



Agenda item 3.3  
For information

**Council**

**CNL(01)7**

***Methods of Calculating the Contributions to NASCO  
– Illustrative Scenarios***

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**Background**

1. Since 1995 the Finance and Administration Committee (FAC) has reviewed the methods of calculating the contributions to NASCO. At its 1999 meeting, in response to a concern raised by Iceland that major changes have taken place which have affected the catches used in calculating the contributions to NASCO, the Council asked the Secretary to prepare a discussion paper on how the issues raised by Iceland might be resolved without amending the Convention. This discussion paper, which was considered by the Council at its last Annual Meeting, concluded that without changes to the Convention there appeared to be little flexibility to address either Iceland's concerns about the effects on contributions of the reduction in the number of NASCO Parties or about the effects of compensation payments for not fishing quotas. However, with regard to exclusion of ranched fish, inclusion of unreported catches and inclusion of an element for catch and release, there might be flexibility to address these concerns without amendments to the Convention, but only through an agreement of what is meant by the term "nominal catches".
  
2. Last year Iceland produced a paper outlining a revised system for budget calculations based on a broader definition of nominal catches to include all "man-handled" salmon. The Council asked the Secretary to prepare a series of scenarios, including very low catches, a high proportion of catch and release, and changes in the fixed and catch-related proportions, showing the effect of these scenarios on the calculation of contributions. The wording from last year's Council report provides little guidance as to the nature of the scenarios envisaged but for illustrative purposes we have summarised the impact on the Parties' 2001 budget contributions of:
  - (a) changing the fixed and catch-related proportions of the contributions. We have examined four scenarios: 100% fixed; 70% fixed/30% catch-related; 50% fixed/50% catch-related; 100% catch-related; and compared the contributions under these scenarios to those using the proportions specified in the Convention (30% fixed/70% catch-related);
  - (b) the inclusion of estimates of unreported catches in 1999 as provided by the Parties, and using 50% of these unreported catches, in the catches used to calculate the contributions;
  - (c) the inclusion of a "mortality factor" of 10%, 25% and 50% of the number of salmon caught and released in 1999 in the catches used to calculate contributions;
  - (d) exclusion of the 1999 ranched salmon production from, and inclusion of 20% of this production in, the catches used to calculate contributions;

- (e) low catches in which the catch is taken by a small number of Parties;
- (f) a combination of (b), (c) and (d) above.

The Icelandic paper also refers to the need to consider salmonids, both freshwater and anadromous, in a holistic way in future, and states that “the mission of NASCO could be broadened to encompass these species”. We do not have catch statistics available for other species and we have not examined the scenario where such statistics are included in those used to calculate contributions.

Some of the scenarios which follow were presented to the Council last year in document CNL(00)8 but we have updated the analyses for the 2001 budget using provisional 1999 catches. While some of the scenarios might be implemented through interpretation of the term “nominal catches”, any change in the proportion of the contributions that is fixed or catch-related would require a change to the Convention. All Parties, other than Iceland, have previously indicated that they do not favour embarking on such a change.

## Scenarios

### (a) *Changing the fixed and catch-related proportions of the contributions*

Under Article 16, paragraph 2, of the Convention it is stated that the annual contribution of each Party shall be determined on the basis that 30% of the budget is divided equally among all Parties and 70% of the budget is divided among the Parties in proportion to their nominal catches. Last year Iceland suggested that “as the problem with the equity of the contributions is mostly related to the relative catches of the NASCO members, the simplest solution to the problem would be to reduce the proportion of the budget which is linked to catches from 70% to a lower proportion, e.g. 50%”.

In Table 1 we have shown the impact on the Parties’ 2001 contributions of making this change to the fixed and catch-related proportions. In fact, reducing the proportion of the contributions that is catch-related actually increases the contributions of the Parties with lower catches (Canada, Denmark (in respect of the Faroe Islands and Greenland), Iceland, the Russian Federation and USA) and reduces the contributions of the Parties with higher catches (EU and Norway). Iceland’s suggestion would, in fact, result in its contribution increasing. When 100% of contributions are fixed, all Parties pay 1/7<sup>th</sup> of the contributions, while when 100% of contributions are catch-related, one Party, the USA, would make no contribution, while the EU and Norway together would pay 82% of the total contributions. There are many scenarios in between.

