



North-East Atlantic Commission

NEA(16)3

Report on the Use of the Framework of Indicators in 2016

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1. At its 2015 Annual Meeting, the North-East Atlantic Commission (NEAC) adopted a multi-annual Decision regarding the salmon fishery in Faroese waters in 2015/2016, 2016/2017 and 2017/2018, (NEA(15)10). The Commission also adopted a Framework of Indicators (FWI), developed by ICES, in order to identify if there had been any significant change in previously provided multi-annual management advice for the Faroese salmon fishery. Under the multi-annual Decision, the Commission decided not to set a quota for the salmon fishery in the Faroes Fishery Zone in 2015/2016. The Decision will also apply in 2016/2017 and 2017/2018 unless application of the FWI shows that there has been a significant change in the indicators used and a reassessment of the catch advice is required.
2. The Commission agreed to use the same procedure for applying the FWI as was used during the previous multi-annual Decision. Thus, each NEAC Party was asked to nominate a representative to serve on the FWI Working Group in 2016. The representatives appointed were Jóannes Hansen (Denmark (in respect of the Faroe Islands and Greenland)), Ian Russell (European Union), Peder Fiske (Norway) and Igor Samokhvalov (Russian Federation). Ian Russell served as the Group's Coordinator. The Group worked by correspondence to coordinate the data collection and apply the FWI and its report is attached.
3. The Group has concluded that the results of the NEAC FWI assessment in 2016 (based on indicator values for 2015) are consistent with the previous PFA forecast for 2015 for two of the four stock complexes. For one stock complex (Southern NEAC 1SW salmon), the FWI suggested that the forecast of PFA was an over-estimate; this does not trigger a reassessment when the Faroes fishery is closed (NASCO agreement NEA(13)11). However, for Northern NEAC MSW salmon, the FWI suggested that the forecast of PFA for this stock complex was an under-estimate and that a reassessment is appropriate. Therefore, the FWI Working Group concludes that a reassessment of the existing management advice for the Faroes fishery is required from ICES in 2016.
4. In light of the Group's conclusions, ICES has been requested to provide catch options or alternative management advice for the 2016/17 - 2018/19 fishing seasons and to update the Framework of Indicators in accordance with paragraphs 2.5 and 2.6 of the Request for Scientific Advice from ICES, CNL(15)11.
5. The arrangement for applying the FWI appeared to work well and within the timescale proposed by the Commission. We are grateful to the Group for its work.

Secretary
Edinburgh
8 April 2016

NASCO – NORTH EAST ATLANTIC COMMISSION

REPORT OF THE FRAMEWORK OF INDICATORS WORKING GROUP 2016

Introduction:

At its annual meeting in Goose Bay, Canada in 2015 the NASCO North East Atlantic Commission (NEAC) adopted a multi-annual regulatory measure for the Faroes salmon fishery for 2015/16, 2016/17 and 2017/18 (NEA(15)10), together with an updated Framework of Indicators (FWI). This regulatory measure indicated that no quota would be set for the salmon fishery in the Faroese Fisheries Zone for 2015/16, and that this decision will also apply in 2016/17 and 2017/18 unless the application of the FWI shows that a reassessment is warranted.

The FWI is used in the intermediate years of a multi-year catch agreement to provide an interim assessment of the robustness of the pre-fishery abundance (PFA) forecasts provided by ICES, and to determine whether a full reassessment of stock status and new catch advice might be required. NASCO has previously agreed (NEA(13)11) that when the Faroes fishery is closed the FWI should only be used to signal the need for a reassessment where there is an underestimate of forecast abundance (i.e. when a potential harvest might otherwise be available). The rationale for this is that if the FWI signaled that PFA had been over-estimated, any new assessment would be even less likely to signal a fishery option.

The Commission further agreed that the same procedure for applying the FWI, as used during the previous multi-annual decision, would apply during the new measure. Under this arrangement, a small group comprising one representative from each member of the Commission will work by correspondence to coordinate the data collection and application of the FWI.

