FISHERIES CATCH DATA RECONSTRUCTIONS 1950-2010:

DATA FORWARD CARRY METHODS TO 2010

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Preface

In the initial release of the *Sea Around Us* globally reconstructed catch data (Pauly and Zeller 2016), we present global catch reconstructions from 1950 to 2010. The following short sections of text are for a sub-set of EEZs, whose initial catch reconstructions were completed earlier in the project, when officially reported baseline data (e.g., FAO FishStat or ICES statistics) were not available to 2010. Hence, the report, methods, and data of these initial reconstructions do not encompass the entire time period to 2010 (i.e., initial reconstructions may end in years prior to 2010). Below, we detail the methods utilized to update and carry forward these reconstructions to 2010. The results for each EEZ can be found online at www.seaaroundus.org. Note that the initial reconstructions were based on earlier versions of officially reported data such as FAO FishStat and ICES data release, and differences in reported data may exist between data sets due to retroactive corrections that may have been made by these organisations or national statistics agencies.

Preface

Country (EEZ) carry forward updates:

Belize

Since completing the initial reconstruction which went to 2008 (Zeller *et al.* 2011), FAO data became available to 2010. There were four new categories reported by FAO starting in 2009 (blue shark, longbill spearfish, marlins, sailfishes, etc. nei, and shortfin mako). These tonnages were all allocated to outside the EEZ, where most of the large pelagic fisheries operating under the flag of Belize are occurring. There were also sharp increases in 2009 and 2010 for albacore, Atlantic sailfish, bigeye tuna, swordfish and yellowfin tuna. For the tuna and billfish species, FAO tonnages for 2008 were flatlined to 2010 for the estimate within the EEZ, and any additional tonnages were allocated to outside the EEZ for 2009-2010. The reported catch of these taxa (large pelagics) equate to the industrial catch with only discards being added for the unreported component. The ratios used for the forward carry were based on the tonnages considered inside the EEZ only. Total unreported catch for 2009-2010 was estimated using the same ratio of reported to unreported in 2008. All remaining reported catches were assigned as artisanal. The sectoral breakdown of the unreported small-scale component was then based on the percentage breakdown in 2008. The taxonomic breakdown for the unreported catch was based on the percentage breakdown in 2008 (calculated separately by sector).

Denmark (Baltic)

Bale *et al.* (2010b) completed the initial catch reconstruction to 2007 and subsequently, ICES landing statistics became available to 2010. To update the reconstruction, ICES landing statistics for 2008-2010 were accepted as the reported landings. Reported landings were assigned to sector

using the 2007 proportions (by species). The unreported component was calculated using the 2007 unreported rates (by species), which were applied to the reported landings. To calculate discards, the 2007 discard rates (by species) were applied to the sum of reported and unreported landings. To calculate recreational catch, population data were first retrieved from Populstat (www.populstat.info), and if needed, a linear interpolation was used to estimate annual population. The 2007 per capita catch rate for the recreational sector was then applied to the 2008-2010 population estimates to calculate total recreational catch for those years. Note that the values and comparisons for the years 1950-2007 were based on the 2007 ICES dataset, and changes were not made to account for small differences within the 2010 ICES dataset regarding previous years.

Estonia

Since completing the initial reconstruction that ended in 2007 (Veitch *et al.* 2010a), ICES landing statistics became available to 2010. To update the reconstruction, ICES landing statistics for 2008-2010 were accepted as the reported landings. Reported landings were assigned to sector using the 2007 proportions (by species). The unreported component was calculated using the 2007 unreported rates (by species), which were applied to the reported landings. To calculate discards, the 2007 discard rates (by species) were applied to the sum of reported and unreported landings. To calculate recreational catch, population data were first retrieved from Populstat (www.populstat.info), and if needed, a linear interpolation was used to estimate annual population. The 2007 per capita catch rate for the recreational sector was then applied to the 2008-2010 population estimates to calculate total recreational catch for those years. Please note that the values and comparisons for the years 1950-2007 were based on the 2007 ICES dataset, and changes were not made to account for small differences within the 2010 ICES dataset regarding previous years.

