

# **ARTICLE**

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# Catch reconstructions reveal that global marine fisheries catches are higher than reported and declining

Daniel Pauly<sup>1</sup> & Dirk Zeller<sup>1</sup>

Fisheries data assembled by the Food and Agriculture Organization (FAO) suggest that global marine fisheries catches increased to 86 million tonnes in 1996, then slightly declined. Here, using a decade-long multinational 'catch reconstruction' project covering the Exclusive Economic Zones of the world's maritime countries and the High Seas from 1950 to 2010, and accounting for all fisheries, we identify catch trajectories differing considerably from the national data submitted to the FAO. We suggest that catch actually peaked at 130 million tonnes, and has been declining much more strongly since. This decline in reconstructed catches reflects declines in industrial catches and to a smaller extent declining discards, despite industrial fishing having expanded from industrialized countries to the waters of developing countries. The differing trajectories documented here suggest a need for improved monitoring of all fisheries, including often neglected small-scale fisheries, and illegal and other problematic fisheries, as well as discarded bycatch.

<sup>&</sup>lt;sup>1</sup> Sea Around Us, Global Fisheries Cluster, University of British Columbia, 2202 Main Mall, Vancouver, British Columbia, Canada V6T 1Z4. Correspondence and requests for materials should be addressed to D.P. (email: d.pauly@oceans.ubc.ca) or to D.Z. (email: d.zeller@oceans.ubc.ca).

arine fisheries are the chief contributors of wholesome seafood (finfish and marine invertebrates; here 'fish'). In many developing countries (and likely also in many 'transition' countries), fish is the major animal protein source that rural people can access or afford<sup>1</sup>; and they are also an important source of micronutrients essential to people with otherwise deficient nutrition<sup>2</sup>. However, the growing popularity of fish in countries with developed or rapidly developing economies creates a demand that cannot be met by fish stocks in their own waters (for example, the EU, the USA, China and Japan). These markets are increasingly supplied by fish imported from developing countries, or caught in the waters of developing countries by various distant-water fleets<sup>3–5</sup>, with the consequences that:

- (a) Foreign and/or export-oriented domestic industrial fleets are increasingly fishing in the waters of developing countries<sup>5,6</sup>
- (b) Industrially caught fish has become a globalized commodity that is mostly traded between continents rather than consumed in the countries where it was caught<sup>7</sup>, and
- (c) The small-scale fisheries that traditionally supplied seafood to coastal rural communities and the interior of developing countries (notably in Africa)<sup>8</sup> are forced to compete with the export-oriented industrial fleets without much support from their governments.

The lack of attention that small-scale fisheries suffer in most parts of the world<sup>9</sup> manifests itself in potentially misleading statistics that are submitted annually by many member countries of the Food and Agriculture Organization of the United Nations (FAO), which may omit or substantially underreport small-scale fisheries data<sup>10</sup>. FAO harmonizes the data submitted by its members, which then becomes the only global data set of fisheries statistics in the world, widely used by policy makers and scholars<sup>11</sup>.

This data set, however, may not only underestimate artisanal (that is, small scale, commercial) and subsistence fisheries <sup>10</sup>, but also generally omit the catch of recreational fisheries, discarded bycatch <sup>12</sup> and illegal and otherwise unreported catch, even when some estimates are available <sup>13</sup>. Thus, except for a few obvious cases of over-reporting <sup>14</sup>, the landings data updated and disseminated annually by the FAO on behalf of member countries may considerably underestimate actual fisheries catch. While this underestimation is widely known among many fisheries scientists working with FAO catch data, and is freely acknowledged by FAO, its global magnitude has not been explicitly presented until now.

Here we present the results of an approach called 'catch reconstruction' <sup>15,16</sup> that utilizes a wide variety of data and information sources to derive estimates for all fisheries components missing from the official reported data. We find that reconstructed global catches between 1950 and 2010 were 50% higher than data reported to FAO suggest, and are declining more strongly since catches peaked in the 1990s. These findings and the country-specific technical work underlying these results will hopefully contribute to member countries submitting more accurate fisheries statistics to FAO. Such improved and more comprehensive data contribute a foundation that can facilitate the implementation of ecosystem-based fisheries management <sup>17</sup>, which is a component of the 'FAO Code of Conduct for Responsible Fisheries' <sup>18</sup>.

## Results

**Global pattern**. The sum of the reconstructed catches of all sectors in all Exclusive Economic Zones (EEZs) of the world, plus the catch of tuna and other large pelagic fishes in the High Seas leads to two major observations (Fig. 1; Supplementary Table 1).

First, the trajectory of reconstructed catches differs substantially from those reported by FAO on behalf of its member countries. The FAO statistics suggest that, starting in 1950, the world catch (actually 'landings', as discarded catches are explicitly excluded from the global FAO data set) increased fairly steadily to 86 million tonnes (mt) in 1996, stagnated and then slowly declined to around 77 mt by 2010 (Fig. 1). In contrast, the reconstructed catch peaked at 130 mt in 1996 and declined more strongly since. Thus, the reconstructed catches are overall 53% higher than the reported data.

Furthermore, since the year of peak catches in 1996, the reconstructed catch declined strongly at a mean rate of - 1.22 mt · per year, whereas FAO, at least until 2010, described the reported catch cautiously as characterized by 'stability' 19,20, though it exhibited a gradual decline ( $-0.38 \,\mathrm{mt} \cdot \mathrm{per}$  year). The reconstructed total catches therefore represent a decline of over three times that of the reported data as presented by FAO on behalf of countries. A segmented regression<sup>21</sup> identifies two breakpoints in the catch time series (that is, change in trend) of the reconstructed total catches as well as the reported catches. These are in 1967 as a result of a changing slope of the catch time series from a stronger increase prior to 1967 (reconstructed catches =  $2.82 \text{ mt} \cdot \text{per year}$ ; reported catches =  $1.88 \text{ mt} \cdot \text{per year}$ ) to a slower increase after 1967 (reconstructed catches = 1.86 mt · per year; reported catches = 1.30 mt · per year). The second breakpoint is in 1996 (the year of peak catch), with a subsequently decreasing trend (that is, slope) of  $-1.22 \,\mathrm{mt} \cdot \mathrm{per}$ year for reconstructed catches and  $-0.38 \,\mathrm{mt}$  per year for reported catches, as also presented for the simple regression above (Fig. 1; see also Supplementary Table 2).

Note that the recent, stronger decline in reconstructed total catches is not due to some countries reducing catch quotas so that stocks can rebuild. For example, a similar decline ( $-1.01 \, \text{mt} \cdot \text{per}$  year) in reconstructed catches is obtained when the catch from the Unites States, Northwestern Europe, Australia and New Zealand (that is, countries where quota management predominates) is excluded (Fig. 2; Supplementary Table 3).

**Spatial pattern**. Closer examination of the reconstructed versus reported catches in each of the 19 maritime FAO statistical areas suggests that some of the areas where industrial fishing originated, such as the Northwest Atlantic (FAO area 21), are the

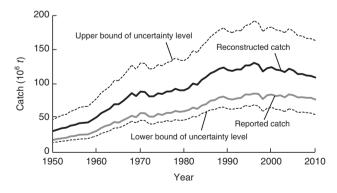
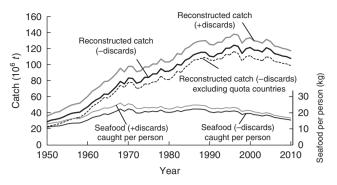


Figure 1 | Trajectories of reported and reconstructed marine fisheries catches 1950-2010. Contrast between the world's marine fisheries catches, assembled by FAO from voluntary submissions of its member countries ('reported') and that of the catch 'reconstructed' to include all fisheries known to exist, in all countries and in the High Sea ('reconstructed' = 'reported' + estimates of 'unreported'). The mean weighted percentage uncertainty of the reconstructed total catches (over all countries and fisheries sectors) based on the quality scores attributed to each sector in each country and territory (dashed line) is also shown.



**Figure 2 | Trajectories of marine fisheries catches 1950–2010.** Effects of removing discards on estimates of seafood caught *per capita*, and of removing the catches of the major countries using quota management (that is, USA, New Zealand, Australia and Western Europe) on reconstructed total catches.

first regions of the world to demonstrate declining catches (Fig. 3). In contrast, lower-latitude areas demonstrate declines later, or still appear to have increasing catches, for example, the Indian and Western Central Pacific Oceans still showing generally increasing trends in reported catches (Fig. 3).

Catches by fishing sector. We present, for the first time, global reconstructed marine fisheries catches by fisheries sectors (Fig. 4; Supplementary Table 4). They are dominated by industrial fisheries, which contribute 73 mt of landings in 2010, down from 87 mt in 2000 (Fig. 4). At the global scale it is a declining industrial catch (combined with the smaller contribution of gradually reduced levels of discarding)<sup>12</sup> that leads to declining global catches since 1996, while the artisanal sector, which generates a catch increasing from about 8 mt · per year in the early 1950s to 22 mt · per year in 2010, continues to show gradual growth in catches at the global scale (Fig. 4).

Also noticeable is that the inter-annual variations (small peaks and troughs) in both reconstructed catches and reported catches (Fig. 1) are mainly driven by industrial data, which are relatively well documented and reported in time series, while the small-scale sector data are smoother over time (Fig. 4), and more strongly influenced by continuity assumptions over time as part of the national reconstructions.

While some countries increasingly include subsets of artisanal catches in official catch statistics provided to FAO, subsistence fisheries catches (Fig. 4) rarely are  $^{10}$ . Worldwide, subsistence fisheries caught an estimated 3.8 mt  $\cdot$  per year between 2000 and 2010 (Fig. 4; Supplementary Table 4). The current global estimate of just under 1 mt  $\cdot$  per year of recreational catches is rather imprecise, and recreational fishing is declining in developed, but increasing in developing countries.

Discarded bycatch, generated mainly by industrial fishing, notably shrimp trawling  $^{22}$ , was estimated at  $27\,\mathrm{mt} \cdot \mathrm{per}$  year ( $\pm\,10\,\mathrm{mt}$ ) and  $7\,\mathrm{mt} \cdot \mathrm{per}$  year ( $\pm\,0.7\,\mathrm{mt}$ ) in global studies conducted for FAO in the early 1990s and 2000s, respectively  $^{23,24}$ . However, these point estimates were not incorporated into FAO's global 'capture' database, which thus consists only of landings. Here, these studies are used, along with numerous other sources, to generate time series of discards (Fig. 4). Discards, after peaking in the late 1980s, have declined, and during 2000–2010, an average of 10.3 mt  $\cdot$  per year of fish were discarded.

# **Discussion**

Our reconstructed catch data, which combines the data reported to FAO with estimates of unreported catches (that is,

reconstructed data are 'reported FAO data + unreported catches') include estimates of uncertainty (Fig. 1) associated with each national reconstruction. Note that many reconstructions are associated with high uncertainty, especially for earlier decades, for sectors such as subsistence which receive less data collection attention by governments, and for small countries or territories (Fig. 1; Supplementary Table 5)<sup>10</sup>. We include uncertainty estimates here, despite the fact that reconstructions address an inherent negative bias in global catch data (that is, address the 'accuracy' of data) and not the replicability of catch data collection (that is, the statistical 'precision' of such estimates), which is what 'uncertainty' estimates (for example, confidence limits) generally are used for. We do recognize that any estimates of unreported catches implies a certain degree of uncertainty, but so do officially reported data. Most countries in the world use sampling schemes, estimations and raising factors to derive their national catch data they officially report domestically and internationally, all without including estimates of the uncertainty inherent in the numbers being reported as official national catches.

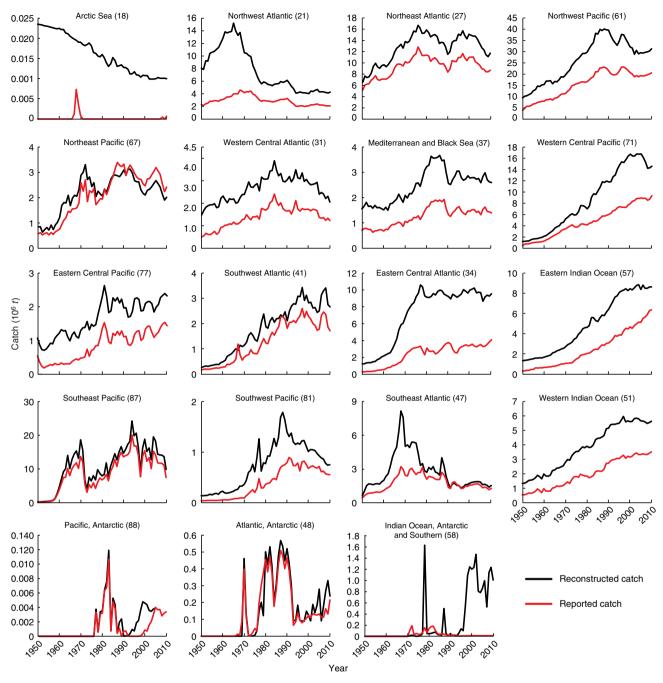
Our comparison of the reconstructed versus reported catches in each of the 19 maritime FAO statistical areas suggests that some of the lower-latitude areas still appear to have increasing reported catches. This generally increasing trend is most pronounced in the Indian and Western Central Pacific Oceans (Fig. 3), where the reconstructed catches are most uncertain, as the statistics of various countries could only partially correct a regional tendency to exaggerate reported catches<sup>5</sup>. FAO's Indian and Western Central Pacific Oceans areas are also the only ones with an increasing FAO reported catch, which, when added to that of other FAO areas, makes the FAO reported world catch appear more stable than it is based on our global reconstructions.

Our data and analyses show that, at the global scale, it is a declining industrial catch (plus a smaller contribution of gradually declining discards)<sup>12</sup> that provide for the declining global catches, while artisanal fishing continues to show slight growth in catches (Fig. 4). Thus, the gradually increasing incorporation of artisanal and other small-scale catches in the officially reported data presented by FAO on behalf of countries is partly masking the decline in industrial catches at the global level. Since officially reported data are not (at the international level) separated into large-scale versus small-scale sectors<sup>25</sup>, this trend could not be easily documented until now. Obviously, these patterns may vary between countries. Furthermore, while parts of artisanal catches are increasingly included in official catch statistics by some countries, non-commercial subsistence fisheries catches, a substantial fraction of it through gleaning by women in coastal ecosystems such as coral reef flats and estuaries<sup>26</sup> are generally neglected. The importance of subsistence fishing for the food security of developing countries, particularly in the tropical Indo-Pacific, cannot be overemphasized 10,27.

Our preliminary and somewhat imprecise reconstruction of recreational catches indicates that this sector is largely missing from official reported data, despite FAO's annual data requests explicitly allowing inclusion of recreational catch data. This activity, however, generates an estimated 40 billion USD · per year of global benefits, involves between 55 and 60 million persons, and generates about one million jobs worldwide<sup>28</sup>.

Finally, our country-by-country reconstructed data supports previous studies illustrating that global discards have decreased <sup>12,24</sup>. Discarded catches should therefore be included in catch databases, if only to allow for correct inferences on the state of the fisheries involved in this problematic practice.

The reconstructed catch data presented here for the first time for all countries in the world can contribute to formulating better policies for governing the world's marine fisheries, with a first

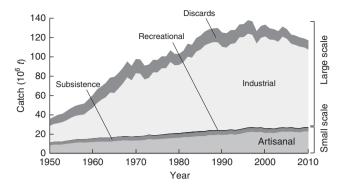


**Figure 3 | Reconstructed and reported catches by FAO areas.** Contrasting reconstructed and reported catches in the 19 maritime 'Statistical Areas' which FAO uses to roughly spatialize the world catch. Note that for Area 18 (Arctic), the reported catch by the U.S. and Canada was zero, while only Russia (former-USSR) reported a small catch in the late 1960s, even though the coastal fishes of the high Arctic are exploited by Inuit and others.

step being the recognition in national policies of the likely magnitude of fisheries not properly captured in the official national data collection systems. This recognition will hopefully contribute to improvements in national data collection systems, an aspiration that we share with FAO. For example, in Mauritania and Guinea Bissau, which, in large part as a result of the reconstructions<sup>29,30</sup> and our ongoing direct engagement with these countries, are now initiating national data collection systems for recreational fisheries (a growth industry in both countries and missing from current data systems). It is hoped that this type of data, and other missing data (for example, subsistence catches)<sup>10</sup>, will be included in future national data reports to FAO, as is the case for some other countries such as Finland<sup>31</sup>.

The taxonomic composition of this reconstructed catch (not presented here but available from the *Sea Around Us* and through the individual catch reconstruction reports, see Supplementary Table 5) can also contribute to the development of more useful first-order indicators of fisheries status<sup>32–34</sup> than has been possible previously, especially in the absence of comprehensive stock assessments for all taxa targeted.

A policy change that would be straightforward for FAO to coordinate and implement with all countries around the world is to request countries to submit their annual catch statistics separately for large-scale and small-scale fisheries<sup>25</sup>, which would be an excellent contribution towards the implementation of the 'Voluntary Guidelines for Securing Sustainable Small-scale



**Figure 4 | Reconstructed global catch by fisheries sectors.** Reconstructed catches for all countries in the world, plus High Seas, by large-scale (industrial) and small-scale sectors (artisanal, subsistence, recreational), with discards (overwhelmingly from industrial fisheries) presented separately.

Fisheries in the Context of Food Security and Poverty Eradication' recently adopted and endorsed at the thirty-first Session of the FAO Committee on Fisheries and Aquaculture (COFI) in June 2014 (ref. 35). While we have found that many countries already have such data or data structure at hand, until all countries can implement such a data-change request, FAO could incorporate such a split into their internal data harmonization procedures, based, for example, on the same or similar information sources as used by the reconstructions.

The very high catches that were achieved globally in the 1990s were probably not sustainable. However, they do suggest that stock rebuilding, as successfully achieved in many Australian and US fisheries, and beginning to be applied in some European fisheries, is a policy that needs wider implementation, and which would generate even higher sustained benefits than previously estimated from reported catches<sup>36</sup>. On the other hand, the recent catch decline documented here is of considerable concern in its implication for food security, as evidenced by the decline in per capita seafood availability (Fig. 2). Note that the recent, strong decline in reconstructed total catches is also evident if catches in countries with well-established quota management systems (United States, Northwestern Europe, Australia and New Zealand) are excluded (Fig. 2). Low quotas are generally not imposed when a stock is abundant; rather low and reduced quotas in fully developed fisheries are generally a management intervention to reduce fishing pressure as a result of past overfishing. Similarly, it has been proposed that strongly declining catches in unmanaged, heavily exploited fisheries are likely a sign of overfishing<sup>32–34</sup>. The often raised suggestion that aquaculture production can replace or compensate for the shortfall in wild capture seafood availability, while being questionable for various reasons<sup>37</sup>, is not addressed here.

The last policy relevant point to be made here transcends fisheries in that it deals with the accuracy of the data used by the international community for its decision making, and the generation of factual knowledge that this requires. After the creation of the United Nations and its technical organizations, including the FAO, a major project of 'quantifying the world'<sup>38</sup> began to provide data for national and international agencies on which they could base their policies. As a result, large databases, for example on agricultural crops and forest cover, were created whose accuracy is becoming increasingly important given the expanding exploitation of our natural ecosystems<sup>39</sup>.

Periodic validation of these databases should therefore be a priority to ensure they avoid producing 'poor numbers' 40. For example, reports of member countries to FAO about their forest

cover, when aggregated at the global level, suggest that the annual rate of forest loss between 1990/2000 and 2001/2005 was nearly halved, while the actual loss rate doubled when assessed by remote sensing and rigorous sampling<sup>41</sup>. Similarly, here we show that the main trend of the world marine fisheries catches is not one of 'stability' as cautiously suggested earlier by FAO<sup>42</sup>, but one of decline. Moreover, this decline, which began in the mid-1990s, started from a considerably higher peak catch than suggested by the aggregate statistics supplied by FAO members, implying that we have more to lose if this decline continues. Thankfully, this also means that there may be more to gain by rebuilding stocks.

For the global community, a solution could therefore be to provide the FAO the required funds to more intensively assist member countries in submitting better and more comprehensive fishery statistics, especially statistics that cover all fisheries components, and report data by sector<sup>25</sup>. Such improved statistics can then lead to better-informed policy changes for rebuilding stocks and maintaining (sea)food security. Alternatively, or in addition, FAO could team up with other groups (as was done for forestry statistics) to improve the fisheries statistics of member countries that often have fisheries departments with very limited human and financial resources.

Ultimately, the only database of international fisheries statistics that the world has (through FAO) can be improved. The more rapid decline of fisheries catches documented here is a good reason for this.

#### Methods

**Catch reconstruction principles.** The catch reconstruction approach rests on two basic principles<sup>16</sup>:

- When 'no data are available' on a fishery that is known to exist, it is not
  appropriate to enter 'NA' or 'no data' into the database. Such entries will later be
  turned into a zero, which is a bad estimate of the catch of an existing fishery.
  This concern about the problematic 'elegance of the number zero' is also
  something that affects other scientific activities, such as climate modelling<sup>43</sup>;
- Rather, a best estimate should be inserted in all such cases, based on the fact that
  fishing is a social activity that is bound to throw a 'shadow' on the society in
  which it is embedded, and from which an approximate and conservative
  (but better than zero) estimate of catch can be derived if fishing of this type is
  known to occur (for example, from the seafood or the fuel consumed locally, or
  the number of vessels engaged in fisheries and the average catch rate of vessels of
  this type and so on).

This approach addresses an inherent negative bias in national and, by extension, global catch data, although considerable uncertainty in catch data is likely to remain.

Notably, when doing reconstructions, it became apparent that the perception of 'no data' being available was not always correct: the 'social shadow' yields hundreds of articles in the peer-reviewed and report literature with catch data, or data from which catch rates could be inferred, even for remote islands <sup>10</sup>. Also, countries may sometimes send to FAO a stripped down version of the national catch data their fisheries research institutes actually possess, and may even publish on their

What is covered here are both 'coastal' waters, defined as the waters within the EEZ (Supplementary Fig. 1) that countries have claimed since this was allowed under the United Nations Convention on the Law of the Sea (UNCLOS), or which they could claim under UNCLOS rules, but have not (such as many countries around the Mediterranean), and the open oceans, or High Seas, that is, the waters beyond national jurisdiction (that is, beyond the EEZs). The delineations provided by the Flanders' Marine Institute (VLIZ, see www.vliz.be) are used for our definitions of EEZs. Countries that have not formally claimed an EEZ are assigned areas equivalent to EEZs based on the basic principles of EEZs as outlined in UNCLOS (that is, 200 nm and/or mid-line rules). Note that we (a) include territorial waters within our EEZs; and (b) treat disputed zones (that is, EEZ areas claimed by more than one country) as being 'owned' by each claimant with respect to their fisheries catches. We treat EEZ areas prior to each country's year of EEZ declaration as 'EEZ-equivalent waters' (with open access to all fishing countries during that time). If the year of EEZ declaration could not be determined (and for 'EEZs' that were derived by us for non-claimant countries), we assign the year 1982 as declaration year, that is, the year of conclusion of UNCLOS.

We use different catch reconstruction approaches for EEZs (40% of the global ocean), and High Seas (60%), where the catches are mainly large pelagic fishes (notably tuna). Note that we also exclude the Caspian Sea from all considerations.

Domestic catch reconstruction method. Reconstructing time series of fisheries catch for all countries of the world from 1950 (the first year that FAO published its 'Yearbook' of global fisheries statistics) to 2010 was undertaken by fisheries 'sectors'. However, because a standardized global definition of fishing sectors based on vessel size does not exist (for example, a vessel considered large-scale (industrial) in a developing country may be considered small-scale (artisanal) in developed countries), reconstructions utilize each country's individual definitions for sectors, or a regional equivalent. These are described in each country reconstruction publication underlying this work. We consider four sectors:

- i Industrial: large-scale fisheries (using trawlers, purse-seiners, longliners) with high capital input into vessel construction, maintenance and operation, and which may move fishing gear across the seafloor or through the water column using engine power (for example, demersal and pelagic trawlers), irrespective of vessel size. This corresponds to the 'commercial' sectors of countries such as the USA;
- ii Artisanal: small-scale fisheries whose catch is predominantly sold (hence they are also 'commercial fisheries'), and which often use a large variety of generally static or stationary (passive) gears. Our definition of artisanal fisheries relies also on adjacency: they are assumed to operate only in domestic waters (that is, in their country's EEZ). Within their EEZ, they are further limited to a coastal area to a maximum of 50 km from the coast or to  $200\,\mathrm{m}$  depth, whichever comes first. This area is defined as the Inshore Fishing Area (IFA)<sup>44</sup>. Note that the definition of an IFA assumes the existence of a small-scale fishery, and thus unpopulated islands, although they may have fisheries in their EEZ (which by our definition are industrial, whatever the gear used), have no IFA;
- iii Subsistence: small-scale non-commercial fisheries whose catch is predominantly consumed by the persons fishing it, and their families (this may also include the 'take-home' fraction of the catch of commercial fishers, which usually by-passes reporting systems); and
- iv Recreational: small-scale non-commercial fisheries whose major purpose is eniovment.

In addition to the reconstructions by sector, we also assign catches to either 'landings' (that is, retained and landed catch) or 'discards' (that is, discarded catch), and label all catches as either 'reported' or 'unreported' with regards to national and FAO data. Thus, reconstructions present 'catch' as the sum of 'landings' plus 'discards'.

Discarded fish and invertebrates are generally assumed to be dead, except for the US fisheries where the fraction of fish and invertebrates reported to survive is generally available on a per species basis<sup>45</sup>. Due to a distinct lack of global coverage of information, we do not account for so-called under-water discards, or net-mortality of fishing gears 46. We also do not address mortality caused by ghost-fishing of abandoned or lost fishing gear 47.

For commercially caught jellyfishes (particularly Rhizostomeae, but also other taxa), it has been shown that over 2.5 time more are caught than reported to FAO (mostly as 'Rhizostoma spp.')<sup>48</sup>. This factor is used to estimate missing catches of unidentified jellyfish. However, this additional catch is, pending further study, not allocated to any specific country or FAO area, and is thus counted only in the world's total catch.

We exclude from consideration all catches of marine mammals, reptiles, corals, sponges and marine plants (the bulk of the plant material is not primarily used for human consumption, but for cosmetic or pharmaceutical use). In addition, we do not estimate catches made for the aquarium trade, which can be substantial in some areas in terms of number of individuals, but relatively small in overall tonnage, as most aquarium fish are small or juvenile specimens<sup>49</sup>. Most catch reconstructions consist of six steps<sup>15</sup>:

(1) Identification, sourcing and comparison of baseline catch times series, that is, (a) FAO reported landings data by FAO statistical areas, taxon and year; and (b) national or regional data series by area, taxon and year. Implicit in this first step is that the spatial entity be identified and named that is to be reported on (for example, EEZ of Germany in the Baltic Sea), something that is not always obvious, and which poses problems to some of our external collaborators, notably those in countries with a claimed EEZ overlapping with that of their neighbour.

For most countries, the baseline data are the statistics reported by member countries to FAO. We treat all countries recognized in 2010 (or acting like independent countries with regards to fisheries) by the international community as having existed from 1950 to 2010. This is necessary, given our emphasis on 'places', that is, on time-series of catches taken from specific ecosystems. This also applies to islands and other territories, many of which were colonies, and which have changed status and borders since 1950.

For several countries, the baseline data are provided by international bodies. In the case of EU countries, the baseline data originate from the International Council for the Exploration of the Sea (ICES), which maintains fisheries statistics by smaller statistical areas, as required given the Common Fisheries Policy of the EU. A similar area is the Antarctic waters and surrounding islands, whose fisheries are managed by the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), where catch data are available by relatively small statistical areas<sup>50</sup>.

