



**North-East Atlantic Commission**

**NEA(13)3**

*Report on the Use of the Framework of Indicators in 2013*



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### *Report on the Use of the Framework of Indicators in 2013*

1. At its 2012 Annual Meeting, the North-East Atlantic Commission 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. The Commission also adopted a multi-annual Decision Regarding the Salmon Fishery in Faroese waters in 2013, 2014 and 2015, (NEA(12)7). Under this Decision, the Commission decided not to set a quota for the salmon fishery in the Faroes Fishery Zone in 2013. The Decision will also apply in 2014 and 2015 unless application of the FWI in 2013 and 2014 shows that there has been significant change in the indicators used and, therefore, that reassessment of the management advice is required.
2. The Commission agreed to use the same procedure as the West Greenland Commission in applying the FWI. Thus, each NEAC Party was asked to nominate a representative to serve on the FWI Working Group in 2013. The representatives appointed were Jan Arge Jacobsen (Denmark (in respect of the Faroe Islands and Greenland)), Ian Russell (European Union), Peder Fiske (Norway), and Sergey Prusov (Russian Federation). Ian Russell served as the Group's Coordinator. The Group worked by correspondence to coordinate the data collection and apply the FWI. The Group's report is attached
3. The Group's overall conclusion is that there had been a significant change in the indicators for one of the stock complexes. For the Southern NEAC MSW stock complex, the FWI indicated that the forecast of PFA was an over-estimate. As such, the Group had concluded that a full reassessment of the ICES management advice was required. The Group had also recommended that ICES be asked to review and update the NEAC indicator data sets and FWI worksheet before it is used in association with a future multi-annual regulatory measure for the Faroes salmon fishery. In accordance with this decision, ICES was requested to provide catch options or alternative management advice for the North-East Atlantic Commission area for 2013 - 2016 and to update the FWI.
4. This was the first time a FWI had been used by the North-East Atlantic Commission in association with a multi-annual decision and the arrangement appeared to work well and within the timescale proposed by the Commission. We are grateful to the Group for its work. ICES has recommended that in future, when the fishery is closed, the FWI should only be used to signal an under-estimate of forecast abundance. Had this approach been used in 2013, the reassessment of the management advice would not have been required. The Commission may wish to consider this proposed approach to applying the FWI in the future.

Interim Secretary  
Edinburgh  
13 May 2013



## *NASCO – North East Atlantic Commission*

### *Report Of The Framework Of Indicators Working Group 2013*

#### **Introduction:**

At its Annual Meeting in Edinburgh, the NASCO North East Atlantic Commission adopted a multi-annual regulatory measure for the Faroes salmon fishery for the years 2013, 2014 and 2015 (NEA(12)7). This regulatory measure (no quota set) applied to the fishery in 2013, and will be carried forward to 2014 and 2015 without further review unless application of the Framework of Indicators (FWI) shows that there has been a significant change in the indicators used and, therefore, that a full reassessment of the management advice is required.

The Commission agreed that a similar procedure to that used for the West Greenland Commission FWI should be used in applying the new Faroes FWI in 2013. Thus, a small group comprising one representative from each member of the Commission was appointed to work by correspondence to collect the data and apply the FWI (Annex 1). The Working Group comprised:

Sergey Prusov	Russian Federation
Peder Fiske	Norway
Jan Arge Jacobsen	Denmark (in respect of the Faroe Islands and Greenland)
Ian Russell	European Union

The Group was asked to complete their tasks before the end of January 2013 and to liaise with NASCO who would present their findings to the Parties and to ICES.

#### **Work of the Working Group:**

Ian Russell agreed to act as co-ordinator of the FWI Working Group for 2013. 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 co-ordinator then circulated the completed FWI worksheet for 2013 (Annex 3) and the draft report to the Working Group for their review and agreement.

## **Framework of Indicators Analysis – 2013:**

The FWI worksheet 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 – 5 indicator data sets  
Northern NEAC MSW salmon – 4 indicator data sets  
Southern NEAC 1SW salmon – 5 indicator data sets  
Southern NEAC MSW salmon – 13 indicator data sets

The Northern NEAC data sets all derive from Norway, while the 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 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 available for all five indicators for the Northern NEAC 1SW stock complex; the results were variable. Four of the indicators were consistent with the previously forecast PFA estimate for 2012, while one suggested that the PFA forecast was an under-estimation. On aggregate, the indicators for this stock complex did not signal a need for a full re-assessment in 2013.