Finland

After the initial reconstruction by Rossing *et al.* (2010a) was completed to 2007, ICES landing statistics became available to 2010. To update the reconstruction, ICES landing statistics for 2008-2010 were accepted as the reported landings. Reported landings were assigned to sector using the 2007 proportions (by species). The unreported component was calculated using the 2007 unreported rates (by species), which were applied to the reported landings. To calculate discards, the 2007 discard rates (by species) were applied to the sum of reported and unreported landings. To calculate recreational catch, population data were first retrieved from Populstat (www.populstat.info), and if needed, a linear interpolation was used to estimate annual population. The 2007 per capita catch rate for the recreational sector was then applied to the 2008-2010 population estimates to calculate total recreational catch for those years. Please note that the values and comparisons for the years 1950-2007 were based on the 2007 ICES dataset, and changes were not made to account for small differences within the 2010 ICES dataset regarding previous years.

France (French Polynesia)

The total marine fisheries catches for French Polynesia were reconstructed from 1950-2007 by Bale *et al.* (2009). The FAO data were used for the reported component. The ratio between the FAO reported component and total reconstructed component for 2007 was calculated and applied to the FAO data for 2008-2010 to estimate the total catch volumes for those years. The unreported component for 2008-2010 was then taken to be the difference between the total reconstructed catches and the FAO reported values. The sectoral breakdown (industrial, artisanal, subsistence) for the reported component of the 2008-2010 estimated catch was based on the same percentage

breakdown (of the reported component) used in 2007. The sectoral breakdown of the unreported component was also based on the percentage breakdown in 2007. Note that the initial reconstruction for the years 1950-2007 was based on the 2007 FAO FishStat dataset, and differences in reported data may exist between the 2007 and 2010 FAO datasets.

France (Guadeloupe)

To update the 1950-2007 reconstruction by Frotté *et al.* (2009a), the 2007 total reconstructed catch was carried forward, unaltered, to 2010. The FAO data constituted the reported portion of the catch. The unreported catch component for 2008-2010 was taken to be the difference between the 2007 total reconstructed catch amount and the FAO totals. The reported component was assigned to the artisanal sector. For the unreported component, the same sectoral breakdown for 2007 was applied to 2008-2010. The taxonomic breakdowns remained the same for all sectors for both the reported and unreported components. The only retroactive change made to the data was the removal of the assumed reported catches of the islands Saint Barthélémy and Saint Martin. The secession of the islands of Saint Barthélémy and Saint Martin from Guadeloupe was finalized in 2007, and they are thus treated separately. The 2011 FAO dataset was the first to account for this, with reported data for these islands which had been separated from the Guadeloupe data in the years 2007-2011. The proportion of reported data allocated to each island from Guadeloupe's FAO data in 2007 was carried back to 1950 in order to extract an assumed reported baseline for these islands, since the *Sea Around Us* now treats these islands separately back to 1950. These catches were removed from the Guadeloupe reconstruction.

France (Martinique)

The 1950-2007 Martinique reconstruction (Frotté *et al.* 2009b) was updated to 2010. The FAO data constituted the reported portion of the catch. The ratio between the FAO reported component and total reconstructed component for 2007 was calculated and applied to the FAO data for 2008-2010 to estimate the total reconstructed catch. The unreported component for 2008-2010 was then taken to be the difference between the total reconstructed catch and the FAO reported values. The entire reported component was assigned to the artisanal sector. For the unreported component, the same sectoral breakdown between recreational and subsistence for 2007 was applied to 2008-2010. Taxonomic reporting from the FAO was accepted for the artisanal sector and the taxonomic breakdowns for the recreational and subsistence sectors remained the same as they were for the rest of the time period. Some other changes that were made to the data included: (1) correction of the subsistence portion (it was missing taxon groups from older versions) and (2) adding in the 'Clams, etc. nei' group from the FAO data. Please note that the values and comparisons for the years 1950-2007 were based on the 2007 FAO dataset, and changes were not made to account for differences between the 2007 and the 2010 datasets regarding previous years.

