years and older is the reason for the lack of recovery of this stock. Estimated natural mortality increased from 18% annually in 1970 to 50% in 2014 ( $M = 0.2$  to  $0.74$ ) for cod aged 5-8 years, and from 29% to 58% in 2010 ( $M = 0.35$  to  $0.88$ ) for cod aged 9 years and older. Predation by grey seals is considered to be a major component of this mortality.
- Given the relatively strong 2011 year-class, SSB is expected to increase slightly in 2016. It is then expected to decline below the 2015 level by 2020 due to the high level of natural mortality.
- At the current level of natural mortality, recovery of this stock is highly improbable, even in the absence of fishing.

### Comments from members

## 2015 Gulf Groundfish Advisory Committee Meeting

A member questions the conclusions of science that large cod are not present in numbers, arguing that if small cod are numerous, there has to be some large cod in numbers as well.

Several members mention the grey seals problem, noting the lack of action by the government to address the situation. Some also indicate positive observations on the condition of the cod in the southern Gulf, noting that the fish is generally in better condition recently than it was in the years 1998-2008, possibly because of a better abundance of forage species like capelin or sand lance.

A member of the mobile gear fleet says that the management of northern Gulf cod stock is different than in the south, which constitutes a problem in his opinion further saying DFO should not have let them overfish the cod to the point of collapse. According to him, the mobile gear users should have access to some form of compensation.

A member indicated they are probably losing the Southern Gulf cod from the 3Ps winter fishery. This was denied by DFO Science who indicated the Southern Gulf cod overwinter more in the West of 4Vn but doesn't know if they move further south when there is heavy ice like this winter.

### Comments/answers from DFO

There are indeed some large cod, as the estimates stock spawning biomass is 34,000t. We do also see more small cod in recent year. But the problem is that once they get older they die of natural mortality.

### **Southern Gulf cod TAC advice from GGAC members to DFO**

<b>Member</b>	<b>Comments</b>	<b>Advice</b>
PEIFA:	Status Quo because we are not seeing any cod	300 t
Province of Prince Edward Island	Status Quo	300 t
MCPEI		no comments
FFAW:		not comment
Province of New Brunswick	Status Quo	300 t
Province of Nova Scotia	Status Quo	300 t
North of Smokey Fishermen's Association	Saw a lot of cod in June and in great shape (Fishing in deep water). Asks for a mechanism in place where we could have a cap in place. Recommend TAC at 1,200t	1,200 t
65-100 mobile gear user (member of	2,000t provided the grey seal herd	2,000 t

## 2015 Gulf Groundfish Advisory Committee Meeting

Member	Comments	Advice
GEAC)	can be reduced by half.	
FRAPP	3,000 t in recognition of what the harvesters are seeing on the water	3,000 t
GNFSC		1,000 t
RPPUM, AMTG, RPPNG & Ass. des pêcheurs de la MRC Pabok	These 4 organizations joined together to submit a request in writing for a 1,200 t TAC, using only longlines as gear. See Annex VII for the written request.	1,200 t 1,200 t 1,200 t 1,200 t
MAPAQ :	Recommends a TAC between 1,200 and 3,000 t, supports a seal herd reduction strategy and ask that provincial shares be respected in the case of a reopening of the directed fishery.	1,200 t to 3,000 t
ACPG	1,500 t and address the seal problem	1 500 t

### UPDATE ON CURRENT GROUND FISH RESEARCH PROJECTS

Both Gulf Region and Quebec Region science representatives deliver presentations on current research projects going on in their respective regions.

#### Gulf Region science Project by Hugues Benoit

The presentation is available upon request at [frederic.butruille@dfo-mpo.gc.ca](mailto:frederic.butruille@dfo-mpo.gc.ca)

#### Quebec Region Project by Hugo Bourdages

The presentation is available upon request at [frederic.butruille@dfo-mpo.gc.ca](mailto:frederic.butruille@dfo-mpo.gc.ca)

#### Other comments

An industry member comments on the return of striped bass, posing a potential threat to other fisheries. DFO answers that a 3-year study is ongoing about the striped bass diet in the Miramichi river system.

### PEIFA ATLANTIC HALIBUT RESEARCH/TAGGING PROJECT

Presentation by a university student on the work conducted in partnership with DFO and the PEIFA in order to develop knowledge on the Atlantic halibut stock characteristics and migratory movements.

## **2015 Gulf Groundfish Advisory Committee Meeting**

### **MARINE PROTECTED AREA NETWORK**

Update on program by DFO (Raymond MacIsaac).

