

2020 Annual Report



Committed to **Conservation** and **Management** of **Fisheries** and **Ecosystems** in the Northwest Atlantic

42nd NAFO Virtual Annual Meeting 21-25 September 2020



CONTENTS

2p	A Year in Review
4p	Elected Officers
5p	Annual Meeting
6p	STACFAD
7p	Fisheries Management
8p	Joint Commission- Scientific Council
9p	Scientific Council
11p	Meetings
13p	Secretariat Activities
16p	Appendix I.

NORTHWEST ATLANTIC
FISHERIES ORGANIZATION

Annual Report 2020

This Annual Report summarizes and highlights discussions, decisions and events of NAFO during 2020. It does not replace the detailed NAFO meeting reports, such as *Scientific Council Reports and Meeting Proceedings of the Commission*, which are accessible on the NAFO Website.

www.nafo.int



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May 2021

A YEAR IN REVIEW



Fred Kingston, Executive Secretary

2020 was an 'interesting' and challenging year for NAFO with the global COVID-19 pandemic and with changes to the Organization and the Secretariat.

NAFO welcomed the United Kingdom (UK) as NAFO's thirteenth (13th) Contracting Party. The UK joined NAFO in mid-September just in time to participate fully in the 2020 Annual Meeting. The UK has had a very long history with fisheries in the Northwest Atlantic and the Organization looks forward to the valuable contribution the UK will provide to its work and evolution.

In late spring, the NAFO Secretariat moved to new offices in downtown Halifax on the Halifax waterfront. This move was made in close cooperation with our host Contracting Party, Canada, which provides the NAFO Secretariat with office space. I am very appreciative of Canada for providing us with such a modern and well-equipped space. Its central location is close to many hotels and restaurants in Halifax for delegates of Contracting Parties attending meetings at the Secretariat—once travel restrictions due to the current pandemic are lifted, of course—and now delegates will not have to wait up to 30 minutes for a taxi to take them to the airport.

The global COVID-19 pandemic has presented NAFO with unique challenges. Since the pandemic was declared on 11 March 2020, NAFO has had to conduct all its business, including the 2020 Annual Meeting, virtually. Due to time zones, meetings could only be held for up to five hours a day. Moreover, with this limited time, Contracting Parties had to prioritize the respective agenda items prior to each of the meetings themselves. Even with these limitations, NAFO Contracting Parties still met about 25 times in 2020. Only three meetings were postponed to a time when face-to-face meetings can safely be conducted, including a proposed intersessional meeting to discuss the allocation regime for the 3M shrimp stock and a workshop of fisheries managers and scientists to draft ecosystem objectives.

I want to thank all Contracting Parties for their understanding and cooperation in ensuring that NAFO was able to conduct its essential business despite these challenging circumstances. In particular, since these meetings were held during the late evening in Japan and the Republic of Korea, I want to express my thanks and appreciation to my Japanese and Korean colleagues for being willing to work outside their normal working hours to allow NAFO business to continue.

Although NAFO has had some success in being able to continue business by holding virtual meetings, one of the challenges to meeting virtually is that it is not always ideal for the resolution of more difficult issues that require some intense negotiations. As a consequence, although the core business of NAFO has not been disrupted by the pandemic, certain important matters have had to be deferred, including the review of closures to protect vulnerable marine ecosystems (VMEs) and the review of all the additional measures to protect VMEs from bottom fishing activities.

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Despite the challenges of the pandemic, NAFO had a productive Annual Meeting. NAFO further advanced its revision of its Precautionary Approach (PA) Framework with the adoption of a detailed three-year workplan. Under this workplan, it is expected that NAFO's revised PA Framework will be finalized by September 2023. NAFO also adopted a number of decisions related to the further development of its ecosystem approach framework to fisheries management and the upcoming review of its measures to protect VMEs from bottom fishing activities. These decisions include a rollover of the current VME closures in the NAFO Regulatory Area for an additional year, pending a more comprehensive review in 2021.

In addition, to the traditional total allowable catch (TAC) and quota decisions, significant decisions were made regarding the following:

- Additional conservation measures were agreed for cod in Div. 3M including a closure of the directed fishery from January until March 2021; increased port inspection requirements; and introduction of sorting grids to protect juvenile fish; and
- Streamlined vessel authorization process.

NAFO also agreed to begin publishing an annual comparison between the TACs adopted at the Annual Meeting and the relevant scientific advice. This addresses a recommendation arising from NAFO's 2018 Performance Review, as

part of NAFO's process to address its 36 recommendations. This comparison can be found as an Appendix I to this Annual Report.

As the year comes to an end, it also marks the end of Deirdre Warner-Kramer's (USA) term as the Chair of the Standing Committee on Finance and Administration (STACFAD). Deirdre has served as the Chair of STACFAD for nine years. I wish to express my appreciation for Deirdre's dedication and service to NAFO over the years and welcome Robert Fagan (Canada) as the new STACFAD Chair.

I look forward to a less challenging year in 2021!

Executive Secretary,
Fred Kingston

CONTRACTING PARTIES OF NAFO



Canada



Cuba



Denmark (in respect of the Faroe Islands and Greenland)



European Union



France (in respect of St. Pierre and Miquelon)



Iceland



Japan



Norway



Republic of Korea



Russian Federation



Ukraine



United Kingdom



United States of America

ELECTED OFFICERS

Commission



President of NAFO &
Chair of the
Commission
Stéphane Artano
(France in respect of St.
Pierre et Miquelon)
Sep. 2019–Sep. 2021



vice-Chair of the
Commission
Temur Tairov
(Russian Federation)
Sep. 2019–Sep. 2021



Chair of STACFAD
Deirdre Warner-Kramer
(United States of America)
Sep. 2011–Sep. 2020



vice-Chair of STACFAD
Robert Fagan
(Canada)
Sep. 2019–Sep. 2020



Chair of STACTIC
Kaire Märtin
(European Union)
Sep. 2019–Sep. 2021



vice-Chair of STACTIC
Patrick Moran
(United States of America)
Sep. 2019–Sep. 2021

Scientific Council



Chair of the
Scientific Council
Carmen Fernandez
(European Union)
Sep. 2019–Sep. 2021



vice-Chair of Scientific
Council &
STACREC Chair
Karen Dwyer
(Canada)
Sep. 2019–Sep. 2021



Chair of STACFEN
Miguel Caetano
(European Union)
Jun. 2019–Sep. 2021



Chair of STACFIS
Katherine Sosebee
(United States of America)
Sep. 2019–Sep. 2021

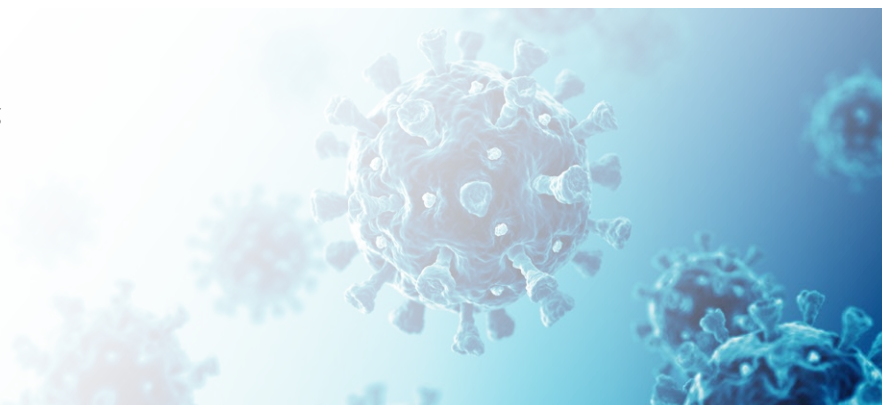


Chair of STACPUB
Margaret Treble
(Canada)
Sep. 2013–Sep. 2021

COVID-19 Pandemic

The global coronavirus (COVID-19) pandemic significantly impacted the operations of NAFO in 2020. Since March 2020, the COVID-19 pandemic has resulted in multiple meetings moving to online formats, instead of the traditional face-to-face meetings. Due to time constraints, including the participation of Contracting Parties in various time zones, the meetings have had to continue with focused and prioritized agendas.