France (Wallis & Futuna)

The reconstruction of Wallis & Futuna's fisheries catches for 1950-2007 is detailed in Harper *et al.* (2009c), and was updated to 2010 by the *Sea Around Us*. To update this reconstruction, the 2007 reconstructed total catch in Harper *et al.* (2009c) was carried forward to 2010. There were some changes (i.e., increases) in the new 2010 FAO dataset which were thought to be due to improvements in national reporting. Therefore, the new 2010 FAO data replaced the FAO totals

in the initial reconstruction for 1998-2007, and were also used as the reported component for 2008-2010. To reassign the catch to sectors, a *per capita* catch rate for the artisanal sector was calculated in 1998 based on the reported catch (FAO) and population in that year. That same *per capita* catch rate was flat lined to 2010 and used to calculate the amount of artisanal reported catches in each year. The remaining reported catch was assigned as subsistence. All of the unreported catch was considered subsistence. To calculate unreported components, *per capita* catch rates were calculated for the reported subsistence amounts for 1998-2010, and then subtracted from the *per capita* catch rates that were used to calculate the total subsistence amounts in the reconstruction by Harper *et al.* (2009c). These 'left over' *per capita* catch rates were used to calculate the amount of unreported subsistence catch for 1998-2010.

Germany (Baltic Sea)

Since completing the initial reconstruction for 1950-2007 (Rossing *et al.* 2010b), ICES landing statistics became available to 2010. To update the reconstruction, ICES landing statistics for 2008-2010 were accepted as the reported landings. The unreported component was calculated using the 2007 unreported rates (by species), which were applied to the reported landings. To calculate discards, the 2007 discard rates (by species) were applied to the sum of reported and unreported landings. To calculate recreational catch, population data were first retrieved from Populstat (www.populstat.info), and if needed, a linear interpolation was used to estimate annual population. The 2007 per capita catch rate for the recreational sector was then applied to the 2008-2010 population estimates to calculate total recreational catch for those years. Please note that the values and comparisons for the years 1950-2007 were based on the 2007 ICES dataset, and changes were not made to account for differences in the 2010 dataset regarding previous years.

Latvia

Rossing *et al.* (2010c) estimated the fisheries catches of Latvia from 1950 until 2007, and subsequently ICES landing statistics became available to 2010. To update the reconstruction, ICES landing statistics for 2008-2010 were accepted as the reported landings. The unreported component was calculated using the 2007 unreported rates (by species), which were applied to the reported landings. To calculate discards, the 2007 discard rates (by species) were applied to the sum of reported and unreported landings. To calculate recreational catch, population data were first retrieved from Populstat (www.populstat.info), and if needed, a linear interpolation was used to estimate annual population. The 2007 per capita catch rate for the recreational sector was then applied to the 2008-2010 population estimates to calculate total recreational catch for those years. Please note that the values and comparisons for the years 1950-2007 were based on the 2007 ICES dataset, and changes were not made to account for differences in the 2010 dataset regarding previous years.

Lithuania

Since completing the initial reconstruction for 1950-2007 (Veitch *et al.* 2010b), ICES landing statistics became available to 2010. To update the reconstructions, ICES landing statistics for 2008-2010 were accepted as the reported landings. The unreported components were calculated using the 2007 unreported rates (by species), which were applied to the reported landings. To calculate discards, the 2007 discard rates (by species) were applied to the sum of reported and unreported landings. To calculate recreational catches, population data were first retrieved from Populstat (www.populstat.info), and if needed, linear interpolations were used to estimate annual

populations. The 2007 per capita catch rates for the recreational sectors were then applied to the 2008-2010 population estimates to calculate total recreational catches for those years. Please note that the values and comparisons for the years 1950-2007 were based on the 2007 ICES dataset, and changes were not made to account for differences in the 2010 dataset regarding previous years.