#### Feedback from members

It is recommended to include the presentation in the summary report of the meeting, as many members have left.

The presentation can be found in Annex VIII

### **END OF MEETING**

The co-chairs thank those who stayed until the end of the meeting, colleagues from the provinces, colleagues from DFO in Quebec and Newfoundland and Labrador and support staff.

2015 GULF GROUND FISH ADVISORY COMMITTEE MEETING  
LIST OF PARTICIPANTS

**ANNEX I**

Name	Organization	Name	Organization
David Coffin	DFO-Newfoundland & Labrador	Ghislain Cyr	RPPUM
Frédéric Butruille	DFO-Gulf	Jason Spingle	FFAW
Richard Ruest	DFO-Gulf	Carl Hedderson	FFAW
Frank Quinn	DFO-Gulf	Kevin Hardy	FFAW
Patrick Vincent	DFO-Québec	Alyre Gauvin	APPFA
Hugo Bourdages	DFO-Québec Sciences	Luc Haché	GEAC
Claude Brassard	DFO-Québec Sciences	André Boucher	RPPNG
Doug Swain	DFO-Gulf Sciences	Gilles Albert	Ass. Pêcheurs MRC Pabok
Hugues Benoit	DFO-Gulf Sciences	Marc Diotte	AMTG
Sandra Courchesne	DFO-National Capital	Robert Courtney	North of Smokey Fishermen's Ass.
Brian Lester	DFO-National Capital	Emmanuel Moyen	MFU
Dave McEwen	Province of Prince Edward Island	Laurent Normand	AQIP
Kris Vascotto	Province of Nova Scotia	Frank Hennessey	PEIGA
Tom Dooley	Province of Newfoundland and Labrador	Ed Frenette	MCPEI
Rabia Sow	Province of Quebec	Eda Roussel	FRAPP
Mario Gaudet	Province of New Brunswick	O'Neil Cloutier	RPPSG
Marcel Cormier	RPPIM	Léonard LeBlanc	GNSFC/GNSFPB
Réginald Cotton	ACPG	Cory Francis	CMM
Allen Cotton	ACPG	Jocelyn Thériault	RPPIM
Jean-François Côté	ACPG	Darren Pettipas	North Cape Breton Vessel Ass.
Vincent Dupuis	ACPG	Réginald Comeau	UPM
Michael McDonald	PEIFA	Erenel Guignard	UPM
Tony Carter	PEIFA	Bruce Chapman	GEAC

## LIST OF ACRONYMS

### ANNEX II

ACPG	Association des capitaines propriétaires de la Gaspésie	PA	Precautionary Approach
AMTG	Association des morutiers traditionnels de la Gaspésie	MFU	Maritimes Fishermen's Union
APPFA	Association des pêcheurs de poisson de fond acadiens	MCPEI	Mi'kmaq Confederacy of Prince Edward Island
AQIP	Association Québécoise de l'industrie de la pêche	PEIFA	Prince Edward Island Fishermen's Association
CMM	Confederacy of Mainland Mi'kmaq	PEIGA	Prince Edward Island Groundfish Association
CPUE	Catch per Unit Of Effort	RAP	Regional Advisory Process (Science Review of Stock Status)
DFO	Department of Fisheries and Oceans	RPA	Recovery Potential Assesment
FFAW	Fish, Food & Allied Workers	RPPIM	Regroupement des pêcheurs professionnels des Îles-de-la-Madeleine
FRAPP	Fédération régionale acadienne de pêcheurs professionnels	RPPNG	Regroupement des pêcheurs professionnels du nord de la Gaspésie
GEAC	Groundfish Enterprise Allocation Council	RPPUM	Regroupement des palangriers et pétoncliers uniques Madelinots
ITQ	Individual Transferable Quota	SSB	Stock Spawning Biomass
LRP	Limit Reference Point	ToR	Terms of reference
		UINR	Unama'ki Institute of Natural Resources

