Fishery-independent setline survey expansion through 2019

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PURPOSE

To provide the Commission with an opportunity to consider the proposed IPHC Fishery-independent setline survey expansion for 2017 through 2019.

BACKGROUND

Beginning in 2014, the IPHC has undertaken a sequence of expansions of the annual IPHC Fishery-independent setline survey in order to obtain direct observation in regions not covered by the annually fished stations. Webster et al. (2014) proposed a five-year plan for undertaking these expansions, which was subsequently updated to a six-year plan as follows:

2014 Areas 2A and 4A
2015 Area 4CDE eastern Bering Sea flats
2016 Area 4CDE eastern Bering Sea continental shelf edge
2017 Area 4B
2018 Areas 2B and 2C
2019 Areas 3A and 3B

The order of expansions was based on an evaluation the quality of data at the time and the impact the new data was likely to have on improving weight-per-unit-effort (WPUE) indices and its effect on coastwide stock estimates (see Webster et al. 2015a for a more detailed rationale). The 2014-16 expansions were successfully completed, with the results presented in a series of reports (Webster et al. 2015b, 2016, 2017).

DISCUSSION

Survey expansions in 2017

Along with the proposed addition of 108 new stations to the setline survey grid in Area 4B (Fig. 1), an expansion of the IPHC Fishery-independent setline survey in Area 2A has been proposed for 2017. This expansion would be repeat of the 2014 IPHC Fishery-independent setline survey expansion in Area 2A (Webster et al. 2015b), along with a further expansion down to 36.5°N in California. This proposal was primarily motivated by the number of otoliths collected on the setline survey in Area 2A being consistently below the target of 2000 otoliths required for the stock assessment. The additional expansion stations, along with the deployment of seven skates of gear per set compared to six to be used in most other areas in 2017, is expected to yield close to 1900 otoliths, compared with around 1600 using the standard grid and six skates.

The additional 34 stations in California (Fig. 2) are to provide direct IPHC observations in a region in which Pacific halibut have previously been captured on the National Marine Fisheries Service (NMFS) annual West Coast trawl survey (see Webster 2016). While Pacific halibut densities are likely to be extremely low so far south, the data will be a useful input into the space-

time modelling of WPUE data in Area 2A (Webster 2017). This region is currently the only one coastwide for which an external adjustment to an area's WPUE index is required to account for unsurveyed habitat (noting that the catch rates on the West Coast trawl survey are too low to provide a reliable index of halibut density, even at the regulatory area level; Webster 2016).

IPHC Fishery-independent setline survey expansions in 2018 and 2019

The current proposal is to complete the IPHC Fishery-independent setline survey expansions by 2019. Figures 3, 4, 5, and 6 show proposed expansion stations along with the current IPHC Fishery-independent setline survey stations in Areas 2B, 2C, 3A and 3B. Note that proposed stations have yet to be carefully vetted, and some are likely to be omitted from the final survey plans (e.g. because they are too close to land, or in waters with strong currents that limit fishing).

References

Webster, R. A., Dykstra, C. L., Soderlund, E. and Kong, T. 2014. Range and depth expansion of the setline survey. Int. Pac. Halibut Comm. Report of Assessment and Research Activities 2013: 451-456.

Webster, R. A., Stewart, I. J., Leaman, B. L., Sadorus, L. L., Henry, E., and Dykstra, C. L. 2015a. Setline survey expansion and complementary data sources. Int. Pac. Halibut Comm. Report of Assessment and Research Activities 2014: 587-601.

Webster, R. A., Dykstra, C. L., Henry, E., Soderlund, E., and Kong, T. 2015b. Setline survey expansions in 2014 and use of sablefish longline survey data for a deep-water density index. Int. Pac. Halibut Comm. Report of Assessment and Research Activities 2014: 603-617.

Webster, R. A., Dykstra, C. L., and Henry, A. M. 2016. Eastern Bering Sea setline survey expansion and trawl calibration. Int. Pac. Halibut Comm. Report of Assessment and Research Activities 2015: 530-543.

Webster, R. A. 2016a. Indexing density in southern Area 2A using West Coast trawl survey data. Int. Pac. Halibut Comm. Report of Assessment and Research Activities 2015: 544-551.

Webster, R. A., and Soderlund, E. 2017. Area 4CDE edge IPHC survey expansion. Int. Pac. Halibut Comm. Report of Assessment and Research Activities 2016: 216-219.

