

Los Angeles Seafood Monitoring Project Annual Meeting – May 2019 Data Summary - Report from Year 1 of LA SMP

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The first year of findings from the Los Angeles Seafood Monitoring Project (LA SMP) consisted of monthly seafood sampling and DNA testing of six common menu-listed fish types (Albacore, Halibut/Fluke, Red Snapper/Red Sea Bream, Salmon, Tuna, Yellowtail) from ten LA restaurants. Notably halibut & fluke and red snapper & red sea bream were all sample to account for past labeling challenges (see Willette et al. 2017 and Willette et al. 2018 for further explanations). Three of the ten locations are participating restaurants in the LA SMP, the seven others were extended an invitation to participate but did not respond during the sampling period. All samples were ordered in restaurant, by phone, or via a mobile food app and purchased by D. Willette or LMU and UCLA undergraduate students. No advance notification was given to restaurants when sampling would occur (i.e. blind sampling), and date of sampling, menu name, price, and restaurant were recorded for each sample from the purchase receipt. Data presented below includes published results (2012-2015) from Willette et al. 2017 *Cons. Biol* 31:1076-1085, and new data sampled between April 2018 and January 2019. The LA SMP was launched in April 2018.

Additional information on project results are available by contacting the LA SMP under the 'Contact' link at www.losangelesseafoodproject.org

Figures presented in workshop

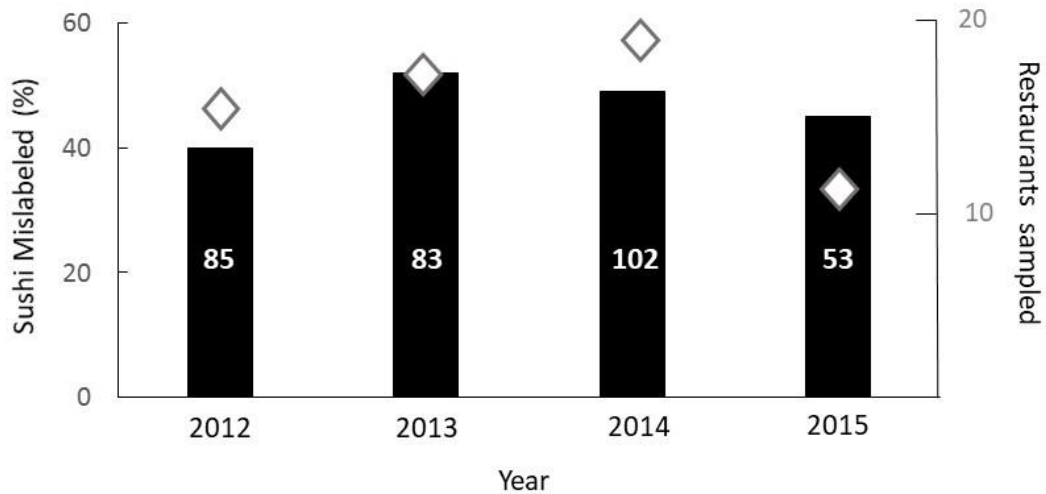


Figure 1. 2012 to 2015 frequency of mislabeling of sushi fish type by year (numbers in bars, total number of samples per year; diamonds represent number of sushi restaurants sampled). Figure adapted from Willette et al. 2017, *Cons. Biol* 31:1076-1085. Average mislabeling rate of sampled seafood was 47% (151/323) and ranged from 40% to 52%. All sampled restaurants and all fish types (except bluefin tuna) had at least one case of mislabeling.

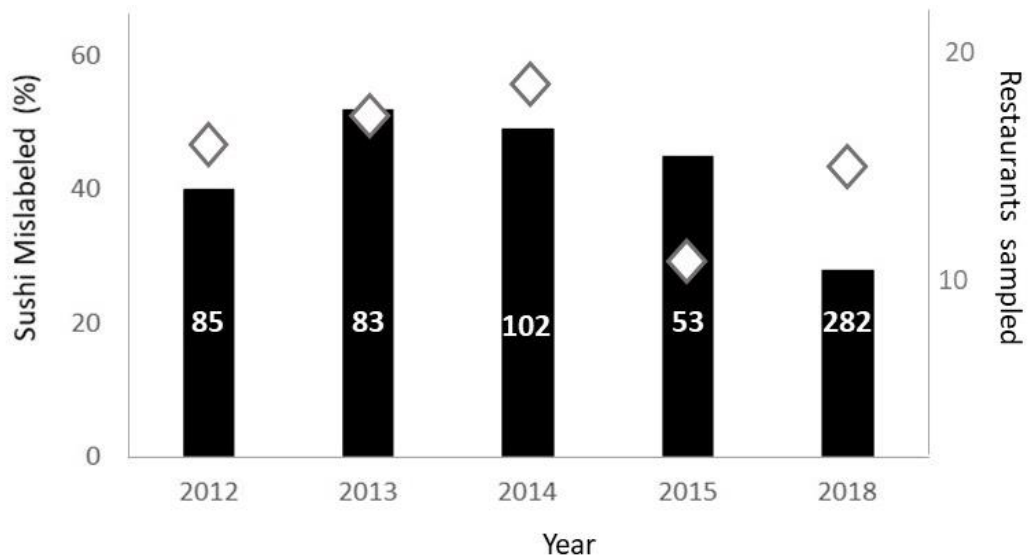


Figure 2. Inclusion of 2018 LA SMP data with 2012-2015 frequency of mislabeling of sushi fish type by year (numbers in bars, total number of samples per year; diamonds represent number of sushi restaurants sampled). Sampling in 2018 occurred monthly, whereas 2012-2015 sampling occurred over 1-3 months only, hence high sample number in 2018. The average mislabeling rate in 2018 was 28%, a substantial decrease from the 40-52% reported in previous years using the same testing design. Data not shown - Mislabeling rate was lower in LA SMP participating restaurants compared to the overall average.