**Northern NEAC MSW salmon** - One of the indicators for the Northern NEAC MSW stock complex (the count of returning salmon on the River Orkla, Norway) was not available in 2012 due to the counter being out of order. Data for the other three indicators provided variable results. Two of the indicators were consistent with the previously forecast PFA estimate for 2012, while one suggested that the PFA forecast was an under-estimation. On aggregate, the indicators for this stock complex did not signal a need for a full re-assessment in 2013.

**Southern NEAC 1SW salmon** - Data were available for all five indicators for the Southern NEAC 1SW stock complex; the results were variable. Two of the indicators were consistent with the previously forecast PFA estimate for 2012, while two suggested that the PFA forecast was an over-estimate and one suggested it was an under-estimate. On aggregate, however, the indicators for this stock complex did not signal a need for a full re-assessment in 2013.

**Southern NEAC MSW salmon** - One of the indicators for the Southern NEAC MSW stock complex (estimated returns of 2SW salmon to the River Baddoch, UK (Scotland)) was not available in 2012. Data for the other twelve indicators provided variable results. Five of the indicators were consistent with the previously forecast PFA estimate for 2012, while six suggested that the PFA forecast was an over-estimate and one suggested it was an under-

estimate. On aggregate, the indicators for this stock complex signalled the need for a full re-assessment in 2013, on the basis that the forecast of PFA was an over-estimate.

**Conclusions:**

**The overall conclusion of the FWI Working Group is that the 2012 NEAC FWI indicates a significant change in the indicators for one of the stock complexes. For the Southern NEAC MSW stock complex the FWI is signaling that the forecast of PFA was an over-estimate. As such, the Working Group concludes that a full re-assessment of the ICES management advice is required.**

**The Working Group also recommends that ICES is asked to review and update the NEAC indicator data sets and FWI worksheet before it is used in association with a future multi-annual regulatory measure for the Faroes salmon fishery.**

**NEAC FWI Working Group  
29<sup>th</sup> January 2013**

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

**From:** [hq@nasco.int](mailto:hq@nasco.int) [mailto:[hq@nasco.int](mailto:hq@nasco.int)]

**Sent:** 21 December 2012 15:36

**To:** Framework of Indicators Working Group NEAC

**Subject:** FWI Working Group – North East Atlantic Commission

Dear All,

We have been advised that the representatives on the Framework of Indicators Working Group will be as follows:

Denmark (in respect of the Faroe Islands and Greenland)	Jan Arge Jacobsen
European Union	Ian Russell
Norway	Peder Fiske
Russian Federation	Sergey Prusov

I would ask that this Group appoint a Coordinator to liaise with the NASCO Secretariat and that the Group's findings be reported to us no later than 31 January 2013 so that I can advise the Parties to the North-East Atlantic Commission and ICES.

Thank you for agreeing to contribute to the work of this Group.

Best regards

Peter Hutchinson  
Interim Secretary

NEA14.337

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## Annex 2. Data inputs to Indicator Framework for 2012.