The NAFO Secretariat's participation in external relations/meetings/guests to the Secretariat were also significantly reduced due to the cancellation of external meetings.



ANNUAL MEETING

Virtual

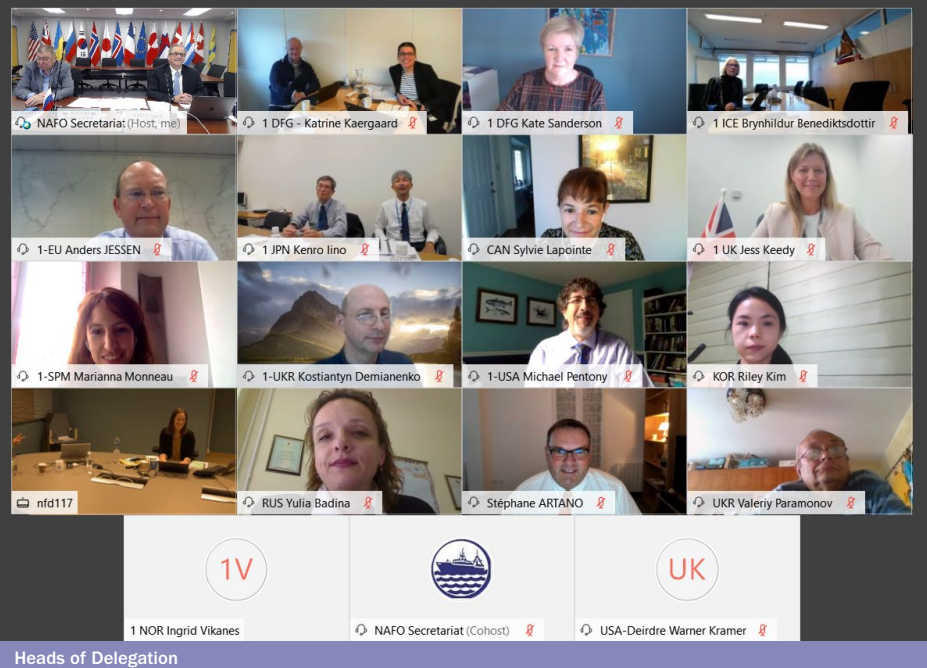
NAFO's 42nd Annual Meeting was held 21–25 September 2020. Due to the current global pandemic, NAFO conducted the Annual Meeting virtually for the first time in its history. During the opening session, delegates from all the NAFO Contracting Parties were welcomed to the meeting by NAFO President, Stéphane Artano. The NAFO President also formally welcomed NAFO's newest Contracting Party, the United Kingdom, which joined NAFO earlier that month. The United Kingdom is NAFO's 13th Contracting Party.

Despite the limitations imposed this year by the current global pandemic, NAFO continued to have a productive meeting. NAFO further advanced its revision of its Precautionary Approach (PA) Framework with the adoption of a detailed three-year workplan. Under this workplan, it is expected that NAFO's revised PA Framework will be finalized by September 2023. NAFO also adopted a number of decisions related to the further development of its ecosystem approach framework to fisheries management and the upcoming review of its measures to protect vulnerable marine ecosystems (VMEs) from bottom fishing activities. These decisions include a rollover of the current VME closures in the NAFO Regulatory Area for an additional year, pending a more comprehensive review in 2021.

In addition, to the traditional total allowable catch (TAC) and quota decisions, significant decisions were made regarding the following:

- Additional conservation measures were agreed for cod in Div. 3M including a closure of the directed fishery from January until March 2021; increased port inspection requirements; and introduction of sorting grids to protect juvenile fish.
- Streamlined vessel authorization process.

NAFO ANNUAL MEETING - SEPTEMBER 2020



Fred Kingston and Temur Tairov (Russian Federation) participate at the virtual Annual Meeting



- The term of the Executive Secretary, Fred Kingston, was extended for an additional year until the end of 2022.

NAFO is also planning intersessional work to review the current management approach for shrimp in Div. 3M and a

workshop to identify ecosystem level objectives in advance of the 2021 Annual Meeting.

The 43rd Annual Meeting will take place 20–24 September 2021, in Halifax, Nova Scotia, Canada.

STACFAD

Financial Status Update

The Standing Committee on Finance and Administration (STACFAD) oversees the budget and administrative matters of the Organization. Under the unusual circumstances of the COVID-19 pandemic and with travel restrictions being in place, STACFAD met via WebEx during the 2020 Annual Meeting and Deirdre Warner-Kramer (USA) led the committee throughout its deliberations.

The 2020 fiscal year was a challenging one for all organizations and businesses dealing with the COVID-19 pandemic. With all non-essential travel being cancelled for the health and safety of its staff

and members, in person meetings hosted, supported and attended by the NAFO Secretariat were either cancelled or held virtually. As the Secretariat has been using WebEx for hosting virtual meetings for several years, the transition to hosting all meetings virtually went relatively smoothly. The Secretariat also relocated its office from Dartmouth to Halifax with the Government of Canada covering the costs for the move.

STACFAD was pleased to report that the overall financial affairs of the Organization continue to be in a stable position. Only one full membership contribution was outstanding for 2020 year.

The NAFO budget for 2020 was set at \$2.369 million (Table. 1) with actual expenditures coming in approximately \$119 000 under budget. Overall savings for the year can be attributed to the reduction in travel and meeting costs with meetings being held virtually, although, some cost overages were incurred with security enhancements being implemented to NAFO's firewall, servers, and software.

Contributions received from NAFO Contracting Parties for 2020 are shown in Table 2. The NAFO Convention (Article IX.2) establishes a four-part cost sharing formula, including a proportion based on the nominal catches in the Convention Area. The United Kingdom (UK) acceded to the NAFO Convention in mid-September 2020 and in accordance with Article IX.6 of the NAFO Convention, the UK's contribution was calculated proportional to the number of complete months (October to December) remaining in 2020.

Table 1. 2020 NAFO Budget

	2020 Budget	2020 Actual Expenditures
Salaries and Benefits	\$1,827,000	\$1,849,544
Meeting and Travel	279,000	45,878
Computer Services	54,000	70,634
Professional Services	45,000	133,605
Fishery Monitoring	42,000	41,200
Other	122,000	109,582
Total	\$2,369,000	\$2,250,443

Table 2. 2020 NAFO Member Contributions

	2020 Member Contributions
Canada	\$725,158
Cuba	58,843
Denmark (in respect of Faroe Islands and Greenland)	243,480
European Union	209,676
France (in respect of St. Pierre et Miquelon)	64,188
Iceland	58,843
Japan	67,926
Norway	68,414
Republic of Korea	58,843
Russian Federation	92,107
Ukraine	58,843
United Kingdom	13,834
United States of America	308,841
Total	\$2,028,996

Grant Thornton audited the 2020 financial statements in accordance with their appointment to audit NAFO'S financial records for the 2016–2020 fiscal periods.

