Supplementary Material: Andrews AH, Prouty NG, Cheriton OM (2020) Bomb-produced radiocarbon across the South Pacific Gyre – a new record from American Samoa with utility for fisheries science

Supplemental Table S1. Data from fish specimens collected in 2016 from the waters of American Samoa (Tutuila, South Bank (Papatua Guyot), and East Bank (Tulaga)) that were used in this study. The smallest fish (cm Fork Length) were aged to ~1–3 years (age is unlikely to be significantly greater based on fish size at recruitment observations). Date of formation was calculated as the difference in age from the date of collection plus 0.5 yr to compensate for the core extraction period (~1 year of growth). Specimens were collected by the Pacific Islands Fisheries Science Center under Project SE-16-01 and data were accessed via the NOAA National Centers for Climate Information (https://www.ncdc.noaa.gov/paleo-search/study/27541).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Snapper species | Collection date  | Length (cm FL) | Estimated age (yr) | F14C ± SD | Δ14C (‰) | Formation date |
| Lehi | 3/13/16 | 32.1 | 2 | 1.0479 ± 0.0033 | 39.7 | 2014.70 |
| (*Aphareus rutilans*) | 3/15/16 | 30.9 | 1 | 1.0415 ± 0.0055 | 33.3 | 2015.71 |
| Ehu | 3/19/16 | 23.8 | 3 | 1.0517 ± 0.0035 | 43.6 | 2013.72 |
| (*Etelis carbunculus*) | 3/16/16 | 25.0 | 3 | 1.0531 ± 0.0043 | 45.0 | 2013.71 |
|  | 3/7/16 | 25.1 | 3 | 1.0475 ± 0.0037 | 39.5 | 2013.68 |



Supplemental Figure S1. Monthly strontium:calcium (Sr/Ca; inverted) and barium:calcium (Ba/Ca) ratios reported in mmol·mol-1 with stable carbon isotopes (δ13C, ‰) from 1955 to 2012 as measured in a coral core collected off the south side of Tutuila, American Samoa.



Supplemental Figure S2. Sea-surface temperature (SST) calibration period from 1998 to 2005 based on a 30-d average of interpolated SST near Fatu Rock, Tutuila (OISST v2.1; Huang et al., 2020) plotted with monthly strontium: calcium (Sr/Ca; inverted mmol·mol-1) from a linear regression (y = –5.2067x + 76.5160, r = 0.732).