When FAO data are used, care is taken to maintain their assignment to different FAO statistical areas for each country (Supplementary Fig. 1), as they often distinguish between strongly different ecosystems. For example, the Caribbean Sea versus the coast of the Eastern Central Pacific in the case of Panama, Costa Rica, Nicaragua, Honduras and Guatemala. For each maritime country, the area covered extends from the coastline to the edge of the EEZ, including any major coastal lagoons connected to the sea, and the mouths of rivers, that is, estuaries. However, freshwaters are excluded.

(2) Identification of sectors (for example, subsistence, recreational), time periods, species, gears and so on, not covered by (1), that is, missing data components. This is conducted via literature searches and consultations with local experts. This step is one where the contribution of local co-authors and experts is crucial. Potentially, all four sectors defined by us can occur in the marine fisheries of a given coastal country, with the distinction between large-scale and small-scale being the most important<sup>25</sup>. For any entity, we check whether catches originating from the four sectors were included in the reported baseline of catch data, notably by examining their taxonomic composition, and any metadata, which were particularly detailed in the early decades of the FAO 'Yearbooks'51

The absence of a taxon known to be caught in a country or territory from the baseline data (for example, cockles gleaned by women on the shore of an estuary)<sup>26</sup> can also be used to identify a fishery that has been overlooked in the official data collection scheme, as can the absence of reef fishes in the coastal data of a Pacific Island state<sup>10</sup>. To avoid double counting, tuna and other large pelagic fishes, unless known to be caught by a local small-scale fishery (and thus in the past not likely reported to a Regional Fisheries Management Organization or RFMO), are not included in this reconstruction step (see below under 'High Seas and other catches of large pelagic fishes').

Finally, if gears are identified in national data, but a gear known to exist in a given country is not included, then it can be assumed that its catch has been missed, as documented for weirs (hadrah) in the Persian Gulf<sup>52</sup>

(3) Sourcing of alternative information sources on missing sectors identified in (2), via literature searches (peer-reviewed and grey) and consultations with local experts. Information sources include social science studies (anthropology, economics and so on), reports, data sets and expert knowledge. The major initial source of information for catch reconstructions is governments' websites and publications (specifically their Department of Fisheries or equivalent agency), both online and in hard copies, Contrary to what could be expected, it is often not the agency responsible for fisheries research and initial data collection that supplies the catch statistics to FAO, but other agencies, for example, statistical office or agency. As a result, much of the granularity of the original data (that is, catch by sector, by species or by gear) may be lost even before data are prepared for submission to FAO. Furthermore, the data request form sent by FAO each year to each country does not encourage improvements or changes in taxonomic composition, as the form that requests the most recent year's data contains the country's previous years' data in the same composition as submitted in earlier years. This encourages the pooling of detailed data at the national level into the taxonomic categories inherited through earlier (often decades old) FAO reporting schemes, as was discovered, for example, for Bermuda in the early 2000s (ref. 53). Thus, by getting back to the original data, much of the original granularity can be regained during reconstructions.

Additional sources of information on national catches are international organizations such as FAO, ICES or SPC (Secretariat of the Pacific Community), or a Regional Fisheries Management Organization (RFMO) such as NAFO (Northwest Atlantic Fisheries Organization), or CCAMLR<sup>54</sup>, or current or past regional fisheries development and/or management projects (many of them launched and supported by FAO), such as the Bay of Bengal Large Marine Ecosystem project (BOBLME). All these organizations and projects issue reports and publications describing-sometimes in considerable details-the fisheries of their member countries. Another source of information is the academic literature, now widely accessible through Google Scholar.

A good source of information for the earlier decades (especially the 1950s and 1960s) for countries that were part of former colonial empires (especially British or French) are the colonial archives in London (British Colonial Office) and the 'Archives Nationales d'Outre-Mer', in Aix-en-Provence, and the publications of ORSTOM (Office de la recherche scientifique et technique d'outre-mer), for former French colonies. A further source of information and data are non-fisheries sources, including household and/or nutritional surveys, which are occasionally used for estimating unreported subsistence catches. Our global network of local collaborators is also crucial in this respect, as they have access to key data sets, publications and local knowledge not available elsewhere, often in languages other than English.

Supplementary Figure 2 shows a plot of the publications used for slightly over 110 reconstructions against their date of publication. Although, recent publications predominate, older publications firmly anchor the 1950s catch estimates of many reconstructions. On average, around 35 unique publications were used per reconstruction (not counting online sources and personal communications).

Potential language bias is taken seriously in the Sea Around Us, to ensure that data are collated in languages other than English. Besides team members who read Chinese, others speak Arabic, Danish, Filipino/Tagalog, French, German, Hindi, Japanese, Portuguese, Russian, Spanish, Swedish and Turkish. To deal with other languages, research assistants are hired who speak, for example, Korean or

Table 1 | Scoring system for deriving uncertainty bands for the quality of time series data of reconstructed catches.

Sco	ore	± %*	Corresponding IPCC criteria <sup>†</sup>
4	Very high	10	High agreement and robust evidence
3	High	20	High agreement and medium evidence or medium agreement and robust evidence
2	Low	30	High agreement and limited evidence or medium agreement and medium evidence or low agreement and robust evidence.
1	Very low	50	Less than high agreement and less than robust evidence

<sup>\*</sup>Percentage uncertainty derived from Monte-Carlo simulations<sup>66,67</sup>.

Malay/Indonesian. We also rely on our multilingual network of colleagues and friends throughout the world, for example, for Greek or Thai. While it is true that English has now become the undisputed language of science<sup>55</sup>, other languages are used by billions of people, and assembling knowledge about the fisheries of the world is not possible without the capacity to explore the literature in languages other than English.

(4) Development of data 'anchor points' in time for each missing data item, and expansion of anchor point data to country-wide catch estimates. 'Anchor' points are catch estimates usually pertaining to a single year and sector, and often to an area not exactly matching the limits of the EEZ or IFA in question. Thus, an anchor point pertaining to a fraction of the coastline of a given country may need to be expanded to the country as a whole. For expansion, we use fisher or population density, or relative IFA or shelf area as raising factor, as appropriate given the local condition. In all cases, we consider that case studies underlying or providing the anchor point data may had a case-selection bias (for example, representing an exceptionally good area or community for study, compared with other areas in the same country), and thus use raising factors very conservatively.

(5) Interpolation for time periods between data anchor points, either linearly or assumption based for commercial fisheries, and generally via per capita (or per fisher) catch rates for non-commercial sectors. Fisheries are often difficult to govern, as they are social activities involving multiple actors. In particular, fishing effort is often difficult to reduce, at least in the short term. Thus, if anchor points are available for years separated by multi-year intervals, it usually will be more reasonable to assume that the underlying fishing activity continues in the intervening years with no data. We tread this 'continuity' assumption as a default proposition. Exceptions to such continuity assumptions are major environmental impacts such a hurricanes or tsunamis<sup>56</sup>, or major socio-political disturbances, such as military conflicts or civil wars<sup>57</sup>, which we explicitly consider with regards to the use of raising factors and the structure of time series estimates. In such cases, our reconstructions mark the event through a temporary change (for example, decline) in the catch time series, which is documented in the text of each catch reconstruction. At the very least, this provides pointers for future research on the relationship between fishery catches and natural catastrophes or conflicts. We note that the absence of such signals (such as a reduction in catch for a year or two) in the officially reported catch statistics for countries having experienced a major natural or socio-political disturbance can be a sign that their official catch data may not accurately reflect what occurs on the ground. This contributes to the emergence of 'poor numbers'40. Overall, our reconstructions assume—when no information to the contrary is available—that commercial catches (that is, industrial and artisanal) can be linearly interpolated between anchor points, while non-commercial catches (that is, subsistence and recreational) can generally be interpolated between anchor points using non-linear trends in human population numbers or number of fishers over time (via per capita rates).

Radical and rapid effort reductions as a result of an intentional policy decision and implementation do not occur widely. One example we are aware of is the trawl ban of 1980 in Western Indonesia<sup>58</sup>. The ban had little or no impact on official Indonesian fisheries statistics for Western Indonesia, another indication that these statistics may have little to do with the realities on the ground. FAO hints at this being widespread in the Western Central Pacific and the Eastern Indian Ocean (the only FAO areas where reported catches appear to be increasing) when they note that 'while some countries (i.e., the Russian Federation, India and Malaysia) have reported decreases in some years, marine catches submitted to FAO by Myanmar, Vietnam, Indonesia and China show continuous growth, i.e., in some cases resulting in an astonishing decadal increase (e.g., Myanmar up 121 percent, and Vietnam up 47 percent)'. <sup>42</sup>

(6) Estimation of total catch times series. A reconstruction is completed when the estimated catch time series derived through steps 2–5 are combined and harmonized with the reported catch of step 1. Generally, this results in an increase of the overall catch, but several cases exist where the reconstructed total catch is lower than the reported catch. The best documented case of this is that of mainland China<sup>14</sup>, whose over-reported catches for local waters in the Northwest Pacific are compensated for by under-reported catches taken by Chinese distant water fleets fishing elsewhere. In the 2000s, Chinese distant water fleets operated in the EEZs of over 90 countries, that is, in most parts of the world's oceans<sup>5</sup>. Harmonizing reconstructed catches with the reported baselines goes hand-in-hand with documenting the entire reconstruction procedure. Thus, every reconstruction is documented and published, either in the peer-reviewed scientific literature, or as detailed technical reports in the publicly accessible and indexed Fisheries Centre

Research Reports series or the Fisheries Centre Working Paper series, or other regional organization reports (Supplementary Table 5).

Several reconstructions were conducted in the mid- to late 2000s, when official reported data (that is, FAO statistics or national data) were not available to 2010 (refs 15,59). All these cases are updated to 2010, in line with each country's individual reconstruction approach to estimating missing catch data. Thus, all reconstructions are brought to 2010 to ensure identical time coverage (Supplementary Table 5).

Since these six points were originally proposed, a seventh point has come to the fore that cannot be ignored <sup>10</sup>:

(7) Quantifying the uncertainty associated with each reconstruction. In fisheries research, catch data are rarely associated with a measure of uncertainty, at least not in the form resembling confidence intervals. This may reflect the fact that the issue with catch data is not a lack of precision (that is, whether we could expect to produce similar results upon re-estimation), but about accuracy, that is, attempting to eliminate a systematic bias, a type of error which statistical theory does not really address.

We deal with this issue through a procedure related to 'pedigrees'<sup>60</sup> and the approach used by the Intergovernmental Panel on Climate Change to quantify the uncertainty in its assessments<sup>61</sup>. The authors of the reconstructions are asked to attribute a 'score' expressing their evaluation of the quality of the time series data to each fisheries sector (industrial, artisanal and so on) for each of the three time periods (1950–1969, 1970–1989 and 1990–2010). These 'scores' are (1) 'very low', (2) 'low', (3) 'high' and (4) 'very high' (Table 1). There is a deliberate absence of an uninformative 'medium' score, to avoid the effective 'non-choice' that this option would represent. Each of these scores is assigned a percentage uncertainty range (Table 1). Thereafter, the overall mean weighted percentage uncertainty (over all countries and sectors) was computed (Fig. 1).

Foreign catches. We define foreign catches as taken by vessels of a maritime state in the EEZ, or EEZ-equivalent waters of another coastal state. Based on our definition of sectors, all foreign fishing in the waters of another country is deemed to be industrial in nature. As the High Seas legally belong to no one (or to everyone), there can be no 'foreign' catches in the High Seas. Prior to UNCLOS, and the declaration of EEZs by maritime countries, foreign catches were illegal only if conducted without explicit permission within the territorial waters of such countries (generally 12 nautical miles). Since the declarations of EEZs by the overwhelming majority of maritime countries, foreign catches are considered illegal if conducted within the EEZ but without access being granted by the coastal state. A distinct exception is the EU, whose waters are managed by a 'Common Fisheries Policy', which implies a multilateral 'access agreement'.

Access permission can be tacit and based on historic rights ('observed' access), or more commonly in the form of explicit access agreements and involving compensatory payment for the coastal state. The Sea Around Us, building on previous work by FAO<sup>62</sup>, has created a database of such access and agreements, which is used to allocate the catches of distant-water fleets to the waters where they were taken.

This information is then harmonized with the catches reported by FAO for countries fishing outside their country's 'home' FAO areas, which always identifies this catch as distant-water industrial catch (see below for tuna catches reported to RFMOs).

In line with INTERPOL and others<sup>63</sup>, we define illegal fishing as foreign fishing within the EEZ waters of another country without a permission to access these resources. We do not treat domestic fisheries' violations of 'fishing regulations' as 'illegal'. In general, our reconstruction method cannot readily distinguish between legal and illegal foreign fishing, as we do not necessarily know about all access agreements<sup>5,6</sup>. Thus, our data only pertain to 'reported' versus 'unreported' status, irrespective of legality of foreign fleets in a host country<sup>5</sup>. However, for around two dozen countries (mainly in West Africa) where the number of illegally operating vessels could be inferred, the fleet size can be multiplied by appropriate catch per unit of effort rates, leading to an estimate of illegal catch in these EEZs.

**Industrial catches of large pelagic fishes.** *Nominal landings data.* To date, there is no single, publicly available data set presenting industrial landings of tuna and large pelagic fishes for the entire world that is separate from the amalgamated FAO statistics, despite these fisheries being among the most valuable in the world<sup>64</sup>.

<sup>†&#</sup>x27;Confidence increases' (and hence percentage ranges are reduced) 'when there are multiple, consistent independent lines of high-quality evidence'61.

Here, we first compile nominal industrial landings of tuna and other large pelagic fish caught either in the High Seas or within EEZs by fishing gear, taxon, countries and statistical reporting areas from data published by Regional Fisheries Management Organizations. Second, we use partially spatialized landings data provided by staff of the French 'Institut de recherche pour le développement' to spatially pre-assign the nominal landings data derived from RFMOs (Supplementary Table 6).

For each ocean, the nominal landings data are spatialized according to reported proportions in the previously spatialized data (Supplementary Table 6). For example, if the nominal data reports France catching 100 tonnes of yellowfin tuna (Thunnus albacares) in 1983 using longlines, but the spatial data only present 85 tonnes of yellowfin tuna reported in 1983 by France using longlines in four separate statistical cells, the nominal 100 tonnes for France are split into these four spatial cells according to their reported proportion of catch in the spatial dataset. This matching of the nominal and spatial records is done over a series of successive refinements, with the first being the best-case scenario, in which there are matching records for year, country, gear and taxon. The last refinement is the worst-case scenario, in which there are no matching records except for the year of catch. For example, if Sri Lanka reports 100 tonnes of yellowfin tuna caught in 1983 using longlines, but there are no spatial records for any country catching yellowfin tuna in 1983, the nominal 100 tonnes for Sri Lanka are split into spatial cells according to their reported proportions of total catch of any species and gear in 1983. The end result is a baseline landings database containing all matched and spatialized catch records, which sum to the original nominal catch tonnages.

Discards. A review of the literature for each ocean provided limited countryand fleet-specific discard data. Therefore, we average the discard rates across the entire time period and apply these to the region of origin of the fleet (for example, East Asia or Western Europe), rather than the actual country of origin of the fleet. Discards were spatialized in conjunction with nominal landings data.

Assembly of total catches. Ultimately, the total catch extracted from a given area, such as a given EEZ or EEZ-equivalent waters, or high seas waters within a given FAO area is computed as the sum of three data layers: (1) the reconstructed domestic catches within home EEZs ('Layer 1' data); (2) the derived catch by foreign fleets ('Layer 2' data); and (3) the tuna and other large pelagic fishes caught in the High Seas and in EEZs ('Layer 3' data).

**Documentation of the catch reconstructions.** The references and web-links of the contributions documenting the catch reconstructions that went into the re-estimation of the global catch of marine fisheries are documented in Supplementary Table 5. Altogether, 273 EEZs (or EEZ 'components') were covered in 247 catch reconstructions, which had 103 unique first authors and 279 unique co-authors in over 50 countries.

All data presented here are also deposited in the Dryad Digital Depository (DOI: 10.5061/dryad.4s4t1).

**Analyses.** To examine if significant breakpoints exist in the catch data time series of both reconstructed total catches and reported catches that may illustrate a change in trends of catches over time (that is, a change in the slope), we analyse the time series trajectories using segmented regression<sup>21</sup>. For both the reconstructed as well as reported time series, we identify two breakpoints, being 1967 and 1996, respectively (Supplementary Table 2). These breakpoints suggest a change in regression slope, with the second breakpoint suggesting a trend reversal. This was validated by testing for a significant difference-in-slope parameter using the Davies test<sup>65</sup>, which tests for a non-zero difference-in-slope of a segmented regression relationship.

# References

- Mohan Dey, M. et al. Fish consumption and food security: a disaggregated analysis by types of fish and classes of consumers in selected Asian countries. Aquacult. Econ. Manage 9, 89–111 (2005).
- Kawarazuka, N. & Béné, C. The potential role of small fish species in improving micronutrient deficiencies in developing countries: building evidence. *Public Health Nutr* 14, 1927–1938 (2011).
- Swartz, W., Sala, E., Tracey, S., Watson, R. & Pauly, D. The spatial expansion and ecological footprint of fisheries (1950 to present). PLoS ONE 5, e15143 (2010).
- Swartz, W., Sumaila, U. R., Watson, R. & Pauly, D. Sourcing seafood for the three major markets: the EU, Japan and the USA. *Mar. Policy* 34, 1366–1373 (2010).
- 5. Pauly, D. et al. China's distant water fisheries in the 21st century. Fish Fish. 15, 474–488 (2014).
- Le Manach, F. et al. European Union's public fishing access agreements in developing countries. PLoS ONE 8, e79899 (2013).
- Alder, J. & Sumaila, U. R. Western Africa: the fish basket of Europe past and present. J. Environ. Dev. 13, 156–178 (2004).

- Belhabib, D., Sumaila, U. R. & Pauly, D. Feeding the poor: contribution of West African fisheries to employment and food security. *Ocean Coast. Manage.* 111, 72–81 (2015).
- Pauly, D. Major trends in small-scale marine fisheries, with emphasis on developing countries, and some implications for the social sciences. *Marit.* Studies 4, 7–22 (2006).
- Zeller, D., Harper, S., Zylich, K. & Pauly, D. Synthesis of under-reported small-scale fisheries catch in Pacific-island waters. Coral Reefs 34, 25–39 (2015).
- Garibaldi, L. The FAO global capture production database: a six-decade effort to catch the trend. Mar. Policy 36, 760–768 (2012).
- Zeller, D. & Pauly, D. Good news, bad news: global fisheries discards are declining, but so are total catches. Fish Fish. 6, 156–159 (2005).
- Zeller, D., Booth, S., Pakhomov, E., Swartz, W. & Pauly, D. Arctic fisheries catches in Russia, USA and Canada: Baselines for neglected ecosystems. *Polar Biol.* 34, 955–973 (2011).
- Watson, R. & Pauly, D. Systematic distortions in world fisheries catch trends. Nature 414, 534–536 (2001).
- Zeller, D., Booth, S., Davis, G. & Pauly, D. Re-estimation of small-scale fishery catches for U.S. flag-associated island areas in the western Pacific: the last 50 years. Fish. Bull. 105, 266–277 (2007).
- Pauly, D. Rationale for reconstructing catch time series. EC Fish. Coop. Bull. 11, 4–10 (1998).
- Pikitch, E. K. et al. Ecosystem-based Fishery Management. Science 305, 346–347 (2004).
- FAO. in Code of Conduct for Responsible Fisheries (Food and Agriculture Organization of the United Nations (FAO), 1995).
- FAO. in The State of World Fisheries and Aquaculture (SOFIA) 2010 197 (Food and Agriculture Organization, 2011).
- Pauly, D. & Froese, R. Comments on FAO's State of Fisheries and Aquaculture, or 'Sofia 2010'. Mar. Policy 36, 746–752 (2012).
- Oosterbaan, R. J. in *Drainage Principles and Applications* Publication 16 (ed Ritzema, H. P.) 175–224 (International Institute for Land Reclamation and Improvement (ILRI), 1994).
- 22. Andrew, N. L. & Pepperell, J. G. The by-catch of shrimp trawl fisheries. Oceanogr. Mar. Biol. Annu. Rev 30, 527–565 (1992).
- Alverson, D. L., Freeberg, M. H., Pope, J. G. & Murawski, S. A. A Global Assessment of Fisheries by-Catch And Discards 233 (FAO Fisheries Technical Papers T339, 1994).
- Kelleher, K. Discards in the World's Marine Fisheries. An Update. 131 (FAO Fisheries Technical Paper 470, Food and Agriculture Organization, 2005).
- Pauly, D. & Charles, T. Counting on small-scale fisheries. Science 347, 242–243 (2015).
- Harper, S., Zeller, D., Hauzer, M., Sumaila, U. R. & Pauly, D. Women and fisheries: contribution to food security and local economies. *Mar. Policy* 39, 56–63 (2013).
- 27. Chapman, M. D. Women's fishing in Oceania. Hum. Ecol. 15, 267-288 (1987).
- Cisneros-Montemayor, A. M. & Sumaila, U. R. A global estimate of benefits from ecosystem-based marine recreation: potential impacts and implications for management. J. Bioecon 12, 245–268 (2010).
- Belhabib, D. et al. in Marine Fisheries Catches in West Africa, 1950-2010, part I. Fisheries Centre Research Reports 20(3) (eds Belhabib, D., Zeller, D., Harper, S. & Pauly, D.) 61-78 (Fisheries Centre, University of British Columbia, 2012).
- Belhabib, D., Nahada, V. A., Blade, D. & Pauly, D. Fisheries in Troubled Waters: A Catch Reconstruction for Guinea-Bissau, 1950-2010. Working Paper #2015-72 21 (Fisheries Centre, University of British Columbia, 2015).
- Zeller, D. et al. The Baltic Sea: estimates of total fisheries removals 1950-2007.
   Fish. Res. 108, 356-363 (2011).
- Kleisner, K., Zeller, D., Froese, R. & Pauly, D. Using global catch data for inferences on the world's marine fisheries. Fish Fish. 14, 293–311 (2013).
- 33. Froese, R., Zeller, D., Kleisner, K. & Pauly, D. Worrisome trends in global stock status continue unabated: a response to a comment by R.M. Cook on 'What catch data can tell us about the status of global fisheries'. *Mar. Biol. (Berlin)* **160,** 2531–2533 (2013).
- 34. Froese, R., Zeller, D., Kleisner, K. & Pauly, D. What catch data can tell us about the status of global fisheries. *Mar. Biol. (Berlin)* **159**, 1283–1292 (2012).
- FAO. in Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication xii + 18 (Food and Agriculture Organization of the United Nations, 2015).
- Sumaila, U. R. et al. Benefits of rebuilding global marine fisheries outweigh costs. PLoS ONE 7, e40542 (2012).
- Cao, L. et al. China's aquaculture and the world's wild fisheries. Science 347, 133–135 (2015).
- 38. Ward, M. in *Quantifying the World: UN Ideas and Statistics* (Indiana University Press, 2004).
- Rockström, J. et al. Planetary boundaries: exploring the safe operating space for humanity. Nature 461, 472–475 (2009).
- 40. Jerven, M. in Poor Numbers: How We Are Misled by African Development Statistics and What to Do About It (Cornell University Press, 2013).

- 41. Lindquist, E. J. et al. in FAO/JRC Global Forest Land-Use Change from 1990 to 2005. FAO Forestry Paper 169 xi + 40 (Food and Agriculture Organization of the United Nations and European Commission Joint Research Center, 2012).
- FAO. in The State of World Fisheries and Aquaculture (SOFIA) 223 (Food and Agriculture Organization, 2014).
- Covey, C. Beware the elegance of the number zero. Clim. Change 44, 409–411 (2000).
- Chuenpagdee, R., Liguori, L., Palomares, M. D. & Pauly, D. in Bottom-up, Global Estimates of Small-Scale Marine Fisheries Catches. 112 (Fisheries Centre Research Reports 14(8) (University of British Columbia, 2006).
- McCrea-Strub, A. in Reconstruction of Total Catch by U.S. Fisheries in the Atlantic and Gulf of Mexico: 1950-2010. Working Paper #2015-79 46 (Fisheries Centre, University of British Columbia, 2015).
- Rahikainen, M., Peltonen, H. & Poenni, J. Unaccounted mortality in northern Baltic Sea herring fishery—magnitude and effects on estimates of stock dynamics. Fish. Res. 67, 111–127 (2004).
- Bullimore, B. A., Newman, P. B., Kaiser, M. J., Gilbert, S. E. & Lock, K. M. A study of catches in a fleet of 'ghost-fishing' pots. *Fish. Bull.* 99, 247–253 (2001).
- 48. Brotz, l. in So Long, and Thanks For the All Fish: the Sea Around Us, 1999-2014—A Fifteen-Year Retrospective. (eds Pauly, D. & Zeller, D.) 81–85 (A Sea Around Us Report to The Pew Charitable Trusts, University of British Columbia, 2014).
- Rhyne, A. L. et al. Revealing the appetite of the marine aquarium fish trade: the volume and biodiversity of fish imported into the United States. PloS ONE 7, e35808 (2012).
- 50. Ainley, D. & Pauly, D. Fishing down the food web of the Antarctic continental shelf and slope. *Polar Rec.* **50**, 92–107 (2013).
- FAO. in Catches and landings (1977) Vol. 44, 343 (Yearbook of Fishery Statistics, Food and Agriculture Organization, 1978).
- Al-Abdulrazzak, D. & Pauly, D. Managing fisheries from space: Google Earth improves estimates of distant fish catches. ICES J. Mar. Sci. 71, 450–455 (2014).
- 53. Luckhurst, B., Booth, S. & Zeller, D. in From Mexico to Brazil: Central Atlantic Fisheries Catch Trends and Ecosystem Models (eds Zeller, D., Booth, S., Mohammed, E. & Pauly, D.) 163–169 (Fisheries Centre Research Reports 11(6), University of British Columbia, 2003).
- Cullis-Suzuki, S. & Pauly, D. Failing the high seas: a global evaluation of regional fisheries management organizations. *Mar. Policy* 34, 1036–1042 (2010)
- 55. Ammon, U. in *The Dominance of English as a Language of Science: Effects on Other Languages and Language Communities* (Walter de Gruyter, 2001).
- 56. Ramdeen, R., Ponteen, A., Harper, S. & Zeller, D. in Fisheries Catch Reconstructions: Islands, Part III (eds Harper, S. et al.) 69–76 (Fisheries Centre Research Reports 20(5), University of British Columbia, 2012).
- Belhabib, D. et al. in When 'Reality Leaves A Lot To the Imagination': Liberian Fisheries from 1950 to 2010 18 (Fisheries Centre Working Paper #2013-06, University of British Columbia, 2013).
- Pauly, D. & Budimartono, V. in Marine Fisheries Catches of Western, Central and Eastern Indonesia, 1950-2010.
   (Fisheries Centre Working Paper #2015-61, University of British Columbia, 2015).
- Zeller, D., Booth, S., Craig, P. & Pauly, D. Reconstruction of coral reef fisheries catches in American Samoa, 1950-2002. Coral Reefs 25, 144-152 (2006).
- Funtowicz, S. O. & Ravetz, J. R. Uncertainty and Quality of Science for Policy XI + 231 (Springer, 1990).