The Committee put forward a budget proposal for the 2021 fiscal year of \$2.451 million, representing an increase of 3.5% over the 2020 budget. The increase in the 2021 budget can be attributed to routine economic and salary step increases for personnel, continuing computer security enhancements, as well as increased costs associated with hosting the 2021 Annual Meeting in Halifax.

Robert Fagan (Canada) was nominated and elected as Chair for a two-year term.

The next meeting of STACFAD will be held during the 2021 Annual Meeting of NAFO in Halifax, Nova Scotia, Canada.

FISHERIES MANAGEMENT

2020 Fishing Effort

The fisheries in the NAFO Regulatory Area (NRA) are generally groundfish in Divisions 3LMNO.

In 2020, there were 49 fishing vessels spending approximately 4 622 days in the NRA. Smaller vessels tend to fish for yellowtail flounder and Atlantic halibut on the Tail of the Grand Banks, and cod on the Flemish Cap using longline gears; and larger vessels go on much longer fishing trips using bottom trawls on the Nose and Tail of the Grand Banks and in the Flemish Cap directing for cod, Greenland halibut, redfish, and skates.



TOTAL ALLOWABLE CATCH (TAC) TABLE 2020 and 2021 (metric tons)

Stock/Year	2020	2021
3L Cod	0	0
3M Cod	8 531	1 500
3NO Cod	0	0
3LN Redfish	18 100	18 100
3M Redfish	8 590	8 448
3O Redfish	20 000	20 000
Sub-Area 2 and Div. 1F+3K Redfish	0	0
3LNO American plaice	0	0
3M American plaice	0	0
3LNO Yellowtail flounder	17 000	17 000
3L Witch flounder	0	0
3NO Witch flounder	1 175	1 175
3NO White hake	1 000	1 000
3NO Capelin	0	0
3LNO Skates	7 000	7 000
3LMNO Greenland halibut	12 542	12 225
Sub-areas 3+4 Squid (<i>Illex</i>)	34 000	34 000
3L Shrimp	0	0
3NO Shrimp	0	0
SA6 Alfonsino	0	0

The annual TACs are agreed by the Commission. TAC decisions are based on scientific advice of the Scientific Council which conducts regular assessment of the fishery stocks. Existing moratoria (TAC = 0) were extended to allow re-building of depleted stocks and quotas for other stocks were set by the Commission. A comparison between the 2021 TAC decisions adopted with their respective scientific advice is appended at the end of this Annual Report.

At the 2019 NAFO Annual Meeting, the Commission re-opened the fishery for shrimp (PRA) in Division 3M. This stock is regulated by effort (fishing days) with a total of 2 640 fishing days available in 2021; the effort allocation scheme is outlined in Annex I.B of the NAFO CEM.

COMPLIANCE

The Inspection and Surveillance Scheme is implemented to ensure compliance of NAFO-registered fishing vessels in the NAFO Regulatory Area (NRA). Inspectors are appointed by Contracting Parties and assigned to fishery patrol vessels tasked to carry out inspection duties at sea. In 2020, Canada and the European Union (EU) deployed five (5) patrol vessels in the NRA under the Scheme, collectively spending 323 patrol-days.

TOOLS AND APPLICATIONS

The NAFO Monitoring, Control, and Surveillance (MCS) website (<https://mcs.nafo.int>) continues to be a valuable tool for retrieving current information for compliance and inspection activities. In January, DJ Laycock, NAFO Database Developer/Programmer Analyst, attended the EU Inspectors Workshop (Vigo, Spain) to provide training to the participants on all the MCS website features. Additionally, in January 2020, the Observer Reporting Application was presented to attendees of the EU Observers Workshop in Averio, Portugal. The attendees provided favourable feedback for the Observer Application. At present, the main technical challenge is provisioning the Observer with the internet to transmit data independent of the vessel's communication system.

VULNERABLE MARINE ECOSYSTEMS (VMEs)

AREAS CLOSED TO BOTTOM FISHING

In total, there are 20 areas closed to bottom fishing, constituting six (6) seamounts, one (1) coral zone and 13 VME areas (Fig. 1). Protocols for exploratory fishing in new fishing areas and for encountering VME species are elaborated in Chapter II of the NAFO Convention and Enforcement Measures (NCEM). These measures are reviewed by the Scientific Council and the Joint Commission–Scientific Council Working Group on the Ecosystem Approach Framework to Fisheries Management (WG-EAFFM) upon availability of new scientific information. The complete review of the VME areas scheduled for 2020 was postponed until 2022 as a result of the COVID-19 pandemic.

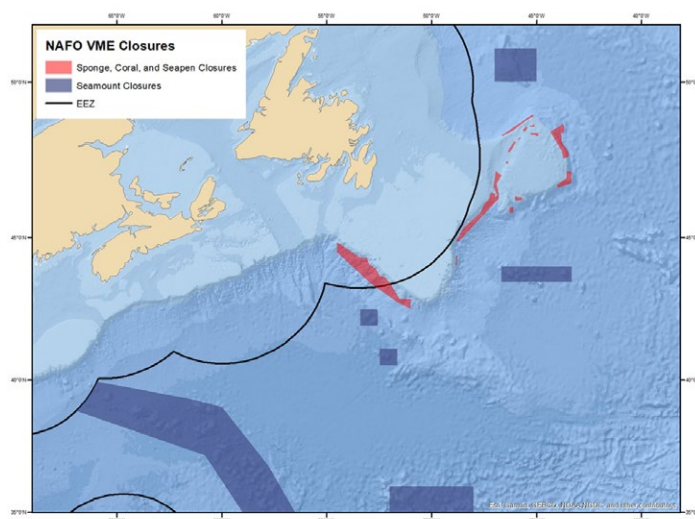


Fig. 1. The NAFO VME closures that were adopted at the 2018 Annual Meeting.