Myanmar

Booth and Pauly (2011) completed the initial reconstruction for 1950-2008, and total catch was carried forward, unaltered, to 2010 (i.e., flat-lined). FAO data became available to 2010 and were used for the reported component. The unreported component for 2010 was then taken to be the difference between these two numbers. Some amendments to the FAO dataset were required in the original reconstruction, and those revisions were maintained in the carry forward. Thus the same negatively adjusted FAO tonnage from 2008 was carried forward to 2010. The sectoral breakdown (industrial vs. artisanal) for the reported component of the 2009-2010 estimated catch was based on the same percentage breakdown (of the reported component) used in 2008. Proportions applied to all species were corrected as reported landings in the initial reconstruction did not match the amounts that FAO had reported. 'Natantian decapods' were not originally included in the taxonomic breakdown, thus the category was added. 'Jellyfish' was not included in the taxonomic breakdown of the initial reconstruction, yet was reported by FAO and consequently were re-allocated. The sectoral breakdown (industrial, artisanal, subsistence) for the unreported component was based on the same percentage breakdown (of the unreported component) used in 2008. The taxonomic breakdown for the unreported component was also based on the percentage breakdown in 2008 (calculated separately by sector).

Nauru

The reconstruction of Nauru's fisheries catches for 1950-2008 is detailed in Trujillo *et al.* (2011), and was updated to 2010 by the *Sea Around Us*. To update this reconstruction, the 2008 total reconstructed catch was carried forward, unaltered to 2010 (i.e., flat-lined). The FAO data were used for the reported component. However, there were large increases in the 2010 FAO dataset for more recent years (i.e., 1995 onwards), compared to the FAO dataset used for the original reconstruction by Trujillo *et al.* (2011). These represent retro-active FAO data adjustments as occur from time to time. Thus, the original reported totals in Trujillo *et al.* (2011) were replaced with the new 2010 FAO totals for the years 1995-2008. As part of this correction, catches that were originally labelled as 'unreported' in 1995-2008 in Trujillo *et al.* (2011) were reassigned as 'reported' to match the retroactively adjusted FAO totals. The new 'unreported' component for 2009-2010 was then taken to be the difference between the FAO and total reconstructed amounts in the newly corrected 2008 data. The sectoral breakdown (artisanal, subsistence etc.) for 2009-2010 for the reported component was based on the taxa. All FAO categories except for 'Marine fishes nei' were assigned as reported artisanal catches. The 'Marine fishes nei' category was then split into artisanal and subsistence using the 2008 proportions. All unreported landings were assigned as subsistence. The 'Marine fishes nei' category was disaggregated using the same percentage breakdown as 2008. The species breakdown of the unreported landings of the subsistence sector has also been carried forward from 2008 and corresponds to the breakdown of the 'Marine fishes nei' category. Note that values for the years 1950-2008 in Trujillo *et al.* (2011) were based on the 2009 FAO dataset, and changes were not made to account for small differences between the 2009 and the 2010 FAO dataset for years prior to 1995.

New Caledonia

Since completing the initial reconstruction by Harper *et al.* (2009b) for 1950-2007, FAO data became available to 2010. To update the reconstruction, the ratio between the 2007 FAO reported component (from the new FAO 2010 dataset) and the 2007 total reconstructed component in Harper *et al.* (2009b) was calculated and applied to the FAO data for 2008-2010 which estimated the total reconstructed catches for those years. The FAO data were used for the reported component. The unreported component for 2008-2010 was then taken to be the difference between these two values. The sectoral breakdown (industrial, artisanal) for the reported component was by taxa and was based on the 2008 assignment. The sectoral breakdown for the unreported component (recreational and subsistence only; no unreported commercial in later years) was based on the 2007 proportions in Harper *et al.* (2009b). Taxonomic breakdown of the recreational and subsistence sectors were the same as the 2007 proportions. Also note that values for the years 1950-2007 in Harper *et al.* (2009b) were based on the 2007 FAO dataset and national sources, and changes were not made to account for small differences between the 2007 and the 2010 FAO dataset regarding previous years.

New Zealand (Tokelau)

The reconstruction of Tokelau's fisheries catches for 1950-2009 is detailed in Zylich *et al.* (2011), and was updated to 2010 by the *Sea Around Us*. To update this reconstruction, the 2009 reconstructed total catch from Zylich *et al.* (2011) was carried forward, unaltered, to 2010 (i.e., flat-lined). The FAO data were used for the reported component. The unreported component for 2010 was taken to be the difference between the FAO data and the total reconstructed catch from

2009. All Tokelau fisheries are classified as subsistence and thus all catches from 2010 are also classified as such. The same taxonomic breakdown from 2009 was applied to the 2010 catch.