MULTI-YEAR MANAGEMENT SUMMARY TABLE

**ANNEX III**

<b>Species</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
Northern Gulf Cod (2)			RAP		RAP	
Southern Gulf Cod (4)			RAP			
Turbot (2)	RAP*		RAP		RAP	
Atl. Halibut (2)	RAP		RAP		RAP	
Winter Flounder 4T (5)					RAP	
Redfish unit 1 4RST, 3Pn (Jan-May), 4Vn (Jan-May)			RAP			
Yellowtail Flounder 4T (5)				RAP		
American Plaice 4T (5)				RAP		
White Hake 4T (5)			RPA**			
Witch Flounder 4RST (5)					RAP	
<b>TAC decisions required</b>	<ul style="list-style-type: none"> <li>• Atl. Halibut;</li> <li>• Turbot;</li> <li>• Northern Gulf cod</li> </ul>		<ul style="list-style-type: none"> <li>• Atl. halibut;</li> <li>• Turbot;</li> <li>• Southern Gulf cod;</li> <li>• Northern Gulf cod;</li> <li>• Redfish Unit 1 (Pending common approach with Unit 2)</li> </ul>	<ul style="list-style-type: none"> <li>• Yellowtail flounder;</li> <li>• American plaice.</li> </ul>	<ul style="list-style-type: none"> <li>• Atlantic halibut</li> <li>• Turbot</li> <li>• Northern Gulf cod</li> <li>• Winter flounder;</li> <li>• White hake;</li> <li>• Witch flounder.</li> </ul>	
<b>GGAC meetings</b>	<b>GGAC Meeting</b>		<b>GGAC Meeting</b>		<b>GGAC Meeting</b>	

\*RAP = Regional Advisory process (Science review of stock status)

\*\* RPA = Recovery Potential Assessment

REDFISH PRESENTATION

**ANNEX IV**



**UNIT 1 &2 REDFISH FISHERIES**

March 2015





## PURPOSE

- The purpose of this presentation is to:
  - Provide an update on the Redfish Working Group's progress in developing a rebuilding plan for Unit 1 and 2 Redfish;
  - Identify considerations for the management of the resource for 2015;
  - Consider interim Milestones and Constraints recommended by the Working Group for 2015.



## OVERVIEW

- Based on the available science information, both *Sebastes mentella* and *Sebastes fasciatus* redfish species are below their respective Limit Reference Points (LRPs).
- DFO and industry are exploring other population model options to address uncertainties noted in the peer review processes to define these LRPs.
- In June 2014 a Redfish Working Group was established to provide advice to advisory committees on a Precautionary Approach Framework and proposed management measures for Unit 1 and Unit 2 Redfish.
- Working Group members include representatives from DFO resource management and science, both inshore and offshore fleets, as well as provincial governments.



## CONSIDERATIONS

- The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) assessed two populations of Redfish in 2010:
  - The Gulf of St. Lawrence/Laurentian Channel Designatable Unit (includes all *S. mentella* in Unit 1 and 2) assessed by as endangered.
  - The Atlantic Population Designatable Unit (includes all *S. fasciatus* in Unit 1 and 2) assessed as threatened.
- High numbers of small Redfish (2-3 year age) of both species have been observed in Unit 1 which suggests strong recruitment year classes (2011&12).
- A new framework model and stock assessment is expected late fall 2015.



# REBUILDING PLAN OBJECTIVES

## Long term Objectives

- To achieve and maintain the Redfish Unit 1 and 2 spawning stock biomass in the “healthy” zone as defined by DFO’s PA framework and at or near  $B_{msy}$ ; and to provide fishing opportunities during the rebuilding period limited by the intent to achieve and maintain a positive stock trajectory until the stock is in the healthy zone.

## Short term Objectives:

- Promote moving the stock out of the critical zone and increasing spawning stock biomass by ensuring removals from all fishing sources are kept at a level that achieves a positive stock trajectory.
- Minimize exploitation of *S. mentella* in the mixed species Unit 1 and 2 fisheries.
- Protect the strong 2011 and 2012 year classes.



# INTERIM MILESTONES/CONSTRAINTS

## Interim Milestones/Constraints (e.g. 1-2 years):

- The allowable catch limits should be established with the goal of avoiding declines in spawning stock biomass. Pending the adoption and projections of a new assessment model in late 2015, the status quo for 2015/16 may be expected to avoid declines in spawning stock biomass given current fishing patterns.
- Maintain the sub-divisional harvesting strategy for the >100' sector: a maximum 25% in the North West zone and the balance harvested in the South East zone in Unit 2 to reduce exploitation of the *S.mentella* component of the stock for this period.
- Continue to evaluate the small fish protocols and associated impacts of undersized fish mortality as a means to protect the strong 2011 and 2012 year classes.
- Continue to explore measures that could minimize by-catch of small redfish to support maximum potential for recruitment of the strong Redfish year classes into the fishery.



## NEXT STEPS

- Rebuilding plan and Harvest Control Rules for Unit 1 and 2 Redfish will be further developed by the Working Group after the 2015 science assessment information is available.
- Harvest Control Rules developed by the Working Group will be vetted through advisory committees for recommendation.
- France, on behalf of St. Pierre et Miquelon, will also be invited to participate in the development of Harvest Control Rules as part of the co-management regime under the *Proces Verbal*.