JOINT COMMISSION-SCIENTIFIC COUNCIL WORKING GROUPS

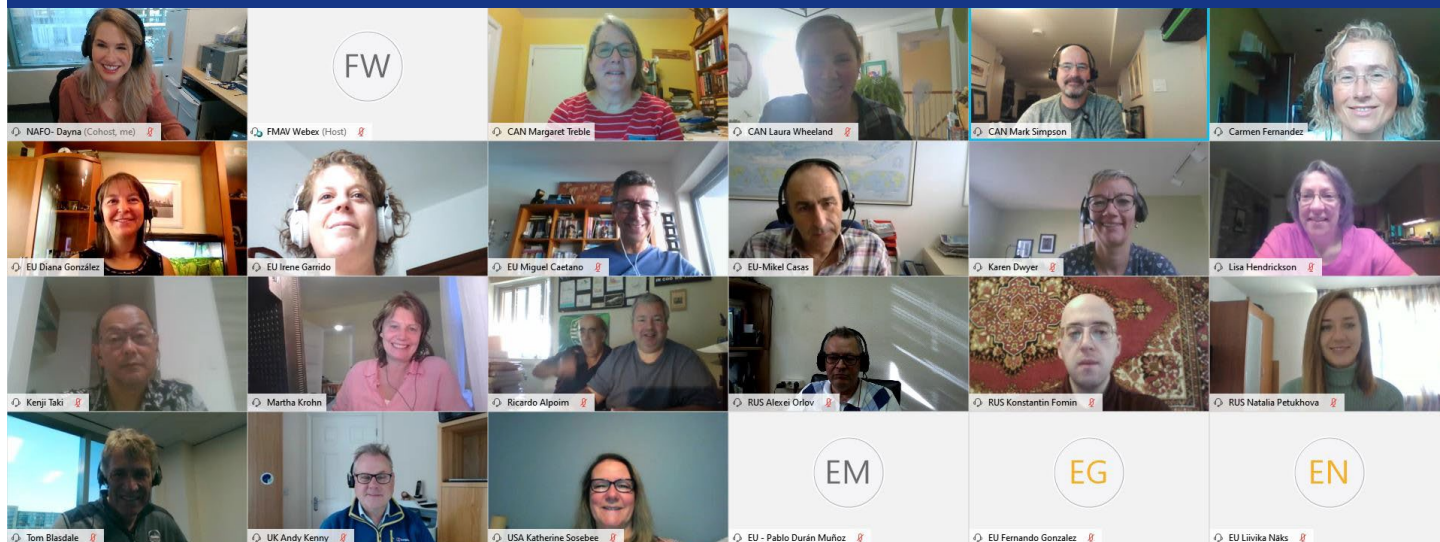
In 2020, the NAFO Joint Commission–Scientific Council Working Group on Catch Estimation Strategy Advisory Group (CESAG), the Working Group on Risk-Based Management Strategies (WG-RBMS), and the Working Group on Ecosystem Approach Framework to Fisheries Management (WG-EAFFM) met virtually throughout the year. These Working Groups provide a forum for an improved dialogue between fishery managers and

scientists while addressing major issues concerning ecosystem approach to fisheries management, risk-based management strategies and catch reporting in a more holistic manner.

Documents and reports from the joint Working Groups can be found on the [NAFO website](https://www.nafo.int).

SCIENTIFIC COUNCIL

SCIENTIFIC COUNCIL - SEPTEMBER 2020



Virtual Annual Meeting - September 2020

As a result of the COVID-19 pandemic, the 2020 Scientific Council (SC) June meeting was held virtually, with a somewhat reduced format. Agenda items were prioritized, with highest priority being given to stock assessments and to requests that had been identified by the Commission as high priority at the 2019 Annual Meeting. A number of agenda items were deferred to be addressed during the 2020 Annual Meeting or the 2021 June SC meeting. Nevertheless, a considerable amount of work was achieved under very challenging circumstances.

During the June meeting, Scientific Council carried out full assessments for cod and American plaice in Division 3M, thorny skate in Divisions 3LNO and Subdivision 3Ps, and witch flounder in Divisions 3NO as well as an update assessment and projections for redfish in Divisions 3LN. At the request of Denmark (on behalf of Greenland), full assessments were also carried out for golden redfish, demersal deep-sea redfish, Atlantic wolffish and spotted wolffish, Greenland halibut, (inshore) and (at the

request of both Denmark and Canada), Greenland halibut in Div. 0A and the offshore area of Div. 1A, plus Div. 1B-F. Full details of all these assessments can be found in the Scientific Council June report ([SCS Doc. 20/14](#)).

As required by the Management Strategy (MS) for Greenland halibut stock in Subarea 2 + Divisions 3KLMNO, adopted by NAFO in 2017, an update assessment was conducted for this stock to monitor its development following three years of application of the MS. The assessment showed that estimates of recruitment, exploitable biomass, and average fishing mortality had changed very little from the values estimated in 2017.

Based on the work of the Working Group on Ecosystem Science and Assessment (WG-ESA) in 2019 and previous years, Scientific Council completed its five-yearly re-assessment of NAFO's VME closures. The results indicated that protection provided by closures for large gorgonian and sponge VMEs is generally good, and management action was considered as beneficial. Conversely,

black coral and sea pen VME have poor protection, and erect bryozoans, sea squirt and small gorgonian VMEs have inadequate protection by closures; management action for these VMEs is recommended as essential. Additionally, work carried out by WG-ESA in 2019 indicate that Black Coral does form aggregations in the NRA and accordingly, Scientific Council recommended the inclusion of this taxon in the NCEM VME indicator species list.

At its September 2020 meeting Scientific Council addressed several new requests from the Commission as well as a number of requests that had been deferred from the June 2020 meeting. These included advice on technical measures to protect and improve the productivity of the 3M cod stock, and the identification of discard stocks with high survivability rates. Scientific Council was pleased to present a Scientific Merit Award to António Ávila de Melo (EU-Portugal), who retired in 2020, to acknowledge and celebrate his contributions to Scientific

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Scientific Council cont'd



António Ávila de Melo

Council over his career as a Research Scientist.

At the request of the Commission, Scientific Council in conjunction with the NAFO/ICES Pandalus Assessment Group (NIPAG) drafted advice for northern shrimp in Div. 3M during an additional WebEx meeting held immediately prior to the Annual Meeting. The assessment indicated that the stock has increased from very low levels since 2014 and is now above B_{lim} with indications of improved recruitment in the 2020 survey data. However, considering the uncertainty over future recruitment, management advice for 2021 remained the same as last year that is limiting the annual catch to no more than 5 448 tonnes.

SC and NIPAG also met by WebEx during October 2020 where advice was produced for northern shrimp in Subarea 1 and Div. 0A and northern shrimp in Denmark Strait and off East Greenland in response to requests from coastal States.

The Working Group on Ecosystem Science and Assessment (WG-ESA)

met by WebEx in November. Like other Scientific Council meetings in 2020, it was not possible to fully address all the items on the agenda, but considerable progress was made, particularly on the reassessment of bottom fishing impacts. In order to complete this important work for presentation to Scientific Council in 2021, an additional meeting of WG-ESA is scheduled for March 2021.

During 2020, Scientific Council re-activated its Precautionary Approach Working Group (PA-WG, previously referred to as WG-PAF), which had been inactive since 2016 due to competing work priorities. A new work plan was developed, and funding obtained from the EU to engage three external experts for a two-year project commencing in 2020. The experts will assist and guide the work of the PA-WG and provide expert review for its work. It is planned that advice on a revised NAFO Precautionary Approach Framework will be presented to WG-RBMS and the Commission at their meetings in 2022.

