

# SC/D16/AWMP/05

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## On the Simple Carryover of Strikes

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INTERNATIONAL  
WHALING COMMISSION

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## ABSTRACT

I deconstruct the notion of carryover into five components: accrual frequency, accrual limit, bank limit, expenditure limit, and expiration. Using these, I suggest that the conservation and utilization goals of aboriginal whaling management can be achieved using a relatively straightforward scheme that does not rely on arbitrary multi-year block boundaries or inconsistent application across stocks. Specifically, unused strikes should be accumulated annually, available for use as soon as the next year, and expire after 12 years. The number of carryover strikes used in a year would be limited to 50% of the annualized strike limit. Tracking of unused strikes would be managed by the IWC Head of Science, based on member countries' annual reports. I suggest simple wording for annual Scientific Committee recommendations about carryover.

## INTRODUCTION

The carryover of unused aboriginal whaling strikes has been treated inconsistently by the Commission. Also, it has received very little attention from the Scientific Committee until the 2016 meeting when the Committee attempted to finalize a recommended Aboriginal Whaling Scheme. At that meeting, recommendations on carryover policy remained undecided, and the Committee agreed to examine the issue further with the goal of making a final recommendation at its 2017 meeting.

Table 1 lists how the Commission regulates carryover in its Schedule (IWC, 2014).

The carryover policies adopted by the Commission have never explicitly been based on any advice from the Scientific Committee. However, when considering how to design trials for development and testing of Strike Limit Algorithms in 2000 the SC presented the Commission with an illustration regarding block quotas and carryover. The Commission considered the Committee's presentation and agreed (IWC, 2001, p.20):

...that blocks of five years with an inter-annual variation of fifty percent were satisfactory in terms of allowing for the likely variability in hunting conditions. It therefore agreed that these values are appropriate for use in trials [of strike limit algorithms].

Despite this, the Scientific Committee did not explicitly incorporate carryover during the testing of strike limit algorithms. However, it recognizes that short-term reservation and expenditure of unused strikes has no significant management implications and should be allowed to better facilitate need satisfaction.

## PRINCIPLES RELATED TO CARRYOVER

Several different issues are intertwined in the notion of carryover limits:

1. The **accrual frequency**. This refers to the period of time ('accrual window') during which unused strikes are accumulated before the tally is added to a bank of unused strikes (see below).
2. The **accrual limit**. This is how many unused strikes within the accrual window can be accumulated and added to the bank.
3. The **bank limit**. This is the total accumulated number of unused strikes that may be retained for future use.
4. The **expenditure limit**. This is how many banked strikes may be used within a specified time period, generally one year in the tabled examples.
5. Carryover **expiration**. This determines how and when accrued carryover strikes are no longer available for use.

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Although these concepts are useful for precise discussion of potential carryover mechanisms and principles, any recommendations by the Committee to the Commission should not be so detailed. Later I propose how a recommendation could be expressed.

Referring to Table 1, let us consider two examples of these concepts. First, I consider West Greenland minke whales:

- The accrual window is one year. Unused strikes from a year are tallied and may be used as soon as the next year.
- The accrual limit equals the annual strike limit. The “unused portion” for a year could, in principle, be the entire annual quota.
- There is no bank limit.
- The expenditure limit is 15 strikes in one year.
- The expiration of strikes is unspecified. However, if the provision was repeated verbatim for consecutive blocks, a literal interpretation of the wording would be that all strikes in the bank would expire at the end of a block.

Now I consider Bering-Chukchi-Beaufort Seas bowhead whales:

- There are three accrual windows. First, reference is made to unused strikes from “any year[s]” in the past. Second, the previous block is explicitly identified as another accrual period. Third, within the current block, there is a one-year accrual window.
- For each of these three windows, the accrual limit equals the sum of the annual strike limits over the relevant window.
- There are three potential bank limits. For the window of “any year[s]” in the past, there is no bank limit specified. For the previous block, the bank limit is unspecified, but it effectively equals 15 since only that number of unused strikes could be carried forward. For the current block, the bank limit is unspecified and could, presumably, equal the entire block quota.
- The expenditure limit is 15 strikes per year.
- The expiration provision is multifaceted and difficult to interpret with confidence. With a very literal reading of the Schedule, one might make the following interpretation.
  - Unused strikes preceding the previous block do not expire.
  - Unused strikes during the current block do not expire during that block.
  - Fifteen unused strikes from the previous block are carried forward and any remaining unused strikes from that block could be considered ‘temporarily expired’ because they would not be available for use in the current block.
  - If the next block mirrored the current one, the ‘temporarily expired’ strikes mentioned above would revert to being eligible for use since their origin would then become “any year[s]” in the past, as opposed to “in the previous block”. All but 15 unused strikes from the most recent block would then ‘temporarily expire’ as in the previous bullet.

#### **SUGGESTED CARRYOVER PROVISION FOR ABORIGINAL WHALING SCHEME**

Now I offer a suggestion for a simple, unified treatment of carryover recommendations by the Scientific Committee.

1. Accrual frequency. This should be 1 year, since there is no scientific reason for delay. Moreover, greater satisfaction of aboriginal need is possible if unused strikes are accrued on a year by year basis, instead, for example, if unused strikes were accrued over a full block before they could be used in the next.
2. Accrual limit. If there are adequate limits to the usage and expiration of unused strikes, then accrual should be limited only by the actual strike limits, as in the minke and bowhead examples above. There is no reason to further limit which unused strikes may be tallied.