- Mastrandrea, M. D. et al. in Guidance Note for Lead Authors of the IPCC Fifth Assessment Report on Consistent Treatment of Uncertainties (Intergovernmental Panel on Climate Change (IPCC), 2010).
- FAO. in FAO's Fisheries Agreement Register (FARISIS) 4 (Committee on Fisheries, 23rd Session, 15-19 February 1999, Food and Agriculture Organization, COFI/99/Inf9E, 1998).
- 63. UNODC. in *Transnational Organized Crime in the Fishing Industry* 140 (United Nations Office on Drug and Crime, 2011).
- 64. FAO. in *The State of World Fisheries and Aquaculture* 209 (Food and Agriculture Organization of the United Nations (FAO), 2012).
- Davies, R. B. Hypothesis testing when a nuisance parameter is present only under the alternative. *Biometrika* 74, 33–43 (1987).
- Ainsworth, C. H. & Pitcher, T. J. Estimating illegal, unreported and unregulated catch in British Columbia's marine fisheries. Fish. Res. 75, 40–55 (2005).
- 67. Tesfamichael, D. & Pitcher, T. J. Estimating the unreported catch of Eritrean Red Sea fisheries. *Afr. J. Mar. Sci.* **29**, 55–63 (2007).

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#### **Author contributions**

D.P. conceptualized the rationale for catch reconstructions, and as Principal Investigator of the Sea Around Us, leads the project since 1999. D.Z. operationalized the methods employed for reconstructions, and as Senior Scientist coordinated and/or led many of the reconstructions contributing to this paper. D.P. and D.Z. co-wrote the paper. A very large number of colleagues have contributed to individual catch reconstructions and our core database work over the last 15 years, and are acknowledged and listed in the Supplementary Acknowledgements.

#### **Additional information**

Supplementary Information accompanies this paper at http://www.nature.com/naturecommunications

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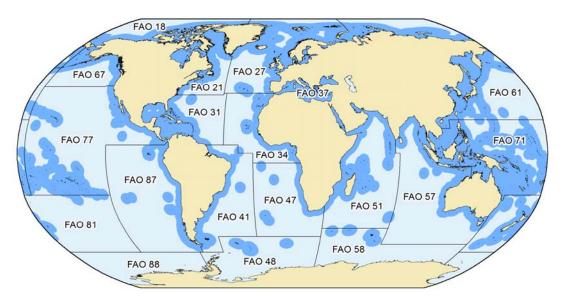
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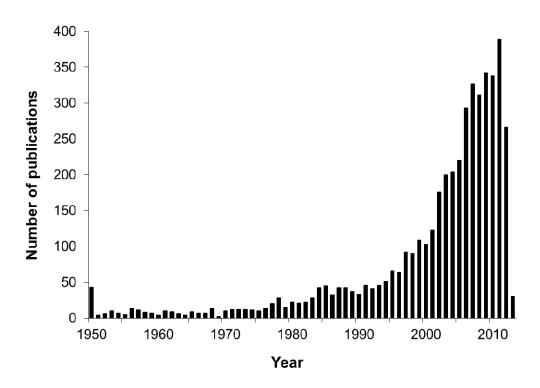
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Supplementary Fig. 1. Spatial categorization of world oceans using Exclusive Economic Zones and FAO

**statistical areas**. Extent and delimitation of countries' Exclusive Economic Zones (EEZs), as declared by individual countries, or as defined by the *Sea Around Us* based on the fundamental principles outlined in UNCLOS (i.e., 200 nautical miles or mid-line rules), and the FAO statistical areas by which global fisheries catch statistics are reported. Note that for several FAO areas some data exist by sub-areas as provided through regional organizations (e.g., ICES for FAO Area 27). The *Sea Around Us* makes use of these spatially refined data to improve the spatial allocation of catch data.



Supplementary Fig. 2. Year of publication of source material for reconstructions. Number of publications (scientific and grey literature) and their publication date used for slightly over 110 country/territory catch reconstructions, i.e., less than half. A total of 4,000 publications (excluding personal communications and online sources) were consulted, resulting in an average of 35 publications being used per reconstruction. While more information sources are obviously available for recent time periods, this illustrates that publications are accessible for the entire time period. The slightly elevated number for 1950 is due to pooling of material dated pre-1950 (as far back as the early 20<sup>th</sup> century or even late 19<sup>th</sup> century) that was used conservatively to inform 1950 anchor point information.

**Supplementary Table 1:** Reported and estimated reconstructed total catches (t) for 1950 to 2010, as used for Figure 1. Shown also are the mean weighted percentage uncertainty as derived from the reconstruction data quality scoring.

quality scoring.  Year	Reported	Reconstructed	Lower mean weighted	Upper mean weighted
	catch (t)	catch (t)	uncertainty (t)	uncertainty (t)
1950	17,965,332	30,913,396	14,304,728	47,522,064
1951	19,355,624	32,963,256	15,028,922	50,897,590
1952	20,251,127	34,988,062	16,030,598	53,945,525
1953	21,030,831	35,851,179	16,595,644	55,106,714
1954	23,117,208	38,779,606	17,887,772	59,671,441
1955	23,758,704	39,939,409	18,226,313	61,652,506
1956	25,532,664	42,276,420	19,163,920	65,388,919
1957	25,716,475	42,906,313	19,430,182	66,382,444
1958	26,062,935	43,490,638	19,912,670	67,068,607
1959	28,701,150	47,368,396	21,971,273	72,765,519
1960	31,211,158	51,293,583	24,038,174	78,548,992
1961	35,321,710	56,977,496	27,292,148	86,662,845
1962	38,293,672	60,236,136	29,315,030	91,157,241
1963	39,912,587	63,650,102	31,386,281	95,913,923
1964	44,052,941	69,976,600	35,295,651	104,657,548
1965	43,194,562	70,004,551	35,532,398	104,476,705
1966	46,604,626	74,576,948	38,033,395	111,120,502
1967	49,709,437	80,108,400	41,581,020	118,635,780
1968	53,138,559	86,167,984	45,210,926	127,125,041
1969	51,149,491	81,935,120	42,928,461	120,941,779
1970	57,126,159	88,419,602	46,604,234	130,234,970
1971	56,844,016	87,862,478	46,123,525	129,601,432
1972	52,012,578	81,407,496	41,379,577	121,435,414
1973	51,851,834	81,533,965	41,047,550	122,020,381
1974	55,934,429	85,896,007	44,026,234	127,765,780
1975	54,373,239	85,003,430	43,907,522	126,099,337
1976	57,385,286	88,484,857	46,091,920	130,877,795
1977	57,393,771	88,740,143	44,941,343	132,538,942
1978	60,124,732	92,575,063	47,421,992	137,728,135
1979	58,951,238	90,285,640	46,415,909	134,155,372
1980	59,807,677	90,359,498	46,913,911	133,805,084
1981	61,577,339	93,471,969	48,896,076	138,047,862
1982	65,069,469	100,164,379	52,155,559	148,173,199
1983	63,254,361	98,427,059	51,392,953	145,461,164
1984	68,074,711	105,538,419	56,429,467	154,647,371
1985	70,049,576	109,577,689	58,626,496	160,528,882
1986	75,146,438	115,000,541	61,849,496	168,151,585
1987	76,114,925	117,870,501	62,314,655	173,426,347
1988 1989	79,860,982	121,596,174 123,584,984	65,088,862	178,103,486 181,301,673
1990	81,182,606		65,868,296	
1991	78,020,708 76,909,696	119,836,808 118,579,720	63,244,516 62,592,414	176,429,100 174,567,026
1992		120,780,941	64,015,035	177,546,847
	78,481,589	120,780,941		
1993 1994	79,304,422	126,570,882	64,126,463	177,306,162
1995	84,336,776 84,048,150	126,691,190	68,227,459 66,906,385	184,914,306 186,475,996
1996	85,592,857	130,376,067	69,094,133	191,658,000
1997	85,059,630	127,748,804	67,181,521	188,316,086
1998	77,663,222	117,831,231	59,508,531	176,153,930
1999	83,132,383	122,637,246	64,062,043	181,212,449
2000	84,149,836	124,076,086	65,521,983	182,630,188
2001	81,897,761	120,479,709	62,482,930	178,476,487
2001	83,045,221	119,539,414	61,807,924	177,270,904
2002	80,060,282	116,942,719	59,369,647	174,515,791
2003	84,465,562	121,805,272	63,290,634	180,319,909
2004	83,107,615	119,224,366	61,732,679	176,716,054
2006	79,988,058	114,012,445	57,928,597	170,710,034
2006	80,252,914	114,012,443	58,693,835	169,532,047
2007	79,444,665	111,978,040	57,715,030	169,332,047
2008	79,444,663	111,362,092	57,110,647	165,613,537
2010	79,400,232	108,987,508	54,879,391	163,095,626
2010	10,034,144	100,707,300	J <del>4</del> ,0/7,371	103,093,020

**Supplementary Table 2.** Results of segmented regressions<sup>71</sup> (determines regression breakpoint years and segmented line slopes) and Davies test<sup>72</sup> (testing for non-zero difference-in-slope parameters) for both the global reconstructed and reported fisheries catch time series presented in main text Figure 1.

Catch time series	Segmer	Davies test		
Catch time series	Breakpoint (year)	Line	Slope (mt·year <sup>-1</sup> )	
Reconstructed	-	1	2.82	-
	1967	2	1.86	NS
	1996	3	-1.22	< 0.001
Reported	-	1	1.88	-
	1967	2	1.30	NS
	1996	3	-0.38	< 0.001

**Supplementary Table 3:** Data used for Figure 2. Reconstructed catches with and without discards, and with and without the major countries using quota management (i.e., USA, New Zealand, Australia and Western Europe), as well as seafood caught per capita (with and without discards).

Year	Reconstructed catch	Reconstructed catch	Reconstructed catch (- discards) excluding	Reconstructed catch (+discards) excluding	Seafood (+discards)	Seafood (- discards)
	(+discards) (t)	(-discards)(t)	quota countries (t)	quota countries (t)	caught (kg/person)	caught (kg/person)
1950	30,913,396	25,039,226	18,593,113	22,855,919	13.1	11.1
1951	32,963,256	26,685,031	19,916,834	24,252,884	13.6	11.5
1952	34,988,062	27,757,751	20,948,053	26,223,331	14.1	11.7
1953	35,851,179	28,678,242	21,919,206	27,133,849	14.2	11.7
1954	38,779,606	30,766,676	23,394,042	29,313,368	15.0	12.5
1955	39,939,409	31,599,230	24,391,541	30,667,991	15.8	13.1
1956				32,478,920	16.3	
	42,276,420	33,583,868	25,850,631			13.5
1957	42,906,313	33,907,581	26,341,204	33,285,103	16.5	13.6
1958	43,490,638	34,234,646	26,815,547	34,024,870	16.5	13.7
1959	47,368,396	37,460,393	29,580,696	37,305,929	17.6	14.6
1960	51,293,583	40,397,437	32,793,377	41,388,458	18.8	15.5
1961	56,977,496	45,264,536	37,133,061	46,755,959	20.5	16.9
1962	60,236,136	48,750,490	40,698,076	50,308,215	21.2	17.7
1963	63,650,102	51,317,915	43,250,449	53,550,429	21.8	18.2
1964	69,976,600	57,044,662	48,753,958	59,570,852	23.1	19.3
1965	70,004,551	56,408,859	47,618,245	59,277,757	22.9	19.0
1966	74,576,948	61,221,051	52,075,358	63,518,573	23.7	19.9
1967	80,108,400	66,558,600	57,402,582	69,111,181	24.8	21.0
1968	86,167,984	72,296,966	63,290,252	75,317,531	26.1	22.4
1969	81,935,120	69,173,236	60,404,068	71,269,141	24.3	21.0
1970	88,419,602	75,664,761	66,401,153	77,182,380	25.7	22.4
1971	87,862,478	75,176,673	65,504,786	76,341,658	25.0	21.8
1972	81,407,496	69,049,516	59,002,302	69,104,135	22.8	19.9
1972		69,502,789		69,119,475	22.7	19.9
1973	81,533,965 85,896,007		59,326,529		23.4	20.8
		74,479,573	64,363,341	73,623,203		
1975	85,003,430	73,690,350	63,164,323	72,263,073	23.0	20.5
1976	88,484,857	77,389,002	65,862,259	74,410,633	23.4	21.0
1977	88,740,143	77,850,414	65,643,255	74,123,691	23.0	20.7
1978	92,575,063	81,702,927	69,691,166	78,137,051	24.0	21.7
1979	90,285,640	79,577,763	67,705,072	75,976,871	22.7	20.5
1980	90,359,498	79,859,266	67,823,711	75,818,606	22.3	20.2
1981	93,471,969	82,487,507	70,429,960	78,934,210	22.7	20.5
1982	100,164,379	87,666,937	75,892,907	85,647,372	23.8	21.4
1983	98,427,059	86,038,585	74,130,347	84,059,093	23.2	20.8
1984	105,538,419	91,611,582	78,897,209	89,904,034	24.1	21.7
1985	109,577,689	94,871,355	82,067,534	93,961,362	24.4	21.8
1986	115,000,541	99,908,899	86,952,522	99,477,724	24.9	22.4
1987	117,870,501	102,200,612	88,750,132	101,552,822	24.8	22.3
1988	121,596,174	105,516,947	91,468,525	104,704,786	24.7	22.3
1989	123,584,984	106,622,257	93,086,670	107,316,459	24.4	21.9
1990	119,836,808	103,137,929	90,425,699	104,559,795	23.1	20.6
1991	118,579,720	102,138,130	89,004,554	102,627,992	22.6	20.2
1992	120,780,941	105,063,072	90,978,258	103,981,363	22.9	20.6
1992	120,780,941		91,313,312	103,737,965	22.5	20.6
		105,597,545	, ,		22.5 23.2	
1994	126,570,882	112,113,344	97,728,799	109,476,595		21.1
1995	126,691,190	112,285,168	97,962,868	109,720,102	23.0	20.9
1996	130,376,067	115,686,872	101,787,805	113,967,161	23.4	21.2
1997	127,748,804	113,426,976	98,754,820	110,421,083	22.8	20.7
1998	117,831,231	104,676,970	90,975,666	101,582,567	20.9	19.0
1999	122,637,246	110,211,122	96,956,107	107,131,693	21.5	19.6
2000	124,076,086	112,089,954	98,714,494	108,643,436	21.4	19.6
2001	120,479,709	108,973,257	95,371,294	104,797,034	20.6	18.8
2002	119,539,414	108,747,754	95,270,880	104,149,438	20.2	18.6
2003	116,942,719	106,159,866	93,529,958	102,308,613	19.6	18.0
2004	121,805,272	111,417,333	98,843,465	107,260,851	20.1	18.6
2005	119,224,366	109,209,836	97,388,313	105,606,026	19.5	18.1
2006	114,012,445	104,481,687	93,179,136	100,931,691	18.4	17.1
2007	114,112,941	104,387,449	93,023,038	101,069,938	18.0	16.7
2007	111,978,040		, ,	99,691,795		
	, ,	102,409,135	91,745,272	, ,	17.6	16.3
2009 2010	111,362,092	101,992,562	91,232,194	98,968,959	17.2	16.0
7010	108,987,508	99,348,620	88,639,690	96,653,238	16.8	15.5

**Supplementary Table 4:** Data used for Figure 4. Reconstructed catches for all countries in the world, plus High Seas, by large-scale (industrial) and small-scale sectors (artisanal, subsistence, recreational), with discards (overwhelmingly from industrial fisheries) presented separately.

Year	Artisanal (t)	Subsistence (t)	Recreational (t)	Industrial (t)	Discards (t)
1950	7,526,795	2,677,833	268,260	14,566,338	5,874,170
1950	8,278,304	2,704,471	284,319		6,278,225
1951			· ·	15,417,937	
	8,272,109	2,728,141	293,558	16,463,942	7,230,311
1953	8,469,284	2,753,098	292,070	17,163,789	7,172,937
1954	9,226,926	2,895,153	304,398	18,340,199	8,012,930
1955	9,545,554	3,012,167	313,420	18,728,089	8,340,179
1956	10,303,408	3,058,523	319,333	19,902,604	8,692,551
1957	10,425,695	3,112,506	339,291	20,030,089	8,998,732
1958	10,172,920	3,187,292	353,633	20,520,801	9,255,992
1959	10,385,711	3,296,620	355,360	23,422,702	9,908,003
1960	10,703,245	3,479,410	360,842	25,853,941	10,896,146
1961	10,846,177	3,532,629	364,629	30,521,101	11,712,961
1962	11,015,370	3,692,738	383,464	33,658,918	11,485,645
1963	11,005,246	3,826,997	392,172	36,093,501	12,332,187
1964	11,303,832	3,870,677	394,958	41,475,194	12,931,938
1965	11,653,978	3,873,765	405,857	40,475,260	13,595,692
1966	12,084,658	3,877,243	432,286	44,826,863	13,355,898
1967	12,386,026	3,903,718	440,399	49,828,456	13,549,800
1968	12,303,383	3,916,270	460,158	55,617,156	13,871,018
1969	12,211,407	3,889,378	445,673	52,626,777	12,761,884
1970	12,365,128	3,937,638	480,642	58,881,353	12,754,841
1971	12,398,298	3,976,718	508,341	58,293,316	12,685,805
1972	12,753,562	3,983,958	522,985	51,789,011	12,357,980
1973	13,688,372	3,957,258	548,785	51,308,375	12,031,176
1974	13,309,012	3,866,687	583,018	56,720,856	11,416,434
1975	13,432,664	3,808,464	594,247	55,854,975	11,313,080
1976	13,761,132	3,911,536	632,334	59,084,000	11,095,856
1977	13,892,726	4,062,986	653,480	59,241,222	10,889,729
1978	14,360,786	4,029,281	689,377	62,623,483	10,872,136
1979	14,616,134	3,985,743	723,286	60,252,600	10,707,877
1980	14,688,464	3,918,334	762,688	60,489,781	10,500,231
1981	15,279,447	3,986,858	761,247	62,459,956	10,984,462
1982	15,220,824	4,080,200	820,815	67,545,097	12,497,442
1983	15,300,068	4,200,135	849,021	65,689,361	12,388,473
1984	16,074,619	4,138,484	789,467	70,609,012	13,926,837
1985	16,380,243	4,173,602	810,942	73,506,569	14,706,334
1986	16,227,297	4,226,487	848,975	78,606,140	15,091,641
1987	17,449,809	4,216,780	778,434	79,755,589	15,669,889
1988	17,418,253	4,100,400	774,315	83,223,979	16,079,227
1989	17,620,239	4,103,211	763,732	84,135,075	16,962,727
1990	17,734,811	4,075,507	733,903	80,593,708	16,698,879
1991	17,773,521	4,099,117	753,923	79,511,569	16,441,591
1992	18,417,117	4,108,368	744,304	81,793,283	15,717,869
1993	18,031,035	4,072,844	747,610	82,746,056	15,118,768
1994	18,723,265	4,139,764	754,426	88,495,889	14,457,538
1995	19,665,232	4,124,233	752,382	87,743,321	14,406,022
1996	20,787,945	4,081,801	748,967	90,068,159	14,689,195
1997	20,401,848	4,044,958	774,972	88,205,198	14,321,828
1998	20,332,081	4,025,919	744,742	79,574,228	13,154,260
1999	20,588,769	4,057,334	731,511	84,833,508	12,426,124
2000	19,735,866	4,094,731	765,919	87,493,439	11,986,132
2001	20,046,446	3,955,601	769,491	84,201,719	11,506,452
2002	19,742,034	3,879,482	758,863	84,367,375	10,791,660
2003	20,568,530	3,865,552	771,767	80,954,017	10,782,853
2004	21,076,208	3,808,617	771,531	85,760,977	10,387,939
2005	20,966,689	3,718,690	745,431	83,779,026	10,014,530
2006	21,417,851	3,792,749	790,270	78,480,816	9,530,758
2007	21,097,388	3,623,797	804,477	78,861,788	9,725,492
2008	21,111,836	3,629,819	826,843	76,840,638	9,568,906
2009	21,828,623	3,630,156	805,632	75,728,150	9,369,530
2010	21,586,606	3,627,383	808,357	73,326,274	9,638,888

#	Country	Publ. type	Source of reconstruction
1	Albania	1	Moutopoulos, D.K., Bradshaw, B. and Pauly, D. 2015. Reconstruction of Albania fishery catches
			by fishing gear (1950-2010). Fisheries Centre Working Paper #2015-12, University of
			British Columbia, Vancouver, 12 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Moutopoulos-et-al-Albania.pdf).
			[Indust. 2,2,3; Art. 2,2,3; Subs. 1,1,1; Recr. 1,1,1; Disc. 1,1,2]
2	Algeria	2	Belhabib, D., Pauly, D., Harper, S. and Zeller, D. 2012. Reconstruction of marine fisheries catches
-	111841111	-	for Algeria, 1950-2010. pp. 1-22. <i>In</i> : D. Belhabib, D. Pauly, S. Harper and D. Zeller (eds.)
			Marine fisheries catches in West Africa, 1950-2010, Part I. Fisheries Centre Research
			Reports 20(3), University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2012/Belhabib-et-al-Algeria.pdf).
			[Indust. 3,3,3; Art. 2,2,4; Subs. 3,2,2; Recr. 2,2,2; Disc. 3,3,4]
3	Amaala	1244	(1) Belhabib, D. and Divovich, E. 2014. Rich fisheries and poor data: a catch reconstruction for
3	Angola	1,2,4,4	
			Angola, 1950-2010. Fisheries Centre Working Paper #2014-12, University of British
			Columbia, Vancouver, 19 p.
			(http://www.seaaroundus.org/doc/publications/wp/2014/Belhabib-et-al-Angola.pdf).
			(2) Belhabib, D. and Divovich, E. 2015. Rich fisheries and poor data: a catch reconstruction for
			Angola, 1950-2010, an update of Belhabib and Divovich (2014). pp. 115-128. <i>In</i> : D.
			Belhabib and D. Pauly (eds). Fisheries catch reconstructions: West Africa, Part II.
			Fisheries Centre Research Reports 23(3), University of British Columbia
			(http://www.seaaroundus.org/doc/publications/chapters/2015/Belhabib-and-Divovich-
			Angola.pdf).
			(4) Belhabib, D., Sumaila, U.R., Lam, V.W.Y., Zeller, D., Le Billon, P., Kane, E.A. and Pauly, D.
			2015. Euro vs. Yuan: Comparing European and Chinese fishing access in West Africa.
			PLoS One 10(3): e0118351
			(4) Belhabib, D., Sumaila, U.R. and Pauly, D. 2015. Feeding the poor: contribution of West African
			fisheries to employment and food security. Ocean & Coastal Management 111: 72-81.
			[Indust. 3,3,2; Art. 1,3,3; Subs. 1,3,3; Recr. 2,3,3; Disc. 2,2,4]
4	Antarctica	4	Ainley, D. and Pauly, D. 2014. Fishing down the food web of the Antarctic continental shelf and
			slope. Polar Record, 50, pp. 92-107.
			[Indust,3,3; Art,-,-; Subs,-,-; Recr,-,-; Disc,1,2]
5	Antigua and	1	Georges, J., Ramdeen, R., Zylich, K. and Zeller, D. 2015. Reconstruction of total marine fisheries
	Barbuda		catch for Antigua and Barbuda (1950-2010). Fisheries Centre Working Paper #2015-13,
			University of British Columbia, Vancouver, 18 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Georges-et-al-Antigua-
			Barbuda.pdf).
			[Indust,; Art. 2,3,3; Subs. 4,3,3; Recr. 2,2,2; Disc,-,-]
6	Argentina	1	Villasante, S., Macho, G., Isusu de Rivero, J., Divovich, E., Zylich, K., Harper, S., Zeller, D. and
Ü	riigentina	1	Pauly, D. 2015. Reconstruction of Argentina's marine fisheries catches (1950-2010).
			Fisheries Centre Working Paper #2015-50, University of British Columbia, Vancouver, 16
			p. (http://www.seaaroundus.org/doc/publications/wp/2015/Villasante-et-al-Argentina.pdf).
			[Indust. 1,1,2; Art. 1,1,2; Subs. 1,1,2; Recr. 1,1,2; Disc. 1,1,2]
7	Australia	1	Kleisner, K.M., Brennan, C., Garland, A., Lingard, S., Tracey, S., Sahlqvist, P., Tsolos, A., Pauly,
/	Ausuana	1	
			D. and Zeller, D. 2015. Australia: reconstructing estimates of total fisheries removals
			1950-2010. Fisheries Centre Working Paper #2015-02, University of British Columbia,
			Vancouver, 26 p. (http://www.seaaroundus.org/doc/publications/wp/2015/Kleisner-et-al-
			Australia.pdf).
			[Indust. 2,3,4; Art. 2,3,4; Subs. 1,1,1; Recr. 1,2,3; Disc. 2,2,3]
8	Australia	2	Greer, K., Harper, S., Zeller, D. and Pauly, D. 2012. Cocos (Keeling) Islands and Christmas
	(Christmas Island)		Islands: Brief history of fishing and coastal catches (1950-2010). pp. 1-13. <i>In</i> : S. Harper,
			K. Zylich, L. Boonzaier, F. Le Manach, D. Pauly and D. Zeller (eds.) Fisheries catch
			reconstructions: Islands, Part III. Fisheries Centre Research Reports 20(5), University of
			British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2012/Greer-et-al-
			CocosChristmasIsland.pdf).
			[Indust,-,2; Art. 1,1,1; Subs. 1,1,1; Recr,-,-; Disc,-,-]
9	Australia (Cocos	2	Greer, K., Harper, S., Zeller, D. and Pauly, D. 2012. Cocos (Keeling) Islands and Christmas
	Keeling Island)		Islands: Brief history of fishing and coastal catches (1950-2010). pp. 1-13. <i>In</i> : S. Harper,
			K. Zylich, L. Boonzaier, F. Le Manach, D. Pauly and D. Zeller (eds.) Fisheries catch
			reconstructions: Islands, Part III. Fisheries Centre Research Reports 20(5), University of
			British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2012/Greer-et-al-
			CocosChristmasIsland.pdf).
			[Indust,-3; Art,1,1; Subs. 1,1,2; Recr,1,2; Disc,-,-]
			[