NAFO/ICES PANDALUS ASSESSMENT GROUP (NIPAG) - OCTOBER 2020

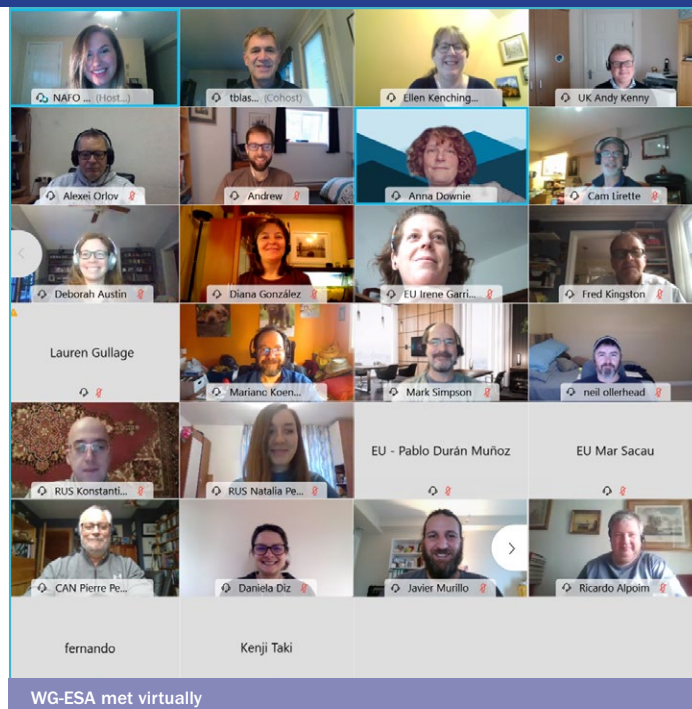


NIPAG met virtually

MEETINGS

SCIENTIFIC COUNCIL WORKING GROUP ON ECOSYSTEM SCIENCE AND ASSESSMENT (WG-ESA) MEETING - NOVEMBER 2020

- 06 February 2020, Joint Commission–Scientific Council Working Group on Risk-based Management Strategies (WG-RBMS) Meeting, WebEx.
- 12 February 2020, Joint Commission–Scientific Council Catch Estimation Strategy Advisory Group (CESAG) Meeting, WebEx.
- 02 March 2020, Ad hoc virtual NAFO Website Re-design Working Group: Data Classification Meeting, WebEx.
- 04 March 2020, Scientific Council Precautionary Approach Working Group (PA-WG), WebEx.
- 17 March 2020, Joint Advisory Group on Data Management (JAGDM) Meeting, WebEx.
- 02 April 2020, Scientific Council and its Standing Committees Planning Meeting, WebEx.
- 23 April 2020, STACTIC - FAO survey on Port State Measures Agreement (PSMA) Implementation Meeting, WebEx.
- 24 April 2020, Joint Commission–Scientific Council Catch Estimation Strategy Advisory Group (CESAG) Meeting, WebEx.
- 30 April 2020, Commission Ad hoc Working Group to Reflect on the Rules Governing Bycatches, Discards and Selectivity (WG-BDS) in the NAFO Regulatory Area Meeting, WebEx
- 04 May 2020, Scientific Council Precautionary Approach Working Group (PA-WG) Meeting, WebEx.
- 11 May 2020, Scientific Council and its Standing Committees (SC Surveys) Meeting, WebEx.
- 12–15 May 2020, Standing Committee on International Control (STACTIC) Intersessional Meeting, WebEx.
- 28 May–12 June 2020, Scientific Council and its Standing Committees Meeting, WebEx.
- 23 June 2020, Ad hoc virtual NAFO Website Re-design Working Group: Data Classification Meeting, WebEx.
- 06 July 2020, Informal Meeting of NAFO Heads of Delegation concerning the 2020 NAFO Annual Meeting, WebEx.
- 17–19 August 2020, Joint Commission–Scientific Council Working Group on Ecosystem Approach Framework to Fisheries Management (WG-EAFFM) Meeting, WebEx
- 20–21 August 2020, Joint Commission–Scientific Council Working Group on Risk-based Management Strategies (WG-RBMS) Meeting, WebEx.
- 25–26 August 2020, STACTIC Editorial Drafting Group of the NAFO CEM (EDG) Meeting, WebEx.



- 10 September 2020, Joint Advisory Group on Data Management (JAGDM) Meeting, WebEx.
- 14 September 2020, Scientific Council (in conjunction with NIPAG) Meeting, WebEx.
- 21–25 September 2020, 42nd Annual Meeting of NAFO, WebEx.
- 26–30 October 2020, Scientific Council and NAFO/ICES *Pandalus* Assessment Group Meeting, WebEx.
- 05 November, STACTIC Editorial Drafting Group of the NAFO CEM (EDG) Meeting, WebEx.
- 17–26 November 2020, Scientific Council Working Group on Ecosystem Science and Assessment (WG-ESA) Meeting, Halifax, NS, Canada.

Meetings postponed (January–December 2020):

- NAFO Fishing Regime for Shrimp in Division 3M Meeting.
- NAFO Ad hoc Working Group on STACTIC Participation (WG-SP) Meeting.
- NAFO Joint Commission–Scientific Council WG-EAFFM Workshop of fisheries managers and scientists to draft ecosystem objectives.

Reports of all NAFO meetings can be found on the [NAFO website](http://www.nafo.int).

EXTERNAL MEETINGS



Aveiro, Portugal



NAFO Observers Workshop, Aveiro, Portugal, 14–15 January 2020

Database Developer/Programmer Analyst, DJ Laycock attended the meeting.

5th Project Steering Committee of the ABNJ Deep Seas Project, Rome, Italy, 27–28 January 2020

Executive Secretary, Fred Kingston, attended the meeting.

EU Inspectors Workshop for NAFO, Vigo, Spain, 28–30 January 2020

Database Developer/Programmer Analyst, DJ Laycock attended the meeting.

Common Oceans Global Steering Committee Meeting, Rome, Italy, 29–30 January 2020

Executive Secretary, Fred Kingston, attended the meeting.

International Fisheries Commissions Pension Society (IFCPS), Annual Meeting, GoToMeeting, 15–17 April 2020

Executive Secretary, Fred Kingston, and Deputy Executive Secretary & Senior Finance & Staff Administrator, Stan Goodick, participated virtually at the meeting.

Aquatic Sciences and Fisheries Abstracts (ASFA) Advisory Board Meeting, Zoom, 10–14 August 2020

Alexis Pacey, Senior Publications/Web Manager, participated virtually.

ABNJ Deep Seas Fisheries Project Inception Workshop, Zoom, 26 August 2020

Executive Secretary, Fred Kingston, attended the meeting virtually.

Second Preparatory Meeting for the Strategic Reorientation of WECAFC, Zoom, 23 October 2020

Executive Secretary, Fred Kingston, attended the meeting virtually.

12th South China Sea International Conference, Zoom, 17 November 2020

Senior Fisheries Management Coordinator, Dr. Ricardo Federizon, attended the conference virtually and gave a presentation focused on NAFO and monitoring, control and surveillance in the northwest Atlantic.

International Seabed Authority (ISA) Workshop on the Development of a Regional Environmental Management Plan for the Area of the Northern Mid-Atlantic Ridge, MSTeams, 23 November–04 December 2020

Executive Secretary, Fred Kingston, attended the meeting virtually and gave a presentation about area-based management tools used by NAFO.

Sargasso Sea Project Inception Meeting, Zoom, 15 December 2020

Executive Secretary, Fred Kingston, attended the meeting virtually.



12th South China Sea International Conference, Zoom, 17 November 2020

SECRETARIAT ACTIVITIES

NAFO Secretariat Headquarters Relocation

The NAFO Secretariat officially moved its head-quarters in May 2020, from its long-time location at 2 Morris Drive, Dartmouth, Nova Scotia. The new Secretariat office space is now located in suite 401 of Summit Place, 1601 Lower Water Street in Halifax, Nova Scotia. The new headquarters is a modernized space in the centre of Nova Scotia's capital, with a large boardroom, bright views of the city and harbour, and within close proximity to the waterfront boardwalk and to various restaurants and accommodations. The Secretariat would like to extend their appreciation to the Government of Canada for all their assistance during the relocation process.