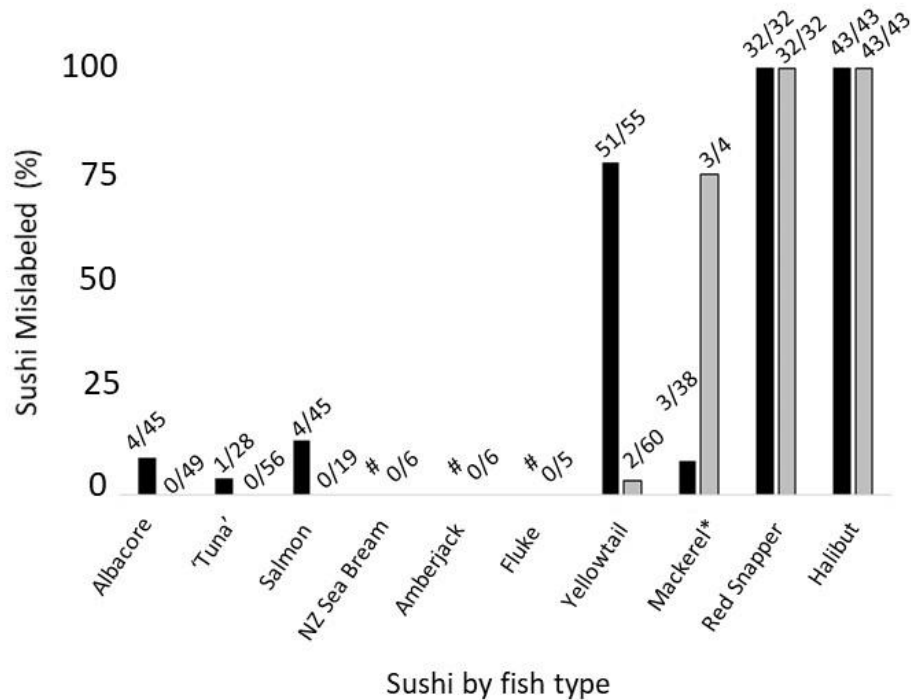


Figure 3. Mean frequency (%) of mislabeling of sushi fish from 2012-2015 (black bars) and 2018 (grey bars). Numbers above bars represent total number of mislabeled samples/total number of samples for a given fish type. For example, 51 of 55 yellowtail samples were mislabeled from 2012-2015, whereas 2 of 60 yellowtail samples were mislabeled in 2018.

Most fish types saw a reduction in mislabeling frequency. Mackerel mislabeling increased but is likely an artifact of the very low sampling size in 2018 (4) versus 2012-2015 (38).

Fish labeled as red snapper and halibut continue to be mislabeled 100% of the time. Sea bream and fluke were never mislabeled. Notably, DNA sequencing data of most sampled red snapper revealed fish were *Pagrus major* (FDA Seafood List acceptable name: sea bream), and most sampled halibut were *Paralichthys olivaceus*/*P. lethostigma* (FDA Seafood List acceptable name: fluke or flounder).

symbol indicates a menu-listed fish not available on from restaurants in 2012-2015, but available in 2018, likely attributed to greater clarity in labeling of *Pagrus* and *Paralichthys* species.

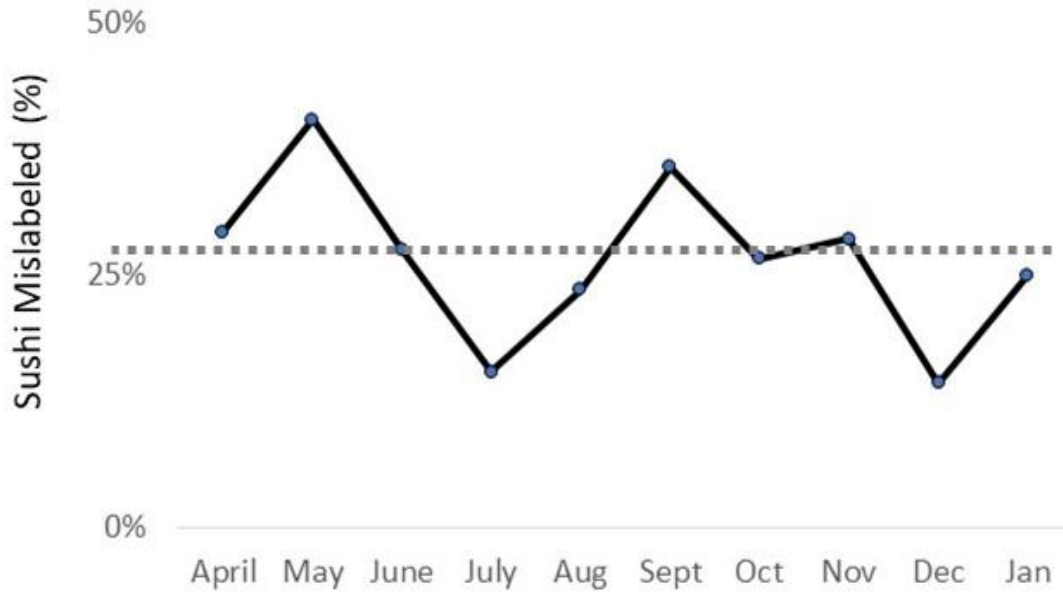


Figure 4. LA SMP mean frequency (%) of mislabeling of sushi fish by month from April 2018 to January 2019. Average mislabeling across months indicated by dotted line (28%).

Noteworthy is the LA SMP 2018 data set is unique from past studies by having a monthly sampling design and results. These data, however, do not reveal any clear pattern in mislabeling rates over the year.