Palau

The catch reconstruction for Palau by Lingard *et al.* (2011) initially covered the 1950-2008 time period, and was updated to 2010 by the *Sea Around Us*. Since completing the initial reconstruction, FAO data became available to 2010. The FAO data were used for the reported component. The ratio between the FAO reported component and total reconstructed component for 2008 was calculated and applied to the FAO data for 2009-2010 to estimate the total reconstructed catch volumes for those years. The unreported component for 2009-2010 was then taken to be the difference between these two numbers. The sectoral breakdown (industrial, artisanal, subsistence) for the reported component of the 2009-2010 estimated catch was based on the same percentage breakdown (of the reported component) used in 2008. The sectoral breakdown of the unreported component was also based on the percentage breakdown in 2008. The species breakdown has also remained the same as 2008 for 2009-2010. Note that the values and comparisons for the years 1950-2008 were based on the 2008 FAO dataset, and changes were not made to account for small differences with the 2010 FAO dataset regarding previous years.

Poland

Since completing the initial reconstruction for 1950-2007 (Bale *et al.* 2010a), ICES landing statistics became available to 2010. To update the reconstruction, ICES landing statistics for 2008-2010 were accepted as the reported landings. The unreported component was calculated using the

2007 unreported rates (by species), which were applied to the reported landings. To calculate discards, the 2007 discard rates (by species) were applied to the sum of reported and unreported landings. To calculate recreational catch, population data were first retrieved from Populstat (www.populstat.info), and if needed, a linear interpolation was used to estimate annual population. The 2007 per capita catch rate for the recreational sector was then applied to the 2008-2010 population estimates to calculate total recreational catch for those years. Please note that the values and comparisons for the years 1950-2007 were based on the 2007 ICES dataset, and changes were not made to account for small differences between the 2007 and 2010 ICES datasets regarding previous years.

Russia (Baltic Sea)

Since completing the initial reconstructions for 1950-2007 (Harper *et al.* 2010), ICES landing statistics became available to 2010. To update the reconstructions, ICES landing statistics for 2008-2010 were accepted as the reported landings. The unreported components were calculated using the 2007 unreported rates (by species), which were applied to the reported landings. To calculate discards, the 2007 discard rates (by species) were applied to the sum of reported and unreported landings. To calculate recreational catches, population data were first retrieved from Populstat (www.populstat.info), and if needed, linear interpolations were used to estimate annual populations. The 2007 per capita catch rates for the recreational sectors were then applied to the 2008-2010 population estimates to calculate total recreational catches for those years. Please note that the values and comparisons for the years 1950-2007 were based on the 2007 ICES dataset, and changes were not made to account for small differences between the 2007 and the 2010 ICES datasets regarding previous years.

Sri Lanka

The total marine fisheries catches for Sri Lanka were initially reconstructed from 1950-2008 (O'Meara *et al.* 2011), and then updated to 2010 by the *Sea Around Us*. Since completing the initial reconstruction, FAO data became available to 2010. The FAO data were used for the reported component, and the sectoral breakdown was based on species. In the initial reconstruction, the following industrial reported tonnages were allocated to outside the EEZ: 90% of large pelagics, 90% of sea cucumbers, and 80% of sharks. Thus, the same pattern was followed for 2009. However, due to large increases in the reported large pelagics in 2010, the 2009 tonnages allocated to inside the EEZ were flat-lined to 2010, and the remainder were allocated to outside the EEZ. For the unreported components, the same discard rates were applied to the reported shrimp catches, and the ratio between the FAO reported component and unreported component for 2008 (from inside the EEZ) was calculated and applied to the FAO data for 2009 to 2010 to estimate the total reconstructed amounts for those years. The difference was then assigned as unreported catches from the subsistence sector. The taxonomic breakdowns for both the reported and unreported components were based on the percentage breakdowns in 2008 (calculated separately by sector and input).