#	Country	Publ. type	Source of reconstruction
10	Australia (Heard and MacDonald Islands)	1	Kleisner, K.M., Brennan, C., Garland, A., Lingard, S., Tracey, S., Sahlqvist, P., Tsolos, A., Pauly, D. and Zeller, D. 2015. Australia: reconstructing estimates of total fisheries removals 1950-2010. Fisheries Centre Working Paper #2015-02, University of British Columbia, Vancouver, 26 p. (http://www.seaaroundus.org/doc/publications/wp/2015/Kleisner-et-al-Australia.pdf).
			[Indust. 2,3,4; Art. 2,3,4; Subs. 1,1,1; Recr. 1,2,3; Disc. 2,2,3]
11	Australia (Lord Howe Island)	1	Kleisner, K.M., Brennan, C., Garland, A., Lingard, S., Tracey, S., Sahlqvist, P., Tsolos, A., Pauly, D. and Zeller, D. 2015. Australia: reconstructing estimates of total fisheries removals 1950-2010. Fisheries Centre Working Paper #2015-02, University of British Columbia, Vancouver, 26 p. (http://www.seaaroundus.org/doc/publications/wp/2015/Kleisner-et-al-Australia.pdf).  [Indust. 2,3,4; Art. 2,3,4; Subs. 1,1,1; Recr. 1,2,3; Disc. 2,2,3]
12	Australia	1	Kleisner, K.M., Brennan, C., Garland, A., Lingard, S., Tracey, S., Sahlqvist, P., Tsolos, A., Pauly,
12	Austrana (Macquarie Island)	1	D. and Zeller, D. 2015. Australia: reconstructing estimates of total fisheries removals 1950-2010. Fisheries Centre Working Paper #2015-02, University of British Columbia, Vancouver, 26 p. (http://www.seaaroundus.org/doc/publications/wp/2015/Kleisner-et-al-Australia.pdf).  [Indust. 2,3,4; Art. 2,3,4; Subs. 1,1,1; Recr. 1,2,3; Disc. 2,2,3]
13	Australia (Norfolk	1	Kleisner, K.M., Brennan, C., Garland, A., Lingard, S., Tracey, S., Sahlqvist, P., Tsolos, A., Pauly,
	Island)		D. and Zeller, D. 2015. Australia: reconstructing estimates of total fisheries removals 1950-2010. Fisheries Centre Working Paper #2015-02, University of British Columbia, Vancouver, 26 p. (http://www.seaaroundus.org/doc/publications/wp/2015/Kleisner-et-al-Australia.pdf).  [Indust. 2,3,4; Art. 2,3,4; Subs. 1,1,1; Recr. 1,2,3; Disc. 2,2,3]
14	Bahamas	1	Smith, N.S. and Zeller, D. 2013. Bahamas catch reconstruction: fisheries trends in a tourism-driven economy (1950-2010). Fisheries Centre Working Paper #2013-08, University of British Columbia, Vancouver, 28 p.  (http://www.seaaroundus.org/doc/publications/wp/2013/Smith-and-Zeller-Bahamas.pdf).  [Indust. 2,4,4; Art. 3,4,4; Subs. 1,1,1; Recr. 1,2,3; Disc,-,-]
15	Bahrain	2,4	(2) Al-Abdulrazzak, D. 2013. Missing sectors from Bahrain's reported fisheries catches: 1950-
			<ul> <li>2010. pp. 1-6. <i>In</i>: D. Al-Abdulrazzak and D. Pauly (eds.) <i>From dhows to trawlers: a recenhistory of fisheries in the Gulf countries, 1950 to 2010.</i> Fisheries Centre Research Reports 21(2), University of British Columbia, Vancouver. (http://www.seaaroundus.org/doc/publications/chapters/2013/AlAbdulrazzak-et-al-Bahrain.pdf).</li> <li>(4) Al-Abdulrazzak, D., Zeller, D., Belhabib, D., Tesfamichael, D. and Pauly, D. 2015. Total marine fisheries catches in the Persian/Arabian Gulf from 1950-2010. <i>Regional Studies in Marine Science</i> 2: 28-34.</li> <li>[Indust. 1,1,1; Art. 3,3,3; Subs. 1,1,1; Recr. 2,2,2; Disc. 2,2,4]</li> </ul>
16	Bangladesh	1	Ullah, H., Knip, D., Gibson, D., Zylich, K. and Zeller, D. 2014. Reconstruction of total marine
			fisheries catches for Bangladesh: 1950-2010. Fisheries Centre Working Paper #2014-15, University of British Columbia, Vancouver, 10 p. (http://www.seaaroundus.org/doc/publications/wp/2014/Ullah-et-al-Bangladesh.pdf). [Indust. 3,2,3; Art. 1,2,2; Subs. 2,2,2; Recr,-,-; Disc. 1,2,3]
17	Barbados	1	Mohammed, E., Lindop, A., Parker, C. and Willoughby, S. 2015. Reconstructed fisheries catches o
-			Barbados, 1950-2010. Fisheries Centre Working Paper #2015-16, University of British Columbia, Vancouver, 28 p. (http://www.seaaroundus.org/doc/publications/wp/2015/Mohammed-et-al-Barbados.pdf). [Indust,4,4; Art. 2,2,2; Subs. 3,3,3; Recr. 3,3,3; Disc,-,-]
18	Belgium	1,4	<ol> <li>(1) Lescrauwaet, A.K., Torreele, E., Vincx, M., Polet, H., Mees, J., Lindop, A. and Zylich, K. 2015         Invisible Catch: A century of by-catch and unreported removals in sea fisheries, Belgium         1950-2010. Fisheries Centre Working Paper #2015-18, University of British Columbia,         Vancouver, 18 p. (http://www.seaaroundus.org/doc/publications/wp/2015/Lescrauwaet-et-al-Belgium.pdf).</li> <li>(4) Lescrauwaet, A.K., Debergh, H., Vincx, M. and Mees, J. 2010. Fishing in the past: Historical         data on sea fisheries landings in Belgium. <i>Marine Policy</i> 34(6): 1279-1289</li> <li>[Indust. 3.5,3.5,3.5; Art. 2,-,-; Subs. 1,1,1; Recr. 1,1,1; Disc. 2,2,2]</li> </ol>
19	Belize	2	Zeller, D., Graham, R. and Harper, S. 2011. Reconstruction of total marine fisheries catches for Belize, 1950-2008. p. 142-151 <i>In</i> : M.L.D. Palomares and D. Pauly (eds.) <i>Too Precious to Drill: the Marine Biodiversity of Belize</i> , Fisheries Centre Research Reports 19(6), University of British Columbia, Vancouver.  (http://www.seaaroundus.org/doc/publications/chapters/2011/Zeller-et-al-Belize.pdf).  Since completing the initial reconstruction, FAO data became available to 2010. To update this reconstruction, the 2008 total reconstructed catch was carried forward to 2010. There were four new

#	Country	Publ. type	Source of reconstruction
			categories reported by FAO starting in 2009/2010 (blue shark, longbill spearfish, marlins,
			sailfishes, etc. nei, and shortfin mako). These tonnages were all allocated to outside the EEZ. There
			were also sharp increases starting in 2009/2010 for albacore, atlantic sailfish, bigeye tuna,
			swordfish and yellowfin tuna. For the tuna and billfish species, FAO tonnages for 2008 were
			flatlined to 2010, and any additional tonnages were allocated to outside the EEZ for 2009-2010.
			The ratio and the forward carry were based on the tonnages considered inside the EEZ. The sectoral
			breakdown of the unreported component was based on the percentage breakdown in 2008. The
			taxonomic breakdown for both the reported and unreported components was based on the
			percentage breakdown in 2008 (calculated separately by sector and input).
20	D .	2.4.4	[Indust. 3,3,3; Art. 2,2,2; Subs. 1,1,1; Recr,-,-; Disc. 1,2,2]
20	Benin	2,4,4	(2) Belhabib, D. and Pauly, D. 2015. Benin's fisheries: a catch reconstruction, 1950 to 2010. pp. 51-
			64. In: D. Belhabib and D. Pauly (eds). Fisheries catch reconstructions: West Africa, Part
			II. Fisheries Centre Research Reports 23(3), University of British Columbia
			(http://www.seaaroundus.org/doc/publications/chapters/2015/Belhabib-and-Pauly-
			Benin.pdf)
			(4) Belhabib, D., Sumaila, U.R., Lam, V.W.Y., Zeller, D., Le Billon, P., Kane, E.A. and Pauly, D.
			2015. Euro vs. Yuan: Comparing European and Chinese fishing access in West Africa.
			PLoS One 10(3): e0118351
			(4) Belhabib, D., Sumaila, U.R. and Pauly, D. 2015. Feeding the poor: contribution of West African
			fisheries to employment and food security. Ocean & Coastal Management 111: 72-81.
			[Indust. 3,3,3; Art. 2,4,4; Subs. 3,3,3; Recr,-,-; Disc. 2,1,2]
21	Bosnia-	1	Iritani, D., Färber, L., Zylich, K. and Zeller, D. 2015. Reconstruction of fisheries catches for
	Herzegovina		Bosnia-Herzegovina: 1950-2010. Fisheries Centre Working Paper #2015-15, University of
			British Columbia, Vancouver, 7 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Iritani-et-al-
			BosniaHerzegovina.pdf).
			[Indust,-,-; Art. 2,2,3; Subs. 4,4,3; Recr. 1,3,3; Disc,-,-]
22	Brazil	2	Freire, K.M.F., Aragão, J.A.N., Araújo, A.R.R., Ávila-da-Silva, A.O., Bispo, M.C.S., Canziani,
			G.V., Carneiro, M.H., Gonçalves, F.D.S., Keunecke, K.A., Mendonça, J.T., Moro, P.S.,
			Motta, F.S., Olavo, G., Pezzuto, P.R., Santana, R.F., Santos, R.A., Trindade-Santos, I.,
			Vasconcelos, J.A., Vianna, M. and Divovich, E. 2015. Reconstruction of catch statistics for
			Brazilian marine waters (1950-2010). pp. 3-30 In: K.M.F. Freire and D. Pauly (eds.),
			Fisheries catch reconstructions for Brazil's mainland and oceanic islands. Fisheries
			Centre Research Reports 23(4). University of British Columbia, Vancouver. (.
			http://www.seaaroundus.org/doc/publications/chapters/2015/Freire-et-al-Brazil.pdf)
			[Indust. 1,3,4; Art. 1,3,4; Subs. 1,2,3; Recr. 1,2,2; Disc. 1,1,1]
23	Brazil (Fernando	2	Divovich, E. and Pauly, D. 2015. Oceanic islands of Brazil: catch reconstruction from 1950 to
	de Noronha)		2010). pp. 31-48. In: K.M.F. Freire and D. Pauly (eds). Fisheries catch reconstructions for
	,		Brazil's mainland and oceanic islands. Fisheries Centre Research Reports 23(4),
			University of British Columbia, Vancouver
			(http://www.seaaroundus.org/doc/publications/chapters/2015/Divovich-and-Pauly-
			Oceanic-Islands-Brazil.pdf)
			[Indust,-,-; Art. 2,2,2; Subs. 1,1,1; Recr,-,-; Disc. 1,1,1]
24	Brazil (St Peter	2	Divovich, E. and Pauly, D. 2015. Oceanic islands of Brazil: catch reconstruction from 1950 to
	and St Paul		2010). pp. 31-48. In: K.M.F. Freire and D. Pauly (eds). Fisheries catch reconstructions for
	Archipelago)		Brazil's mainland and oceanic islands. Fisheries Centre Research Reports 23(4),
	1 1 10 1		University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2015/Divovich-and-Pauly-
			Oceanic-Islands-Brazil.pdf)
			[Indust. 2,2,2; Art,; Subs,; Recr,; Disc. 1,1,1]
25	Brazil (Trindade &	2	Divovich, E. and Pauly, D. 2015. Oceanic islands of Brazil: catch reconstruction from 1950 to
23	Martim Vaz	2	2010). pp. 31-48. <i>In</i> : K.M.F. Freire and D. Pauly (eds). <i>Fisheries catch reconstructions for</i>
	Islands)		Brazil's mainland and oceanic islands. Fisheries Centre Research Reports 23(4),
	Loiding)		University of British Columbia, Vancouver
			(http://www.seaaroundus.org/doc/publications/chapters/2015/Divovich-and-Pauly-
			Oceanic-Islands-Brazil.pdf)
			[Indust. 2,2,3; Art. 2,2,2; Subs. 1,1,1; Recr,-,-; Disc. 1,1,1]
26	Brunei	1	Cinco, E.A., Zylich, K., Teh, L.C.L. and Pauly, D. 2015. The marine and estuarine fisheries of
20	Diuliei	1	
			Brunei Darussalam, 1950 to 2010. Fisheries Centre Working Paper #2015-29, University
			of British Columbia, Vancouver, 16 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Cinco-et-al-Brunei.pdf).
27	Dulania	1	[Indust. 3,3.5,3.5; Art. 3,3.5,3.5; Subs. 3,3,3.5; Recr. 2,2.5,2.5; Disc. 2,3,3.5]
27	Bulgaria	1	Keskin, Ç., Ulman, A., Raykov, V., Daskalov, G.M., Zylich, K., Pauly, D. and Zeller, D. 2015.
			Reconstruction of fisheries catches for Bulgaria: 1950-2010. Fisheries Centre Working

#	Country	Publ. type	subsistence, Recr. = recreational, plus Disc. = discards.  Source of reconstruction
			Paper #2015-20. University of British Columbia, Vancouver, 18 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Keskin-et-al-Bulgaria.pdf).
			[Indust. 2,3,2; Art. 3,3,2; Subs. 1,1,1; Recr. 1,1,1; Disc. 2,2,2]
28	Cambodia	1	Teh, L.C.L., Shon, D., Zylich, K. and Zeller, D. 2014. Reconstructing Cambodia's Marine Fisheries
			Catch, 1950-2010. Fisheries Centre Working Paper #2014-18, University of British
			Columbia, Vancouver, 10 p. (http://www.seaaroundus.org/doc/publications/wp/2014/Teh-
			et-al-Cambodia.pdf).
20		2.1.1	[Indust,1,1; Art. 1,2,2; Subs. 1,2,2; Recr,-,-; Disc. 2,2,2]
29	Cameroon	2,4,4	(2) Belhabib, D. and Pauly, D. 2015. Reconstructing fisheries catches for Cameroon between 1950-2010. pp. 77-84. <i>In</i> : D. Belhabib and D. Pauly (eds). <i>Fisheries catch reconstructions: West</i>
			Africa, Part II. Fisheries Centre Research Reports 23(3), University of British Columbia.
			(http://www.seaaroundus.org/doc/publications/chapters/2015/Belhabib-and-Pauly-
			Cameroon.pdf)
			(4) Belhabib, D., Sumaila, U.R., Lam, V.W.Y., Zeller, D., Le Billon, P., Kane, E.A. and Pauly, D.
			2015. Euro vs. Yuan: Comparing European and Chinese fishing access in West Africa.
			PLoS One 10(3): e0118351
			(4) Belhabib, D., Sumaila, U.R. and Pauly, D. 2015. Feeding the poor: contribution of West African
			fisheries to employment and food security. Ocean & Coastal Management 111: 72-81.
			[Indust. 2,2,2; Art. 1,3,3; Subs. 2,2,1; Recr,-,-; Disc. 2,2,3]
30	Canada (Arctic)	1,2,4	(1) Teh, L.C.L., Zylich, K. and Zeller, D. 2015. FAO area 18 (Arctic Sea): Catch data
			reconstruction extension of Zeller et al. (2011) to 2010. Fisheries Centre Working Paper
			#2015-14, University of British Columbia, Vancouver, 5 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Teh-et-al-Arctic-Sea.pdf).
			(2) Booth, S. and Watts, P. 2007. Canada's Arctic marine fish catches. pp. 3-15. <i>In:</i> D. Zeller and
			D. Pauly (eds.) Reconstruction of marine fisheries catches for key countries and regions
			(1950-2005). Fisheries Centre Research Reports 15(2), University of British Columbia,
			Vancouver. (http://www.seaaroundus.org/doc/publications/chapters/2007/Booth-and-Watts-Canada-Arctic.pdf).
			(4) Zeller, D., Booth, S., Pakhomov, E., Swartz, W. and Pauly, D. 2011. Arctic fisheries catches in
			Russia, USA and Canada: Baselines for neglected ecosystems. <i>Polar Biology</i> 34(7): 955-
			973.
			[Indust,-,-; Art,-,-; Subs. 3,3,3; Recr,-,-; Disc,-,-]
31	Canada (East	1	Divovich, E., Belhabib, D., Zeller, D. and Pauly, D. 2015. Eastern Canada, "a fishery with no clean
	Coast)		hands": Marine fisheries catch reconstruction from 1950 to 2010. Fisheries Centre
			Working Paper #2015-56, University of British Columbia, Vancouver, 37 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Divovich-et-al-Canada-East.pdf).
			[Indust. 2,2,1; Art. 2,2,2; Subs. 1,3,1; Recr. 1,2,4; Disc. 4,4,4]
32	Canada (Pacific)	1	Ainsworth, C. 2015. British Columbia Marine Fisheries Catch Reconstruction: 1873 to 2010.
			Fisheries Centre Working Paper #2015-62, University of British Columbia, Vancouver, 9
			p. (http://www.seaaroundus.org/doc/publications/wp/2015/Ainsworth-Canada-BC.pdf).
22	C W	2.4.4	[Indust. 4,4,4; Art. 1,1,2; Subs. 1,1,2; Recr. 3,4,4; Disc. 1,1,1]
33	Cape Verde	2,4,4	(2) Santos, I.T., Monteiro, C.A., Harper, S., Zeller, D. and Belhabib, D. 2012. Reconstruction of marine fisheries catches for the Republic of Cape Verde, 1950-2010. pp. 79-90. <i>In</i> : D.
			Belhabib, D. Zeller, S. Harper and D. Pauly (eds.) <i>Marine fisheries catches in West Africa</i> ,
			Part I. Fisheries Centre Research Reports 20(3), University of British Columbia,
			Vancouver. (http://www.seaaroundus.org/doc/publications/chapters/2012/Santos-et-al-
			CapeVerde.pdf).
			(4) Belhabib, D., Sumaila, U.R., Lam, V.W.Y., Zeller, D., Le Billon, P., Kane, E.A. and Pauly, D.
			2015. Euro vs. Yuan: Comparing European and Chinese fishing access in West Africa.
			PLoS One 10(3): e0118351
			(4) Belhabib, D., Sumaila, U.R. and Pauly, D. 2015. Feeding the poor: contribution of West African
			fisheries to employment and food security. Ocean & Coastal Management 111: 72-81.
			[Indust. 1,1,4; Art. 4,4,4; Subs. 2,2,2; Recr. 2,2,4; Disc. 2,2,2]
34	Chile	1	van der Meer, L., Arancibia, H., Zylich, K. and Zeller, D. 2015. Reconstruction of total marine
			fisheries catches for mainland Chile (1950-2010). Fisheries Centre Working Paper #2015-
			91, University of British Columbia, Vancouver, 15 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/VanderMeer-et-al-Chile-
			Mainland.pdf).
35	Chile (Easter	4,4	[Indust. 2,2,4; Art. 2,2,3; Subs. 2,2,3; Recr. 2,2,1; Disc. 1,1,1] (4) Zylich, K., Harper, S., Licandeo, R., Vega, R., Zeller, D. and Pauly, D. 2014. Fishing in Easter
33	Island)	7,7	Island: a recent history (1950-2010). Latin American Journal of Aquatic Research 24(4):
	ioiana)		845-856.
			(4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-reported small-scale
			fisheries catch in Pacific island waters. <i>Coral Reefs</i> 34(1): 25-39.
			N = 7 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \

36	Chile (Juan Fernandez and Desventuradas Islands)	1	[Indust. 1.3,2.3,3; Art. 1.3,2.3,3; Subs. 1.3,2,2; Disc,-,-] van der Meer, L. and Zylich, K. 2015. Reconstruction of total marine fisheries catches for Juan Fernández Islands and the Desventuradas Islands (1950-2010). Fisheries Centre Working
	Fernandez and Desventuradas	1	
37			Paper #2015-92, University of British Columbia, Vancouver, 14 p. (http://www.seaaroundus.org/doc/publications/wp/2015/VanderMeer-and-Zylich-Chile-
37			<u>Islands.pdf</u> ). [Indust. 2,2,4; Art. 4,4,4; Subs. 2,2,2; Recr. 2,2,1; Disc. 1,1,1]
	China	1,4	<ul> <li>(1) Pauly, D. and Le Manach, F. 2015. Tentative adjustments of China's marine fisheries catches (1950-2010). Fisheries Centre Working Paper #2015-28, University of British Columbia, Vancouver, 16 p. (<a href="http://www.seaaroundus.org/doc/publications/wp/2015/Pauly-and-LeMenach-China.pdf">http://www.seaaroundus.org/doc/publications/wp/2015/Pauly-and-LeMenach-China.pdf</a>).</li> <li>(4) Pauly, D., Belhabib, D., Blomeyer, R., Cheung, W.W.L., Cisneros-Montemayor, A.M.,</li> </ul>
			Copeland, D., Harper, S., Lam, V.W.Y., Mai, Y., Le Manach, F., Österblom, H., Mok, K.M., Van der Meer, L., Sanz, A., Antonio, S., Shon, S., Sumaila, U.R., Swartz, W., Watson, R., Zhai, Y. and Zeller, D. 2014. China's distant-water fisheries in the 21st century. <i>Fish and Fisheries</i> 15: 474-488.  [Indust. 2,3,3; Art. 1,2,2; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,2,2]
38	China (Hong	1	Cheung, W.W.L. 2015. Reconstructed catches in waters administrated by the Hong Kong Special
30	Kong)	1	Administrative Region. Fisheries Centre Working Paper #2015-93, University of British Columbia, Vancouver, 15 p.  (http://www.seaaroundus.org/doc/publications/wp/2015/Cheung-Hong-Kong.pdf).
			[Indust. 3,2,2; Art. 2,3,3; Subs. 2,2,2; Recr. 1,1,1; Disc. 1,1,1]
39	Columbia	1	Lindop, A., Chen, T., Zylich, K. and Zeller, D. 2015. A reconstruction of Colombia's marine
	(Caribbean)		fisheries catches. Fisheries Centre Working Paper #2015-32, University of British
			Columbia, Vancouver, 15 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Lindop-et-al-Colombia.pdf).
40	C-1	1	[Indust. 2,2,3; Art. 2,2,2; Subs. 2,2,2; Recr,-,-; Disc. 2,2,2]
40	Colombia (Pacific)	1	Lindop, A., Chen, T., Zylich, K. and Zeller, D. 2015. A reconstruction of Colombia's marine fisheries catches. Fisheries Centre Working Paper #2015-32, University of British
			Columbia, Vancouver, 15 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Lindop-et-al-Colombia.pdf).
			[Indust. 2,2,3; Art. 2,2,2; Subs. 2,2,2; Recr,-,-; Disc. 2,2,2]
41	Cook Islands	2,4	<ul> <li>Haas, A., Rongo, T., Hefferman, N., Harper, S. and Zeller, D. 2012. Reconstruction of the Cook</li> <li>Islands fisheries catches: 1950-2010, pp. 15-24. <i>In:</i> S. Harper, K. Zylich, L. Boonzaier, F.</li> <li>Le Manach, D. Pauly and D. Zeller (eds.) <i>Fisheries catch reconstructions: Islands, Part</i></li> </ul>
			III. Fisheries Centre Research Reports 20(5), University of British Columbia, Vancouver. (http://www.seaaroundus.org/doc/publications/chapters/2012/Haas-et-al-2012-Cook-Islands.pdf).
			(4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-reported small-scale fisheries catch in Pacific island waters. <i>Coral Reefs</i> 34(1): 25-39.
42	Comoros	2	[Indust. 4,4,2; Art. 2,2,3; Subs. 2,2,2; Recr,-,-; Disc. 3,3,3]  Doherty, B., Hauzer, M. and Le Manach, F. 2015. Reconstructing Catches for the Union of the
.2	Comoros	-	Comoros: Uniting Historical Sources of Catch Data for Ngazidja, Ndzuwani and Mwali from 1950–2010. pp. 1-11. <i>In:</i> F. Le Manach and D. Pauly (eds.) <i>Fisheries catch</i>
			reconstructions in the Western Indian Ocean, 1950-2010. Fisheries Centre Research
			Report 23(2), University of British Columbia, Vancouver. (http://www.seaaroundus.org/doc/publications/chapters/2015/Doherty-et-al-2015-
			Comoros.pdf).
43	Congo	2,4,4	[Indust,-,-; Art. 1,1,1; Subs. 1,1,1; Recr,-,-; Disc,-,-] (2) Belhabib, D. and Pauly, D. 2015. The implications of misreporting on catch trends: a catch
15	(Brazzaville)	2,1,1	reconstruction for the People's Republic of the Congo, 1950-2010. pp. 95-106. <i>In</i> : D.
			Belhabib and D. Pauly (eds). Fisheries catch reconstructions: West Africa, Part II.
			Fisheries Centre Research Reports 23(3), University of British
			Columbia(http://www.seaaroundus.org/doc/publications/chapters/2015/Belhabib-and-Pauly-Congo-Brazzaville.pdf)
			(4) Belhabib, D., Sumaila, U.R., Lam, V.W.Y., Zeller, D., Le Billon, P., Kane, E.A. and Pauly, D.
			2015. Euro vs. Yuan: Comparing European and Chinese fishing access in West Africa.  PLoS One 10(3): e0118351
			(4) Belhabib, D., Sumaila, U.R. and Pauly, D. 2015. Feeding the poor: contribution of West Africa
			fisheries to employment and food security. Ocean & Coastal Management 111: 72-81.
			[Indust. 2,4,3; Art. 2,4,4; Subs. 2,4,4; Recr,-,-; Disc. 2,2,2]
44	Congo (ex-Zaïre)	2,4,4	(2) Belhabib, D., Ramdeen, S. and Pauly, D. 2015 An attempt at reconstructing the marine fisheries
			catches in the Congo (Ex-Zaïre), 1950-2010. pp. 107-114. <i>In:</i> D. Belhabib and D. Pauly (eds). <i>Fisheries catch reconstructions: West Africa, Part II</i> . Fisheries Centre Research