## OTHER MANAGEMENT ISSUES

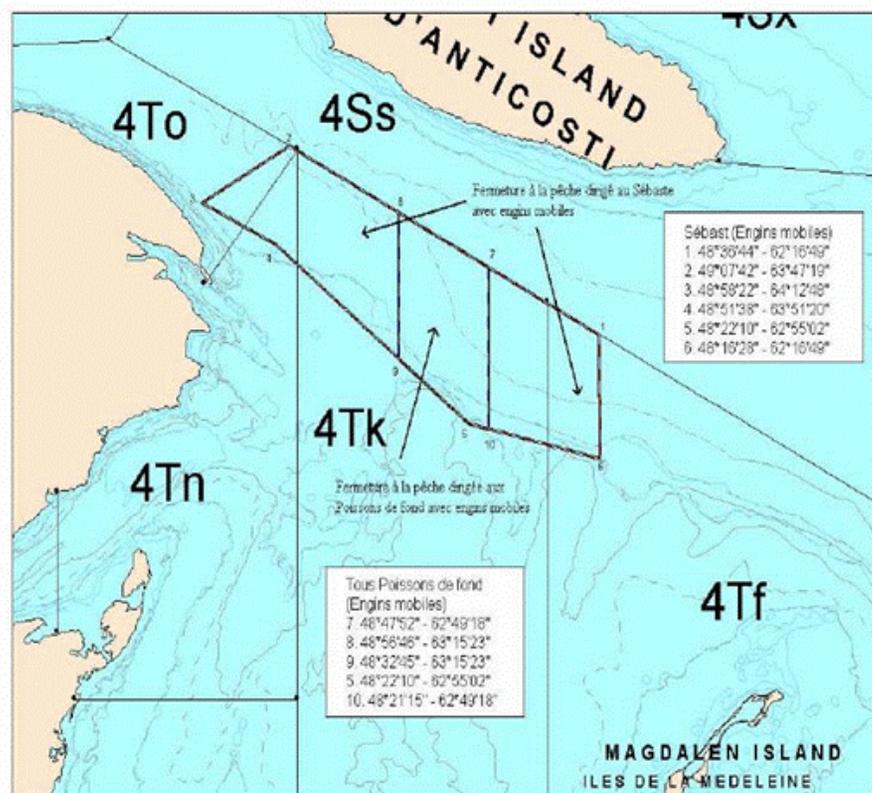
- Other items raised with the Working Group:
  - Access to the Unit 1 index fishery
    - Gulf based harvesters raised concerns about access to Unit 1
    - Equity in the application of restrictions to all fleets with access to Unit 1 was evaluated.
  - Concerns related to mobile gear closed areas in 4T.
    - Some industry representatives noted an interested in modifying the closed areas.

## REDFISH PRESENTATION



Fisheries and Oceans  
Canada

Pêches et Océans  
Canada



Canada

## GROUND FISH ENTERPRISE ALLOCATION COUNCIL PROPOSITION

### ANNEX V

Information Note: >100' Groundfish Enterprise Allocation Shares Expressed as Percentage of Total Allowable Commercial Catch (TACC)

- Total Allowable Commercial Catches (TACC) in Atlantic Canada is established in a given year based on the TAC minus quota allocations (where applicable) for other countries, some aboriginal obligations, and sentinel fisheries.
- In most groundfish fisheries, quota allocations from the TACC are then calculated using pre-established sector percentage shares.
- Quota allocations or individual catch limits within each sector may be calculated or determined using various methods.
- Within the >100' sector, quota allocations (enterprise allocations or EAs) were traditionally calculated using percentage shares totaling 100% of the >100' sector quota.
- For Scotia-Fundy groundfish stocks, percentage shares for EAs (>65' sectors) and ITQs (45-65' sectors) have for several years been identified based on percentages of the TACC. **The expression of these EA and ITQ shares as percentages of the TACC have had no impact on the <45' sector, which maintains its own pre-established percentage of the TACC, within which the method of providing catch limits among individual license holders is determined by the respect sector and/or community board as the case may be.**
- >100' Enterprise Allocation holders are requesting their EAs to be identified as a percentage of the TACC in all regions of Atlantic Canada, but only for those stocks where percentage sector shares have been pre-established by the Department. **This approach will not affect the pre-established percentage shares of other sectors or of individual license holders within those sectors.**

#### Illustration

Assume a TACC of 100t with a 50% pre-established quota share for >100' sector

- 5t is allocated to the >100' EA holder, regardless whether the calculation is 10% share of the >100' sector quota, of 5% share of the TACC
- Establishing a more direct form of percentages that link the individual EA holders and the TACC (only for stocks in which percentage shares have already been established by DFO) facilitates lender financing, and can also facilitate temporary quota transfers with other quota holders to the extent other sectors may wish this to occur on an enterprise-to-enterprise level (such as is the case between EA holders and ITQ holders in Scotia-Fundy).

