

Highly Migratory Species Management Team Report on
Drift Gillnet Performance Metrics Methodology

At the June 2018 Council meeting, the Highly Migratory Species Management Team (HMSMT) presented a report ([Agenda Item G.3.a, Supplemental HMSMT Report 2](#)) which suggested the Council consider evaluating the methodology used to specify drift gillnet (DGN) bycatch performance metrics. The HMSMT compared the adopted performance metrics based on ratio estimators of bycatch to performance metrics calculated by the regression tree methodology presented by James Carretta at the March 2017 Council meeting ([Agenda Item J.1.b, Supplemental SWFSC PowerPoint](#), [Agenda Item J.1.b, Southwest Fisheries Science Center Report](#)). The Southwest Fisheries Science Center has developed the regression tree method as the bycatch estimation method for the drift gillnet fishery (Carretta et al. 2017) and estimates derived from this method are currently used in the Marine Mammal Protection Act (MMPA) marine mammal stock assessments (Carretta et al. 2018). The regression tree method has been vetted by the Pacific Scientific Review Group, an MMPA advisory body to the National Marine Fisheries Service that reviews the agency marine mammal science annually. Additionally, the Science and Statistical Committee (SSC) has reviewed the regression tree method and its application to marine mammal and sea turtle bycatch estimation ([Agenda Item H.5.a Supplemental SSC Report 1, September 2018](#)). The SSC recommended that the regression tree method represents a technical improvement over the ratio estimator method. Additionally, the SSC recommended exploring if this method could be applied to generate bycatch estimates for finfish.

If the regression tree methodology is adopted by Council, the HMSMT recommends tasking the team with developing new performance metric values based upon the regression tree methodology, including review of the regression tree method for its potential application to finfish species and identification of the appropriate staff to perform these analyses. The HMSMT will bring these, along with a description of the process, to the Council in March for consideration.

References:

Carretta, J.V., J.E. Moore, and K.A. Forney. 2017. Regression tree and ratio estimates of marine mammal, sea turtle, and seabird bycatch in the California drift gillnet fishery, 1990-2015. U.S. Department of Commerce, NOAA Technical Memorandum, NOAA-TM-NMFS-SWFSC-568. 83 p.

Carretta, J.V., K.A. Forney, E.M. Oleson, D.W. Weller, A.R. Lang, J. Baker, M.M. Muto, B. Hanson, A.J. Orr, H. Huber, M.S. Lowry, J. Barlow, J.E. Moore, D. Lynch, L. Carswell, and R.L. Brownell Jr. 2018. U.S. Pacific marine mammal stock assessments: 2017. NOAA Technical Memorandum NMFS-SWFSC-602. 155 p. DOI: 10.7289/V5/TM-SWFSC-602.