The Working Group responsible for applying the FWI in 2016 comprised:

Igor Samokhvalov	Russian Federation
Peder Fiske	Norway
Jóannes Hansen	Denmark (in respect of the Faroe Islands and Greenland)
Ian Russell (coordinator)	European Union

The Group was asked to complete their tasks before the end of January 2016 and to liaise with NASCO who would present their findings to the Parties and to ICES (Annex 1).

Work of the Working Group:

Ian Russell agreed to act as coordinator of the FWI Working Group for 2016. Requests for data to populate the FWI were sent to representatives from each of the North East Atlantic Commission (NEAC) countries which had indicator data sets included in the FWI. Returns were collated (Annex 2), and the coordinator then circulated the completed FWI worksheet for 2016 (Annex 3) and the draft report to the Working Group for their review and agreement.

Framework of Indicators Analysis – 2016:

The FWI worksheet was revised and updated by ICES in 2015. The FWI includes data from both NEAC areas (Northern NEAC and Southern NEAC) and has been further divided by sea-age into maturing (1SW salmon) and non-maturing (MSW salmon) components. There are thus four distinct ‘management units’ / stock complexes within the framework, and within these there are variable numbers of indicator data sets. Thus:

Northern NEAC 1SW salmon – 6 indicator data sets
Northern NEAC MSW salmon – 5 indicator data sets
Southern NEAC 1SW salmon – 7 indicator data sets
Southern NEAC MSW salmon – 10 indicator data sets

The Northern NEAC data sets mainly derive from Norway, with one indicator data set from Finland. For Southern NEAC, data sets derive from UK (Scotland), UK (N. Ireland), UK (England & Wales) and Iceland (South and East).

The FWI Working Group noted that the majority of the data sets used in applying the FWI in 2016 were reported to be preliminary values.

Each Working Group member has reviewed the raw data (Annex 2) and the FWI assessment spreadsheet (Annex 3) and confirmed their agreement with the following summary of the findings.

Northern NEAC 1SW salmon – Data were provided for five of the six indicators for the Northern NEAC 1SW stock complex; the reported catch of 1SW salmon in the rivers Teno and Naatamøjoki (Finland) was not available in time for inclusion in the FWI. Three of the five available indicators were consistent with the forecast, while two suggested that the PFA forecast was an under-estimate. However, on aggregate, the indicators for this stock complex do not signal a need for a re-assessment in 2016.

Northern NEAC MSW salmon - Data were provided for three of the five indicators for the Northern NEAC MSW stock complex; neither the count of returning salmon on the River Orkla (Norway) nor the reported catch of 2SW salmon in the rivers Teno and Naatamøjoki (Finland) were available in time for inclusion in the FWI. One of the available indicators was consistent with the forecast. However, the other two suggested that the PFA forecast was an under-estimate and, on aggregate, the indicators for this stock complex signal the need for a re-assessment in 2016.

Southern NEAC 1SW salmon - Data were available for all seven indicators for the Southern NEAC 1SW stock complex. Two of these indicators were consistent with the forecast and one suggested that the PFA forecast was an under-estimate. However, four indicators suggested that the PFA forecast was an over-estimate, and the aggregate score for this stock complex indicates an over-estimation of PFA. In keeping with the agreement reached at NASCO in 2013 (NEA(13)11), a re-assessment is only signaled where the indicators suggest the forecast PFA was under-estimated. Thus, the indicators for this stock complex do not signal a need for a re-assessment in 2016.

Southern NEAC MSW salmon – Data were available for all ten of the indicators for the Southern NEAC MSW stock complex. Most of the available indicators (8) were consistent

with the PFA forecast for 2016, while the other two indicators suggested that the PFA forecast was an under-estimate. On aggregate, the indicators for this stock complex do not signal a need for a re-assessment in 2016.