Webster, R. A. 2017. Results of space-time modelling of survey WPUE and NPUE data. Int. Pac. Halibut Comm. Report of Assessment and Research Activities 2016: 241-257.

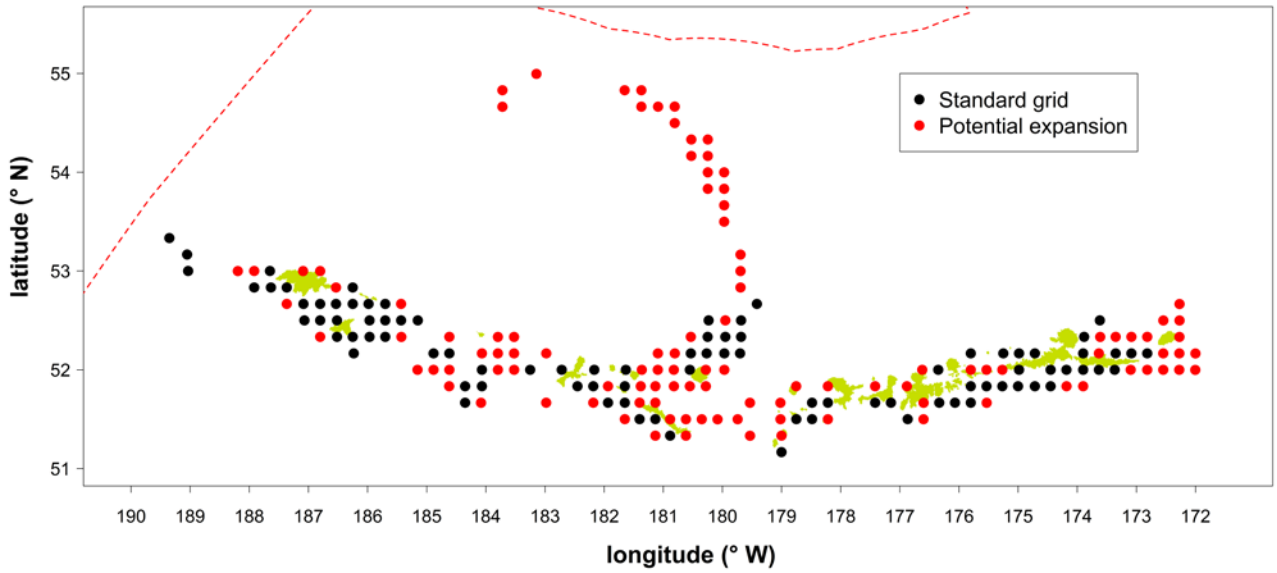

Figure 1. Proposed IPHC Fishery-Indepenent setline survey design for Area 4B in 2017.