Sweden (Baltic Sea)

Since completing the initial reconstruction for 1950-2007 (Persson 2010), ICES landing statistics became available to 2010. To update the reconstructions, ICES landing statistics for 2008-2010 were accepted as the reported landings. The unreported components were calculated using the 2007 unreported rates (by species), which were applied to the reported landings. To calculate

discards, the 2007 discard rates (by species) were applied to the sum of reported and unreported landings. To calculate recreational catches, population data were first retrieved from Populstat (www.populstat.info), and if needed, linear interpolations were used to estimate annual populations. The 2007 per capita catch rates for the recreational sectors were then applied to the 2008-2010 population estimates to calculate total recreational catches for those years. Please note that the values and comparisons for the years 1950-2007 were based on the 2007 ICES dataset, and changes were not made to account for small differences between the 2007 and the 2010 ICES dataset regarding previous years.

Timor-Leste

To update the original reconstruction for 1950-2009 (Barbosa and Booth 2009), the total reconstructed catch was carried forward, unaltered, to 2010 (i.e., flat-lined). The FAO data constituted the reported portion of the catch. The unreported component was then taken to be the difference between the total reconstructed catch and the FAO data. Some amendments to the reconstructed dataset were also required, such as including the 'Cephalopods nei', 'Marine crabs nei', 'Natantian decapods nei', and 'Tropical spiny lobsters nei' categories from the FAO data. The original reconstruction interpolated between catch anchor points derived from literature sources, to reconstruct the artisanal and subsistence sectors separately from 1950-2009. These 2009 catch values for each sector were carried forward unaltered to 2010. FAO reported catches from Timor-Leste were deemed to be largely artisanal. Therefore, reported catches were first assigned as artisanal and the remainder were deemed to be subsistence landings. All other subsistence catches were assigned as unreported going forward. The taxonomic breakdown for both the reported and unreported components was based on the percentage breakdown in 2009.

Tonga

Since completing the initial reconstruction by Sun *et al.* (2011) for 1950-2007, FAO data became available to 2010. To update this reconstruction to 2010, the FAO data were used for the reported component. The FAO data for all tuna, marlins and swordfish were taken to be the total industrial catch, as was the case in the original reconstruction. For the artisanal and subsistence sectors, the per capita catch rates from 2007 for each sector were applied to the 2008-2010 population data. FAO reported landings for the remaining, non-large pelagic categories, were assigned as reported artisanal catch, with the remaining artisanal being labelled unreported. All subsistence catch was deemed unreported. For the reported artisanal data, the same taxa disaggregation for each individual FAO category from 2007 was applied to 2008-2009. For both the unreported artisanal and subsistence catches, the same taxa breakdown from 2007 for each sector was applied to 2008-2010. Note that the initial reconstruction for the years 1950-2007 (Sun *et al.* 2011) was based on the 2007 FAO FishStat data release, and small differences in reported data may exist between the 2007 and 2010 FAO data releases.

Tuvalu

The reconstruction of Tuvalu's fisheries catches for 1950-2009 is detailed in Crawford *et al.* (2011), and was updated to 2010 by the *Sea Around Us*. The FAO data were used for the reported component. Following the assumptions outlined in Crawford *et al.* (2011), 90% of the reported tuna catch (skipjack tuna, 'tuna-like fishes nei', yellowfin tuna) was allocated to areas outside the domestic EEZ (i.e., assumed to be taken by re-flagged foreign vessels) and 10% was allocated as domestic catch within the Tuvalu EEZ. However, the catches reported for these three taxa groups

(i.e., skipjack tuna, 'tuna-like fishes nei', yellowfin tuna) in 2010 were significantly higher than in previous years. Therefore, we took the average of the reported catches for 2007-2009 and used those values instead of the 2010 reported values. The total reconstructed catch inside the EEZ in 2009 was carried forward, unaltered, to be the catch inside the EEZ in 2010. The unreported component for 2010 was taken to be the difference between this unaltered total catch and the reported catch allocated inside the EEZ. The sectoral breakdown (artisanal, subsistence) for both the reported and unreported small-scale components of the 2010 estimated catch was based on the same percentage breakdown used in Crawford *et al.* (2011) for 2009. Also note that values for the years 1950-2009 in Crawford *et al.* (2011) were based on the 2009 FAO dataset, and changes were not made to account for small differences in the 2010 FAO dataset regarding previous years. However, also note that catch for 'tuna-like fishes nei' in 2009 was not reported in 2009 dataset. This was a retroactive change in the FAO dataset. Therefore, the FAO reported value used in 2010 for 'tuna-like fishes nei' was carried back to 2009 instead of the full reported amount, in order to address the substantial increase in the category from 20 t to 898 t.