Conclusions:

The results of the NEAC FWI assessment in 2016 (based on indicator values for 2015) are consistent with the previous PFA forecast for 2015 for two of the four stock complexes. For one stock complex, Southern NEAC 1SW salmon, the FWI suggested that the forecast of PFA was an over-estimate; this does not trigger a re-assessment when the Faroes fishery is closed (NASCO agreement NEA(13)11). However, for Northern NEAC MSW salmon, the FWI suggested that the forecast of PFA for this stock complex was an under-estimate and that a reassessment is appropriate.

Therefore, the FWI Working Group concludes that a re-assessment of the existing management advice for the Faroes fishery is required from ICES in 2016.

**NEAC FWI Working Group
25th January 2016**

Annex 1. Notification from NASCO of representation on the FWI Working Group

From: hq@nasco.int [mailto:hq@nasco.int]

Sent: 21 December 2015

To: Framework of Indicators Working Group NEAC

Subject: FWI Working Group – North East Atlantic Commission

Dear All,

Thank you for agreeing to serve on the North-East Atlantic Commission's Framework of Indicators Working Group. There has been one change to the representation on this Working Group since last year. Igor Samokhvalov has replaced Sergey Prusov as the Russian Federation's representative on the Group and I would like to thank Mr Samokhvalov for agreeing to participate in this work.

The members of the Group are as follows:

Denmark (in respect of the Faroe Islands and Greenland)	Jóannes Hansen
European Union	Ian Russell
Norway	Peder Fiske
Russian Federation	Igor Samokhvalov

I would ask that you appoint a Coordinator to liaise with the NASCO Secretariat and that the Group's findings be reported to us no later than 31 January 2016 so that I can inform the North-East Atlantic Commission and ICES of your findings. Ian Russell served as Coordinator for the Group's work in 2013 and 2014. I attach a copy of the Group's report from 2014, NEA(14)3.

With best wishes for Christmas and the New Year.

Best regards

Peter Hutchinson
Secretary

NEA14.405

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Annex 2. Data inputs for the NEAC Indicator Framework - 2015.

DATA INPUTS FOR THE NEAC FWI		
Indicators for Northern NEAC 1SW PFA		2015
Indicator data set	Country	
1 Estimated returns (PFA) of 1SW salmon to the coast	Norway	280,000
2 Return rate of 1SW wild salmon River Imsa (% survival)	Norway	2.80%
3 Return rate of 1SW hatchery salmon River Imsa (% survival)	Norway	1.30%
4 Count of returning salmon - River Øyensåa	Norway	3,215
5 Count of returning salmon - River Nausta	Norway	1,744
6 Catch of 1SW salmon in the rivers Teno & Naatamøjoki	Finland	N/A
Indicators for Northern NEAC MSW PFA		
Indicator data set	Country	
1 Estimated returns (PFA) of MSW salmon to the coast	Norway	260,000
2 Count of returning salmon - River Orkla	Norway	N/A
3 Count of returning salmon - River Nausta	Norway	1,744
4 Estimated returns (PFA) of 2SW salmon to the coast	Norway	215,000
5 Catch of 2SW salmon in the rivers Teno & Naatamøjoki	Finland	N/A
Indicators for Southern NEAC 1SW PFA		
Indicator data set	Country	
1 Returning stock estimate - 1SW salmon River Itchen	UK (England & Wales)	666
2 Returning stock estimate - 1SW salmon River Frome	UK (England & Wales)	620
3 Estimated returns of 1SW salmon - River North Esk	UK (Scotland)	7,863
4 Return rate of 1SW salmon River Bush (% survival)	UK (N. Ireland)	2.89%
5 Estimated returns of 1SW salmon to freshwater - River Bush	UK (N. Ireland)	832
6 Return rate of 1SW salmon River Dee (% survival)	UK (England & Wales)	0
7 Returning stock estimate - 1SW salmon River Dee	UK (England & Wales)	766
Indicators for Southern NEAC MSW PFA		
Indicator data set	Country	
1 Estimated returns of 2SW salmon - River Baddoch	UK (Scotland)	22
2 Estimated returns of 2SW salmon - River Girnoch	UK (Scotland)	10
3 Estimated returns of 1SW salmon - River North Esk	UK (Scotland)	7,863
4 Returning stock estimate - MSW salmon River Itchen	UK (England & Wales)	237
5 Returning stock estimate - 1SW salmon River Itchen	UK (England & Wales)	666
6 Returning stock estimate - MSW salmon River Frome	UK (England & Wales)	209
7 Returning stock estimate - 1SW salmon River Frome	UK (England & Wales)	620
8 Catch of MSW salmon - River Ellidaar	Iceland (South & East)	16
9 Estimated returns of MSW salmon to freshwater - River Bush	UK (N. Ireland)	144
10 Estimated returns of 2SW salmon - River North Esk	UK (Scotland)	5,366
Notes:		
N/A indicates data not available for year in question		
Most 2015 indicator values are preliminary data		
Data relate to wild fish unless otherwise indicated		