As indicated last year, the NASCO formula is not extreme and does appear to have advantages over those used by some other inter-governmental fishery commissions.

(b) *The inclusion of unreported catches*

Unreported catches are not included in the statistics used to calculate the contributions to NASCO, although the Minimum Standard for Catch Statistics urges the Parties to take measures to minimise such catches. It is possible that the procedures by which unreported catch estimates are derived might be adversely affected if they were to be used for calculating contributions. Iceland, however, has suggested that unreported catches should be included in the definition of “nominal catches” used to calculate the contributions. Estimates of unreported catch by the Parties for 1999 were made available at the last Annual Meeting. The effect of including these estimates in the catches used to calculate the contributions is shown in Table 2 and ranges from -£19,051 to +£15,012. ICES has indicated that progress has been made in relation to the methods used to determine unreported catches, and that the figures provided are now more frequently described as “estimates” rather than “guess-estimates”. Several countries have suggested possibilities for improving these “estimates” or “guess-estimates”. Reported catches are presented to NASCO in accordance with a Minimum Standard designed to improve comparability. Different approaches are used by the Parties to provide “estimates” or “guess-estimates” of unreported catch. It is difficult to conclude, therefore, that reported and unreported catches should be given equal weighting. We have, therefore, also shown the effect of including only 50% of the unreported catch by Party. The impact on the 2001 contributions ranges from -£11,335 to +£8,931. However, the Parties are all taking steps to minimise unreported catches, so in future the impact of their inclusion might be lower.

(c) *The inclusion of a “mortality factor” for catch and release angling*

Catch and release angling in recreational fisheries is becoming increasingly commonplace. Information provided by the Parties indicates that during the 1999 fishing seasons more than 77,500 salmon were released following capture by anglers. However, catch and release is not practised in all countries. The Council’s Minimum Standard for Catch Statistics requires only that catches which have been retained be included in the Parties’ statistics provided to NASCO. ICES has advised that at high temperatures mortality associated with catch and release angling could be in the region of 8-40% for grilse, and Iceland has proposed that 25% of caught and released salmon be included in the catches used to calculate contributions. Non-catch fishing mortality is not, however, restricted to catch and release fishing, so it might be argued that an adjustment should be made for all salmon fishing gear types. This becomes rather complicated since non-catch fishing mortality is likely to be highly variable. However, catch and release fishing is, perhaps, different in that it does produce economic benefits. In Table 3, for illustrative purposes, we have shown the impact on the contributions of including mortality factors of 10%, 25% and 50% of the fish reported to have been caught and released in 1999. We do not have data on the weight of the salmon caught and released although for some, but not all, countries the numbers are broken down into grilse (or small) and MSW (or large) salmon. We have, therefore, assumed an average fish weight of 3kg. The effect of including these mortality factors on the Parties’ contributions ranges from -£939 to +£1,281 at 10% mortality to -£4,508 to +£6,147 at 50% mortality. The impact would be greater if we had assumed a higher average fish weight.

(d) ***The exclusion of ranched salmon from the catches used to calculate contributions***

The majority of salmon ranching in the North Atlantic area has been conducted in Iceland where production peaked at about 500 tonnes in 1993. The Council's Minimum Standard for Catch Statistics requires that the catch statistics provided to NASCO include returns of salmon to ranching units, so the growth of ranching had a significant impact on the Icelandic contribution. In 1999, however, the production of ranched salmon in the North Atlantic area was only 33 tonnes, the lowest value since 1984, with 26 tonnes being ranched in Iceland, 5.7 tonnes in the EU and 1 tonne in Norway. Iceland has previously proposed that ranched salmon be excluded from the catch statistics. The effect of this is shown in Table 4 and results in a reduction in the Icelandic contribution of £2,694, no change to the US contribution and an increase in all other Parties' contributions ranging from +£32 to +£1,239. Iceland has now proposed that ranched production be included but given a weighting factor of 0.2, i.e. only 1/5<sup>th</sup> of production is included. Under this scenario, Iceland's contribution for 2001 would be reduced by £2,149, the contribution of the USA would not change, and the increase in the other Parties' contributions would range from £25 to £988.