NOTES REGARDING THE RE-ENTRY OF THE MOBILE GEAR  
IN THE NORTHERN GULF COD FISHERY

**ANNEX VI**

**Participants**

**Mobile Fleet Participation in the 4RS3Pn Cod Fishery**

**Delta Montreal**

**January 17-18, 2005**

Barry Rashotte	DFO/MPO
Rhéal Vienneau	DFO/MPO
Réjean Hebert	DFO/MPO
Brian Lester	DFO/MPO
Gary Brocklehurst	DFO/MPO
Willie Bruce	DFO/MPO
Daniel Boisvert	DFO/MPO
Dario Lemelin	DFO/MPO
Dave Gillis	DFO/MPO
Alain Frechet	DFO/MPO
Serge Gosselin	DFO/MPO
Max Short	DFO/MPO
Bruce Chapman	Groundfish Enterprise Allocation Council
David Decker	FFAW/CAW
Paul Nadeau	Regroupement des associations de pêcheurs de la Basse Côte-Nord (RAPBCN)
Wilson Goosney	Dept. Of Fisheries & Aquaculture Government of NL Dept. des Pêches et Aquaculture, Gouvernement de TN et Labrador
Pierre Bédard	Ministère de l'Agriculture, des pêcheries et de l'alimentation du Québec
Allain Cotton	Fédération des pêcheurs semi-hauturiers du Québec
Guy Perry	FFAW/CAW
Reginald Cotton	A.C.P.G.

# NOTES REGARDING THE RE-ENTRY OF THE MOBILE GEAR IN THE NORTHERN GULF COD FISHERY

Mobile Gear Fleet Participation in the 4RS3Pn Cod Fishery  
Delta Montreal  
Ravel Room  
January 17-18, 2005

## Summary of Discussions

### Introduction

Barry Rashotte (Chairman) opened the meeting at 13:00 on January 17, 2005 by welcoming participants to Montreal for what he indicated would be the last meeting of this working group given the large number of upcoming consultations regarding cod (i.e. cod action teams, SARA, TAC decision rules) in the coming months. He indicated his preferred course of action would be to reach agreement on an approach for mobile gear to re-enter the fishery that could be recommended to the Minister.

Following a roundtable on introductions (list of participants in Annex V) the minutes of the previous meeting (October 13, 2004) were reviewed. There was some confusion on whether items listed under the title "Recap of Montreal (April 2002) Meeting" were truly discussions from 2002 or were from the October 2004. The Chair recommended changing the title to "Discussion". The minutes will be adjusted to reflect this change along with FFAW request to change the 32,000t level to 18,000t in paragraph 3 on page 2 of the minutes. B. Chapman (GEAC) asked that the words "in the context of a re-entry strategy being accepted" be added at the end of the second sentence of this paragraph.

The Chair noted that it was the goal to have a long term agreement on mobile gear re-entry and noted that there were currently two proposals on the table, the original scenario (Annex I) that was agreed to by most of the parties back in 2002 and the more recent proposal (Annex II) put forward by the Federation des pêcheurs semi-hauturiers du Quebec (FPSHQ) at the October 2004 meeting. He noted that perhaps there could be some meshing of these proposals.

### FPSHQ proposal

In the absence of Gabrielle Landry, Daniel Boisvert (DFO) proceeded to explain the proposal put forward by the FPSHQ at the last meeting. He noted that this re-entry strategy was not based on any level of TAC but rather on a year by year incremental re-integration of mobile gear beginning at a level of 70% in 2005 and 100% of the mobile quota being fished with traditional gear by 2008.

### Discussion (January 17)

The FPSHQ proposal was rejected by fixed gear participants and several groups proceeded to re-state their position from the previous meeting. Bruce Chapman suggested that it would be more beneficial for

## NOTES REGARDING THE RE-ENTRY OF THE MOBILE GEAR IN THE NORTHERN GULF COD FISHERY

the groups to explore ways to come to agreement on an integrated re-entry strategy rather than to restate old positions.