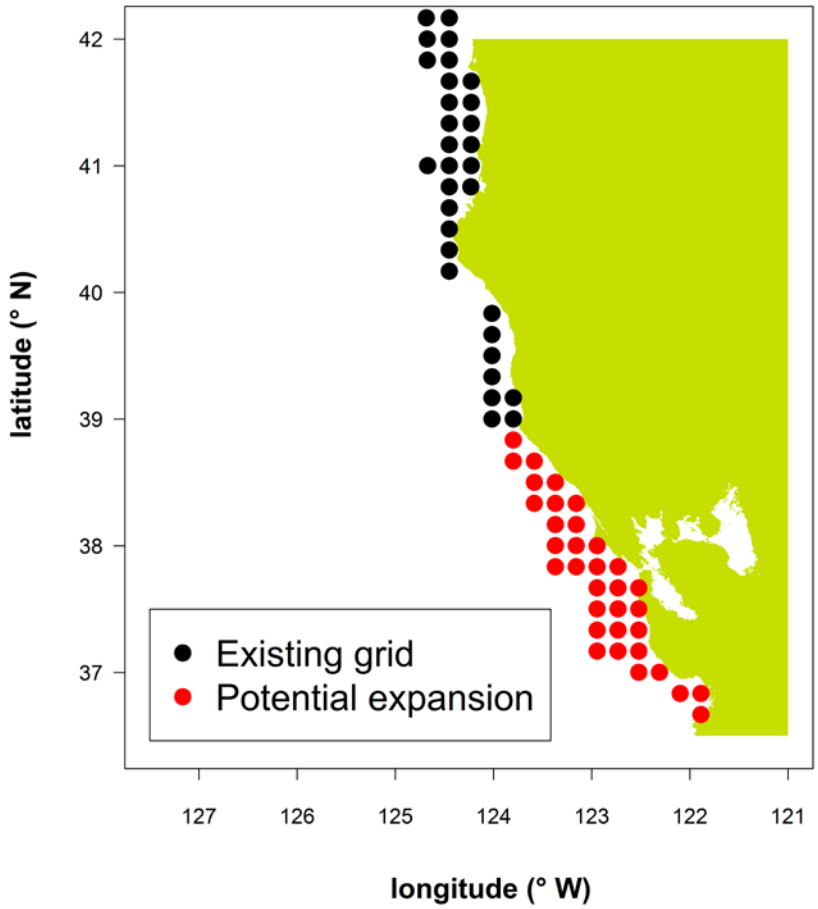

Figure 2. Proposed new IPHC Fishery-Indepenent setline survey expansion stations in California in 2017.