United Kingdom (Ascension)

Booth and Azar (2009a) completed the initial reconstruction for St. Helena and its dependencies for 1950-2006. The update of the reconstruction to 2010 is separated alphabetically for the three entities (Ascension, St. Helena and Tristan da Cunha) in this document. To update the Ascension Island reconstruction, the 2010 total reconstructed catch was estimated using this formula: (population*per capita rate in tonnes) – imports. The data points between 2006 and 2010 were generated using linear interpolation. A population estimate for 2010 was combined with the per

capita catch rate and imports were used to update trends to 2010. The same taxonomic breakdown used for 1950-2006 was maintained and carried forward, unaltered, to 2010.

United Kingdom (Cayman Islands)

Since the completion of the original reconstruction for 1950-2007 by Harper *et al.* (2009a), FAO data became available to 2010. To update this reconstruction, the 2007 total reconstructed catch was carried forward, unaltered, to 2010 (i.e., flat-lined). The FAO data constituted the reported portion of the catch. The unreported catch component for 2008-2010 was taken to be the difference between the 2007 total reconstructed catch amount and the FAO totals. The reported component was assigned to the artisanal sector and split equally between the EEZs of Honduras and Colombia (which follows the pattern of the original reconstruction). The unreported component was also assigned to sectors following the pattern of the original reconstruction. The taxonomic breakdowns remained the same for all sectors for both the reported and unreported components. Please note that the values and comparisons for the years 1950-2007 were based on the 2007 FAO dataset, and changes were not made to account for small differences between the 2007 and the 2010 FAO dataset regarding previous years.

United Kingdom (St. Helena)

Since completing the initial reconstruction for 1950-2006 (Booth and Azar 2009b), FAO data became available to 2010. To update the reconstruction, the FAO data for St. Helena, except for the 'Tristan da Cunha rock lobster' and 'Octopuses, etc. nei' categories, were used as the reported component. However, in the initial reconstruction, the reported data for 1950-1977 were

disregarded. Therefore, we retroactively reassigned the correct amount of artisanal unreported catches as reported catches for that time period. The ratio between the FAO reported component and total reconstructed component for 2006 was calculated and applied to the FAO data for 2007-2010 to estimate the total reconstructed catch for those years. The unreported component for 2007 to 2010 was then taken to be the difference between the two numbers. All of the reported data for 2007 to 2010 were assigned as industrial. The amount of unreported industrial catch was carried forward unaltered from 2006, and therefore the remaining unreported catch was assigned as artisanal catch. The taxonomic breakdown for the unreported component was based on the percentage breakdown in 2006 (by sector).

United Kingdom (Tristan da Cunha)

Since completing the initial reconstruction for 1950-2006 (Booth and Azar 2009b), FAO data became available to 2010. To update the reconstruction, the FAO data for 'Tristan da Cunha rock lobster' and 'Octopuses, etc. nei' categories from the Saint Helena FAO data were used as the reported component. The ratio between the FAO reported component and total reconstructed catch for 2006 was applied to the FAO data for 2007 to 2010 to estimate the total reconstructed catch for those years. The unreported component was then taken to be the difference between the two numbers. All of the reported data were assigned as industrial, and the sectoral breakdown for the unreported component was based on the percentage breakdown in 2005. The taxonomic breakdown for the unreported component was based on the percentage breakdown in 2006 (by sector).