He floated the idea of having limited <65' mobile gear fishing activity (level of 5% of the TAC) that would provide not only a small level of harvest for mobile gear fishermen right away; it would provide another index of abundance for stock assessment purposes, particularly for waters deeper than those being fished by fixed gear. This 3rd proposal would be a variation of the original re-entry strategy that was proposed by DFO and conditionally accepted by most fleet representatives in April 2002 but includes provision for 5% of the TAC (at levels up to 9,000t) being utilized from existing quota holdings for a mobile gear index fishing program that would provide another indicator of abundance. Access to this mobile gear index fishing program would be split between 4R3Pn based and 4ST based mobile gear <65' vessels and would require 100% observer coverage, a minimum depth requirement to avoid gear conflict and a limit on the number of vessels participating in the survey. Fish caught under this program would be charged against the respective sector quota. All mobile gear fleets would participate in a progressive re-entry at a TAC level of 9,000t and on a straight line basis the use of mobile gear would be fully integrated at a level of 19,000t as per the 2002 Working Paper Scenario (Annex I). The Chair committed to put Mr. Chapman's proposal on paper for further discussion during the morning session of January 18.

### **Discussion (January 18)**

The second day of the meeting began with the distribution of the proposal (Annex III) that was outlined by Bruce Chapman the previous afternoon. Discussion on this latest proposal resulted in all participants generally agreeing with the concept of progressive entry of the use of mobile gear in the northern Gulf cod fishery. However there was a difference of opinion on the timing that the mobile gear would be permitted to access the fishery.

The FFAW and the LNSQA representatives expressed a philosophy that at such low levels of TACs, priority to harvest should be given to the inshore fixed gear fleet sector while the mobile gear fleets would be permitted to harvest at a "higher" level of TAC. However, they stated they were prepared to support a re-entry strategy where all sectors received their full percentage allocations at all TAC levels, as long as there were effective arrangements in place that would result in the fixed gear fleets being able to fish most if not all of the available quotas at "low" TACs. They generally supported the proposal outlined in Annex III. The GEAC representative indicated that a progressive entry for harvesting >100' quota shares using mobile gear as outlined in Annex III was acceptable but that at "low" levels of TAC, the >100' sector: (1) insists on receiving its full allocation and associated EAs; (2) has agreed in principle to enter into a multi-year agreement for <65' fixed gear to catch EAs held by NF-based enterprises; (3) needs other EA holders to have the right to engage fixed gear vessels of their choice.

Not satisfied with the outcome of the 3<sup>rd</sup> proposal the FPSHQ representative presented a modified version of their previous re-entry strategy (Annex IV). With this proposal, inshore (<65') mobile gear fleets would be permitted to direct for cod (using mobile gear) beginning with 5% of their traditional

## NOTES REGARDING THE RE-ENTRY OF THE MOBILE GEAR IN THE NORTHERN GULF COD FISHERY

allocation at a 3,500t TAC, 10% of their traditional allocation at 4,000t TAC, 20% at 5,000t and progressively increasing by 10% per 1,000t of TAC increase. This option would result in the inshore mobile gear fleets being fully integrated into the fishery at 13,000t. Fleets >65' would still only receive a portion of their allocation beginning at a TAC of 9,000t and would be fully integrated at 19,000t as per previous proposals. This proposal was debated with strong opposition from the fixed gear fleet representatives who noted that most mobile gear licence holders < 65' in the northern Gulf have received quotas of either shrimp, crab or both given that they were not permitted to harvest cod and that this should be considered in any re-entry strategy. They did agree however, that any re-entry should be subject to revision towards an earlier re-entry to the use of mobile gear in the event that temporary access to shellfish stocks by <65' mobile gear vessels became significantly diminished.

### Conclusion

Following discussion, the Chairman concluded that while there was no single option that was supported by all participants at the meeting, the idea tabled by Bruce Chapman seemed to have support from all except the FPSHQ. The Chairman decided to adjourn the meeting, noting that he would present the Minister with a document outlining the four (4) different proposals that had been discussed at the meeting, i.e.: (1) The original Working Scenario as established in 2002 (Annex I); (2) The proposal from the FPSHQ from October 2004 meeting (Annex II), (3) the Modified 2002 proposal as defined by Bruce Chapman at the January 2005 meeting (Annex III); and (4) the modified FPSHQ option (Annex IV) from the January 2005 meeting.

The participants requested option papers be circulated before being presented to the Minister for a final decision in order that sector groups could provide any final comment as required.