#	Country	Publ. type	subsistence, Recr. = recreational, plus Disc. = discards.  Source of reconstruction
	·	V 1	Reports 23(3), University of British Columbia.
			(http://www.seaaroundus.org/doc/publications/chapters/2015/Belhabib-and-Pauly-Congo-
			Ex-Zaiire.pdf)
			(4) Belhabib, D., Sumaila, U.R., Lam, V.W.Y., Zeller, D., Le Billon, P., Kane, E.A. and Pauly, D.
			2015. Euro vs. Yuan: Comparing European and Chinese fishing access in West Africa.
			PLoS One 10(3): e0118351
			(4) Belhabib, D., Sumaila, U.R. and Pauly, D. 2015. Feeding the poor: contribution of West African
			fisheries to employment and food security. Ocean & Coastal Management 111: 72-81.
			[Indust. 2,3,1; Art. 2,3,1; Subs. 1,2,2; Recr,-,-; Disc. 1,1,1]
45	Costa Rica	1	Trujillo, P., Cisneros-Montemayor, A., Harper, S., Zylich, K. and Zeller, D. 2015. Reconstruction
73	(Caribbean)	1	of Costa Rica's marine fisheries catches, 1950-2010. Fisheries Centre Working Paper
	(Carioucan)		#2015-31, University of British Columbia, Vancouver, 16 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Trujillo-et-al-Costa-Rica.pdf).
16	C4- D:	1	[Indust. 2,3,4; Art. 2,3,4; Subs. 2,3,3; Recr. 1,1,1; Disc. 2,3,4]
46	Costa Rica	1	Trujillo, P., Cisneros-Montemayor, A., Harper, S., Zylich, K. and Zeller, D. 2015. Reconstruction
	(Pacific)		of Costa Rica's marine fisheries catches, 1950-2010. Fisheries Centre Working Paper
			#2015-31, University of British Columbia, Vancouver, 16 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Trujillo-et-al-Costa-Rica.pdf).
			[Indust. 2,3,4; Art. 2,3,4; Subs. 2,3,3; Recr. 1,1,1; Disc. 2,3,4]
47	Côte d'Ivoire	2,4,4	(2) Belhabib, D. and Pauly, D. 2015. Côte d'Ivoire: Fisheries catch reconstruction, 1950-2010. pp.
			17-36. In: D. Belhabib and D. Pauly (eds). Fisheries catch reconstructions: West Africa,
			Part II. Fisheries Centre Research Reports 23(3), University of British Columbia
			(http://www.seaaroundus.org/doc/publications/chapters/2015/Belhabib-and-Pauly-Cote-d-
			<u>Ivoirey.pdf</u> )
			(4) Belhabib, D., Sumaila, U.R., Lam, V.W.Y., Zeller, D., Le Billon, P., Kane, E.A. and Pauly, D.
			2015. Euro vs. Yuan: Comparing European and Chinese fishing access in West Africa.
			PLoS One 10(3): e0118351
			(4) Belhabib, D., Sumaila, U.R. and Pauly, D. 2015. Feeding the poor: contribution of West African
			fisheries to employment and food security. Ocean & Coastal Management 111: 72-81.
			[Indust. 4,4,4; Art. 2,3,3; Subs. 2,3,2; Recr,-,-; Disc. 3,3,2]
48	Croatia	1	Matić-Skoko, S., Soldo, A., Stagličić, N., Blažević, D., Šiljić, J. and Iritani, D. 2014. Croatian
			Marine Fisheries (Adriatic Sea): 1950-2010. Fisheries Centre Working Paper #2014-26,
			University of British Columbia, Vancouver, 16 p.
			(http://www.seaaroundus.org/doc/publications/wp/2014/Matic-Skoko-et-al-Croatia.pdf).
			[Indust. 2,3,3; Art. 2,3,3; Subs. 1,2,2; Recr. 1,1,1; Disc. 2,2,2]
49	Cuba	2	Au, A., Zylich, K. and Zeller, D. 2014. Reconstruction of total marine fisheries catches for Cuba
			(1950-2009). pp. 25-32. <i>In: K. Zylich</i> , D. Zeller, M. Ang, and D. Pauly (eds.) <i>Fisheries</i>
			catch reconstructions: Islands, Part IV. Fisheries Centre Research Reports 22(2).
			University of British Columbia, Vancouver. (http://www.seaaroundus.org/about/wp-
			content/uploads/2014/11/Au-et-al-Cubapdf).
			[Indust. 2,3,3; Art. 2,3,3; Subs. 1,2,2; Recr. 1,1,1; Disc. 2,2,2]
50	Cyprus (North)	1,4	(1) Ulman, A., Çiçek, B., Salihoglu, I., Petrou, A., Patsalidou, M., Pauly, D. and Zeller, D. 2013.
	J1 ( ·- · )	2	The reconstructed and unified marine fisheries catches of Cyprus, 1950-2010. Fisheries
			Centre Working Paper #2013 - 09, Fisheries Centre, University of British Columbia,
			Vancouver. 69 p. (http://www.seaaroundus.org/doc/publications/wp/2013/Ulman-et-al-
			Cyprus.pdf).
			(4) Ulman, A., Çiçek, B., Salihoglu, I., Petrou, A., Patsalidou, M., Pauly, D. and Zeller, D. 2014.
			Unifying the catch data of a divided island: Cyprus's marine fisheries catches, 1950-2010.
			Environment, Development and Sustainability, 21 p. doi: 10.1007/s10668-014-9576-z
			[Indust. 1.5,-,2.5; Art. 2,2,4; Subs. 1,1,1; Recr. 2,1,3; Disc,-,-]
51	Cyprus (South)	1,4	(1) Ulman, A., Çiçek, B., Salihoglu, I., Petrou, A., Patsalidou, M., Pauly, D. and Zeller, D. 2013.
31	Cyprus (Soum)	1,4	The reconstructed and unified marine fisheries catches of Cyprus, 1950-2010. Fisheries
			Centre Working Paper #2013 - 09, Fisheries Centre, University of British Columbia,
			Vancouver, 69 p. (http://www.seaaroundus.org/doc/publications/wp/2013/Ulman-et-al-
			Cyprus.pdf).
			(4) Ulman, A., Çiçek, B., Salihoglu, I., Petrou, A., Patsalidou, M., Pauly, D. and Zeller, D. 2014.
			Unifying the catch data of a divided island: Cyprus's marine fisheries catches, 1950-2010.
			Environment, Development and Sustainability, 21 p. doi: 10.1007/s10668-014-9576-z
			[Indust. 1.5,1.5,2; Art. 2,2,2; Subs. 1,1,1; Recr. 2,1,2; Disc,-,-]
52	Denmark (Baltic	2,4	(2) Bale, S., Rossing, P., Booth, S. and Zeller, D. 2010. Denmark's marine fisheries catches in the
34			D 1: 0 (1050 2005) 20 (2 1 D D 1 D D 1 D D D 1 D D D 1 D D D 1 D D D 1 D D 1 D D 1 D D 1 D D 1 D D 1 D D 1 D D 1 D D 1 D D 1 D D
32	Sea)		Baltic Sea (1950-2007), pp. 39-62. In: R. Rossing, S. Booth and D. Zeller (eds.) Total
32	Sea)		Baltic Sea (1950-2007), pp. 39-62. In: R. Rossing, S. Booth and D. Zeller (eds.) Total marine fisheries extractions by country in the Baltic Sea: 1950-present. Fisheries Centre