3. Bank limit. If there are adequate limits to the usage and expiration of unused strikes, then the bank should, in principle, be unlimited. However, political perception could be negative if, for some reason, cumulative accrued strikes were very high. I recommend that the notion of a bank limit be replaced by limits on usage and expiration. However, I note that the notion of a bank is helpful for tracking unused strikes; I am specifically suggesting that the notion of a bank *limit* be rejected.
4. Usage limit. I suggest that usage be limited to 50% of the annualized strike limit, reflecting the Committee's and Commission's 2001 agreement.
5. Expiration. I suggest that an unused strike should expire after 12 years. This expiration time is suggested because it mirrors the two-block time frame during which an updated survey is normally required when using Strike Limit Algorithms. The boundaries of blocks are scientifically irrelevant when assessing the conservation performance and need satisfaction of strike limits. In the minke example above, it makes no sense that at least some of the unused strikes at the end of one block would not be carried forward into the next.

A result of these suggestions is that a carryover policy is best specified using only an accrual window, usage limit, and expiration provision. This proposal is also generic; all stocks subject to aboriginal whaling can be treated equally.

### **SUGGESTED WORDING FOR SCIENTIFIC COMMITTEE MANAGEMENT ADVICE**

I stress that the manner in which the Scientific Committee recommends carryover limits to the Commission should be as simple as possible. Here I use the Bering-Chukchi-Beaufort Seas bowhead case as an example. The existing management advice from the Bowhead, Right and Gray Whale Sub-committee (IWC, 2017) is:

The sub-committee agreed with their past advice that the Bowhead Whale SLA continues to be the most appropriate way for the Committee to provide management advice for this population of bowhead whales. The Commission adopted catch limits for a six-year block in 2012, i.e., 2013-2018. The total number of whales landed shall not exceed 336 and the number of annual strikes shall not exceed 67; however, there is a carryover provision that allows for any unused portion of a strike quota from past years be carried forward to future years provided that no more than 15 strikes be added for any one year. The sub-committee agreed that these limits will not harm the stock.

Wording consistent with the suggestions in this paper could, e.g., for 2017, read:

The sub-committee reiterated that the Bowhead SLA is the most appropriate way for the Committee to provide management advice for this population of bowhead whales. In 2012, the Commission agreed that landed whales shall not exceed 336 during the 2013-2018 block, and annual strikes shall not exceed 67. The sub-committee agreed that those limits will not harm the stock. Furthermore, the sub-committee agreed that additional unused, unexpired strikes consistent with the Aboriginal Whaling Scheme would not harm the stock, provided no more than 33 such carryover strikes are used in any year. The IWC Secretariat Head of Science tallies the accrual and expiration of carryover strikes annually.

In this example, 33 is calculated as 50% of 67.

Note that the actual number of unexpired carryover strikes that may be used in the year is not explicitly given. This is intentional. Since the number of usable carryover strikes will vary from year to year, it is important that the limit in one year is not extrapolated (e.g., by the Commission) to a longer period. To prevent this, the annual Scientific Committee guidance to the Commission should be comprised of a reference to the terms of the AWS and a reiteration of the 50% limit (i.e., 33).

The IWC Secretariat Head of Science then tracks the annual accrual and expiration of carryover strikes with the assistance of hunting countries through their yearly harvest reports.

### **CONCLUSIONS**

Our proposal has several attractive features. It is simple and scientifically justified. It can be applied equally to all aboriginal whaling cases. It establishes the Scientific Committee and the AWS as the arbiters of scientifically appropriate carryover limits, although the Commission retains the right to set carryover limits as it wishes. It is easy to implement using existing data and IWC Secretariat support. It requires limited revision to the standard wording of Scientific Committee advice; however if implemented by the Commission it would require revision to the current wording in the Schedule.

Choice of a carryover policy is the last remaining provision to be agreed before the Scientific Committee can recommend a comprehensive AWS to the Commission. Since its proposal in 2003, the previous AWS recommendation has never been supported by the Commission, thus the recommendation of an acceptable new scheme would be a major accomplishment and could ensure that a combined AWMP and AWS for all aboriginal whaling would be finished for Commission adoption at its next meeting.

#### **ACKNOWLEDGMENTS**

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Table 1: Hunting limits and carryover provisions for aboriginal whaling in the IWC Schedule.

| <b>Stock</b>                             | <b>Block Hunting Limit</b>  | <b>Carryover Provision</b>  |
|--|---|---|
| Bering-Chukchi-Beaufort Seas bowheads    | Block limit of 336 landed. Annual strike limit of 67 during this block.                                 | “...any unused portion of a strike quota from any year (including 15 unused strikes from the [previous block] quota shall be carried forward and added to the strike quota of any subsequent years, provided that no more than 15 strikes shall be added to the strike quota for any one year.” |
| Eastern North Pacific gray whales        | Block limit of 744 whales “taken”, provided that the number taken in any one year shall not exceed 140. | None specified.   |
| West Greenland fin whales                | Annual strike limit of 19.  | None specified.   |
| Central stock of minke whales            | Annual strike limit of 12.  | “...any unused portion of the quota for each year shall be carried forward from that year and added to the quota of any subsequent years, provided that no more than 3 shall be added to the quota for any one year.”   |
| West Greenland stock of minke whales     | Annual strike limit of 164.   | “...any unused portion of the quota for each year shall be carried forward from that year and added to the strike quota of any of the subsequent years, provided that no more than 15 strikes shall be added to the strike quota for any one year.”   |
| West Greenland bowheads                  | Annual strike limit of 2.   | “...any unused portion of the quota for each year shall be carried forward from that year and added to the quota of any subsequent years, provided that no more than 2 shall be added to the quota for any one year.”   |
| West Greenland humpbacks                 | Annual strike limit of 10.  | “...any unused portion of the quota for each year shall be carried forward from that year and added to the strike quota of any of the subsequent years, provided that no more than 2 strikes shall be added to the strike quota for any one year.”  |
| St. Vincent and the Grenadines humpbacks | Block limit of 24 whales “taken”.   | None specified.   |