**The minister's decision regarding mobile gear fleet participation in the 4RS3Pn cod fishery can be found at the link below.**

<http://www.marketwired.com/press-release/df-regan-announces-2005-tacs-gulf-st-lawrence-sub-division-3ps-cod-other-groundfish-541494.htm>

LETTER FROM FOUR QUEBEC ASSOCIATIONS REGARDING  
THEIR SOUTHERN GULF COD ADVICE  
**ANNEX VII**

04/16/2015 06:18

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MARC DIOTTE

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**L'ASSOCIATION DES MORUTIERS  
TRADITIONNELS DE LA GASPÉSIE**

214, de la Rivière  
Grande-Rivière (Québec)  
GOC 1WO

Tél. : (418) 385-4501 - Cell. : (418) 689-9284 - Fax : (418) 385-4502

Le 8 avril 2015

L'honorable Gail Shea  
Chambre des communes  
Ministre des Pêches et des Océans  
Édifice du Parlement, rue Wellington  
Ottawa (Ontario)  
K1A 0A6

De : L'Association des morutiers traditionnels de la Gaspésie, l'Association des pêcheurs de la MRC Pabok, le Regroupement des pêcheurs professionnels du nord de la Gaspésie et le Regroupement des palangriers et pétoncliers uniques madelinots

**Objet : Proposition pêche à la morue pour le sud du golfe en 2015 - Zone 4T**

L'Association des morutiers traditionnels de la Gaspésie, l'Association des pêcheurs de la MRC Pabok, le Regroupement des pêcheurs professionnels du nord de la Gaspésie et le Regroupement des palangriers et pétoncliers uniques madelinots proposent une réouverture limitée de la pêche à la morue pour le sud du golfe en 2015 avec l'établissement d'un TAC de 1 200 tonnes, en plus des 300 tonnes destinées annuellement au programme des pêches sentinelles.

Cette proposition d'une réouverture de la pêche à la morue a été faite par nos quatre (4) associations de pêcheurs lors de la tenue du Comité consultatif du poisson de fond du golfe les 24 et 25 mars 2015, à Moncton. Notre proposition a été déposée à tous les membres du comité consultatif ainsi qu'aux gestionnaires présents de Pêches et Océans Canada..

Pour cette allocation de 1 200 tonnes, les quatre associations de pêcheurs recommandent le maintien des parts historiques provinciales et le respect des parts de chacune des flottilles de pêche impliquées.

.../2

## LETTER FROM FOUR QUEBEC ASSOCIATIONS REGARDING THEIR SOUTHERN GULF COD ADVICE

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MARC DIOTTE

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Les quatre associations de pêcheurs proposent également que seule **la palangre** soit utilisée comme engin de pêche pour la capture de cette allocation de 1 200 tonnes de morue et ce, dans le but de maintenir le plus grand nombre de gros poissons géniteurs au sein de la biomasse reproductrice du sud du golfe, soit la zone 4T.

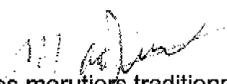
Les quatre associations de pêcheurs souhaitent aussi que votre ministère des Pêches et des Océans fasse preuve de toute la flexibilité nécessaire à l'égard de tous les groupes de pêcheurs concernés pour soit prendre part à la pêche, réaliser des ententes entre groupes de pêcheurs ou encore entre pêcheurs eux-mêmes.

Cette proposition d'une allocation 1 200 tonnes de morue sous forme de pêche dirigée se veut aussi une **pêche de reconnaissance et de tradition** à l'égard de tous les groupes de pêcheurs concernés.

Cette proposition des quatre associations de pêcheurs poursuit également plusieurs objectifs, à savoir :

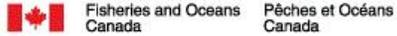
- 1) Bonifier les données scientifiques actuelles;
- 2) Maintenir l'expertise des pêcheurs au profit de l'analyse des sciences;
- 3) Favoriser une meilleure collaboration du secteur de la capture avec celui des sciences pour une meilleure compréhension de l'état du stock;
- 4) Respecter le contexte environnemental actuel;
- 5) Reconnaître les aspects socio-économique et culturel de cette pêcherie;
- 6) Alimenter les marchés local et régional.

En espérant obtenir toute votre attention et une réponse positive de votre part, je vous prie d'agréer, Madame la Ministre, mes salutations les meilleures.