DATA INPUTS FOR THE NEAC FWI			
Indicators for Northern NEAC 1SW PFA			2012 Comments
Indicator data set	Country		
1 Estimated returns (PFA) of 1SW salmon to the coast	Norway	218,000	
2 Return rate of 1SW wild salmon River Imsa (% survival)	Norway	4.40%	
3 Return rate of 1SW hatchery salmon River Imsa (% survival)	Norway	1.80%	
4 Count of returning salmon - River Øyensåa	Norway	1,500	
5 Count of returning salmon - River Nausta	Norway	2,039	"Final" number (verified by video)
Indicators for Northern NEAC MSW PFA			
Indicator data set	Country		
1 Estimated returns (PFA) of MSW salmon to the coast	Norway	291,000	
2 Count of returning salmon - River Orkla	Norway	N/A	Counter out of order, no data available for 2012
3 Count of returning salmon - River Målselv	Norway	5,137	
4 Count of returning salmon - River Nausta	Norway	2,039	"Final" number (verified by video)
Indicators for Southern NEAC 1SW PFA			
Indicator data set	Country		
1 Returning stock estimate - 1SW salmon River Itchen	UK (England & Wales)	572	
2 Returning stock estimate - 1SW salmon River Frome	UK (England & Wales)	156	
3 Estimated returns of 1SW salmon - River North Esk	UK (Scotland)	7,964	
4 Estimated returns of 1SW salmon to the coast - River Bush	UK (N. Ireland)	648	
5 Estimated returns of 1SW salmon to freshwater - River Bush	UK (N. Ireland)	648	
Indicators for Southern NEAC MSW PFA			
Indicator data set	Country		
1 Estimated returns of 2SW salmon - River Baddoch	UK (Scotland)	N/A	Time series under review; data unavailable
2 Estimated returns of MSW salmon - River North Esk	UK (Scotland)	5,487	
3 Estimated returns of 1SW salmon - River North Esk	UK (Scotland)	7,964	
4 Returning stock estimate - MSW salmon River Itchen	UK (England & Wales)	168	
5 Returning stock estimate - 1SW salmon River Itchen	UK (England & Wales)	572	
6 Returning stock estimate - MSW salmon River Frome	UK (England & Wales)	156	
7 Returning stock estimate - 1SW salmon River Frome	UK (England & Wales)	156	
8 Catch of MSW salmon - River Ellidaar	Iceland (South & East)	12	
9 Estimated returns of MSW salmon to freshwater - River Bush	UK (N. Ireland)	250	
10 Estimated returns of 1SW salmon to the coast - River Bush	UK (N. Ireland)	648	
11 Returning stock estimate - 1SW salmon River Tamar	UK (England & Wales)	1,364	
12 Count of returning MSW salmon - River Lune	UK (England & Wales)	1,695	
13 Count of returning MSW salmon - River Fowey	UK (England & Wales)	52	
Notes:			
N/A indicates data not available for year in question			
Most 2012 indicator values are preliminary data			