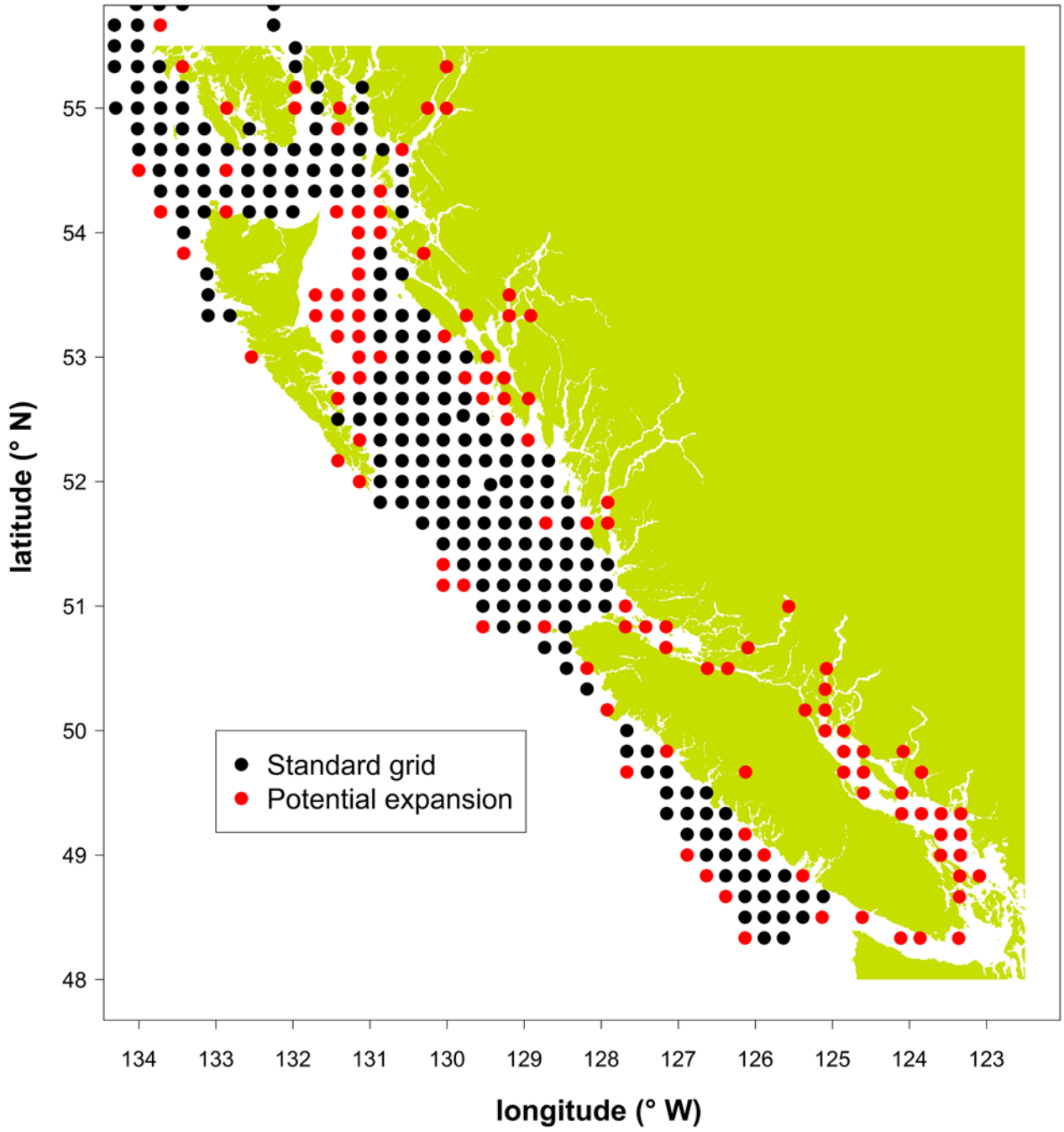

Figure 3. Proposed IPHC Fishery-Indepenent setline survey design for Area 2B in 2018.

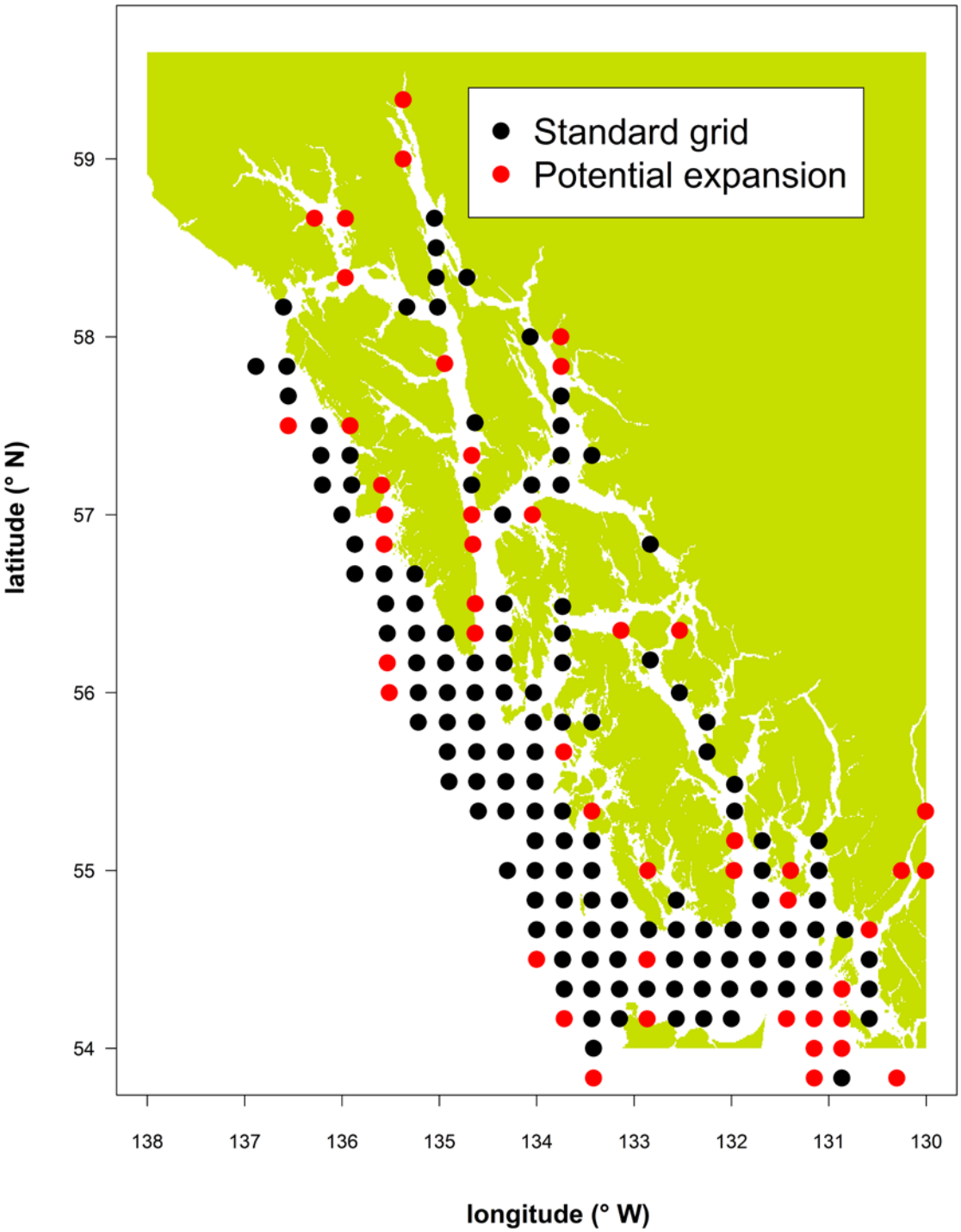

Figure 4. Proposed IPHC Fishery-Indepenent setline survey design for Area 2C in 2018.