INTERNSHIPS

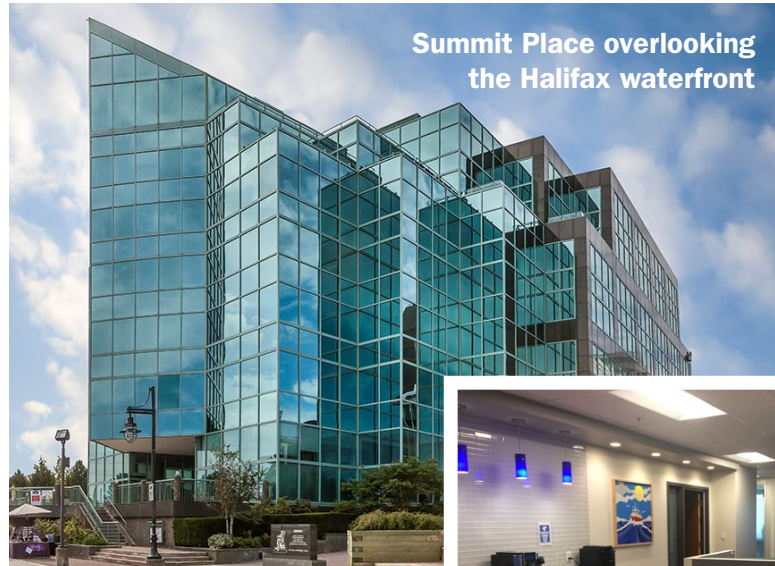
The NAFO Intern Program allows students, postgraduates or early career individuals from NAFO member countries to work in the NAFO Secretariat as an intern for periods of up to six (6) months. Interns can gain experience and knowledge in operations of NAFO as an intergovernmental organization while the NAFO Secretariat can benefit through the presence of an additional professional and his/her capacity and knowledge.

Since its inception in 2011, 13 interns have taken part in the NAFO Internship Program. This year, one intern participated in the NAFO internship program. Due to the COVID-19 pandemic, the NAFO internship was postponed for the second half of 2020.

ANNA WALL

Anna Wall was invited to complete a three-month internship at the NAFO Secretariat. Anna first began her internship program at the 2019 Annual Meeting of NAFO in Bordeaux, France. She then rejoined the Secretariat in the winter of 2020.

Hailing from Sweden, Anna holds a Master of Science in Marine Sciences and a Bachelor of Science Degree in Marine Sciences from Gothenburg University. She



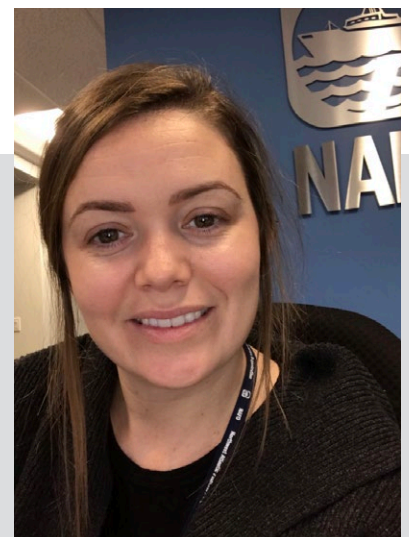
Summit Place overlooking the Halifax waterfront

New NAFO Secretariat head-quarters office reception area



currently works as a nature conservation officer at the department of nature conservation in Gotland, Sweden. Anna previously worked for the ABNJ Deep Seas Project with FAO in Rome.

During her internship, Anna helped on bycatch and discards analyses of haul by haul data by creating maps showing where and when bycatch of certain species occurs. She also assisted by writing R scripts for NAFO publication requirements and assisting in the production of responses for various United Nations requests for information.



We want to thank Shala Singer for ably fulfilling Sarah Guile's position as Office Administrator while she was on maternity leave.

Secretariat Staff Members 2020

In 2020, the Secretariat was comprised of the following employees:

Executive Secretary	Fred Kingston
Deputy Executive Secretary and Senior Finance and Staff Administrator	Stan Goodick
Senior Fisheries Information Administrator	Jana Aker
Scientific Information Administrator	Dayna Bell MacCallum
Scientific Council Coordinator	Tom Blasdale
Senior Fisheries Management Coordinator	Ricardo Federizon
Office Administrator	Sarah Guile
Office Administrator (term)	Shala Singer
IT Manager	Matthew Kendall
Database Developer/Programmer Analyst	DJ Laycock
Senior Executive Assistant to the Executive Secretary	Lisa LeFort
Senior Publications/Web Manager	Alexis Pacey



Back row - left to right: Jana Aker, Fred Kingston, Ricardo Federizon, Tom Blasdale, Matthew Kendall, Alexis Pacey, Lisa LeFort.

Front row - left to right: Dayna Bell MacCallum, Stan Goodick, DJ Laycock, Sarah Guile.

Outreach

MEDIA

The Secretariat continued to circulate its annual press releases to a dedicated NAFO media contact list. This year, a press release was circulated following the closing of the Annual Meeting. The Secretariat continues to try to increase its outreach including outreach initiatives with various groups and universities and by updating its various social media platforms.

EXTERNAL RELATIONS

During the past year, the NAFO Secretariat has participated in meetings to discuss NAFO-related issues, including the following:

- Executive Secretary, Fred Kingston, attended the monthly meetings of the Nova Scotia Consular Corps.

The NAFO Secretariat also continues to strengthen its relationship with the academic community.

- 05 March 2020, Executive Secretary, Fred Kingston, gave a guest lecture to the Dalhousie University Law of the Sea class in Halifax, Nova Scotia, Canada.
- 16 November 2020, Jana Aker, Senior Fisheries Information Administrator, and Dayna Bell MacCallum, Scientific Information Administrator, gave a brief presentation about NAFO to the Dalhousie University Marine Affairs Program class in Halifax, Nova Scotia, Canada.

GUESTS TO THE SECRETARIAT

- On 10 February 2020 the United States Consul General, Kevin Skillin, paid a courtesy visit to the NAFO Secretariat.

The NAFO Secretariat continues to hold smaller working group meetings in its boardroom whenever possible as well as offer the use of the space to affiliated groups for a nominal fee. In the past, universities and Fisheries and Oceans Canada have used the space for meetings, as well as the ICES Working Group on the Northwest Atlantic Regional Sea (WG-NARS).

INFORMATION REQUESTS

The NAFO Secretariat regularly responds to requests from various international sources. During the last year, the Secretariat has responded to the following specific requests for input:

- Information request for the COFI34 information paper on the impacts of COVID-19 on fisheries and aquaculture.
- Request from OECD on analyzing the impacts of COVID-19 on fisheries and policy responses to the crisis.
- Contribution to the monitoring the implementation of the 1995 FAO Code of Conduct for Responsible Fisheries, the International Plans of Action on Capacity, Sharks, Seabirds, Illegal, Unreported and Unregulated Fishing and the Strategies for Improving Information on Status and Trends of Capture Fisheries and Aquaculture.

Secretariat cont'd

- Contribution to the report of the UN Secretary-General on the actions of RFMOs the impacts of bottom fishing on vulnerable marine ecosystems and the long-term sustainability of the deep-sea fish stocks.
- Contribution to the UN Secretary-General's contribution to UNGA resolution 74/18 of 10 December 2019, pursuant to paragraph 67, regarding "*Implementation of an ecosystem approach to fisheries management*".
- Contribution to the WECAFC Ad Hoc Intersessional Working Group to progress towards the developments of a model for a regional fisheries management entity or arrangement in the WECAFC Area.
- Contribution to the Regional Fishery Body Secretariats Network (RSN) Newsletters.

Throughout the year various informal requests are made to the Secretariat regarding specific information, procedures of NAFO, etc. by students, educational institutes, RFMOs, Contracting Parties representatives or other organizations. These are answered to the best of the ability and as time permits by various members of the NAFO Secretariat.

Networking

INTERNET AND SECURITY

In 2020, NAFO continued to significantly upgrade their security systems. All areas of security have been enhanced including Perimeter, Network, Endpoint, Application and Data.