			subsistence, Recr. = recreational, plus Disc. = discards.
#	Country	Publ. type	Source of reconstruction
			(http://www.seaaroundus.org/doc/publications/chapters/2010/Bale-et-al-Denmark-
			Baltic.pdf). (4) Zeller, D., Rossing, P., Harper, S., Persson, L., Booth, S. and Pauly, D. 2011. The Baltic Sea:
			estimates of total fisheries removals 1950-2007. Fisheries Research 108: 356-363.
			Since completing the initial reconstruction, 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 IUU 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 landings and unreported catches. To calculate recreational
			catch, population data was 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 dataset regarding previous years.
			[Indust. 3,3,3; Art. 2,2,2; Subs. 1,1,1; Recr. 2,2,2; Disc. 2,2,2]
53	Denmark (North	1	Gibson, D., Ueberschaer, B., Zylich, K. and Zeller, D. 2015. Preliminary reconstruction of total
33	Sea)	1	marine fisheries catches for Denmark in the Kattegat, the Skagerrak and the North Sea
	~~~)		(1950-2010). Fisheries Centre Working Paper #2014-25, University of British Columbia,
			Vancouver, 12 p. (http://www.seaaroundus.org/doc/publications/wp/2014/Gibson-et-al-
			Denmark.pdf).
			[Indust. 3,3,4; Art. 3,3,4; Subs. 1,1,1; Recr. 1,1,2; Disc. 1,1,2]
54	Djibouti	2	Colléter, M., Djibril, A.D., Hosch, G., Labrosse, P., Yvergniaux, Y., Le Manach, F. and Pauly, D.
			2015. Le Développement Soutenu de Pêcheries Artisanales: Reconstruction des Captures
			Marines à Djibouti de 1950 à 2010. pp. 13-25. <i>In:</i> F. Le Manach and D. Pauly (eds.) <i>Fisheries catch reconstructions in the Western Indian Ocean, 1950-2010.</i> Fisheries Centre
			Research Report 23(2), University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2015/Colleter-et-al-2015-
			Djibouti.pdf).
			[Indust. 4,4,4; Art. 2,3,3; Subs. 2,2,2; Recr. 1,1,2; Disc. 2,2,2]
55	Dominica	2	Ramdeen, R., Harper, S. and Zeller, D. 2014. Reconstruction of total marine fisheries catches for
			Dominica (1950-2010). pp. 33-42. <i>In:</i> K. Zylich, D. Zeller, M. Ang, and D. Pauly (eds.)
			Fisheries catch reconstructions: Islands, Part IV. Fisheries Centre Research Reports 22(2).
			University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2014/Ramdeen-et-al-Dominica.pdf).
			[Indust. 2,3,3; Art. 2,2,2; Subs. 1,2,2; Recr. 1,1,1; Disc. 2,2,2]
56	Dominican	2	Van der Meer, L., Ramdeen, R., Zylich, K. and Zeller, D. 2014. Reconstruction of total marine
	Republic		fisheries catches for the Dominican Republic (1950-2009). pp. 43-54. <i>In:</i> K. Zylich, D.
	•		Zeller, M. Ang, and D. Pauly (eds.) Fisheries catch reconstructions: Islands, Part IV.
			Fisheries Centre Research Reports 22(2), University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2014/VanderMeer-et-al-
			DominicanRepublic.pdf).
57	F1	1	[Indust. 2,2,3; Art. 2,4,4; Subs. 2,2,3; Recr. 2,2,2; Disc. 1,1,1]
57	Ecuador	1	Alava, J.J., Lindop, A. and Jacquet, J. 2015. Marine fisheries catch reconstructions for continental Ecuador: 1950-2010. Fisheries Centre Working Paper #2015-34, University of British
			Columbia, Vancouver, 25 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Alava-et-al-Ecuador.pdf).
			[Indust. 2,2,2; Art. 3,3,3; Subs. 1,1,1; Recr. 1,1,1; Disc. 1,1,2]
58	Ecuador	1,4	(1) Schiller, L., Alava, JJ., Grove, J., Reck, G. and Pauly, D. 2013. A reconstruction of fisheries
	(Galápagos)		catches for the Galápagos islands, 1950-2010. Fisheries Centre Working Paper #2013-11,
			University of British Columbia, Vancouver, 38 p.
			(http://www.seaaroundus.org/doc/publications/wp/2013/Schiller-et-al-Galapagos.pdf).
			(4) Schiller, L., Alava, JJ., Grove, J., Reck, G. and Pauly, D. 2014. A reconstruction of fisheries
			catches for the Galápagos islands, 1950-2010. Aquatic Conservation: Freshwater and Marine Ecosystems, doi: 10.1002/aqc.2458.
			[Indust. 2,3,3; Art. 2,4,4; Subs. 1,1,2; Recr,-,-; Disc,-,-]
59	Egypt	1	Mahmoud, H., Teh, L.C.L., Khalfallah, M. and Pauly, D. 2015. Reconstruction of marine fisheries
	(Mediterranean)	-	statistics in the Egyptian Mediterranean Sea, 1950-2010. Fisheries Centre Working Paper
	,		#2015-85, University of British Columbia, Vancouver, 16 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Mahmoud-et-al-Egypt-Med.pdf).
	T (D		[Indust. 2,2,2; Art. 2,2,2; Subs. 2,2,2; Recr,1,1; Disc. 2,3,3]
60	Egypt (Red Sea)	2	Tesfamichael, D. and Mehanna, S.F. 2012. Reconstructing Red Sea fisheries of Egypt: Heavy
			investment and fisheries. pp. 23-50. In: D. Tesfamichael and D. Pauly (eds.) Catch

#	Country	Publ. type	Source of reconstruction
			reconstruction for the Red Sea large marine ecosystem by countries (1950 – 2010). Fisheries Centre Research Reports 20(1), University of British Columbia, Vancouver. (http://www.seaaroundus.org/doc/publications/chapters/2012/Tesfamichael-and-Mehanna-
			EgyptRedSea.pdf).
(1	E1.0.11	4	[Indust. 2,2,2; Art. 2,2,2; Subs. 2,2,2; Recr,1,1; Disc. 2,3,3]
61	El Salvador	1	Donadi, R., Au, A., Zylich, K., Harper, S. and Zeller, D. 2014. Reconstruction of marine fisheries in El Salvador, 1950-2010. Fisheries Centre Working Paper #2015-35, University of British Columbia, Vancouver, 22 p. (http://www.seaaroundus.org/doc/publications/wp/2015/Donadi-et-al-El-Salvador.pdf).
			[Indust. 2,3,4; Art. 2,3,4; Subs. 2,3,1; Recr. 1,1,1; Disc. 2,3,4]
62	Equatorial Guinea	1,4,4	<ol> <li>Belhabib, D., Hellebrandt, D., Allison, E.H. and Pauly, D. 2015. Equatorial Guinea: a catch reconstruction (1950-2010). Fisheries Centre Working Paper #2015-71, University of British Columbia, Vancouver, 24 p.         (http://www.seaaroundus.org/doc/publications/wp/2015/Belhabib-et-al-Equatorial-Guinea.pdf).     </li> <li>Belhabib, D., Sumaila, U.R., Lam, V.W.Y., Zeller, D., Le Billon, P., Kane, E.A. and Pauly, D. 2015. Euro vs. Yuan: Comparing European and Chinese fishing access in West Africa. <i>PLoS One</i> 10(3): e0118351</li> </ol>
			(4) Belhabib, D., Sumaila, U.R. and Pauly, D. 2015. Feeding the poor: contribution of West African fisheries to employment and food security. <i>Ocean &amp; Coastal Management</i> 111: 72-81. [Indust. 2,3,3; Art. 2,2,4; Subs. 2,2,4; Recr 2,2,3; Disc. 2,2,2]
63	Eritrea	2	Tesfamichael, D. and Mohamud, S. 2012. Reconstructing Red Sea fisheries catches of Eritrea: a
			case study of the relationship between political stability and fisheries development. pp. 51-70. <i>In:</i> D. Tesfamichael and D. Pauly (eds.) <i>Catch reconstruction for the Red Sea large marine ecosystem by countries (1950-2010)</i> . Fisheries Centre Research Reports 20(1), University of British Columbia, Vancouver.  (http://www.seaaroundus.org/doc/publications/chapters/2012/Tesfamichael-and-
			Mohamud-Eritrea.pdf).
64	Estonia	2,4	[Indust. 2,3,3; Art. 2,3,3; Subs. 2,3,3; Recr. 1,1,1; Disc. 2,2,2] (2) Veitch, L., Booth, S., Harper, S., Rossing, P. and Zeller, D. 2010. Catch reconstruction for
65	Faeroe Islands	1	Estonia in the Baltic Sea from 1950-2007, pp. 63-84. <i>In:</i> R. Rossing, S. Booth and D. Zeller (eds.) <i>Total marine fisheries extractions by country in the Baltic Sea: 1950-present.</i> Fisheries Centre Research Reports 18(1), University of British Columbia, Vancouver. (http://www.seaaroundus.org/doc/publications/chapters/2010/Veitch-et-al-Estonia.pdf). (4) Zeller, D., Rossing, P., Harper, S., Persson, L., Booth, S. and Pauly, D. 2011. The Baltic Sea: estimates of total fisheries removals 1950-2007. <i>Fisheries Research</i> 108: 356-363. Since completing the initial reconstruction, 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 IUU 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 landings and unreported catches. To calculate recreational catch, population data was 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 dataset regarding previous years.  [Indust. 3,3,4; Art5,-5; Subs5,-5; Recr 3,3,2; Disc. 2,2,2]  Gibson, D., Zylich, K. and Zeller, D. 2015. Preliminary reconstruction of total marine fisheries
65	Faeroe Islands	1	Gibson, D., Zylich, K. and Zeller, D. 2015. Preliminary reconstruction of total marine fisheries catches for the Faeroe Islands in EEZ- equivalent waters (1950-2010). Fisheries Centre Working Paper #2015-36, University of British Columbia, Vancouver, 12 p. (http://www.seaaroundus.org/doc/publications/wp/2015/Gibson-et-al-Faroe-Islands.pdf). [Indust. 2,3,4; Art. 2,3,4; Subs. 1,1,1; Recr 1,1,1; Disc. 1,1,1]
66	Fiji	2,4	(2) Zylich, K., O'Meara, D., Jacquet, J., Harper, S. and Zeller, D. 2012. Reconstruction of marine fisheries catches for the Republic of Fiji (1950-2009). pp. 25-36. <i>In:</i> S. Harper, K. Zylich, L. Boonzaier, F. Le Manach, D. Pauly, and D. Zeller (eds.) <i>Fisheries catch reconstructions: Islands, Part III.</i> Fisheries Centre Research Reports 20(5), University of British Columbia, Vancouver.  (http://www.seaaroundus.org/doc/publications/chapters/2012/Zylich-et-al-2012-Fiji.pdf).  (4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-reported small-scale fisheries catch in Pacific island waters. <i>Coral Reefs</i> 34(1): 25-39.  [Indust. 3,3,4; Art. 3,3,3; Subs. 2,2,2; Recr. 4,4,4; Disc. 2,2,3]
67	Finland	2,4	(2) Rossing, P., Bale, S., Harper, S. and Zeller, D. 2010. Baltic Sea fisheries catches for Finland
07	- munu	۷,۳	(1950-2007). pp. 85-106. <i>In:</i> R. Rossing, S. Booth and D. Zeller (eds.), <i>Total marine</i>

#	Country	Publ. type	subsistence, Recr. = recreational, plus Disc. = discards.  Source of reconstruction
π	Country	1 uoi. type	fisheries extractions by country in the Baltic Sea: 1950-present. Fisheries Centre Research
			Reports 18(1), University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2010/Rossing-et-al-Finland.pdf).
			(4) Zeller, D., Rossing, P., Harper, S., Persson, L., Booth, S. and Pauly, D. 2011. The Baltic Sea:
			estimates of total fisheries removals 1950-2007. Fisheries Research 108: 356-363.
			Since completing the initial reconstruction, 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 IUU 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 landings and unreported catches. To calculate recreational
			catch, population data was 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 dataset regarding previous years.
			[Indust. 2,3,3; Art. 2,3,3; Subs. 1,1,1; Recr. 2,3,3; Disc. 2,3,3]
68	France (Atlantic	1	Bultel, E., Gascuel, D., Le Manach, F., Pauly, D. and Zylich, K. 2015. Catch reconstruction for the
	Coast)		French Atlantic coasts 1950-2010. Fisheries Centre Working Paper #2015-37, University
	,		of British Columbia, Vancouver, 20 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Bultel-et-al-France-Atlantic.pdf).
			[Indust. 3,3,3; Art. 3,3,3; Subs. 1,1,1; Recr. 2,2,2; Disc. 2,2,2]
69	France (Clipperton	2	Pauly, D. 2009. The fisheries resources of the Clipperton Island EEZ (France), pp. 35-37. <i>In</i> : D.
	Island)		Zeller and S. Harper (eds.) Fisheries catch reconstructions: Islands, Part I. Fisheries
	,		Centre Research Reports 17(5), University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2009/Pauly-Clipperton-
			France.pdf).
			No updated needed as domestic catches are nil.
			[Indust,-,-; Art,-,-; Subs,-,-; Recr,-,-; Disc,-,-]
70	France (Corsica)	1,2	(1) Le Manach, F. and Pauly, D. 2015. Update of the fisheries catch reconstruction of Corsica
			(France), 1950-2010. Fisheries Centre Working Paper #2015-33, University of British
			Columbia, Vancouver, 5 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/LeMenach-and-Pauly-
			Corsica.pdf).
			(2) Le Manach, F., Dura, D., Pere, A., Riutor, J.J., Lejeune, P., Santoni, M.C., Culioli, J.M. and
			Pauly, D. 2011. Preliminary estimates of total fisheries catch in Corsica, France (1950-
			2008) pp. 3-14 In: S. Harper and D. Zeller (eds.) Fisheries catch reconstruction: Islands,
			Part II. Fisheries Centre Research Reports 19(4), University of British Columbia,
			Vancouver. (http://www.seaaroundus.org/doc/publications/chapters/2011/Le-Menach-et-
			al-Corsica-France.pdf).
			[Indust. 2.5,3.5,3.5; Art. 2,3,3; Subs. 1,1,1; Recr. 2,2,2; Disc,-,-]
71	France (Crozet	2	Pruvost, P., Duhamel, G., Gasco, N. and Palomares, M.L.D. 2015. A short history of the fisheries of
	Islands)		Crozet Islands. In: M.L.D. Palomares and D. Pauly (eds.) Marine Fisheries Catches of
			Sub-Antarctic Islands, 1950 to 2010. p. 30-35. Fisheries Centre Research Reports 23(1),
			University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2015/Pruvost-et-al-2015-Crozet-
			Islands.pdf).
			[Indust. 3,3,4; Art,-,-; Subs,-,-; Recr,-,-; Disc. 3,3,4]
72	France	2	Frotté, L., Harper, S., Veitch, L., Booth, S. and Zeller, D. 2009. Reconstruction of marine fisheries
	(Guadeloupe)		catches for Guadeloupe from 1950-2007. pp. 13-19. <i>In:</i> D. Zeller and S. Harper (eds.)
			Fisheries catch reconstructions: Islands, Part I. Fisheries Centre Research Reports 17(5),
			University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2009/Frotte-et-al-Guadeloupe.pdf).
			To update this reconstruction 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 Barthélemy and Saint Martin. The secession of the islands of Saint  Parthélemy and Saint Martin from Guadalayna was finalized in 2007. The 2011 FAO detect was
			Barthélemy and Saint Martin from Guadeloupe was finalized in 2007. The 2011 FAO dataset was
			the first to account for this, with reported data for these islands separated from Guadeloupe in the years 2007-2011. The proportion of reported data allocated to each island from Guadeloupe's FAO
			years 2007-2011. The proportion of reported data anocated to each island from Guadeloupe's FAO

#	Country	Publ. type	Source of reconstruction
	•		data in 2007 was carried back to 1950 in order to extract an assumed reported baseline for the
			islands. These catches were removed from the Guadeloupe reconstruction.
			[Indust,-,-; Art. 2,3,2; Subs. 1,1,1; Recr 1,1,2; Disc,-,-]
73	France (French	1	Harper, S., Frotté, L., Booth, S., Veitch, L. and Zeller, D. 2015. Reconstruction of marine fisheries
	Guiana)		catches for French Guiana from 1950-2010. Fisheries Centre Working Paper #2015-07,
			University of British Columbia, Vancouver, 11 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Harper-et-al-Guiana.pdf).
			[Indust. 2,3,3; Art. 2,3,2; Subs. 1,1,1; Recr -,-,-; Disc. 2,2,3]
74	France (Kerguelen	2	Palomares, M.L.D. and Pauly, D. 2011. A brief history of fishing in the Kerguelen Islands, France,
	Islands)		pp. 15-20. In: S. Harper and D. Zeller (eds.) Fisheries catch reconstructions: Islands, Part
			II. Fisheries Centre Research Reports 19(4), University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2011/Palomares-and-Pauly-
			KerguelenIs.pdf).
			[Indust. 3,3,4; Art,-,-; Subs,-,-; Recr,-,-; Disc. 3,3,4]
75	France	2	Frotté, L., Harper, S., Veitch, L., Booth, S. and Zeller, D. 2009. Reconstruction of marine fisheries
	(Martinique)		catches for Martinique, 1950-2007. pp. 21-26. In: D. Zeller and S. Harper (eds.) Fisheries
			catch reconstructions: Islands, Part I. Fisheries Centre Research Reports 17(5), University
			of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2009/Frotte-et-al-Martinique.pdf).
			To update this reconstruction the total reconstructed catch was carried forward 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 amounts for those years. The unreported component for
			2008-2010 was then taken to be the difference between those two numbers each year. 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. Some other changes that were made to
			the data included: (1) correction of the subsistence portion (it was missing taxon groups from older
			workings) 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 small differences within the 2010 dataset regarding previous years.
			[Indust,-,-; Art. 2,3,2; Subs. 1,2,1; Recr. 1,1,2; Disc,-,-]
76	France (Mayotte)	2	Doherty, B., Herfaut, J., Le Manach, F., Harper, S. and Zeller, D. 2015. Reconstructing Domestic
, 0	Transc (may out)	_	Marine Fisheries in Mayotte from 1950–2010. pp. 53-65. <i>In:</i> F. Le Manach and D. Pauly
			(eds.) Fisheries catch reconstructions in the Western Indian Ocean, 1950-2010. Fisheries
			Centre Research Report 23(2), University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2015/Doherty-et-al-2015-
			Mayotte.pdf).
			[Indust,-,-; Art. 1,1,3; Subs. 1,1,3; Recr,1,1; Disc,-,1]
77	France	1,4	(1) Bultel, E., Le Manach, F., Ulman, A. and Zeller, D. 2015. Catch reconstruction for the French
	(Mediterranean)		Mediterranean Sea, 1950-2010. Fisheries Centre Working Paper #2015-38, University of
			British Columbia, Vancouver, 20 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Bultel-et-al-France-Med.pdf).
			(4) Pauly, D., Ulman, A., Piroddi, C., Bultel, E. and Coll, M. 2014. 'Reported' versus 'likely'
			fisheries catches of four Mediterranean countries. pp. 11-17 In: J. Lleonart and F. Maynou
			(eds.) The Ecosystem approach to fisheries in the Mediterranean and Black Seas. Scientia
			Marina 78S1.
			[Indust. 3,3,3; Art. 3,3,3; Subs. 1,1,1; Recr. 2,2,2; Disc. 2,2,2]
78	France (New	2,4	(2) Harper, S., Frotté, L., Bale, S., Booth, S. and Zeller, D. 2009. Reconstruction of total marine
	Caledonia)		fisheries catches for New Caledonia (1950-2007). pp. 67-75. In: S. Harper and D. Zeller
			(eds.) Fisheries catch reconstructions: Islands, Part I. Fisheries Centre Research Reports
			17(5), University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2009/Harper-et-al-2009-New-
			Caledonia.pdf).
			(4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-reported small-scale
			fisheries catch in Pacific island waters. <i>Coral Reefs</i> 34(1): 25-39.
70	Ε(Γ 1	2.4	[Indust. 2,3,3; Art. 2,3,3; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,3,3]
79	France (French	2,4	(2) Bale, S., Frotté, L., Harper, S. and Zeller, D. 2009. Reconstruction of total marine fisheries
	Polynesia)		catches for French Polynesia (1950-2007). pp. 53-65. <i>In:</i> S. Harper and D. Zeller (eds.)
			Fisheries catch reconstructions: Islands, Part I. Fisheries Centre Research Reports 17(5),
			University of British Columbia, Vancouver.  (http://www.seaaroundus.org/doc/publications/chapters/2009/Bale-et-al-2009-French-
			· · · · · · · · · · · · · · · · · · ·
			<u>Polynesia.pdf</u> ).

#	Country	Publ. type	Source of reconstruction
	Country	1 don type	(4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-reported small-scale
			fisheries catch in Pacific island waters. Coral Reefs 34(1): 25-39.
			[Indust. 3,3,3; Art. 2,2,2; Subs. 1,1,1; Recr. 2,2,2; Disc. 2,2,2]
80	France (Réunion)	2	Le Manach, F., Bach, P., Barret, L., Guyomard, D., Fleury, P.G., Sabarros, P.S. and Pauly, D. 2015 Reconstruction of the Domestic and Distant-Water Fisheries Catch of La Réunion (France), 1950–2010. pp. 83-98. <i>In:</i> F. Le Manach and D. Pauly (eds.) <i>Fisheries catch</i> reconstructions in the Western Indian Ocean, 1950-2010. Fisheries Centre Research Report 23(2), University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2015/LeManach-et-al-2015-La-Reunion.pdf).  [Indust. 2,3,3; Art. 3,3,3; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,2,2]
81	France (Îles	2	Le Manach, F. and Pauly, D. 2015. First Estimate of Unreported Catch in the French Îles Éparses,
	Éparses)	_	1950-2010. pp. 27-35. <i>In:</i> F. Le Manach and D. Pauly (eds.) <i>Fisheries catch reconstructions in the Western Indian Ocean, 1950-2010.</i> Fisheries Centre Research Report 23(2), University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2015/LeManach-and-Pauly-2015- Iles-Eparses.pdf).
92	France (Saint	1	[Indust. 1,2,3; Art. 1,1,2; Subs. 1,1,2; Recr,-,-; Disc. 1,1,1] Bultel, E., Lindop, A., Ramdeen, R. and Zylich, K. 2015. Reconstruction of marine fisheries
82	Barthélemy)	I	Catches for St. Barthélémy and St. Martin (French Caribbean, 1950-2010). Fisheries Centr Working Paper #2015-39, University of British Columbia, Vancouver, 9 p. (http://www.seaaroundus.org/doc/publications/wp/2015/Bultel-et-al-St-Barts-St-
			Martin.pdf).
			[Indust. 2,3,3; Art. 2,3,3; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,2,2]
83	France (Saint Martin)	1	Bultel, E., Lindop, A., Ramdeen, R. and Zylich, K. 2015. Reconstruction of marine fisheries catches for St. Barthélémy and St. Martin (French Caribbean, 1950-2010). Fisheries Centr
			Working Paper #2015-39, University of British Columbia, Vancouver, 9 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Bultel-et-al-St-Barts-St-
			Martin pdf).
84	France (St Paul	2	[Indust. 2,3,3; Art. 2,3,3; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,2,2] Pruvost, P., Duhamel, G., Le Manach, F. and Palomares, M.L.D. 2015. A short history of the
04	and Amsterdam)	2	fisheries of Saint-Paul and Amsterdam Islands. pp. 36-44. <i>In:</i> M.L.D. Palomares and D. Pauly (eds.) <i>Marine Fisheries Catches of Sub-Antarctic Islands, 1950 to 2010.</i> Fisheries Centre Research Reports 23(1), University of British Columbia, Vancouver. (http://www.seaaroundus.org/doc/publications/chapters/2015/Pruvost-et-al-2015-StPaul-Amsterdam.pdf).
			[Indust. 3,3,4; Art,-,-; Subs,-,-; Recr,-,-; Disc. 3,3,4]
85	France (Saint Pierre et Miquelon)	1	Bultel, E. and Zylich, K. 2015. Fisheries catch reconstruction of the Western Atlantic French archipelago of Saint Pierre et Miquelon, 1950-2010. Fisheries Centre Working Paper #2015-42, University of British Columbia, Vancouver, 15 p.
			http://www.seaaroundus.org/doc/publications/wp/2015/Bultel-and-Zylich-St-Pierre-et-Miquelon.pdf).
			[Indust. 3,3,4; Art. 3,3,4; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,2,2]
86	France (Wallis and Futuna)	2,4	(2) Harper, S., Frotté, L., Booth, S. and Zeller, D. 2009. Reconstruction of marine fisheries catches for Wallis and Futuna Islands (1950-2007). pp. 99-104. <i>In</i> : S. Harper and D. Zeller (eds.) <i>Fisheries catch reconstructions: Islands, Part I.</i> Fisheries Centre Research Reports 17(5),
			University of British Columbia, Vancouver. (http://www.seaaroundus.org/doc/publications/chapters/2009/Harper-et-al-2009-Wallis-
			and-Futuna-Islands.pdf).
			(4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-reported small-scale fisheries catch in Pacific island waters. <i>Coral Reefs</i> 34(1): 25-39.
07	C 1	2.4.4	[Indust. 2,3,3; Art. 3,3,3; Subs. 2,3,3; Recr. 1,1,1; Disc. 2,2,2]
87	Gabon	2,4,4	(2) Belhabib, D. 2015. Gabon fisheries between 1950-2010: a catch reconstruction. pp. 85-94. <i>In</i> : D. Belhabib and D. Pauly (eds). <i>Fisheries catch reconstructions: West Africa, Part II</i> . Fisheries Centre Research Reports 23(3), University of British Columbia
			(http://www.seaaroundus.org/doc/publications/chapters/2015/Belhabib-Gabon.pdf) (4) Belhabib, D., Sumaila, U.R., Lam, V.W.Y., Zeller, D., Le Billon, P., Kane, E.A. and
			Pauly, D. 2015. Euro vs. Yuan: Comparing European and Chinese fishing access in West
			Africa. PLoS One 10(3): e0118351
			(4) Belhabib, D., Sumaila, U.R. and Pauly, D. 2015. Feeding the poor: contribution of West Africa fisheries to employment and food security. <i>Ocean &amp; Coastal Management</i> 111: 72-81. [Indust. 3,3,4; Art. 2,4,4; Subs. 3,2,3; Recr -,,-; Disc. 2,2,3]
88	Gambia	1,4,4,4	(1) Belhabib, D., Mendy, A. and Pauly, D. 2013. Big fishing for small fishes: six decades of
		-, -, ', '	fisheries in The Gambia, "the smiling coast of Africa's". Fisheries Centre Working Paper

#	Country	Publ. type	subsistence, Recr. = recreational, plus Disc. = discards.  Source of reconstruction
	, , , , , , , , , , , , , , , , , , ,	71	#2013-07, University of British Columbia, Vancouver, 20 p.
			<ul> <li>(http://www.seaaroundus.org/doc/publications/wp/2014/Belhabib-et-al-Gambia.pdf).</li> <li>(4) Belhabib, D., Sumaila, U.R., Lam, V.W.Y., Zeller, D., Le Billon, P., Kane, E.A. and Pauly, D. 2015. Euro vs. Yuan: Comparing European and Chinese fishing access in West Africa. <i>PLoS One</i> 10(3): e0118351</li> </ul>
			<ul> <li>(4) Belhabib, D., Sumaila, U.R. and Pauly, D. 2015. Feeding the poor: contribution of West African fisheries to employment and food security. Ocean &amp; Coastal Management 111: 72-81.</li> <li>(4) Belhabib, D., Mendy, A., Subah, Y., Broh, N.T., Jueseah, A.S., Nipey, N., Boeh, W.W., Willemse, N., Zeller, D. and Pauly, D. (in press) Fisheries catch under-reporting in The Gambia, Liberia and Namibia, and the three Large Marine Ecosystems which they represent. <i>Environmental Development</i>. DOI: 10.1016/j.envdev.2015.08.004</li> <li>[Indust. 3,3,3; Art. 2,3,3; Subs. 2,3,3; Recr 2,2,3; Disc. 2,3,3]</li> </ul>
89	Gaza Strip	4	Abudaya, M., Harper, S., Ulman, A. and Zeller, D. 2013. Correcting mis- and under-reported marine fisheries catches for the Gaza Strip: 1950-2010. <i>Acta Adriatica</i> 54(2): 241-252.
			[Indust. 3,4,4; Art. 3,3,4; Subs. 3,3,3; Recr 2,3,3; Disc. 2,3,3]
90	Georgia	1	UIman, A. and Divovich, E. 2015. The marine fishery catch of Georgia (including Abkhazia), 1950-2010. Fisheries Centre Working Paper #2015-88, University of British Columbia, Vancouver, 25 p. (http://www.seaaroundus.org/doc/publications/wp/2015/Ulman-and-Divovich-Georgia.pdf).
	G (D.1):		[Indust. 2.5,3,1.5; Art. 3,4,2; Subs. 1,1,2; Recr. 1,1,2; Disc,-,-]
91	Germany (Baltic Sea)	2,4	(2) Rossing, P., Hammer, C., Bale, S., Harper, S., Booth, S. and Zeller, D. 2010. Germany's marine fisheries catches in the Baltic Sea (1950-2007), pp. 107-126. <i>In:</i> R. Rossing, S. Booth and D. Zeller (eds.) <i>Total marine fisheries extractions by country in the Baltic Sea: 1950-present.</i> Fisheries Centre Research Reports 18 (1), University of British Columbia, Vancouver. (http://www.seaaroundus.org/doc/publications/chapters/2010/Rossing-et-al-
92	Germany (North	1	Germany-Baltic.pdf).  (4) Zeller, D., Rossing, P., Harper, S., Persson, L., Booth, S. and Pauly, D. 2011. The Baltic Sea: estimates of total fisheries removals 1950-2007. <i>Fisheries Research</i> 108: 356-363.  Since completing the initial reconstruction, 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 IUU 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 landings and unreported catches. To calculate recreational catch, population data was 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 dataset regarding previous years.  [Indust. 2,2,2; Art. 2,2,2; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,2,2]  Gibson, D., Froese, R., Ueberschaer, B., Zylich, K. and Zeller, D. 2014. Reconstruction of total
92	Sea)	1	Gibson, D., Froese, R., Ueberschaer, B., Zylich, K. and Zeller, D. 2014. Reconstruction of total marine fisheries catches for Germany in the North Sea (1950-2010). Fisheries Centre Working Paper #2015-09, University of British Columbia, Vancouver, 11 p. (http://www.seaaroundus.org/doc/publications/wp/2015/Gibson-et-al-GermanyNorthSea.pdf).  [Indust. 3,3,4; Art. 3,3,4; Subs. 1,1,1; Recr 1,1,2; Disc. 1,1,3]
93	Ghana	1,4,4,4	<ol> <li>Nunoo, F.K.E., Asiedu, B., Amador, K., Belhabib, D. and Pauly, D. 2015. Reconstruction of marine fisheries catches for Ghana, 1950-2010. Fisheries Centre Working Paper #2015-10, University of British Columbia, Vancouver, 16 p. (http://www.seaaroundus.org/doc/publications/wp/2014/Nunoo-et-al-Ghana.pdf).</li> <li>Nunoo, F.K.E., Asiedu, B., Amador, K., Belhabib, D., Lam, V.W.Y., Sumaila, U.R. and Pauly, D. 2014. Marine fisheries catches in Ghana: historic reconstruction for 1950 to 2010 and current economic impacts. Reviews in Fisheries Science &amp; Aquaculture 22(4): 274-283.</li> <li>Belhabib, D., Sumaila, U.R., Lam, V.W.Y., Zeller, D., Le Billon, P., Kane, E.A. and Pauly, D. 2015. Euro vs. Yuan: Comparing European and Chinese fishing access in West Africa. PLoS One 10(3): e0118351</li> <li>Belhabib, D., Sumaila, U.R. and Pauly, D. 2015. Feeding the poor: contribution of West African fisheries to employment and food security. Ocean &amp; Coastal Management 111: 72-81.</li> <li>Indust. 4,4,4; Art. 3,3,3; Subs. 2,2,3; Recr. 2,2,3; Disc. 2,3,3</li> </ol>
94	Greece	1	Moutopoulos, D.K., Tsikliras, A.C. and Stergiou, K.I. 2014. Reconstruction of Greek fishery catches by fishing gear and area (1950-2010). Fisheries Centre Working Paper #2015-11, University of British Columbia, Vancouver, 14 p.  (http://www.seaaroundus.org/doc/publications/wp/2015/Moutopoulos-et-al-Greece.pdf).  [Indust. 3,3,3; Art. 2,2,3; Subs. 1,1,1; Recr. 1,1,2; Disc. 1,1,3]

			subsistence, Recr. = recreational, plus Disc. = discards.
#	Country	Publ. type	Source of reconstruction
95	Greece (Crete)		Moutopoulos, D.K., Tsikliras, A.C. and Stergiou, K.I. 2014. Reconstruction of Greek fishery
			catches by fishing gear and area (1950-2010). Fisheries Centre Working Paper #2015-11,
			University of British Columbia, Vancouver, 14 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Moutopoulos-et-al-Greece.pdf).
	~		[Indust. 3,3,3; Art. 2,2,3; Subs. 1,1,1; Recr. 1,1,2; Disc. 1,1,3]
96	Greenland	2	Booth, S. and Knip, D. 2014. The catch of living marine resources around Greenland from 1950-
			2010. pp. 55-72. In: K. Zylich, D. Zeller, M. Ang and D. Pauly (eds.) Fisheries catch
			reconstructions: Islands, Part IV. Fisheries Centre Research Reports 22(2), University of
			British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2014/Booth-et-al-Greenland.pdf).
	0 1		[Indust. 2,3,3; Art. 2,3,3; Subs. 2,2,2; Recr. 1,1,1; Disc. 3,3,3]
97	Grenada	1	Mohammed, E. and Lindop, A. 2015. Grenada: Reconstructed Fisheries Catches, 1950-2010.