(e) ***Low catches***

Over the last ten years catches in the North Atlantic area have declined, partly as a result of conservation measures, by an average of 5.5% per annum. If this trend continued over the next ten years the total catch could be less than 1,000 tonnes by 2010. If the catch for each Party declined by exactly the same percentage in future there would be no impact on the contributions. However, over the last ten years the decline in catches has not been uniform, ranging from 13% to 100%. One Party, the USA, now has no harvest of salmon. If catches continue to decline it is possible that there may be other Parties with no harvest so an increasing number of Parties would pay only the fixed proportion of the budget. In the extreme situation of one Party taking 100% of the catch, even if this was only 1 tonne, it would pay 74% of the total contributions and the other six Parties approximately 4% each. This scenario is unlikely, but demonstrates that in very low catch situations the 70% contribution may not be spread widely.

Iceland has also proposed that catches in fresh water and from coastal and marine fisheries be given different weightings. The effect is to reduce the catch used to calculate contributions to less than half the unweighted total. We are unsure as to the justification for such a difference, since as a past NASCO President once said "to the salmon it does not matter who or what kills it". However, on the basis of information contained in the ICES Working Group Report, the effect of applying the weightings to coastal and marine catches (0.5) and to estuarine and freshwater catches (0.33) ranges from -£3,215 to +£4,097.

(f) ***Combined scenarios***

It is, of course, possible to combine scenarios, and Iceland has proposed that this should be done. In Table 5 we have illustrated the effects of including 50% of the unreported catch, a 25% mortality factor for catch and release and 1/5<sup>th</sup> of the ranched production. The impact on the Parties' contributions ranges from -£12,589 to +£9,018.

## Summary

The above scenarios are presented to illustrate a number of options in relation to the methods used in calculating the contributions of the Parties. There is an almost infinite number of combinations of options. However, as reported last year, without making amendments to the Convention there is no flexibility for addressing Iceland's concerns about the 30/70 split between the fixed and catch-related contributions. Iceland is the only Party that has indicated that it would be willing to consider amending the Convention but, as it turns out, Iceland would pay more if the fixed and catch-related proportions were changed (other than by increasing the catch-related proportion above the present 70%). There is also no flexibility to address concerns about the reduction in the number of NASCO Parties without changing the Convention.

With regard to the issues of exclusion of ranched salmon, inclusion of unreported catches and inclusion of an element for catch and release, there could possibly be flexibility to address these concerns without amendments to the Convention, through an agreement on what is meant by the term "nominal catches". This is the basis of the Icelandic proposal tabled last year in which it is stated that "some changes need to be made in the calculations of contributions to NASCO, either through a more liberal interpretation of Article 16 of the current Convention, probably through a Protocol, or a change in the Treaty".

The Council's Minimum Standard for Catch Statistics, unanimously adopted in 1993, states that the Parties' catch statistics should include ranched salmon and only those salmon which are retained. Unreported catches are not included but the Minimum Standard requires that steps be taken to minimise unreported catches. If the Council considers that the Minimum Standard is, in effect, the definition of "nominal catches", then there is little flexibility unless the Minimum Standard is itself changed. If the Council considers that the Minimum Standard is not the same as "nominal catches", then the "nominal catches" could conceivably be differently defined. However, other internationally agreed definitions of "nominal catches", e.g. that of FAO, accord with the NASCO Minimum Standard.

In short, there is an infinite number of possible scenarios. Some of them (e.g. changing the fixed/catch-related proportion) involve changing the Convention. Others involve redefining the term "nominal catches". However, except for the inclusion of unreported catches, they do not have a very marked effect on any Party's contributions (mostly considerably less than 10%).

If I may, as Secretary, I would add a consolatory footnote. The variations illustrated in the scenarios have, of course, no effect on the total contributions, only on the allocation of costs between the Parties. Some would pay more and some less. These variations are dwarfed by the major saving that we have been able to achieve by purchasing the Headquarters Property, managing and renting it out ourselves, thereby producing both an annual income to NASCO and very significant savings by not paying rent. We are now producing a saving of about one third of the budget and this saving applies annually to all Parties. I hope that this may give some perspective to these deliberations.