STAFF TRAINING

In December 2020, all staff of the NAFO Secretariat took part in a *Cybersecurity Awareness Training* course held by Bulletproof Academy. The training session was part of the overall upgrade that the NAFO Secretariat is taking to enhance information technology security measures.

SHAREPOINT

The NAFO Meetings SharePoint was upgraded from version 2013 to 2019. SharePoint continues to be a valuable resource allowing access to meeting documentation before, during and after meetings.

NAFO WEBPAGES/DATA CLASSIFICATION

In response to Recommendation 26 of the 2018 NAFO Performance Review Panel, the NAFO *Ad Hoc* Virtual NAFO Website Re-Design Group reconvened in 2020 to explore options for making meeting documents including working papers, more accessible.

The NAFO *Ad Hoc* Virtual NAFO Website Re-Design Group will work in conjunction with NAFO Bodies, Standing Committees, and Working Groups for the development of an appropriate meeting documentation policy and appropriate confidentiality guidelines for NAFO meeting documentation, such as working papers.

JOURNAL OF NORTHWEST ATLANTIC FISHERY SCIENCE

The *Journal of Northwest Atlantic Fishery Science*, Vol. 51, 2020 was published. To submit articles, or view past publications, please visit the JNAFS website at <https://journal.nafo.int/>.

Publications

During the period of January–December 2020, in addition to the many meeting documents and working papers for NAFO meetings, the NAFO Secretariat prepared, posted to the web and/or printed the following publications:

- *Journal of Northwest Atlantic Fisheries* Volume 51, 2020 (94 pp)
- *NAFO Conservation and Enforcement Measures 2021* (194 pp)
- *NAFO Annual Report 2019* (20-page booklet)
- *Meeting Proceedings of the Commission September 2019–August 2020* (362 pp).
- *NAFO Scientific Council Reports 2019* (451 pp)
- *Statistical Bulletin* (ICNAF & NAFO -1951–1999) - all copies are now digitized and available online.

All publications and documents are available on the NAFO website: www.nafo.int/Publications

AQUATIC SCIENCES AND FISHERIES ABSTRACTS (ASFA)

For 2020 documents and publications, ASFA inputting and indexing will take place during the winter of 2021. New software testing for data-inputters took place in the autumn of 2020. The new software is scheduled to be released in the spring of 2021.

The **Aquatic Sciences and Fisheries Abstracts (ASFA) database** is the premier reference in the field of fisheries, aquatic and marine sciences. Input to the **ASFA database** is provided by a growing international network of information centers monitoring over 3 000 serial publications, in addition to books, reports, conference proceedings, translations and grey literature covering the science, technology and management of marine, brackish water, and freshwater environments. For more information about ASFA view their webpage at <http://www.fao.org/fishery/asfa/contacts/en>

The ASFA newsletter is available online at: <http://www.fao.org/3/cb2829en/CB2829EN.pdf>

APPENDIX I.

Comparison Between Management Measures Adopted for 2021 and Scientific Advice

As per the decision of Contracting Parties at the NAFO Annual Meeting in September 2020, please find the inclusion of the table “Comparison Between Decisions Adopted for 2021 and Scientific

Advice” for implementation of Recommendation 10 of the 2018 NAFO Performance Review Panel.

Comparison of Scientific Advice on NAFO Fish Stocks and the Management Measures decided by the Commission			
	Most recent scientific advice and year of provision		Management measures applicable to 2021
FISH STOCKS	SCIENTIFIC ADVICE	YEAR	MANAGEMENT MEASURES
Cod in Division 3M	<p>Yield of less than or equal to 1 000 tonnes in 2021 results in a very low probability ($\leq 10\%$) of SSB being below B_{lim} in 2022 and a very low probability of exceeding F_{lim}. For any catch over 1 000 tonnes, the probability of being below B_{lim} exceeds the NAFO Precautionary Approach guidelines (NAFO/SCS Doc. 19-22).</p> <p>Scientific Council advises that a seasonal closure (no directed fishery on 3M cod during the first quarter of the year) would protect spawning activity, reducing the number of spawning fish that are captured and allow them to spawn before becoming available to the fishery.</p> <p>The implementation of sorting-grids in the Div. 3M cod fishery gear will reduce catch of small and immature individuals of cod. These devices would to a large extent prevent catches of individuals less than the minimum landing size (41 cm) and have the advantage also of reducing redfish bycatches and thereby reduce discards.</p> <p>From the Scientific Council Meeting, 21–25 September 2020 (NAFO/SCS Doc. 20/19): <i>Scientific Council is not at this point able to quantify the full effect of implementing these [flanking] management measures.</i></p>	2020	<p>TAC 1 500 tonnes,</p> <ul style="list-style-type: none"> “close its directed fishery for cod in Division 3M between 24:00 UTC 31 December 2020 and 24:00 UTC 31 March 2021”, “.. Use a sorting grid for the purpose of reducing the catches of smaller individuals of cod. The minimum bar spacing shall be 55 mm. Control measures: Each Contracting Party For vessels with more than 1 250 kg of 3M cod catches on board: prohibit its vessels from landing or transporting 3M cod catches in port other than those designated in accordance with Article 43. inspect each landing or transshipment of 3M cod in its port and prepare an inspection report. <p>From the Report of the NAFO Commission, 21–25 September 2020 (NAFO/COM Doc. 20-19): “As requested by the Commission at this meeting, SC made recalculations of the projections between 500–1500 tonnes at 100-tonne intervals. The projections revealed that, at catch of 1 100 tonnes, the risk levels ($P(SSB < B_{lim})$ and $P(F > F_{lim})$) remain unchanged”. Further, “In addition, it was recalled that acceptable levels of probability and risk specific to the 3M cod stock had not been agreed, and this matter should be subject to a more comprehensive discussion among managers in relation to the Precautionary Approach Framework (PAF).”</p>
Cod in Division 3NO¹	No directed fishing in 2019 to 2021 to allow for stock rebuilding. Bycatches of cod in fisheries targeting other species should be kept at the lowest possible level.	2018	Ban on fishing.