			Fisheries Centre Working Paper #2015-40, University of British Columbia, Vancouver, 27
			p. (http://www.seaaroundus.org/doc/publications/wp/2015/Mohammed-and-Lindop-
			Grenada.pdf).
- 00	C	1	[Indust. 3,3,3; Art. 2,3,3; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,2,2]
98	Guatemala	1	Lindop, A., Ixquiac-Cabrera, M., Zylich, K. and Zeller, D. 2015. A reconstruction of marine fish
	(Caribbean)		catches in the Republic of Guatemala. Fisheries Centre Working Paper #2015-41,
			University of British Columbia, Vancouver, 17 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Lindop-et-al-Guatemala.pdf).
	C	1	[Indust. 2,2,2; Art. 2,2,2; Subs. 1,1,1; Recr. 1,1,1; Disc. 1,1,1]
99	Guatemala	1	Lindop, A., Ixquiac-Cabrera, M., Zylich, K. and Zeller, D. 2015. A reconstruction of marine fish
	(Pacific)		catches in the Republic of Guatemala. Fisheries Centre Working Paper #2015-41,
			University of British Columbia, Vancouver, 17 p. (http://www.seaaroundus.org/doc/publications/wp/2015/Lindop-et-al-Guatemala.pdf).
			[Indust. 2,2,2; Art. 2,2,2; Subs. 1,1,1; Recr. 1,1,1; Disc. 1,1,1]
100	Guinea	2,3,4,4	(2) Belhabib, D., Doumbouya, A., Copeland, D., Gorez, B., Harper, S., Zeller, D. and Pauly, D.
100	Guinea	2,3,4,4	2012. Guinean fisheries, past, present andfuture? pp. 91-104 <i>In</i> : D. Belhabib, D. Zeller,
			S. Harper and D. Pauly (eds.) <i>Marine fisheries catches in West Africa, Part I.</i> Fisheries
			Centre Research Reports 20(3), University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/Belhabib-et-al-Guinea.pdf).
			(3) Belhabib, D., Doumbouya, A., Diallo, I., Traore, S., Camara, Y., Copeland, D., Gorez, B.,
			Harper, S., Zeller, D., Sumaila, U.R. and Pauly, D. 2014. Guinean fisheries resources: an
			abused source of wealth. <i>In:</i> P. Onyango, S. Chimatiro and U.R. Sumaila (eds.)
			UNKNOWN WEALTH: The Contribution of Capture and Aquaculture fisheries in
			Accelerating Economic Growth and Food Security in Africa. Dordrecht, Springer
			Netherlands [in press].
			(4) Belhabib, D., Sumaila, U.R., Lam, V.W.Y., Zeller, D., Le Billon, P., Kane, E.A. and Pauly, D.
			2015. Euro vs. Yuan: Comparing European and Chinese fishing access in West Africa.
			PLoS One 10(3): e0118351
			(4) Belhabib, D., Sumaila, U.R. and Pauly, D. 2015. Feeding the poor: contribution of West African
			fisheries to employment and food security. Ocean & Coastal Management 111: 72-81.
			[Indust. 2,4,2; Art. 2,3,4; Subs. 2,2,2; Recr -,-,-; Disc. 4,4,4]
101	Guinea Bissau	2,4,4	(2) Belhabib, D. and Pauly, D. 2015. Fisheries in troubled waters: a catch reconstruction for
101	Guinea Dissau	2,1,1	Guinea-Bissau, 1950-2010. pp. 1-16. <i>In</i> : D. Belhabib and D. Pauly (eds). <i>Fisheries catch</i>
			reconstructions: West Africa, Part II. Fisheries Centre Research Reports 23(3), University
			of British
			Columbia(http://www.seaaroundus.org/doc/publications/chapters/2015/Belhabib-and-
			Pauly-Guinea-Bissau.pdf) (4) Belhabib, D., Sumaila, U.R., Lam, V.W.Y., Zeller, D., Le
			Billon, P., Kane, E.A. and Pauly, D. 2015. Euro vs. Yuan: Comparing European and
			Chinese fishing access in West Africa. PLoS One 10(3): e0118351
			(4) Belhabib, D., Sumaila, U.R. and Pauly, D. 2015. Feeding the poor: contribution of West African
			fisheries to employment and food security. Ocean & Coastal Management 111: 72-81.
_			[Indust. 4,4,4; Art. 3,3,3; Subs. 2,3,3; Recr 2,2,4; Disc. 2,3,3]
102	Guyana	1	MacDonald, J., Harper, S., Booth, S. and Zeller, D. 2015. Guyana fisheries catch: 1950-2010.
			Fisheries Centre Working Paper #2015-21, University of British Columbia, Vancouver, 18
			p. (http://www.seaaroundus.org/doc/publications/wp/2015/MacDonald-et-al-Guyana.pdf).
			[Indust. 3,3,3; Art. 2,2,2; Subs. 1,1,1; Recr -,-,-; Disc. 1,2,2]
103	Haiti and Navassa	2	Ramdeen, R., Belhabib, D., Harper, S. and Zeller, D. 2012. Reconstruction of total marine fisheries
	Island		catches for Haiti and Navassa Island (1950-2010). pp. 37-45. In: S. Harper, K. Zylich, L.
			Boonzaier, F. Le Manach, D. Pauly and D. Zeller (eds.) Fisheries catch reconstructions:
			Islands, Part III. Fisheries Centre Research Reports 20(5), University of British Columbia,
			Vancouver. (http://www.seaaroundus.org/doc/publications/chapters/2012/Ramdeen-et-al-
			<u>Haiti-NavassaIsland.pdf</u> ).

_			subsistence, Recr. = recreational, plus Disc. = discards.
#	Country	Publ. type	Source of reconstruction [Indust. 2,2,2; Art. 2,2,2; Subs. 1,2,2; Recr. 1,1,1; Disc. 2,2,2]
104	Honduras (Caribbean)	1	Funes, M., Zylich, K., Divovich, E., Zeller, D., Lindop, A., Pauly, D. and Box, S. 2015. Honduras, a fish exporting country: Preliminary reconstructed marine catches in the Caribbean Sea and the Gulf of Fonseca, 1950 – 2010. Fisheries Centre Working Paper #2015-90, University of British Columbia, Vancouver, 16 p.  (http://www.seaaroundus.org/doc/publications/wp/2015/Funes-et-al-Honduras.pdf).  [Indust. 2,2,2; Art. 2,2,2; Subs. 1,1,1; Recr. 1,1,1; Disc. 2,2,2]
105	Honduras (Pacific)	1	Funes, M., Zylich, K., Divovich, E., Zeller, D., Lindop, A., Pauly, D. and Box, S. 2015. Honduras, a fish exporting country: Preliminary reconstructed marine catches in the Caribbean Sea and the Gulf of Fonseca, 1950 – 2010. Fisheries Centre Working Paper #2015-90, University of British Columbia, Vancouver, 16 p.  (http://www.seaaroundus.org/doc/publications/wp/2015/Funes-et-al-Honduras.pdf).  [Indust. 2,2,2; Art. 2,2,2; Subs. 1,1,1; Recr. 1,1,1; Disc. 2,2,2]
106	Iceland	2	Valtýsson, H. 2014. Reconstructing Icelandic catches from 1950-2010. pp. 73-88. <i>In:</i> K. Zylich, D. Zeller, M. Ang and D. Pauly (eds.) <i>Fisheries catch reconstructions: Islands, Part IV.</i> Fisheries Centre Research Reports 22(2), University of British Columbia, Vancouver. (http://www.seaaroundus.org/doc/publications/chapters/2014/Valtýsson-Iceland.pdf). [Indust. 4,4,4; Art. 2,3,4; Subs. 1,2,3; Recr 1,2,3; Disc. 1,2,3]
107	India	1	Hornby, C., Bhathal, B., Pauly, D. and Zeller, D. 2015. Reconstruction of India's marine fish catch from 1950-2010. Fisheries Centre Working Paper #2015-77, University of British Columbia, Vancouver, 42 p. ( <a href="http://www.seaaroundus.org/doc/publications/wp/2015/Hornby-et-al-India.pdf">http://www.seaaroundus.org/doc/publications/wp/2015/Hornby-et-al-India.pdf</a> ). [Indust. 2,2,2; Art. 2,3,3; Subs. 2,2,2; Recr. 1,1,1; Disc. 1,1,1]
108	India (Andaman and Nicobar Islands)	1	Hornby, C., Arun Kumar, M., Bhathal, B., Pauly, D. and Zeller, D. 2015. Reconstruction of the Andaman and Nicobar Islands marine fish catch from 1950-2010. Fisheries Centre Working Paper #2015-75, University of British Columbia, Vancouver, 27 p. (http://www.seaaroundus.org/doc/publications/wp/2015/Hornby-et-al-AN-Islands.pdf). [Indust. 1,2,1; Art. 1,2,1; Subs. 1,2,1; Recr. 1,1,1; Disc. 1,1,1]
109	Indonesia (Central)	1	Budimartono, V., Badrudin, M., Divovich, E. and Pauly, D. 2015. A reconstruction of marine fisheries catches of Indonesia, with emphasis on Central and Eastern Indonesia, 1950 – 2010. pp. 2-26 In: D. Pauly and V. Budimartono (eds.) Marine Fisheries Catches of Western, Central and Eastern Indonesia, 1950-2010. Fisheries Centre Working Paper #2015-61, University of British Columbia, Vancouver.  (http://www.seaaroundus.org/doc/publications/wp/2015/Pauly-and-Budimartono-Indonesia.pdf).
110	Indonesia (Eastern)	1	[Indust. 1,2,1; Art. 1,2,1; Subs. 1,2,1; Recr. 1,1,1; Disc. 1,1,1]  Budimartono, V., Badrudin, M., Divovich, E. and Pauly, D. 2015. A reconstruction of marine fisheries catches of Indonesia, with emphasis on Central and Eastern Indonesia, 1950 – 2010. pp. 2-26 In: D. Pauly and V. Budimartono (eds.) Marine Fisheries Catches of Western, Central and Eastern Indonesia, 1950-2010. Fisheries Centre Working Paper #2015-61, University of British Columbia, Vancouver.  (http://www.seaaroundus.org/doc/publications/wp/2015/Pauly-and-Budimartono-Indonesia.pdf).  [Indust. 1,2,1; Art. 1,2,1; Subs. 1,2,1; Recr. 1,1,1; Disc. 1,1,1]
111	Indonesia (Indian Ocean)	1	Budimartono, V., Badrudin, M. and Pauly, D. 2015. Indonesian marine fisheries catches in the Western Indonesia (FAO Area 57) and in the Bay of Bengal large marine ecosystem project (BOBLME) area: a tentative reconstruction, 1950-2010. pp. 27-51. <i>In:</i> D. Pauly and V. Budimartono (eds.) <i>Marine Fisheries Catches of Western, Central and Eastern Indonesia, 1950-2010.</i> Fisheries Centre Working Paper #2015-61, University of British Columbia, Vancouver. (http://www.seaaroundus.org/doc/publications/wp/2015/Pauly-and-Budimartono-Indonesia.pdf).  [Indust. 2,2,2; Art. 2,2,2; Subs. 1,1,1; Recr. 1,1,1; Disc. 1,1,1]
112	Iran (Arabian Sea)	2,4	<ul> <li>(2) Roshan Moniri, Nar., Roshan Moniri, Naz., Zeller, D., Al-Abdulrazzak, D. and Belhabib, D. 2013. Fisheries catch reconstruction for Iran, 1950-2010. pp. 7-16. <i>In</i>: D. Al-Abdulrazzak and D. Pauly (eds.) <i>From dhows to trawlers: a recent history of fisheries in the Gulf countries, 1950 to 2010</i>. Fisheries Centre Research Reports 21(2), University of British Columbia, Vancouver.  (http://www.seaaroundus.org/doc/publications/chapters/2013/Moniri-et-al-Iran.pdf).</li> <li>(4) Al-Abdulrazzak, D., Zeller, D., Belhabib, D., Tesfamichael, D. and Pauly, D. 2015. Total marine fisheries catches in the Persian/Arabian Gulf from 1950-2010. <i>Regional Studies in Marine Science</i> 2: 28-34.</li> <li>[Indust. 2,3,2; Art. 2,3,2; Subs. 2,2,2; Recr. 1,1,1; Disc. 1,1,1]</li> </ul>
113	Iran (Persian Gulf)	2,4	(2) Roshan Moniri, Nar., Roshan Moniri, Naz., Zeller, D., Al-Abdulrazzak, D. and Belhabib, D. 2013. Fisheries catch reconstruction for Iran, 1950-2010. pp. 7-16. <i>In</i> : D. Al-Abdulrazzak

#	Country	Publ. type	subsistence, Recr. = recreational, plus Disc. = discards.  Source of reconstruction
	<del> </del> J		and D. Pauly (eds.) From dhows to trawlers: a recent history of fisheries in the Gulf
			countries, 1950 to 2010. Fisheries Centre Research Reports 21(2), University of British
			Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2013/Moniri-et-al-Iran.pdf).
			(4) Al-Abdulrazzak, D., Zeller, D., Belhabib, D., Tesfamichael, D. and Pauly, D. 2015. Total
			marine fisheries catches in the Persian/Arabian Gulf from 1950-2010. Regional Studies in
			· · · · · · · · · · · · · · · · · · ·
			Marine Science 2: 28-34.
114	T	2.4	[Indust. 2,3,2; Art. 2,3,2; Subs. 2,2,2; Recr. 1,1,1; Disc. 1,1,1]
114	Iraq	2,4	(2) Al-Abdulrazzak, D. and Pauly, D. 2013. Reconstructing Iraq's fisheries: 1950-2010. pp. 17-22.
			In: D. Al-Abdulrazzak and D. Pauly (eds.) From dhows to trawlers: a recent history of
			fisheries in the Gulf countries, 1950 to 2010. Fisheries Centre Research Reports 21(2),
			University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2013/AlAbdulrazzak-et-al-
			<u>Iraq.pdf</u> ).
			(4) Al-Abdulrazzak, D., Zeller, D., Belhabib, D., Tesfamichael, D. and Pauly, D. 2015. Total
			marine fisheries catches in the Persian/Arabian Gulf from 1950-2010. Regional Studies in
			Marine Science 2: 28-34.
			[Indust,-,-; Art. 2,2,2; Subs. 1,1,1; Recr -,-,-; Disc. 1,1,1]
115	Ireland	1	Miller, D. and Zeller, D. 2013. Reconstructing Ireland's marine fisheries catches: 1950-2010.
			Fisheries Centre Working Paper #2013-10, University of British Columbia, Vancouver, 48
			p. (http://www.seaaroundus.org/doc/publications/wp/2013/Miller-et-al-Ireland.pdf).
			[Indust. 3,3,4; Art. 2,2,3; Subs. 3,3,3; Recr 1,1,1; Disc. 2,3,4]
116	Israel	4	Edelist, D., Scheinin, A., Sonin, O., Shapiro, J., Salameh, P., Rilov, G., Benayhu, Y., Schulz, D.
	(Mediterranean)		and Zeller, D. 2013. Israel: Reconstructed estimates of total fisheries removals in the
	( ,		Mediterranean, 1950–2010. Acta Adriatica 54(2): 252-264.
			[Indust. 3,3,3; Art. 2,2,2; Subs. 1,1,1; Recr. 1,1,2; Disc. 1,1,2]
117	Israel (Red Sea)	2	Tesfamichael, D., Govender, R. and Pauly, D. 2012. Preliminary reconstruction of fisheries catches
117	isiaci (Rea Sea)	2	of Jordan and Israel in the inner Gulf of Aqaba, Red Sea, 1950-2010. pp. 179-204. <i>In: D.</i>
			Tesfamichael and D. Pauly (eds.) Catch reconstruction for the Red Sea large marine
			ecosystem by countries (1950 – 2010). Fisheries Centre Research Reports 20(1),
			University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2012/Tesfamichael-et-al-
			JordanIsrael.pdf).
110	T <sub>4</sub> 1	1 4 4	[Indust. 3,3,3; Art. 2,2,2; Subs. 1,1,1; Recr. 1,1,2; Disc. 1,1,2]
118	Italy	1,4,4	(1) Piroddi, C., Gristina, M., Ulman, A., Zeller, D. and Pauly, D. 2014. Reconstruction of Italy's
			marine fisheries catches (1950-2010). Fisheries Centre Working Paper #2014-22,
			University of British Columbia, Vancouver, 42 p.
			(http://www.seaaroundus.org/doc/publications/wp/2014/Piroddi-et-al-Italy.pdf).
			(4) Pauly, D., Ulman, A., Piroddi, C., Bultel, E. and Coll, M. 2014. 'Reported' versus 'likely'
			fisheries catches of four Mediterranean countries. pp. 11-17. In: J. Lleonart and F. Maynou
			(eds.) The Ecosystem approach to fisheries in the Mediterranean and Black Seas. Scientia
			Marina 78S1.
			(4) Piroddi, C., Gristina, M., Zylich, K., Greer, K., Ulman, A., Zeller, D. and Pauly, D. 2015.
			Reconstruction of Italy's marine fisheries removals and fishing capacity, 1950-2010.
			Fisheries Research 172: 137-147.
			[Indust. 1.5,2.5,3.5; Art. 2,3,4; Subs. 1,1,1; Recr 1,1,2; Disc,-,-]
119	Italy (Sardinia)	1,4	(1) Piroddi, C., Gristina, M., Ulman, A., Zeller, D. and Pauly, D. 2014. Reconstruction of Italy's
	• · · · · · · · · · · · · · · · · · · ·	,	marine fisheries catches (1950-2010). Fisheries Centre Working Paper #2014-22,
			University of British Columbia, Vancouver, 42 p.
			(http://www.seaaroundus.org/doc/publications/wp/2014/Piroddi-et-al-Italy.pdf).
			(4) Piroddi, C., Gristina, M., Zylich, K., Greer, K., Ulman, A., Zeller, D. and Pauly, D. 2015.
			Reconstruction of Italy's marine fisheries removals and fishing capacity, 1950-2010.
			Fisheries Research 172: 137-147.
			[Indust. 1.5,2.5,3.5; Art. 2,3,4; Subs. 1,1,1; Recr 1,1,2; Disc,-,-]
120	Italy (Sigily)	1,4	(1) Piroddi, C., Gristina, M., Ulman, A., Zeller, D. and Pauly, D. 2014. Reconstruction of Italy's
120	Italy (Sicily)	1,4	
			marine fisheries catches (1950-2010). Fisheries Centre Working Paper #2014-22,
			University of British Columbia, Vancouver, 42 p.
			(http://www.seaaroundus.org/doc/publications/wp/2014/Piroddi-et-al-Italy.pdf).
			(4) Piroddi, C., Gristina, M., Zylich, K., Greer, K., Ulman, A., Zeller, D. and Pauly, D. 2015.
			Reconstruction of Italy's marine fisheries removals and fishing capacity, 1950-2010.
			Fisheries Research 172: 137-147.
			[Indust. 1.5,2.5,3.5; Art. 2,3,4; Subs. 1,1,1; Recr 1,1,2; Disc,-,-]
121	Jamaica	2	

#	Country	Publ. type	subsistence, Recr. = recreational, plus Disc. = discards.  Source of reconstruction
	Country	1 don type	Boonzaier, F. Le Manach, D. Pauly and D. Zeller (eds.) Fisheries catch reconstructions: Islands, Part III. Fisheries Centre Research Reports 20(5), University of British Columbia,
			Vancouver, 42 p. (http://www.seaaroundus.org/doc/publications/chapters/2012/Lingard-et-al-Jamaica.pdf).
			[Indust. 2,2,2; Art. 2,2,2; Subs. 1,1,1; Recr. 1,1,1; Disc. 1,1,1]
122	Japan	4	Swartz, W. and Ishimura, G. 2014. Baseline assessment of total fisheries-related biomass removal from Japan's Exclusive Economic Zone: 1950-2010. Fisheries Science, doi: 10.1007/s12562-014-0754-6
			[Indust. 2.5,4,4; Art. 4,4,4; Subs. 2,2,2; Recr 1,2,4; Disc. 1,2,2]
123	Japan (Daito Islands)	1	Swartz, W. 2015. Notes on the fisheries around Japan's so-called 'outer-' or oceanic islands: Ogasawara (Bonin) and Daito Islands. Fisheries Centre Working Paper #2015-17, University of British Columbia, Vancouver, 5 p. (http://www.seaaroundus.org/doc/publications/wp/2015/Swartz-et-al-Japan-Outer.pdf).
			[Indust,-,-; Art. 2.5,3.5,3.5; Subs. 2.5,3.5,3.5; Recr,-,-; Disc,-,-]
124	Japan (Ogasawara Islands)	1	Swartz, W. 2015. Notes on the fisheries around Japan's so-called 'outer-' or oceanic islands: Ogasawara (Bonin) and Daito Islands. Fisheries Centre Working Paper #2015-17, University of British Columbia, Vancouver, 5 p. (http://www.seaaroundus.org/doc/publications/wp/2015/Swartz-et-al-Japan-Outer.pdf).
			[Indust,-,-; Art. 1.5,1.5,3.5; Subs. 1.5,1.5,3.5; Recr,-,-; Disc,-,-]
125	Jordan	2	Tesfamichael, D., Govender, R. and Pauly, D. 2012. Preliminary reconstruction of fisheries catches of Jordan and Israel in the inner Gulf of Aqaba, Red Sea, 1950-2010. pp. 179-204. <i>In:</i> D. Tesfamichael and D. Pauly (eds.) <i>Catch reconstruction for the Red Sea large marine ecosystem by countries (1950 – 2010).</i> Fisheries Centre Research Reports 20(1), University of British Columbia, Vancouver.  (http://www.seaaroundus.org/doc/publications/chapters/2012/Tesfamichael-et-al-JordanIsrael.pdf).
			[Indust. 1,4,4; Art. 1,1,1; Subs. 1,1,2; Recr. 2,2,2; Disc. 3,3,3]
126	Kenya	2	Le Manach, F., Abunge, C.A., McClanahan, T.R. and Pauly, D. 2015. Tentative Reconstruction of Kenya's Marine Fisheries Catch, 1950–2010. pp. 37-52. <i>In</i> : F. Le Manach and D. Pauly (eds.) <i>Fisheries catch reconstructions in the Western Indian Ocean, 1950-2010.</i> Fisheries Centre Research Report 23(2), University of British Columbia, Vancouver. (http://www.seaaroundus.org/doc/publications/chapters/2015/LaManach-et-al-2015-Kenya.pdf).  [Indust. 2,3,3; Art. 2,3,3; Subs. 1,2,2; Recr. 2,2,2; Disc. 2,2,2]
127	Kiribati (Gilbert Islands)	2,4	<ul> <li>(2) Zylich, K., Harper, S. and Zeller, D. 2014. Reconstruction of marine fisheries catches for the Republic of Kiribati (1950-2010). pp. 89-106. <i>In</i>: K. Zylich, D. Zeller, M. Ang, and D. Pauly (eds.) <i>Fisheries catch reconstructions: Islands, Part IV</i>. Fisheries Centre Research Reports 22(2), University of British Columbia, Vancouver.</li> <li>(http://www.seaaroundus.org/doc/publications/chapters/2014/Zylich-et-al-Kiribati.pdf).</li> <li>(4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-reported small-scale fisheries catch in Pacific island waters. <i>Coral Reefs</i> 34(1): 25-39.</li> <li>[Indust. 3,3,3; Art. 2,2,2; Subs. 2,2,2; Recr. 1,1,1; Disc. 3,3,3]</li> </ul>
128	Kiribati (Line Islands)	2,4	<ul> <li>(2) Zylich, K., Harper, S. and Zeller, D. 2014. Reconstruction of marine fisheries catches for the Republic of Kiribati (1950-2010). pp. 89-106. <i>In</i>: K. Zylich, D. Zeller, M. Ang, and D. Pauly (eds.) <i>Fisheries catch reconstructions: Islands, Part IV.</i> Fisheries Centre Research Reports 22(2), University of British Columbia, Vancouver. (http://www.seaaroundus.org/doc/publications/chapters/2014/Zylich-et-al-Kiribati.pdf).</li> <li>(4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-reported small-scale fisheries catch in Pacific island waters. <i>Coral Reefs</i> 34(1): 25-39.</li> <li>[Indust. 3,3,3; Art. 2,2,2; Subs. 2,2,2; Recr. 1,1,1; Disc. 3,3,3]</li> </ul>
129	Kiribati (Phoenix Islands)	2,4	<ul> <li>Zylich, K., Harper, S. and Zeller, D. 2014. Reconstruction of marine fisheries catches for the Republic of Kiribati (1950-2010). pp. 89-106. <i>In</i>: K. Zylich, D. Zeller, M. Ang, and D. Pauly (eds.) <i>Fisheries catch reconstructions: Islands, Part IV</i>. Fisheries Centre Research Reports 22(2), University of British Columbia, Vancouver.         <ul> <li>(http://www.seaaroundus.org/doc/publications/chapters/2014/Zylich-et-al-Kiribati.pdf).</li> </ul> </li> <li>(4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-reported small-scale fisheries catch in Pacific island waters. <i>Coral Reefs</i> 34(1): 25-39.</li> <li>[Indust. 3,3,3; Art. 2,2,2; Subs. 2,2,2; Recr. 1,1,1; Disc. 3,3,3]</li> </ul>
130	Korea (North)	1	Shon, S., Harper, S. and Zeller, D. 2014. Reconstruction of Marine Fisheries Catches for the Republic of Korea (South Korea) from 1950-2010. Fisheries Centre Working Paper #2014-19, University of British Columbia, Vancouver, 13 p.  (http://www.seaaroundus.org/doc/publications/wp/2014/Shon-et-al-North-Korea.pdf).  [Indust. 2,2,2; Art. 1,1,1; Subs. 1,1,1; Recr,-,-; Disc. 1,1,1]

#	Country	Publ. type	Source of reconstruction
131	Korea (South)	1	Shon, S., Harper, S. and Zeller, D. 2014. Reconstruction of marine fisheries catches from the Democratic People's Republic of Korea (North Korea) from 1950-2010. Fisheries Centre
			Working Paper #2014-20, University of British Columbia, Vancouver, 11 p. (http://www.seaaroundus.org/doc/publications/wp/2014/Shon-et-al-South-Korea.pdf).
122	Vuvvoit	2.4	[Indust. 2,2,3; Art. 2,2,3; Subs. 2,2,2; Recr. 1,1,2; Disc. 2,2,2] (2) Al-Abdulrazzak, D. 2013. Reconstructing Kuwait's marine fishery catches: 1950-2010. pp. 23-
132	Kuwait	2,4	29. In: D. Al-Abdulrazzak and D. Pauly (eds.) From dhows to trawlers: a recent history of fisheries in the Gulf countries, 1950 to 2010. Fisheries Centre Research Reports 21(2), University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2013/AlAbdulrazzak-et-al-Kuwait.pdf).
			(4) Al-Abdulrazzak, D., Zeller, D., Belhabib, D., Tesfamichael, D. and Pauly, D. 2015. Total marine fisheries catches in the Persian/Arabian Gulf from 1950-2010. <i>Regional Studies in Marine Science</i> 2: 28-34.
			[Indust. 2,2,2; Art. 2,2,3; Subs. 1,1,1; Recr 2,2,2; Disc. 3,3,3]
133	Latvia	2,4	(2) Rossing, P., Plikshs, M., Booth, S., Veitch, L. and Zeller, D. 2010. Catch reconstruction for
		_,.	Latvia in the Baltic Sea from 1950 – 2007. pp. 127-144. <i>In:</i> R. Rossing, S. Booth and D. Zeller (eds.) <i>Total marine fisheries extractions by country in the Baltic Sea: 1950-present.</i> Fisheries Centre Research Reports 18 (1), University of British Columbia, Vancouver. (http://www.seaaroundus.org/doc/publications/chapters/2010/Rossing-et-al-Latvia.pdf).
			(4) Zeller, D., Rossing, P., Harper, S., Persson, L., Booth, S. and Pauly, D. 2011. The Baltic Sea: estimates of total fisheries removals 1950-2007. Fisheries Research 108: 356-363.
			Since completing the initial reconstruction, 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 IUU 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 landings and unreported catches. To calculate recreational
			catch, population data was 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 dataset regarding previous years.
			[Indust. 2,3,3; Art. 2,3,3; Subs. 2,2,2; Recr. 1,2,2; Disc. 2,2,2]
134	Lebanon	1	Nader, M.R., Indary, S., Roshan Moniri, Naz. and Zylich, K. 2014. Historical fisheries catch
			reconstruction for Lebanon (GSA 27), 1950-2010. Fisheries Centre Working Paper #2014-
			11, University of British Columbia, Vancouver, 19 p.
			(http://www.seaaroundus.org/doc/publications/wp/2014/Nader-et-al-Lebanon.pdf). [Indust. 2,2,2; Art. 2,2,2; Subs. 1,1,1; Recr. 1,1,1; Disc. 1,1,1]
135	Liberia	1,4,4,4	(1) Belhabib, D., Subah, Y., Broh, N.T., Jueseah, A.S., Nipey, N., Boeh, W.Y., Copeland, D.,
		, , ,	Zeller, D. and Pauly, D. 2013. When 'Reality leaves a lot to the imagination': Liberian
			fisheries from 1950 to 2010. Fisheries Centre Working Paper #2013-06, University of
			British Columbia, Vancouver, 18 p. (http://www.seaaroundus.org/doc/publications/wp/2013/Belhabib-et-al-2013-Liberia.pdf).
			(4) Belhabib, D., Sumaila, U.R., Lam, V.W.Y., Zeller, D., Le Billon, P., Kane, E.A. and Pauly, D.
			2015. Euro vs. Yuan: Comparing European and Chinese fishing access in West Africa.
			<ul> <li>PLoS One 10(3): e0118351</li> <li>(4) Belhabib, D., Sumaila, U.R. and Pauly, D. 2015. Feeding the poor: contribution of West African fisheries to employment and food security. Ocean &amp; Coastal Management 111: 72-81.</li> </ul>
			(4) Belhabib, D., Mendy, A., Subah, Y., Broh, N.T., Jueseah, A.S., Nipey, N., Boeh, W.W.,
			Willemse, N., Zeller, D. and Pauly, D. (in press) Fisheries catch under-reporting in The
			Gambia, Liberia and Namibia, and the three Large Marine Ecosystems which they
			represent. Environmental Development. DOI: 10.1016/j.envdev.2015.08.004
127	Lihvo	1	[Indust. 3,3,4; Art. 3,3,3; Subs. 1,3,3; Recr,-,-; Disc. 2,2,4]
136	Libya	1	Khalfallah, M., Belhabib, D., Zeller, D. and Pauly, D. 2015. Reconstruction of Marine Fisheries catches for Libya (1950-2010). Fisheries Centre Working Paper #2015-47, University of British Columbia, Vancouver, 15 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Khalfallah-et-al-Libya.pdf).
137	Lithuania	2,4	[Indust. 1,2,2; Art. 1,2,2; Subs. 1,2,2; Recr. 1,1,1; Disc. 1,2,2] (2) Veitch, L., Toliusis, S., Booth, S., Rossing, P., Harper, S. and Zeller, D. 2010. Catch
13/	Limuama	۷,٦	reconstruction for Lithuania in the Baltic Sea from 1950–2007. pp. 145-164. <i>In:</i> R.
			Rossing, S. Booth and D. Zeller (eds.) Total marine fisheries extractions by country in the

#	Country	Publ. type	subsistence, Recr. = recreational, plus Disc. = discards.  Source of reconstruction
- п	Country	1 ubi. type	Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2010/Veitch-et-al-Lithuania.pdf).
			(4) Zeller, D., Rossing, P., Harper, S., Persson, L., Booth, S. and Pauly, D. 2011. The Baltic Sea: estimates of total fisheries removals 1950-2007. <i>Fisheries Research</i> 108: 356-363.
			Since completing the initial reconstructions, 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 IUU rates (by species), which were applied to the reported landings. To calculate discards, the 2007 discard rates (by species)
			were applied to the reported landings and unreported catches. 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 within the 2010 dataset regarding previous years. Data generated in these
			reconstructions (for both reported and unreported catches) for 1950 to 2010 will replace FAO
			landings data at www.seaaroundus.org.
129	Modogogopr	2.4	[Indust. 3,3,4; Art,-,-; Subs,-,-; Recr. 3,3,2; Disc. 2,2,3] (2) Le Manach, F., Gough, C., Humber, F., Harper, S. and Zeller, D. 2011. Reconstruction of total
138	Madagascar	2,4	marine fisheries catches for Madagascar (1950-2008), pp. 21-42 <i>In</i> : S. Harper and D.
			Zeller (eds.) Fisheries catch reconstruction: Islands, Part II. Fisheries Centre Research
			Reports 19(4), University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2011/LeMenach-et-al-Madagascar.pdf).
			(4) Le Manach, F., Gough, C., Harris, A., Humber, F., Harper, S. and Zeller, D. 2012. Unreported
			fishing, hungry people and political turmoil: the recipe for a food security crisis in
			Madagascar? Marine Policy 36(1): 218-225.
120	Malassia	1	[Indust. 1,2,3; Art. 2,2,2; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,2,2]
139	Malaysia (Peninsular)	1	Teh, L.C.L. and Teh, L.S.L. 2014. Reconstructing the marine fisheries catch of Peninsular Malaysia, Sarawak and Sabah, 1950-2010. Fisheries Centre Working Paper #2014-16,
	(i ciiiisuidi)		University of British Columbia, Vancouver, 20 p.
			(http://www.seaaroundus.org/doc/publications/wp/2014/Teh-et-al-Malaysia.pdf).
1.10			[Indust. 2,2,3; Art. 2,2,3; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,2,3]
140	Malaysia (Sabah)	1,2	(1) Teh, L.C.L. and Teh, L.S.L. 2014. Reconstructing the marine fisheries catch of Peninsular Malaysia, Sarawak and Sabah, 1950-2010. Fisheries Centre Working Paper #2014-16,
			University of British Columbia, Vancouver, 20 p.
			(http://www.seaaroundus.org/doc/publications/wp/2014/Teh-et-al-Malaysia.pdf).
			(2) Teh, L.S.L, Teh, L.C.L., Zeller, D. and Cabanban, A. 2009. Historical perspective of Sabah's
			marine fisheries. pp. 77-98. <i>In:</i> D. Zeller and S. Harper (eds). <i>Fisheries catch reconstructions: Islands, Part I.</i> Fisheries Centre Research Reports 17(5), University of
			British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2009/Teh-et-al-Sabah.pdf).
			[Indust,2,3; Art. 2,2,2; Subs. 2,2,2; Recr -,-,-; Disc,3,3]
141	Malaysia (Sarawak)	1	Teh, L.C.L. and Teh, L.S.L. 2014. Reconstructing the marine fisheries catch of Peninsular Malaysia, Sarawak and Sabah, 1950-2010. Fisheries Centre Working Paper #2014-16,
	(Salawak)		University of British Columbia, Vancouver, 20 p.
			(http://www.seaaroundus.org/doc/publications/wp/2014/Teh-et-al-Malaysia.pdf).
			[Indust,2,3; Art. 2,2,2; Subs. 2,2,2; Recr -,1,1; Disc,3,3]
142	Maldives	2	Hemmings, M., Harper, S. and Zeller, D. 2014. Reconstruction of total marine catches for the
			Maldives: 1950–2010. pp. 107-120. <i>In:</i> K. Zylich, D. Zeller, M. Ang, and D. Pauly (eds.) <i>Fisheries catch reconstructions: Islands, Part IV.</i> Fisheries Centre Research Reports 22(2).
			Fisheries Centre, University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2014/Hemmings-et-al-
			Maldives.pdf).
143	Malta	1	[Indust. 2,3,3; Art. 2,3,3; Subs. 2,3,3; Recr. 1,1,1; Disc. 2,3,3] Khalfallah, M., Dimech, M., Ulman, A., Zeller, D. and Pauly, D. 2014. Reconstruction of Marine
173		1	Fisheries catches for the Republic of Malta (1950-2010). Fisheries Centre Working Paper
			#2015-43, University of British Columbia, Vancouver, 12 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Khalfallah-et-al-Malta.pdf).
144	Marshall Islands	2,4	[Indust. 2.5,2.5,3.5; Art. 3,3,4; Subs. 2,2,2; Recr 2,2,4; Disc,-,-] (2) Haas, A., Harper, S., Zylich, K., Hehre, J. and Zeller, D. 2014. Reconstruction of the Republic
144	iviaisnan islands	۵,4	of the Marshall Islands fisheries catches: 1950-2010. pp. 121-128. <i>In</i> : K. Zylich, D. Zeller,
			M. Ang, and D. Pauly (eds.) Fisheries catch reconstructions: Islands, Part IV. Fisheries