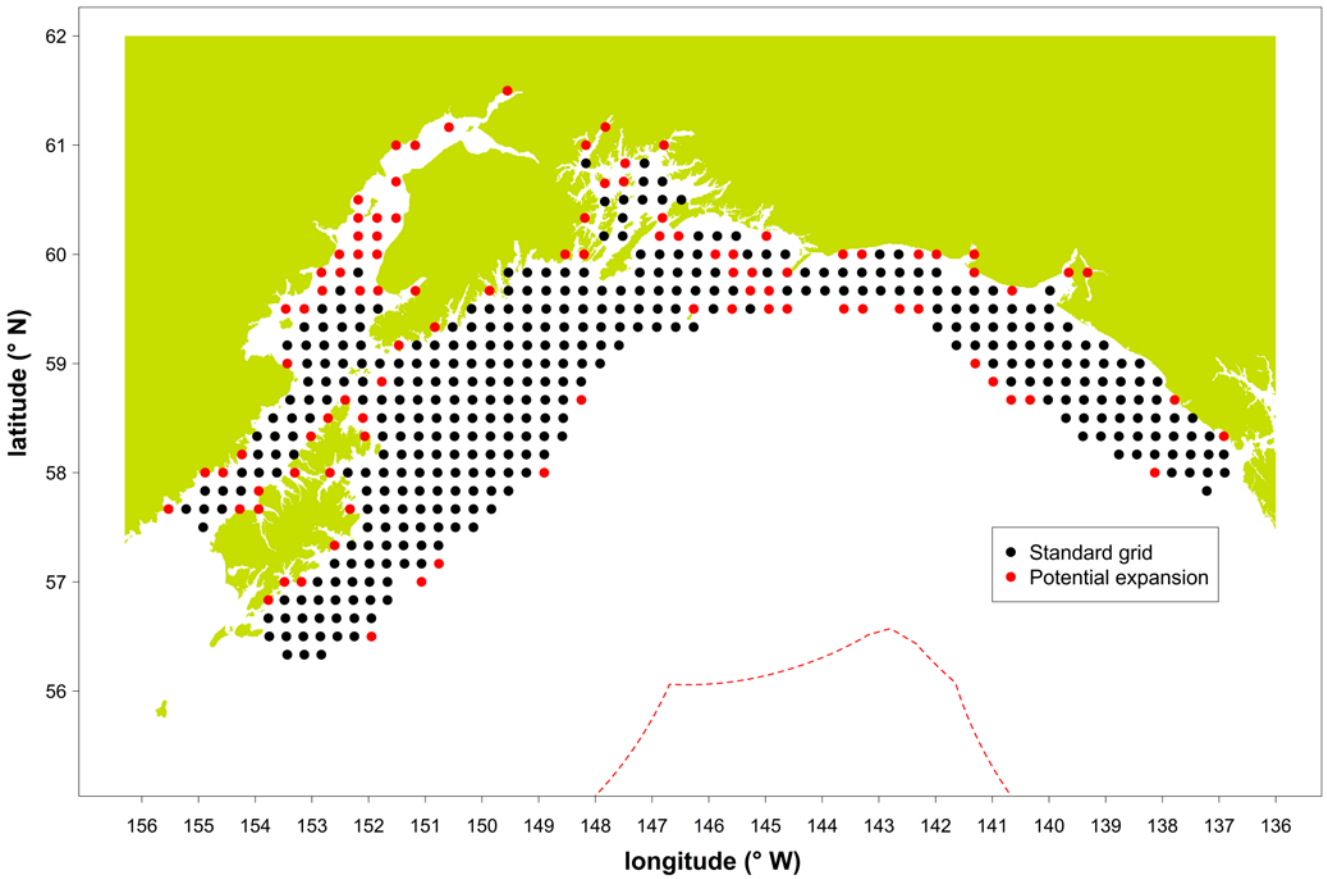

Figure 5. Proposed IPHC Fishery-Indepenent setline survey design for Area 2A in 2019.