Marc Diotte   
Association des morutiers traditionnels de la Gaspésie  
et porte-parole des quatre associations concernées

C.C. : Richard Nadeau, directeur général régional, MPO, Région du Québec  
Patrick Vincent, directeur régional, Gestion des pêches, MPO, Région du Québec  
France Simard, directrice de secteur, MPO, Secteur Gaspésie-Bas-Saint-Laurent  
Aziz Niang, Sous-ministre adjoint aux pêches et à l'aquaculture commerciales - MAPAQ  
Philip Toone, député fédéral Gaspésie-Îles-de-la-Madeleine

MARINE PROTECTED AREA NETWORK PRESENTATION  
ANNEX VIII



Canada's oceans  
*A natural resource, a national treasure*

# MPA Network Development in the Gulf of St. Lawrence Bioregion

Fisheries and Oceans Canada  
March 25, 2015

Canada

## National Conservation Plan



- Announced by Prime Minister on May 15
- 5 year funding announced to “strengthen marine and coastal conservation”

Canada's oceans  
*A natural resource, a national treasure*

# Canada's Commitments to MPA Networks

## International

- Convention on Biological Diversity - Conference of Parties (2010): Aichi target 11 - 10% of coastal and marine areas conserved through ecologically representative and well connected systems of protected areas and other effective area-based conservation measures by 2020

## Domestic

- *Oceans Act* (1996): DFO to lead development of national system of MPAs
- Federal MPA Strategy (2005)
- *National Framework for Canada's Network of Marine Protected Areas* (2011)

## National Framework

### Goals of the National Network:

1. To provide long-term protection of marine biodiversity, ecosystem function and special natural features
2. To support the conservation and management of Canada's living marine resources and their habitats, and the socio-economic values and ecosystem services they provide
3. To enhance public awareness and appreciation of Canada's marine environments and rich maritime history and culture

## Background

- Gulf of St. Lawrence Network development includes a working arrangement between Quebec, Gulf and Newfoundland/Labrador Regions
- Network planning involves Federal departments with conservation mandates (Parks Canada and Environment Canada), key stakeholders (i.e. fishing industry), provincial governments and Aboriginal organizations.

## Network Goals

*Provide long-term protection of marine biodiversity, ecosystem functions and special natural features of the marine environment*

*And:*

- Support the conservation and sustainable management of living marine resources and their habitats, in order to preserve the socioeconomic values and ecosystem services associated with them
- Raise public awareness of the value of marine environments and the cultural and historic values associated with them

## MPA vs Network

### MPA Network:

- A network of MPAs is a group of MPAs in a defined geographic space that are strategically planned and explicitly linked to achieve common objectives

### MPAs in a network include:

- Different types of MPAs based on statutes (National Marine Conservation Areas, Marine Reserves, *Oceans Act* Marine Protected Areas)
- Different levels of protection depending on objectives
- Options for zoning in *Oceans Act* MPAs

## Benefits of a Network

### Potential socio-economic and cultural benefits of an MPA Network:

- Help protect and restore fishery resources and their habitats;
- Help enhance the productivity of nearby areas ;
- Help conserve traditional uses and cultural heritage;
- Help maintain and develop tourism and leisure activities;
- Contribute to the **eco-certification** process.

# Strategy Scope



Canada's oceans  
*A natural resource, a national treasure*

# Network Development Process

## Data and Information Gathering

- Collect, map and validate existing ecological, social, cultural and economic data and information.
- Identify existing federal, provincial and territorial MPAs and other spatial conservation measures.

## MPA Network Design

- Identify MPA network objectives and related conservation priorities for the bioregion.
- Consider existing data and information and the contributions of existing spatial conservation measures.
- Develop MPA network design options.
- Finalize network design.

## Implementation

- Designate areas on a site-by-site basis, as resources allow.

## Management and Monitoring

- Manage, monitor and evaluate the effectiveness of designated sites.
- Monitor and evaluate the effectiveness of the bioregional network.

\*The engagement of stakeholders and partners is a fundamental principle and will occur during all phases of MPA network development and implementation.

## Socio-economic Principles

- Acknowledging and considering socio-economic and cultural aspects.
- Minimize the socio-economic impacts on Aboriginal groups, stakeholders and coastal communities.

## Results of the Process

The result of the process will be a network design, in map form, of important areas to protect.

Network plan be a decision support tool for the various jurisdictions with mandates and responsibilities related to marine protected areas.

Network design identifies and prioritize the potential areas of interest for conservation.

Specific consultation approaches will be used for each of the sites of interest as network implementation occurs.

## Opportunities for Participation

**Through various information and participation activities, you will have the opportunity to:**

- Receive up-to-date information on the network development
- Contribute to the integration of socioeconomic and cultural information into network design
- Share your opinions and concerns about possible MPA network options (maps)

## Next Steps

- Validate socio-economic data and information (2015-2016)
- Define MPA network design options and consult the interested parties (2016-2017)
- Identify the MPA network design (2017-2018)
- Implement, manage and monitor the MPA network (2018 - )