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As described above, an ABC control rule is a policy set by the Council, in consultation with its SSC, or by the Secretary for Secretarial managed stocks, that articulates how the ABC will be set compared to the associated OFL. ABC control rules account for scientific uncertainty as well as the Council's risk policy (e.g., the acceptable probability that catch equal to the ABC would result in overfishing). Because the ABC cannot exceed the OFL, ABC control rules generally specify the amount by which the ABC should be reduced from the OFL<sup>15</sup>, based on the level of scientific uncertainty and the preferred probability that such a catch level could result in overfishing. Most of the Councils have established a tiered ABC control rule, where different approaches are used to specify OFL and ABC depending on the data that is available for a given stock. In many of the higher data quality tiers, P\* will be applied to the probability distribution of OFL to generate ABC. In general, when there is a large buffer between the OFL and the ABC, there is more room to account for carry-over and to adjust the ABC upwards. The amount of carry-over that can be applied is limited by the difference between the OFL and the ABC. Stock assessments with more uncertainty will have larger buffers and thus more room to accommodate ABC adjustments upward to allow for carry-over or phase-in.

#### 5.0 Conclusions and Recommendations

Revisions to the National Standard 1 (NS1) guidelines that allow some portion of ACL underages to be carried over to the following year and phase-in of ABC changes over a period of up to three years can have benefits including increasing safety and economic performance. Phase-in of ABC changes can reduce social disruptions by creating stability in harvests over time. However, these policies may also increase risk of overfishing and depletion, and should be properly analyzed and adopted with caution. Carry-over and phase-in policies that limit changes in the ACL to the gap between the ACL and the ABC do not necessarily require any additional analysis or changes to FMPs. Policies that allow the ABC to be adjusted to accommodate carry-over or phase-in require comprehensive evaluation in advance and/or provisions for SSCs to evaluate and approve changes to ABCs on a case-by-case basis.

There are two alternative acceptable approaches by which carry-over or phase-in could be implemented. The first approach is to evaluate carry-over or phase-in actions on a case-by-case basis. For assessed stocks, this might entail re-running the projections used in the last stock assessment with revised catch estimates adjusted to accommodate proposed carry-over or phase-in of ABC changes. Ideally, these projections should incorporate uncertainty and should take retrospective patterns into account. Deterministic projections may be acceptable but should be used with caution when assessments are imprecise or when there is reason to believe a stock is declining. It may be possible to run catch projection scenarios in advance that allow for a range of actual catches and carry-over to ensure that they do not result in overfishing. Then, if the actual adjustments to the ABC for carry-over and phase-in fall with the scenarios tested, it is possible they can be approved without further analysis.

The second, and preferred, approach is to incorporate carry-over and phase-in provisions within ABC control rules by first conducting a comprehensive evaluation (preferably an MSE) of

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<sup>15</sup> Note: For some data limited stocks, OFL is not specified.





