Annex 3. Indicator Framework sheet for 2016 (indicator data sets for 2015).

FWI NEAC		2016		Indicators suggest:		REASSESS									
Indicators for Northern NEAC 1SW PFA												Reassess in year 2016?			
		Insert data from 2015 here	N reg	Slope	Intercept	r²	Median PFA in 2015	12.5%ile	87.5%ile	Outside 75% conf.lim.		Outside 75% confidence limits			
									below	above	below	above			
1	Returns all 1SW NO PFA est	280000	32	0.571387	-85680.77	0.94	503435	157724.51	246226.71	-1	1	NO	YES		
2	Survivals W 1SW NO Imsa	2.8	31	0.000012	-3.86	0.45	503435	-2.07	6.58	0	-1	Uninformative	NO		
3	Survivals H 1SW NO Imsa	1.3	32	0.000006	-1.22	0.30	503435	-1.07	4.82	0	-1	Uninformative	NO		
4	Counts all NO Øyensåa (1SW)	3215	16	0.002723	226.18	0.37	503435	593.26	2600.42	-1	1	NO	YES		
5	Counts all NO Nausta (1SW)	1744	17	0.002196	-175.84	0.31	503435	-7.27	1826.80	0	-1	Uninformative	NO		
6	Catch rT&N 1SW FI		16	0.013758	1835.8849	0.38	503435	-364.43	17888.70	0	-1	Uninformative	Uninformative		
							Sum of scores			-2	-1				
										Indicators do not suggest that the PFA forecast is an overestimation.		Indicators do not suggest that the PFA forecast is an underestimation.			
Indicators for Northern NEAC MSW PFA												Reassess in year 2016?			
		Insert data from 2015 here	N reg	Slope	Intercept	r²	Median PFA in 2015	12.5%ile	87.5%ile	Outside 75% conf.lim.		Outside 75% conf.lim.			
										below	above	below	above		
1	PFA-MSW-CoastNorway	260000	32	0.358598	-14470.47	0.87	570739	155054.05	225337.02	-1	1	NO	YES		
2	Orkla counts		17	0.013428	-3504.23	0.57	570739	2229.37	6089.41	0	0	Uninformative	Uninformative		
3	Counts all NO Nausta	1744	17	0.003994	-1403.18	0.36	570739	-7.07	1760.04	0	-1	Uninformative	NO		
4	Returns all 2SW NO PFA est	215000	22	0.2427393	1727.8195	0.5	570739	73902.39	206634.70	-1	1	NO	YES		
5	Catch W rT&N 2SW FI		16	0.0070016	-1497.989	0.34	570739	-509.42	5505.66	0	0	Uninformative	Uninformative		
							Sum of scores			-2	1				
										Indicators do not suggest that the PFA forecast is an overestimation.		Indicators suggest that the PFA forecast is an underestimation. REASSESS			
Indicators for Southern NEAC 1SW PFA												Reassess in year 2016?			
		Insert data from 2015 here	N reg	Slope	Intercept	r²	Median PFA in 2015	12.5%ile	87.5%ile	Outside 75% conf.lim.		Outside 75% conf.lim.			