United States (American Samoa)

The catch reconstruction for American Samoa was undertaken for 1950-2002 on the request of and reviewed by the US Western Pacific Regional Fishery Management Council (Zeller *et al.* 2005) and is further documented in Zeller *et al.* (2006; 2007). Since completing the initial reconstruction, FAO data became available to 2010. To update this reconstruction, the 2010 FAO dataset was used as the reported catch for 2003-2010, whereas WPacFIN national data (http://www.pifsc.noaa.gov/wpacfin/) had been used for the previous years. The 2002 unreported per capita catch rate (based on total unreported catch/population for 2002) was calculated and applied to population data (from the World Bank) for 2003-2010 to estimate the total unreported catch amounts for those years. In the original reconstruction, all small-scale non-commercial catches were assigned to the subsistence sector, so we split these subsistence catches to account for the growth of recreational fishing. We assumed 80% of the catch was subsistence in 1950 and 20% of the catch was recreational, while in 2002 80% of the catch was recreational and 20% of the catch was subsistence. We then performed a linear interpolation between 1950 and 2002 based on these proportions. For the sector breakdown for 2003-2010, all the reported catch was assigned as artisanal and the unreported catch was assigned as subsistence and recreational based on the proportions in 2002. Large pelagic species were not included in American Samoa's catch reconstruction (i.e., albacore, bigeye tuna, blue marlin, common dolphinfish, Indo-Pacific sailfish, skipjack tuna, striped marlin, swordfish, wahoo, yellowfin tuna). Also note that the values and comparisons for the years 1950-2002 were based on the national WPacFIN data, and changes were not made to account for small differences to the 2010 FAO dataset regarding previous years.

United States (Guam)

The catch reconstruction for Guam from 1950-2002 was conducted on the request of and reviewed by the US Western Pacific Regional Fishery Management Council (Zeller *et al.* 2005) and is further documented in Zeller *et al.* (2007). Since completing the initial reconstruction (Zeller *et al.* 2005), FAO data became available to 2010. To update this reconstruction, the national data that were used as the reported component (WPacFIN) were replaced by the 2010 FAO dataset for 2000-2002, and the FAO data were also used as the reported component for 2003-2010. The 2010 FAO data closely matched the national data from WPacFIN. Given the comprehensive local catch survey system in place, there were deemed to be no unreported catches for 1985-2010. Guam's original reconstructed catches were not assigned to specific fisheries sectors, with catches only defined as "offshore", "inshore", or "inshore+offshore". To assign the catch to fisheries sectors as defined here (i.e., industrial, artisanal, subsistence, and recreational), we followed the fisheries statistics published for Guam by Gillett (2009), and assigned 36% of the catch to the artisanal sector and 64% of the catch to the subsistence sector. We further split the catch assigned to the subsistence sector to account for the growth of recreational fishing over time. We assumed for 1950 that 80% of this catch was truly subsistence and 20% of the catch was recreational, and that by 2000, 80% of the catch was recreational and 20% of the catch was truly subsistence (the 2000 percentages were carried to 2010 unaltered). We then performed a linear interpolation between 1950 and 2000 based on these proportions. Large pelagic species were not included in Guam's catch reconstruction (i.e., blue marlin, common dolphinfish, Indo-Pacific sailfish, skipjack tuna, 'tuna-like fishes nei', wahoo, yellowfin tuna). Also note that the values and comparisons for the years 1950-1999 were based on national WPacFIN data, and changes were not made to account for small differences to the 2010 FAO dataset regarding previous years.

United States (Pacific small island territories)

The catch reconstruction for the US Pacific small island territories for 1950-2002 was undertaken on the request of and reviewed by the US Western Pacific Regional Fishery Management Council (Zeller *et al.* 2005). While this group consists of 5 island entities or groups (Howland & Baker Islands, Jarvis Island, Johnston Atoll, Palmyra Atoll, and Wake Island), only two had substantial and permanent resident populations (Johnston Atoll and Wake Island; Zeller *et al.* 2005), mainly consisting of US military/meteorological/scientific personnel or civilian contractors, which engaged in limited recreational fishing. No coastal commercial or subsistence fishing occurred in any of these islands. To update reconstructed recreational catches from 2002 to 2010, data for human population were sourced for both islands, and the 2002 per capita recreational catch rate (assumed constant to 2010) was applied to interpolated human population numbers. While Wake Island continues to be occupied by around 150 government employees and civilian contractors, Johnston Atoll's military base and US government facilities were closed in 2004, resulting in the previous population levels of around 300 residents declining to zero by 2007 and thereafter.

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