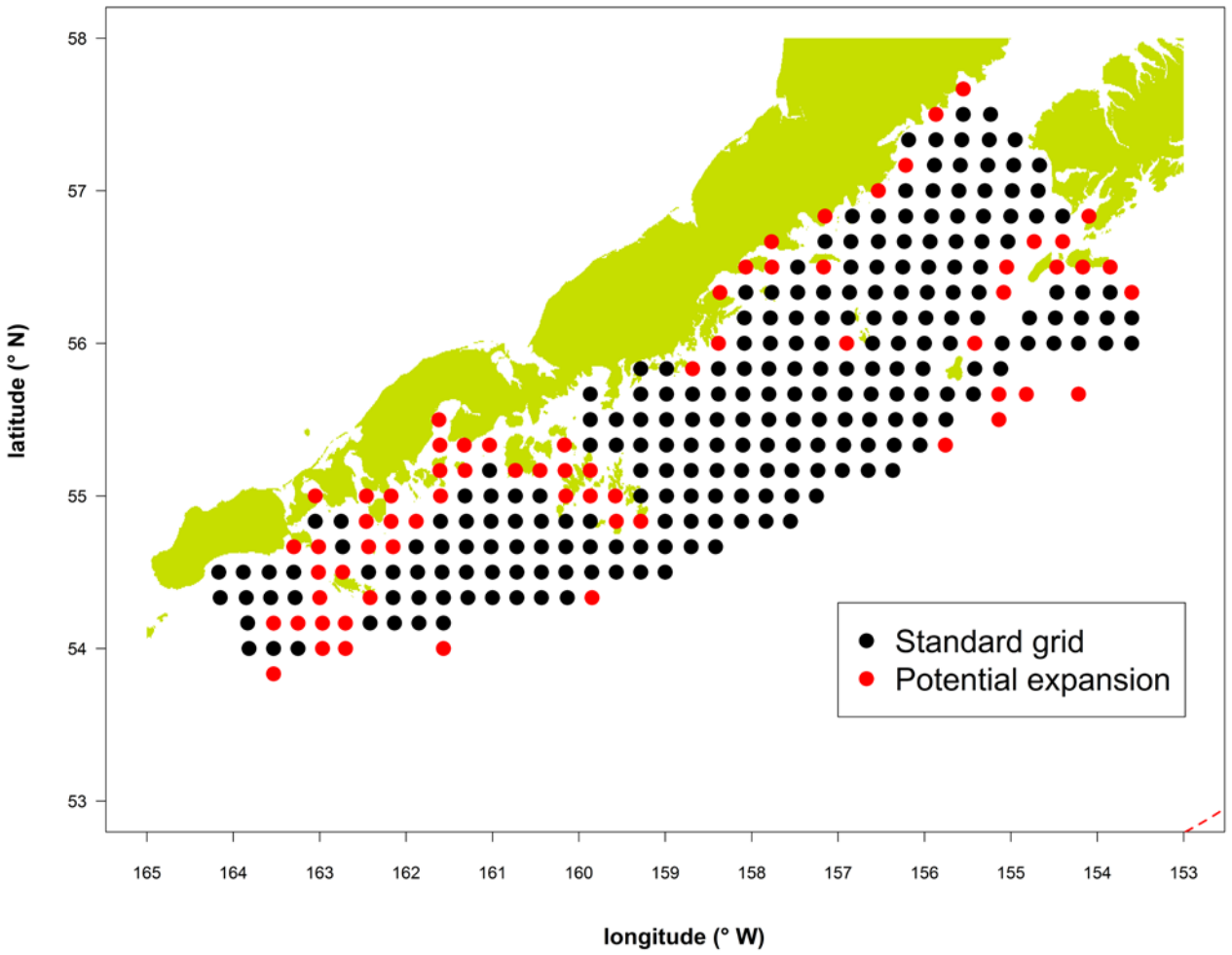

Figure 6. Proposed IPHC Fishery-Indepenent setline survey design for Area 3B in 2019.

RECOMMENDATION/S

That the Commission **NOTE** paper IPHC-2017-AM093-06 which provided the Commission with an opportunity to consider the proposed IPHC Fishery-Independent setline survey expansion for 2017-19.

APPENDICES

Nil