### Annex 3. Indicator Framework sheet for 2013 (indicator data sets for 2012).

FWI NEAC		2013		Indicators suggest:			REASSESS												
<b>Indicators for Northern NEAC 1SW PFA</b>												<b>Reassess in year 2013?</b>							
												Outside 75% conf.lim.		Outside 75% confidence limits					
														below		above			
	Insert data from 2012 here	N reg	Slope	Intercept	r <sup>2</sup>	Median PFA	12.5%ile	87.5%ile	below	above	below	above	below	above					
1	Returns all 1SW NO PFA est	218000	23	0.536108	-73170.20	0.91	577600	194219.71	278751.74	-1	-1	NO	NO						
2	Survivals W 1SW NO lmsa	4.4	28	0.000012	-4.14	0.42	577600	-1.59	7.56	-1	-1	NO	NO						
3	Survivals H 1SW NO lmsa	1.8	29	0.000006	-1.11	0.26	577600	-0.75	5.47	-1	-1	NO	NO						
4	Counts all NO Øyensåa (1SW)	1500	13	0.002703	256.13	0.33	577600	708.37	2926.92	-1	-1	NO	NO						
5	Counts all NO Nausta (1SW)	2039	14	0.002486	-490.54	0.39	577600	2.84	1888.12	-1	-1	NO	YES						
<b>Sum of scores</b>										<b>-5</b>	<b>-3</b>								
												Indicators do not suggest that the PFA forecast is an overestimation.		Indicators do not suggest that the PFA forecast is an underestimation.					
<b>Indicators for Northern NEAC MSW PFA</b>												<b>Reassess in year 2013?</b>							
												Outside 75% conf.lim.		Outside 75% conf.lim.					
														below		above			
	Insert data from 2012 here	N reg	Slope	Intercept	r <sup>2</sup>	Median PFA	12.5%ile	87.5%ile	below	above	below	above	below	above					
1	PFA-MSW-CoastNorway	291000	23	0.344433	-12251.11	0.71	827300	241156.14	304240.14	-1	-1	NO	NO						
2	Orkla counts		17	0.013484	-3478.47	0.57	827300	5699.58	9654.44	0	0	Uninformative	Uninformative						
3	Målselv counts	5137	21	0.003871	14.46	0.22	827300	2135.00	4299.62	-1	1	NO	YES						
4	Counts all NO Nausta	2039	14	0.004249	-1647.46	0.36	827300	874.76	2861.04	-1	-1	NO	NO						
<b>Sum of scores</b>										<b>-3</b>	<b>-1</b>								
												Indicators do not suggest that the PFA forecast is an overestimation.		Indicators do not suggest that the PFA forecast is an underestimation.					
<b>Indicators for Southern NEAC 1SW PFA</b>												<b>Reassess in year 2013?</b>							
												Outside 75% conf.lim.		Outside 75% conf.lim.					
														below		above			
	Insert data from 2012 here	N reg	Slope	Intercept	r <sup>2</sup>	Median PFA	12.5%ile	87.5%ile	below	above	below	above	below	above					
1	Ret. W 1SW UK(E&W) Itchen M	572	24	0.000330	-106.71	0.34	1187000	80.15	489.51	-1	1	NO	YES						
2	Ret. W 1SW UK(E&W) Frome M	156	39	0.000497	65.49	0.31	1187000	103.51	1206.63	-1	-1	NO	NO						
3	Ret. W 1SW UK(Sc.) North Esk M	7964	31	0.006129	5122.42	0.52	1187000	9092.67	15701.63	1	-1	YES	NO						
4	Ret. W 1SW UK(NI) Bush M	648	18	0.004420	-2435.32	0.61	1187000	1028.93	4593.43	1	-1	YES	NO						
5	Ret. Freshw 1SW UK(NI) Bush	648	37	0.000673	478.23	0.23	1187000	477.32	2078.00	-1	-1	NO	NO						
<b>Sum of scores</b>										<b>-1</b>	<b>-3</b>								
												Indicators do not suggest that the PFA forecast is an overestimation.		Indicators do not suggest that the PFA forecast is an underestimation.					
<b>Indicators for Southern NEAC MSW PFA</b>												<b>Reassess in year 2013?</b>							
												Outside 75% conf.lim.		Outside 75% conf.lim.					
														below		above			
	Insert data from 2012 here	N reg	Slope	Intercept	r <sup>2</sup>	Median PFA	12.5%ile	87.5%ile	below	above	below	above	below	above					
1	Ret. W 2SW UK(Sc.) Baddoch NM		24	0.000034	3.23	0.45	793000	16.15	43.45	0	0	Uninformative	Uninformative						
2	Ret. W 2SW UK(Sc.) North Esk NM	5487	31	0.003676	4605.52	0.21	793000	4169.18	10871.97	-1	-1	NO	NO						
3	Ret. W 1SW UK(Sc.) North Esk NM	7964	30	0.006340	8457.39	0.35	793000	9717.50	17251.95	1	-1	YES	NO						
4	Ret. W MSW UK(E&W) Itchen NM	168	24	0.000289	-96.89	0.70	793000	63.66	201.60	-1	-1	NO	NO						
5	Ret. W 1SW UK(E&W) Itchen NM	572	23	0.000426	-2.64	0.25	793000	113.40	556.46	-1	1	NO	YES						
6	Ret. W MSW UK(E&W) Frome NM	156	39	0.000737	104.10	0.44	793000	166.05	1211.31	1	-1	YES	NO						
7	Ret. W 1SW UK(E&W) Frome NM	156	38	0.000720	119.80	0.37	793000	160.53	1220.74	1	-1	YES	NO						
8	Catch W MSW Ice Ellidaar NM	12	40	0.000092	-22.38	0.55	793000	-7.16	108.62	-1	-1	NO	NO						
9	Ret. Freshw 2SW UK(NI) Bush	250	36	0.000157	41.30	0.24	793000	27.20	304.15	-1	-1	NO	NO						
10	Ret. W 1SW UK(NI) Bush NM	648	18	0.005612	-802.38	0.66	793000	2008.18	5288.18	1	-1	YES	NO						
11	Ret. W 1SW UK(E&W) Tamar NM	1364	14	0.009158	-1853.33	0.44	793000	4120.15	6698.35	1	-1	YES	NO						
12	Count MSW UK(E&W) Lune NM	1695	15	0.003815	-1088.59	0.36	793000	1324.41	2548.60	-1	-1	NO	NO						
13	Count MSW UK(E&W) Fowey NM	52	15	0.000200	-45.65	0.24	793000	69.89	155.38	1	-1	YES	NO						
<b>Sum of scores</b>										<b>0</b>	<b>-10</b>								
												Indicators suggest that the PFA forecast is an overestimation. REASSESS		Indicators do not suggest that the PFA forecast is an underestimation.					
<b>Not available</b>																			