Appendix I. cont'd

Comparison of Scientific Advice on NAFO Fish Stocks and the Management Measures decided by the Commission			
	Most recent scientific advice and year of provision	Management measures applicable to 2021	
FISH STOCKS	SCIENTIFIC ADVICE	YEAR	MANAGEMENT MEASURES
Redfish in Divisions 3LN	<p>Scientific Council conducted an update assessment of Redfish in Division 3LN followed by five-year projections (2021 to 2025) to evaluate the impact of annual removals at 18 100 tonnes on stock biomass and fishing mortality in relation to B_{lim}, B_{msy} and F_{msy} by 2026. At the beginning of 2020 the stock was in the safe zone, with a probability of biomass being above $B_{msy} > 90\%$, and with the probabilities of biomass being below B_{lim} and fishing mortality being above F_{msy} less than 1%.</p> <p>Annual catch of 18 100 tonnes during 2021–2025 will maintain biomass above B_{msy} at the beginning of 2026 with very high probability ($> 90\%$). Also, the probability of $B_{2026} < B_{lim}$ or $F_{2025} > F_{msy}$ is $< 1\%$ if the 2020 HCR TAC is maintained during 2021–2025.</p>	2020	TAC 18 100 tonnes.
Redfish in Division 3M	Catches should not exceed the $F_{0.1}$ level given the recent very low productivity of the stock. This corresponds to a TAC of 4 319 tonnes in 2020 and 4 624 tonnes in 2021.	2019	TAC corresponding to the F_{max} scenario, i.e. 8 448 tonnes.
Redfish in Division 3O	There is insufficient information on which to base predictions of annual yield potential for this resource. Stock dynamics and recruitment patterns are also poorly understood. Catches have averaged about 12 000 t since the 1960s and over the long term, catches at this level appear to have been sustainable. Scientific Council is unable to advise on an appropriate TAC for 2020, 2021 and 2022.	2019	TAC 20 000 tonnes
Pelagic <i>Sebastes mentella</i> (oceanic redfish) in Subarea 2 + Divisions 1F and 3K	Scientific Council endorsed the International Council for the Exploration of the Sea (ICES) advice for Pelagic <i>Sebastes mentella</i> in ICES Divisions V, XII and XIV and NAFO Subarea 1 that; <i>when the MSY approach is applied, there should be zero catch in each of the years 2020 and 2021.</i>	2020	TAC is set at zero. ⁶
American plaice in Divisions 3LNO¹	SSB remains below B_{lim} , therefore Scientific Council recommends that, in accordance with the rebuilding plan, there should be no directed fishing on American plaice in Div. 3LNO in 2019, 2020, and 2021. Bycatches of American plaice should be kept to the lowest possible level and restricted to unavoidable bycatch in fisheries directing for other species.	2018	Ban on fishing.

Appendix I. cont'd

Comparison of Scientific Advice on NAFO Fish Stocks and the Management Measures decided by the Commission			
	Most recent scientific advice and year of provision		Management measures applicable to 2021
FISH STOCKS	SCIENTIFIC ADVICE	YEAR	MANAGEMENT MEASURES
American Plaice in Division 3M	The stock has recovered to the levels of the mid 1990s, when the fishery was closed. Scientific Council considers that there is not sufficient evidence that the stock would be able to sustain a fishery at this time and recommends that there be no directed fishing in 2021, 2022 and 2023. Bycatch should be kept at the lowest possible level.	2020	Ban on fishing.
Yellowtail flounder in Divisions 3LNO¹	At a fishing mortality of 85% F_{msy} , catches of 24 900 t, 22 500 t, and 21 100 t in 2019 to 2021, respectively, have less than a 30% risk of exceeding F_{lim} . At these yields the stock is projected to have an 82% probability of remaining above B_{msy} .	2018	<p>TAC 17 000 tonnes.</p> <p>From the Report of the NAFO Commission, 17–21 September 2018, Tallinn, Estonia (NAFO/COM Doc. 18-28): “Noting the SC advice, and in particular taking into consideration impacts on other fisheries, particularly bycatch of 3NO cod and 3LNO American plaice, the Commission agreed to rollover the TAC for one year at 17 000t.”</p> <p>From the Report of the NAFO Commission, 23–27 September 2019, Bordeaux, France (NAFO/COM Doc. 19-34 Revised): The Commission agreed to rollover the TAC of 17 000 tonnes applicable to 2020 and 2021.</p>
Witch flounder in Divisions 3NO²	Scientific Council considers that there is not sufficient evidence that the stock would be able to sustain a fishery at this time and recommends that there be no directed fishing in 2021 and 2022.	2020	<p>TAC 1 175 tonnes.</p> <p>From the Report of the NAFO Commission, 21–25 September 2020 (NAFO/COM Doc. 20-19): The Commission recalled that the 2021 TAC for this stock has been decided at the 41st Annual Meeting in Bordeaux, France. No further action was undertaken.</p> <p>From the Report of the NAFO Commission, 23–27 September 2019, Bordeaux, France (NAFO/COM Doc. 19-34 Revised): The Commission agreed to rollover the TAC of 1 175 tonnes, applicable to 2020 and 2021. Several Contracting Parties noted the critical importance of the PA Framework Review planned the 2020 WG-RBMS meeting for future decisions related to the management of this stock.</p> <p>From the Report of the NAFO Commission, 17–21 September 2018, Tallin, Estonia (NAFO/COM Doc. 18-28): “Based on a question posed to SC on the impact of various harvest levels of the stock, some Contracting Parties noted that there was negligible impact on the resource between no directed fishing and the TAC at the previously agreed level, and the two-year decision taken in 2017 should be maintained. The Commission agreed to maintain its decision that was made in 2017. “</p>

Appendix I. cont'd

Comparison of Scientific Advice on NAFO Fish Stocks and the Management Measures decided by the Commission			
	Most recent scientific advice and year of provision		Management measures applicable to 2021
FISH STOCKS	SCIENTIFIC ADVICE	YEAR	MANAGEMENT MEASURES
White hake in Divisions 3NO³	Given the absence of strong recruitment, Scientific Council recommends catches of white hake in Divisions 3NO should not increase. Average annual catches over 2014 to 2018 were 406 tonnes.	2019	TAC 1 000 tonnes.
Capelin in Divisions 3NO¹	No directed fishery, applicable to 2019–2021.	2018	Ban on fishing.
Skates in Division 3LNO	The stock has been stable at recent catch levels (approximately 3 511 tonnes, 2015–2019). However, given the low resilience of this species and higher historic stock levels, Scientific Council advises no increase in catches. Applicable to 2021 and 2022.	2020	TAC 7 000 tonnes. Footnote 12 of the Quota Table updated to read: Should catches exceed 5 000 tonnes, additional measures would be adopted to further restrain catches in 2021.
Greenland halibut in Sub-area 2 and Divisions 3KLMNO	The TAC for 2021 derived from the HCR is 16 498 tonnes. Scientific Council advises that Exceptional Circumstances are not occurring.	2020	TAC of 16 498 tonnes in 2+3KLMNO, 12 225 tonnes of which is allocated to the fishery in 3LMNO.
Northern shortfin squid in Subareas 3+4⁴	The primary biomass index (Div. 4VWX) and mean body size value for 2018 were not available for use in the assessment. The 2019 values indicated that the stock may be moving towards a high productivity period. Scientific Council advice is a TAC of no more than 34 000 tons/yr.	2019	TAC 34 000 tonnes.
Northern Shrimp in Divisions 3LNO³	No directed fishery in 2020 and 2021 as the stock is below B_{lim} with no indication of short-term recovery.	2019	Ban on fishing.
Splendid alfonso in Subarea 6⁵	The substantial decline in CPUE and catches on the Kükenthal peak in the past year indicates that the stock may be depleted. Scientific Council advises to close the fishery until biomass increases to exploitable levels	2019	Ban on fishing.
Shrimp in Division 3M	Scientific Council advises that the catch in 2021 should not exceed the 2009 level (5 448 tonnes).	2020	2 640 fishing days ⁷

¹ The advice was formulated in 2018, applicable to 2019–2021. Scientific Council monitored the status of this stock in 2019 and in 2020 and reiterated its previous advice.

² The advice was formulated by Scientific Council on its own accord. The management measure was decided by the Commission in 2019, applicable to 2020 and 2021.

³ The advice was formulated in 2019, applicable to years 2020 and 2021. Scientific Council monitored the status of this stock in 2020 and reiterated its previous advice.

⁴ The advice was formulated in 2019, applicable to 2020–2022. Scientific Council monitored the status of this stock in 2020 and reiterated its previous advice.

⁵ This stock was included in the 2020 Quota Table.

⁶ Objection by Russia – unilateral 5 229 tonnes quota issued for 2021.

⁷ Objection by Iceland – unilateral 0 quota fishing days issued for 2021.