										below	above	below	above		
1	Ret. W 1SW UK(E&W) Itchen M	666	27	0.000327	-59.92	0.28	1187678	91.48	565.54	-1	1	NO	YES		
2	Ret. W 1SW UK(E&W) Frome M	620	42	0.000544	-37.92	0.36	1187678	70.40	1147.01	-1	-1	NO	NO		
3	Ret. W 1SW UK(Sc.) North Esk M	7863	34	0.006733	3959.08	0.58	1187678	8705.46	15205.32	1	-1	YES	NO		
4	Surv. W 1SW UK(NI) Bush M	2.89	26	2.147E-05	-10.20677	0.54	1187678	5.74	24.86	1	-1	YES	NO		
5	Ret. Freshw 1SW UK(NI) Bush	832	40	0.000699	425.50	0.26	1187678	484.52	2027.31	-1	-1	NO	NO		
6	Surv coast 1SW UK(E&W) Dee M	0	20	3.187E-06	-0.063259	0.2	1187678	1.94	5.50	1	-1	YES	NO		
7	Ret. W 1SW UK(E&W) Dee M	766	23	0.0034888	-330.6473	0.3	1187678	2246.87	5378.99	1	-1	YES	NO		
							Sum of scores			1	-5				
										Indicators suggest that the PFA forecast is an overestimation.		Indicators do not suggest that the PFA forecast is an underestimation.			
Indicators for Southern NEAC MSW PFA												Reassess in year 2016?			
		Insert data from 2015 here	N reg	Slope	Intercept	r²	Median PFA in 2015	12.5%ile	87.5%ile	Outside 75% conf.lim.		Outside 75% conf.lim.			
										below	above	below	above		
1	Ret. W 2SW UK(Sc.) Baddoch NM	22	27	0.000035	2.54	0.47	587010	9.75	35.84	-1	-1	NO	NO		
2	Ret. W 2SW UK(Sc.) Girnoch NM	10	43	0.000036	9.73	0.42	587010	1.64	59.86	-1	-1	NO	NO		
3	Ret. W 1SW UK(Sc.) North Esk NM	7863	34	0.007452	6699.92	0.44	587010	7295.35	14853.26	-1	-1	NO	NO		
4	Ret. W MSW UK(E&W) Itchen NM	237	27	0.000137	9.62	0.24	587010	3.61	176.65	-1	1	NO	YES		
5	Ret. W 1SW UK(E&W) Itchen NM	666	27	0.000394	48.36	0.25	587010	36.08	523.01	-1	1	NO	YES		
6	Ret. W MSW UK(E&W) Frome NM	209	42	0.000782	29.27	0.48	587010	-22.62	999.20	0	-1	Uninformative	NO		
7	Ret. W 1SW UK(E&W) Frome NM	620	42	0.000669	110.42	0.38	587010	-28.38	1034.66	0	-1	Uninformative	NO		
8	Catch W MSW Ice Ellidaar NM	16	43	0.000094	-26.07	0.57	587010	-27.50	85.39	0	-1	Uninformative	NO		
9	Ret. Freshw 2SW UK(NI) Bush	144	39	0.000148	53.95	0.23	587010	5.17	276.47	-1	-1	NO	NO		
10	Ret. W 2SW UK(Sc.) North Esk NM	5366	34	0.0039066	4277.4756	0.23	587010	3334.60	9806.73	-1	-1	NO	NO		
							Sum of scores			-7	-6				
										Indicators do not suggest that the PFA forecast is an overestimation.		Indicators do not suggest that the PFA forecast is an underestimation.			
		2015 data entered													
		Data not available													