Secretary  
Edinburgh  
1 December, 2000

**Table 1: The effect of changing the fixed and catch-related proportions used to calculate the contributions by the Parties. In each case, the figure shown is the difference in pounds sterling from the 2001 contribution calculated using the proportions specified in the Convention.**

	Difference in pounds sterling			
	100% fixed	70% fixed/ 30% catch- related	50% fixed/ 50% catch- related	100% catch- related
<b>Canada</b>	+£19,296	+£11,026	+£5,513	-£8,270
<b>Denmark (in respect of the Faroe Islands and Greenland)</b>	+£33,093	+£18,910	+£9,455	-£14,183
<b>European Union</b>	-£75,500	-£43,143	-£21,572	+£32,357
<b>Iceland</b>	+£19,074	+£10,899	+£5,450	-£8,174
<b>Norway</b>	-£55,028	-£31,444	-£15,722	+£23,583
<b>Russian Federation</b>	+£23,858	+£13,633	+£6,817	-£10,225
<b>United States of America</b>	+£35,207	+£20,118	+£10,059	-£15,089

**Table 2: The effect of including estimates of unreported catches and 50% of these estimates in the catches used to calculate the contributions by the Parties to the 2001 budget.**

	Difference in pounds sterling	
	Inclusion of the estimates of unreported catch	Inclusion of 50% of the estimates of unreported catch
<b>Canada</b>	+£4,996	+£2,972
<b>Denmark (in respect of the Faroe Islands and Greenland)</b>	+£272	+£162
<b>European Union</b>	-£19,051	-£11,335
<b>Iceland</b>	-£4,998	-£2,974
<b>Norway</b>	+£3,770	+£2,243
<b>Russian Federation</b>	+£15,012	+£8,931
<b>United States of America</b>	£0	£0

*Note: Where a Party provided a range for its estimate of unreported catch, rather than a single value, we have used the mid-point value.*

**Table 3: The effect of including 10%, 25% and 50% of salmon caught and released during angling in the catches used to calculate the contributions by the Parties to the 2001 budget (assumes an average weight of salmon of 3kg).**

	<b>Difference in pounds sterling</b>		
	<b>10%</b>	<b>25%</b>	<b>50%</b>
<b>Canada</b>	+£1,281	+£3,152	+£6,147
<b>Denmark (in respect of the Faroe Islands and Greenland)</b>	-£22	-£54	-£106
<b>European Union</b>	-£512	-£1,261	-£2,460
<b>Iceland</b>	-£67	-£165	-£322
<b>Norway</b>	-£939	-£2,312	-£4,508
<b>Russian Federation</b>	+£253	+£623	+£1,215
<b>United States of America</b>	+£7	+£17	+£34

**Table 4: The effect of excluding ranched salmon from, or inclusion of 1/5<sup>th</sup> of ranched production in, the catches used to calculate the contributions by the Parties to the 2001 budget.**

	<b>Difference in pounds sterling</b>	
	<b>Exclusion of ranched production</b>	<b>Inclusion of 1/5<sup>th</sup> of ranched production</b>
<b>Canada</b>	+£238	+£190
<b>Denmark (in respect of the Faroe Islands and Greenland)</b>	+£32	+£25
<b>European Union</b>	+£1015	+£810
<b>Iceland</b>	-£2,694	-£2,149
<b>Norway</b>	+£1,239	+£988
<b>Russian Federation</b>	+£170	+£136
<b>United States of America</b>	£0	£0



**Table 5:** The effect of including only 1/5<sup>th</sup> of ranched production, 50% of the estimate of unreported catch, and a 25% mortality factor for catch and release fishing in the catches used to calculate the contributions by the Parties to the 2001 budget.

	<b>Difference in pounds sterling</b>
<b>Canada</b>	+£5,286
<b>Denmark (in respect of the Faroe Islands and Greenland)</b>	+£93
<b>European Union</b>	-£12,589
<b>Iceland</b>	-£1,361
<b>Norway</b>	-£464
<b>Russian Federation</b>	+£9,018
<b>United States of America</b>	+£17