			Centre Research Reports 22(2). Fisheries Centre, University of British Columbia,

#	Country	Publ. type	subsistence, Recr. = recreational, plus Disc. = discards.  Source of reconstruction
	Country	r don ej pe	Vancouver. (http://www.seaaroundus.org/doc/publications/chapters/2014/Haas-et-al-
			Marshall-Is.pdf).
			(4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-reported small-scale
			fisheries catch in Pacific island waters. Coral Reefs 34(1): 25-39.
			[Indust. 4,3,4; Art. 2,2,3; Subs. 2,2,3; Recr -,-,-; Disc. 3,3,2]
145	Mauritania	2,4,4	(2) Belhabib, D., Gascuel, D., Abou Kane, E., Harper, S., Zeller, D. and Pauly, D. 2012.
			Preliminary estimation of realistic fisheries removals from Mauritania: 1950-2010. pp. 61-
			78 In: D. Belhabib, D. Zeller, S. Harper and D. Pauly (eds.) Marine fisheries catches in West Africa, Part 1. Fisheries Centre Research Reports 20(3), University of British
			Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2012/Belhabib-et-al-2012-
			Mauritania.pdf).
			(4) Belhabib, D., Sumaila, U.R., Lam, V.W.Y., Zeller, D., Le Billon, P., Kane, E.A. and Pauly, D.
			2015. Euro vs. Yuan: Comparing European and Chinese fishing access in West Africa.
			PLoS One 10(3): e0118351
			(4) Belhabib, D., Sumaila, U.R. and Pauly, D. 2015. Feeding the poor: contribution of West African
			fisheries to employment and food security. <i>Ocean &amp; Coastal Management</i> 111: 72-81. [Indust. 2,2,4; Art. 2,3,4; Subs. 2,2,2; Recr 4,4,4; Disc. 4,4,4]
146	Mauritius	2	Boistol, L., Harper, S., Booth, S. and Zeller, D. 2011. Reconstruction of marine fisheries catches for
1.0	1,100110100	_	Mauritius and its outer islands, 1950-2008. pp. 39-61. <i>In:</i> S. Harper and D. Zeller (eds.)
			Fisheries catch reconstructions: Islands, Part II. Fisheries Centre Research Reports 19(4),
			University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2011/Boistol-et-al-Mauritius.pdf).
1.47	MC : (Ad d: )	1.4	[Indust. 2,3,3; Art. 2,3,3; Subs. 2,3,3; Recr. 1,1,1; Disc. 2,3,3]
147	México (Atlantic)	1,4	(1) Cisneros-Montemayor, A.M., Cisneros-Mata, M.A., Harper, S., Pauly, D. 2015. Unreported marine fisheries catch in Mexico, 1950-2010. Fisheries Centre Working Paper #2015-22,
			University of British Columbia, Vancouver, 9 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Cisneros-et-al-Mexico.pdf).
			(4) Cisneros-Montemayor, A.M., Cisneros-Mata, M.A., Harper, S., Pauly, D. 2013. Extent and
			implications of IUU catch in México's marine fisheries. Marine Policy 39: 283-288
			[Indust. 3,3,4; Art. 1,1,2; Subs. 1,1,1; Recr 1,2,2; Disc,-,-]
148	México (Pacific)	1,4	(1) Cisneros-Montemayor, A.M., Cisneros-Mata, M.A., Harper, S., Pauly, D. 2015. Unreported
			marine fisheries catch in Mexico, 1950-2010. Fisheries Centre Working Paper #2015-22, University of British Columbia, Vancouver, 9 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Cisneros-et-al-Mexico.pdf).
			(4) Cisneros-Montemayor, A.M., Cisneros-Mata, M.A., Harper, S., Pauly, D. 2013. Extent and
			implications of IUU catch in México's marine fisheries. Marine Policy 39: 283-288
			[Indust. 3,3,4; Art. 1,1,2; Subs. 1,1,1; Recr 1,2,2; Disc,-,-]
149	Micronesia	1,4	(1) Vali, S., Rhodes, K., Au, A., Zylich, K., Harper, S. and Zeller, D. 2014. Reconstruction of total
	(Federated States		fisheries catches for the Federated States of Micronesia (1950–2010). Fisheries Centre
	of)		Working Paper #2014-06, University of British Columbia, Vancouver, 16 p. (http://www.seaaroundus.org/doc/publications/wp/2014/Vali-et-al-Federated-States-of-
			Micronesia.pdf).
			(4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-reported small-scale
			fisheries catch in Pacific island waters. <i>Coral Reefs</i> 34(1): 25-39.
			[Indust. 1,2,3; Art. 2,2,3; Subs. 2,2,3; Recr. 1,1,1; Disc. 2,3,3]
150	Montserrat	2	Ramdeen, R., Ponteen, A., Harper, S. and Zeller, D. 2012. Reconstruction of total marine fisheries
			catches for Montserrat (1950-2010). pp. 69-76. <i>In</i> : S. Harper, K. Zylich, L. Boonzaier, F.
			Le Manach, D. Pauly and D. Zeller (eds.) <i>Fisheries catch reconstructions: Islands, Part III</i> . Fisheries Centre Research Reports 20(5), University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2012/Ramdeen-et-al-
			Montserrat.pdf).
			[Indust. 1,2,3; Art. 1,2,3; Subs. 1,2,3; Recr. 1,1,1; Disc. 1,1,1]
151	Montenegro	1	Keskin, Ç., Ulman, A., Iritani, D. and Zeller, D. 2014. Reconstruction of fisheries catches for
			Montenegro: 1950-2010. Fisheries Centre Working Paper #2014-27, University of British
			Columbia, Vancouver, 11 p.
			(http://www.seaaroundus.org/doc/publications/wp/2014/Keskin-et-al-Montenegro.pdf).
152	Morocco (Central)	2,4,4	[Indust. 2,3,3; Art. 2,3,3; Subs. 1,1,1; Recr. 1,1,1; Disc. 2,2,2] (2) Belhabib, D., Harper, S., Zeller, D. and Pauly, D. 2012. Reconstruction of marine fisheries
134	Morocco (Central)	۷,4,4	catches for Morocco (North, Central and South), 1950-2010. pp. 23-40 <i>In</i> : D. Belhabib, D.
			Zeller, S. Harper and D. Pauly (eds.) <i>Marine fisheries catches in West Africa, Part I.</i>
			Fisheries Centre Research Reports 20(3), University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2012/Belhabib-ef-al-Morocco.pdf).

#	Country	Publ. type	subsistence, Recr. = recreational, plus Disc. = discards.  Source of reconstruction
	•		(4) Belhabib, D., Sumaila, U.R., Lam, V.W.Y., Zeller, D., Le Billon, P., Kane, E.A. and Pauly, D.
			2015. Euro vs. Yuan: Comparing European and Chinese fishing access in West Africa.
			PLoS One 10(3): e0118351
			(4) Belhabib, D., Sumaila, U.R. and Pauly, D. 2015. Feeding the poor: contribution of West African
			fisheries to employment and food security. <i>Ocean &amp; Coastal Management</i> 111: 72-81.
153	Morocco	2,4,4	[Indust. 3,3,3; Art. 3,4,4; Subs. 2,2,2; Recr. 2,2,4; Disc. 3,4,4] (2) Belhabib, D., Harper, S., Zeller, D. and Pauly, D. 2012. Reconstruction of marine fisheries
133	(Mediterranean)	2,4,4	catches for Morocco (North, Central and South), 1950-2010. pp. 23-40 <i>In</i> : D. Belhabib, D.
	(Wicanterranean)		Zeller, S. Harper and D. Pauly (eds.) <i>Marine fisheries catches in West Africa, Part 1</i> .
			Fisheries Centre Research Reports 20(3), University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2012/Belhabib-et-al-Morocco.pdf).
			(4) Belhabib, D., Sumaila, U.R., Lam, V.W.Y., Zeller, D., Le Billon, P., Kane, E.A. and Pauly, D.
			2015. Euro vs. Yuan: Comparing European and Chinese fishing access in West Africa.
			PLoS One 10(3): e0118351
			(4) Belhabib, D., Sumaila, U.R. and Pauly, D. 2015. Feeding the poor: contribution of West African
			fisheries to employment and food security. Ocean & Coastal Management 111: 72-81.
151		211	[Indust. 3,3,3; Art. 3,4,4; Subs. 2,2,2; Recr. 2,2,4; Disc. 3,4,4]
154	Morocco (South)	2,4,4	(2) Belhabib, D., Harper, S., Zeller, D. and Pauly, D. 2012. Reconstruction of marine fisheries
			catches for Morocco (North, Central and South), 1950-2010. pp. 23-40 <i>In</i> : D. Belhabib, D. Zeller, S. Harper and D. Pauly (eds.) <i>Marine fisheries catches in West Africa, Part I.</i>
			Fisheries Centre Research Reports 20(3), University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2012/Belhabib-et-al-Morocco.pdf).
			(4) Belhabib, D., Sumaila, U.R., Lam, V.W.Y., Zeller, D., Le Billon, P., Kane, E.A. and Pauly, D.
			2015. Euro vs. Yuan: Comparing European and Chinese fishing access in West Africa.
			PLoS One 10(3): e0118351
			(4) Belhabib, D., Sumaila, U.R. and Pauly, D. 2015. Feeding the poor: contribution of West African
			fisheries to employment and food security. Ocean & Coastal Management 111: 72-81.
1.5.5	1:	2.4	[Indust. 3,3,3; Art. 3,4,4; Subs. 2,2,2; Recr. 2,2,4; Disc. 3,4,4]
155	Mozambique	2,4	(2) Doherty, B., McBride, M.M., Brito, A.J., Le Manach, F., Sousa, L., Chauca, I. and Zeller, D.
			2015. Marine Fisheries in Mozambique: Catches Updated to 2010 and Taxonomic Disaggregation. pp. 67-82. <i>In:</i> F. Le Manach and D. Pauly (eds.) <i>Fisheries catch</i>
			reconstructions in the Western Indian Ocean, 1950-2010. Fisheries Centre Research
			Report 23(2), University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2015/Doherty-et-al-2015-
			Mozambique.pdf).
			(4) Jacquet, J., Fox, H., Motta, H., Ngusaru, A. and Zeller, D. 2010. Few data but many fish:
			marine small-scale fisheries catches for Mozambique and Tanzania. African Journal of
			Marine Science, 32(2), 197-206.
156	Myanmar	3	[Indust. 1,2,3; Art. 1,1,2; Subs. 1,1,2; Recr,-,-; Disc. 1,1,1] Booth, S. and Pauly, D. 2011. Myanmar's marine capture fisheries 1950-2008: Expansion from the
150	Myammai	3	coast to the deep waters. pp. 101-134. <i>In:</i> S. Harper, D. O'Meara, S. Booth, D. Zeller and
			D. Pauly (eds). Fisheries Catches for the Bay of Bengal Large Marine Ecosystem since
			1950. Report to the Bay of Bengal Large Marine Ecosystem Project. BOBLME-2011-
			Ecology-16.
			Since completing the initial reconstruction, the 2008 total reconstructed catch was carried forward,
			unaltered, to 2010. 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, hence the reflection of those
			revisions in the original reconstruction. The sectoral breakdown (artisanal, large-scale etc.) 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 (artisanal, subsistence, large-scale etc.) 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).
1.57	NT 11:	1 4 4 4	[Indust. 2,3,3; Art. 2,3,3; Subs. 2,3,3; Recr. 1,1,1; Disc. 2,2,2]
157	Namibia	1,4,4,4	(1) Belhabib, D., Willemse, N.E. and Pauly, D. 2015. A fishery tale: Namibian fisheries between
			1950 and 2010. Fisheries Centre Working Paper #2015-65, University of British Columbia, Vancouver, 17 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Belhabib-et-al-Namibia.pdf).
			(map.// www.scaaroundus.org/uoc/puoncations/wp/2013/Demaoio-et-at-ivaliiloia.pui).

#	Country	Publ. type	subsistence, Recr. = recreational, plus Disc. = discards.  Source of reconstruction
	Country	1 usu eype	(4) Belhabib, D., Sumaila, U.R., Lam, V.W.Y., Zeller, D., Le Billon, P., Kane, E.A. and Pauly, D. 2015. Euro vs. Yuan: Comparing European and Chinese fishing access in West Africa.
			PLoS One 10(3): e0118351 (4) Belhabib, D., Sumaila, U.R. and Pauly, D. 2015. Feeding the poor: contribution of West African
			fisheries to employment and food security. Ocean & Coastal Management 111: 72-81.
			(4) Belhabib, D., Mendy, A., Subah, Y., Broh, N.T., Jueseah, A.S., Nipey, N., Boeh, W.W.,
			Willemse, N., Zeller, D. and Pauly, D. (in press) Fisheries catch under-reporting in The
			Gambia, Liberia and Namibia, and the three Large Marine Ecosystems which they represent. <i>Environmental Development</i> . DOI: 10.1016/j.envdev.2015.08.004
			[Indust. 4,4,4; Art,-,-; Subs. 2,2,3; Recr. 3,3,3; Disc. 4,4,4]
158	Nauru	2,4	(2) Trujillo, P., Harper, S. and Zeller, D. 2011. Reconstruction of Nauru's fisheries catches: 1950-
			2008. pp. 63-71. In: S. Harper and D. Zeller (eds.) Fisheries catch reconstructions:
			Islands, Part II. Fisheries Centre Research Reports 19(4), University of British Columbia,
			Vancouver. (http://www.seaaroundus.org/doc/publications/chapters/2011/Trujillo-et-al-2011-Nauru.pdf).
			(4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-reported small-scale
			fisheries catch in Pacific island waters. <i>Coral Reefs</i> 34(1): 25-39.
			[Indust. 2,2,2; Art. 2,2,2; Subs. 2,2,2; Recr. 1,1,1; Disc. 1,1,1]
159	Netherlands	1	Gibson, D., Zylich, K. and Zeller, D. 2015. Preliminary reconstruction of total marine fisheries
			catches for the Netherlands in the North Sea (1950-2010). Fisheries Centre Working Paper #2015-46, University of British Columbia, Vancouver, 15 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Gibson-et-al-Netherlands.pdf).
			[Indust. 3,3,4; Art. 3,3,4; Subs. 2,1,1; Recr. 1,1,2; Disc. 1,1,2]
160	Netherlands	1	Pauly, D., Ramdeen, S. and Ulman, A. 2015. Reconstruction of total marine catches for Aruba,
	(Aruba)		Southern Caribbean, 1950-2010. Fisheries Centre Working Paper #2015-10, University of British Columbia, Vancouver, 8 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Pauly-et-al-Aruba.pdf).
			[Indust. 2,2,2; Art. 2,3,4; Subs. 2,2,2; Recr. 2,2,2; Disc. 2,2,2]
161	Netherlands	1	Lindop, A., Bultel, E., Zylich, K. and Zeller, D. 2015. Reconstructing the former Netherlands
	(Bonaire)		Antilles marine catches from 1950 to 2010. Fisheries Centre Working Paper #2015-69,
			University of British Columbia, Vancouver, 22 p. (http://www.seaaroundus.org/doc/publications/wp/2015/Lindop-et-al-Netherlands-
			Antilles.pdf).
			[Indust. 2,2,2; Art. 2,3,4; Subs. 2,2,2; Recr. 2,2,2; Disc. 2,2,2]
162	Netherlands	1	Lindop, A., Bultel, E., Zylich, K. and Zeller, D. 2015. Reconstructing the former Netherlands
	(Curação)		Antilles marine catches from 1950 to 2010. Fisheries Centre Working Paper #2015-69, University of British Columbia, Vancouver, 22 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Lindop-et-al-Netherlands-
			Antilles.pdf).
			[Indust. 2,2,2; Art. 2,3,4; Subs. 2,2,2; Recr. 2,2,2; Disc. 2,2,2]
163	Netherlands (Saba and Sint Eustatius)	1	Lindop, A., Bultel, E., Zylich, K. and Zeller, D. 2015. Reconstructing the former Netherlands Antilles marine catches from 1950 to 2010. Fisheries Centre Working Paper #2015-69,
	and Sint Eustatius)		University of British Columbia, Vancouver, 22 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Lindop-et-al-Netherlands-
			Antilles.pdf).
164	N 4 1 1 (0)		[Indust. 2,2,2; Art. 2,3,4; Subs. 2,2,2; Recr. 2,2,2; Disc. 2,2,2]
164	Netherlands (Sint Maarten)	1	Lindop, A., Bultel, E., Zylich, K. and Zeller, D. 2015. Reconstructing the former Netherlands Antilles marine catches from 1950 to 2010. Fisheries Centre Working Paper #2015-69,
	widarten)		University of British Columbia, Vancouver, 22 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Lindop-et-al-Netherlands-
			Antilles.pdf).
165	New Zealand	1	[Indust. 2,2,2; Art. 2,3,4; Subs. 2,2,2; Recr. 2,2,2; Disc. 2,2,2] Simmons, G., Bremner, G., Stringer, C., Torkington, B., Teh, L.C.L., Zylich, K., Zeller, D., Pauly,
165	New Zealand	1	D. and Whittaker, H. 2015. Preliminary reconstruction of marine fisheries catches for New
			Zealand (1950-2010). Fisheries Centre Working Paper #2015-87, University of British
			Columbia, Vancouver, 33 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Simmons-et-al-New-Zealand.pdf).
166	New Zealand	2	[Indust. 2,3,3; Art. 2,3,3; Subs. 2,2,2; Recr. 2,2,3; Disc. 2,3,3]  Zylich, K., Harper, S. and Zeller, D. 2012. Reconstruction of marine fisheries catches for the
100	(Kermadec	<i>2</i>	Kermadec Islands (1950-2010). pp. 61-67. <i>In:</i> S. Harper, K. Zylich, L. Boonzaier, F. Le
	Íslands)		Manach, D. Pauly and D. Zeller (eds.) Fisheries catch reconstructions: Islands, Part III.
			Fisheries Centre Research Reports 20(5), University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2012/Zylich-et-al-Kermadec.pdf). [Indust. 1,2,3; Art,-,-; Subs,-,-; Pisc. 1,2,3]
			[maust. 1,2,3, mt,-,-, buos,-,-, neet,-,-, bist. 1,2,3]

#	Country	Publ. type	subsistence, Recr. = recreational, plus Disc. = discards.  Source of reconstruction
167	New Zealand	2,4	(2) Zylich, K., Harper, S. and Zeller, D. 2011. Reconstruction of fisheries catches for Tokelau
	(Tokelau)		(1950-2009). pp. 107-117. In: S. Harper and D. Zeller (eds.) Fisheries catch
			reconstructions: Islands, Part II. Fisheries Centre Research Reports 19(4), University of
			British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2011/Zylich-et-al-2011-
			Tokelau.pdf).
			(4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-reported small-scale
			fisheries catch in Pacific island waters. <i>Coral Reefs</i> 34(1): 25-39.
4.00			[Indust. 2,3,3; Art. 2,3,3; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,2,2]
168	Nicaragua	1	Haas, A., Harper, S. and Zeller, D. 2015. Reconstruction of Nicaragua's fisheries catches: 1950-
	(Caribbean)		2010. Fisheries Centre Working Paper #2015-23, University of British Columbia, Vancouver, 9 p. (http://www.seaaroundus.org/doc/publications/wp/2015/Haas-et-al-
			Nicaragua.pdf).
			[Indust. 2,2,2; Art. 2,2,2; Subs. 2,1,2; Recr,-,-; Disc. 3,2,3]
169	Nicaragua	1	Haas, A., Harper, S. and Zeller, D. 2015. Reconstruction of Nicaragua's fisheries catches: 1950-
10)	(Pacific)	1	2010. Fisheries Centre Working Paper #2015-23, University of British Columbia,
	()		Vancouver, 9 p. (http://www.seaaroundus.org/doc/publications/wp/2015/Haas-et-al-
			Nicaragua.pdf).
			[Indust. 2,2,2; Art. 2,2,2; Subs. 2,1,2; Recr,-,-; Disc. 3,2,3]
170	Nigeria	2,4,4	(2) Etim, L., Belhabib, D. and Pauly, D. 2015. An overview of the Nigerian marine fisheries and a
			re-evaluation of its catch data for the years 1950-2010. pp. 66-76. In: D. Belhabib and D.
			Pauly (eds). Fisheries catch reconstructions: West Africa, Part II. Fisheries Centre
			Research Reports 23(3), University of British Columbia.
			(http://www.seaaroundus.org/doc/publications/chapters/2015/Etim-Nigeria.pdf)
			(4) Belhabib, D., Sumaila, U.R., Lam, V.W.Y., Zeller, D., Le Billon, P., Kane, E.A. and Pauly, D.
			2015. Euro vs. Yuan: Comparing European and Chinese fishing access in West Africa.
			PLoS One 10(3): e0118351  (4) Pollockib D. Sumaila III. and Pauly D. 2015. Feeding the pear, contribution of West African
			(4) Belhabib, D., Sumaila, U.R. and Pauly, D. 2015. Feeding the poor: contribution of West African fisheries to employment and food security. <i>Ocean &amp; Coastal Management</i> 111: 72-81.
			[Indust. 1,3,3; Art. 1.5,2.5,2.5; Subs. 1,3,3; Recr,; Disc. 1,2.7,2.7]
171	Niue	2,4	(2) Zylich, K., Harper, S., Winkler, N. and Zeller, D. 2012. Reconstruction of marine figheries
1/1	TVIUC	2,4	catches for Niue (1950-2010). pp. 77-86. <i>In:</i> S. Harper, K. Zylich, L. Boonzaier, F. Le
			Manach, D. Pauly and D. Zeller (eds.) Fisheries catch reconstructions: Islands, Part III.
			Fisheries Centre Research Reports 20(5), University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2012/Zylich-et-al-2012-Niue.pdf).
			(4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-reported small-scale
			fisheries catch in Pacific island waters. Coral Reefs 34(1): 25-39.
			[Indust. 2,3,3; Art. 2,3,3; Subs. 2,3,3; Recr. 1,1,1; Disc. 1,2,3]
172	Norway	1	Nedreaas, K., Iversen, S. and Kuhnle, G. 2015. Preliminary estimates of total removals by the
			Norwegian marine fisheries, 1950-2010. Fisheries Centre Working Paper #2015-94,
			University of British Columbia, Vancouver, 15 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Nedreaas-et-al-Norway.pdf).
1.72	N (D)	2	[Indust. 2,3,4; Art. 2,3,4; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,3,3]
173	Norway (Bouvet	2	Padilla, A., Zeller, D. and Pauly, D. 2015. The fish and fisheries of Bouvet Island. <i>In:</i> M.L.D.
	Island)		Palomares and D. Pauly (eds.) <i>Marine Fisheries Catches of Sub- Antarctic Islands, 1950 to 2010.</i> pp. 20-29. Fisheries Centre Research Reports 23(1), University of British Columbia,
			Vancouver. (http://www.seaaroundus.org/doc/publications/chapters/2015/Padilla-et-al-
			2015-Bouvet-Island.pdf)
			[Indust. 2,4,4; Art,-,-; Subs,-,-; Disc. 1,2,2]
174	Norway (Jan	1	Nedreaas, K., Iversen, S. and Kuhnle, G. 2015. Preliminary estimates of total removals by the
	Mayen)		Norwegian marine fisheries, 1950-2010. Fisheries Centre Working Paper #2015-94,
	,		University of British Columbia, Vancouver, 15 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Nedreaas-et-al-Norway.pdf).
			[Indust. 2,3,4; Art. 2,3,4; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,3,3]
175	Norway (Svalbard)	1	Nedreaas, K., Iversen, S. and Kuhnle, G. 2015. Preliminary estimates of total removals by the
			Norwegian marine fisheries, 1950-2010. Fisheries Centre Working Paper #2015-94,
			University of British Columbia, Vancouver, 15 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Nedreaas-et-al-Norway.pdf).
177	0		[Indust. 2,3,3; Art. 2,2,2; Subs. 1,1,1; Recr. 1,1,1; Disc. 2,2,2]
176	Oman	1	Khalfallah, M., Zylich, K., Zeller, D. and Pauly, D. 2015. Reconstruction of marine fisheries
			catches for Oman (1950-2010). Fisheries Centre Working Paper #2015-89, University of
			British Columbia, Vancouver, 11 p. (http://www.seaaroundus.org/doc/publications/wp/2015/Khalfallah-et-al-Oman.pdf).
			(http://www.seaaroundus.org/doc/publications/wp/2015/Khalfallah-et-al-Oman.pdf). [Indust. 2,3,3; Art. 2,3,3; Subs. 2,2,2; Recr. 1,1,1; Disc. 1,2,2]
			[muust. 2,3,5, Att. 2,3,5 3uus. 2,2,2, RCtl. 1,1,1, Dist. 1,2,2]

## Country Publ. type   Source of reconstruction	O, University of Oman.pdf).  Stan's marine, University of istan.pdf).  1950-2008: Sheries catch, University of inl-2011- ed small-scale  I's total fisheries in needs. Marine
Peninsula)  catches for Oman (1950-2010), Fisheries Centre Working Paper #2015-8! British Columbia, Vancouver, 11 p. (http://www.seaaroundus.org/doc/publications/wp/2015/Khalfallah-et-al-[Indust. 1,1,1; Art. 2,2,3; Subs. 1,1,1; Recr. 1,1,1; Disc. 1,1,1]  178 Pakistan  1 Hornby, C., Moazzam, M., Zylich, K. and Zeller, D. 2014. Reconstruction of Pakis fisheries catches (1950-2010). Fisheries Centre Working Paper #2014-28 British Columbia, Vancouver, 54 p. (http://www.seaaroundus.org/doc/publications/wp/2014/Hornby-et-al-Paking). [Indust. 2,33; Art. 2,22; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,22]  179 Palau  2,4  (2) Lingard, S., Harper, S., Ota, Y. and Zeller, D. 2011. Marine Fisheries of Palau, Total reconstructed catch. pp. 73-84. In: S. Harper and D. Zeller (eds.) Fire constructions: Islands, Part II. Fisheries Centre Research Reports 19(4) British Columbia, Vancouver. (http://www.seaaroundus.org/doc/publications/chapters/2011/Lingard-et-Palau.pdf).  (4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-report fisheries catch in Pacific island waters. Coral Reefs 34(1): 25-39.  [Indust. 2,33; Art. 3,33; Subs. 2,22; Recr. 1,1,1; Disc. 2,22]  180 Panama (Caribbean)  4 Harper, S., Guzman, H.M., Zylich, K. and Zeller, D. 2014. Reconstructing Panama catches from 1950 to 2010: highlighting data deficiencies and manageme Fisheries Review, 76 (1-2): 51-65. doi: dx.doi.org/10.7755/MFR.76.1_2.3 [Indust. 3,33; Art. 2,22; Subs. 1,1,1; Recr. 1,2,1; Disc. 1,1,2]  181 Panama (Pacific)  4 Harper, S., Guzman, H.M., Zylich, K. and Zeller, D. 2014. Reconstructing Panama catches from 1950 to 2010: highlighting data deficiencies and manageme Fisheries Review, 76 (1-2): 51-65. doi: dx.doi.org/10.7755/MFR.76.1_2.3 [Indust. 3,33; Art. 2,22; Subs. 1,1,1; Recr. 1,2,1; Disc. 1,1,2]  182 Papua New Guinea  1,4  (1) Teh, L.C.L, Kinch, J., Zylich, K. and Zeller, D. 2014. Reconstructing Papua N Marine Fisheries Catch, 1950-2010. Fisheries Centre Working Paper #20 of British Columbia, Vancouver, 23 p.  (http://www.seaaroun	O, University of Oman.pdf).  Stan's marine, University of istan.pdf).  1950-2008: Sheries catch, University of inl-2011- ed small-scale  I's total fisheries in needs. Marine
British Columbia, Vancouver, 11 p. (http://www.seaaroundus.org/doc/publications/wp/2015/Khalfallah-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-al-et-	Oman.pdf).  stan's marine by University of sistan.pdf).  1950-2008: sheries catch by University of al-2011- ed small-scale c's total fisheries at needs. Marine
[Indust. 1,1,1; Art. 2,2,3; Subs. 1,1,1; Recr. 1,1,1; Disc. 1,1,1]  178 Pakistan  1 Hornby, C., Moazzam, M., Zylich, K. and Zeller, D. 2014. Reconstruction of Paki fisheries catches (1950–2010). Fisheries Centre Working Paper #2014-28  British Columbia, Vancouver, 54 p.  (http://www.seaaroundus.org/doc/publications/wp/2014/Hornby-et-al-Pal [Indust. 2,3,3; Art. 2,2,2; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,2,2]  179 Palau  2,4 (2) Lingard, S., Harper, S., Ota, Y. and Zeller, D. 2011. Marine Fisheries of Palau, Total reconstructed catch, pp. 73-84. In: S. Harper and D. Zeller (eds.) Fi reconstructions: Islands, Part II. Fisheries Centre Research Reports 19(4 British Columbia, Vancouver.  (http://www.seaaroundus.org/doc/publications/chapters/2011/Lingard-et-Palau.pdf).  (4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-report fisheries catch in Pacific island waters. Coral Reefs 34(1): 25-39.  [Indust. 2,3,3; Art. 3,3,3; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,2,2]  180 Panama  (Caribbean)  4 Harper, S., Guzman, H.M., Zylich, K. and Zeller, D. 2014. Reconstructing Panama catches from 1950 to 2010: highlighting data deficiencies and manageme Fisheries Review, 76 (1-2): 51-65. doi: dx.doi.org/10.7755/MFR.76.1_2.3 [Indust. 3,3,3; Art. 2,2,2; Subs. 1,1,1; Recr. 1,2,1; Disc. 1,1,2]  181 Panama (Pacific)  4 Harper, S., Guzman, H.M., Zylich, K. and Zeller, D. 2014. Reconstructing Panama catches from 1950 to 2010: highlighting data deficiencies and manageme Fisheries Review, 76 (1-2): 51-65. doi: dx.doi.org/10.7755/MFR.76.1_2.3 [Indust. 3,3,3; Art. 2,2,2; Subs. 1,1,1; Recr. 1,2,1; Disc. 1,1,2]  182 Papua New  Guinea  1,4 (1) Teh, L.C.L., Kinch, J., Zylich, K. and Zeller, D. 2014. Reconstructing Papua New Marine Fisheries Catch, 1950-2010. Fisheries Centre Working Paper #20 of British Columbia, Vancouver, 23 p. (http://www.seaaroundus.org/doc/publications/wp/2014/Teh-et-al-Papua-Guinea.pdf).  (4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-report fisheries catch in Pacific isl	stan's marine , University of istan.pdf). 1950-2008: sheries catch , University of al-2011- ed small-scale 's total fisheries at needs. Marine
[Indust. 1,1,1; Art. 2,2,3; Subs. 1,1,1; Recr. 1,1,1; Disc. 1,1,1]  178 Pakistan  1 Hornby, C., Moazzam, M., Zylich, K. and Zeller, D. 2014. Reconstruction of Paki fisheries catches (1950–2010). Fisheries Centre Working Paper #2014-28  British Columbia, Vancouver, 54 p.  (http://www.seaaroundus.org/doc/publications/wp/2014/Hornby-et-al-Pal [Indust. 2,3,3; Art. 2,2,2; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,2,2]  179 Palau  2,4 (2) Lingard, S., Harper, S., Ota, Y. and Zeller, D. 2011. Marine Fisheries of Palau, Total reconstructed catch. pp. 73-84. In: S. Harper and D. Zeller (eds.) Fi reconstructions: Islands, Part II. Fisheries Centre Research Reports 19(4 British Columbia, Vancouver.  (http://www.seaaroundus.org/doc/publications/chapters/2011/Lingard-et-Palau.pdf).  (4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-report fisheries catch in Pacific island waters. Coral Reefs 34(1): 25-39.  [Indust. 2,3,3; Art. 3,3,3; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,2,2]  180 Panama  (Caribbean)  4 Harper, S., Guzman, H.M., Zylich, K. and Zeller, D. 2014. Reconstructing Panama catches from 1950 to 2010: highlighting data deficiencies and manageme Fisheries Review, 76 (1-2): 51-65. doi: dx.doi.org/10.7755/MFR.76.1_2.3 [Indust. 3,3,3; Art. 2,2,2; Subs. 1,1,1; Recr. 1,2,1; Disc. 1,1,2]  181 Panama (Pacific)  4 Harper, S., Guzman, H.M., Zylich, K. and Zeller, D. 2014. Reconstructing Panama catches from 1950 to 2010: highlighting data deficiencies and manageme Fisheries Review, 76 (1-2): 51-65. doi: dx.doi.org/10.7755/MFR.76.1_2.3 [Indust. 3,3,3; Art. 2,2,2; Subs. 1,1,1; Recr. 1,2,1; Disc. 1,1,2]  182 Papua New  Guinea  1,4 (1) Teh, L.C.L., Kinch, J., Zylich, K. and Zeller, D. 2014. Reconstructing Papua New Marine Fisheries Catch, 1950-2010. Fisheries Centre Working Paper #20 of British Columbia, Vancouver, 23 p. (http://www.seaaroundus.org/doc/publications/wp/2014/Teh-et-al-Papua-Guinea.pdf).  (4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-report fisheries catch in Pacific isl	stan's marine , University of istan.pdf). 1950-2008: sheries catch , University of al-2011- ed small-scale 's total fisheries at needs. Marine
178 Pakistan  1 Hornby, C., Moazzam, M., Zylich, K. and Zeller, D. 2014. Reconstruction of Paki fisheries catches (1950–2010). Fisheries Centre Working Paper #2014-28 British Columbia, Vancouver, 54 p. (http://www.seaaroundus.org/doc/publications/wp/2014/Hornby-et-al-Pak [Indust. 2,3,3; Art. 2,2,2; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,2,2]  179 Palau  2,4 (2) Lingard, S., Harper, S., Ota, Y. and Zeller, D. 2011. Marine Fisheries of Palau, Total reconstructed catch, pp. 73-84. In: S. Harper and D. Zeller (eds.) Fi reconstructions: Islands, Part II. Fisheries Centre Research Reports 19(4) British Columbia, Vancouver. (http://www.seaaroundus.org/doc/publications/chapters/2011/Lingard-et-Palau.pdf). (4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-report fisheries catch in Pacific island waters. Coral Reefs 34(1): 25-39. [Indust. 2,3,3; Art. 3,3,3; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,2,2]  180 Panama (Caribbean)  4 Harper, S., Guzman, H.M., Zylich, K. and Zeller, D. 2014. Reconstructing Panama catches from 1950 to 2010. highlighting data deficiencies and manageme Fisheries Review, 76 (1-2): 51-65. doi: dx.doi.org/10.7755/MFR.76.1_2.3 [Indust. 3,3,3; Art. 2,2,2; Subs. 1,1,1; Recr. 1,2,1; Disc. 1,1,2]  181 Panama (Pacific)  4 Harper, S., Guzman, H.M., Zylich, K. and Zeller, D. 2014. Reconstructing Panama catches from 1950 to 2010. highlighting data deficiencies and manageme Fisheries Review, 76 (1-2): 51-65. doi: dx.doi.org/10.7755/MFR.76.1_2.3 [Indust. 3,3,3; Art. 2,2,2; Subs. 1,1,1; Recr. 1,2,1; Disc. 1,1,2]  182 Papua New 1,4 (1) Teh, L.C.L., Kinch, J., Zylich, K. and Zeller, D. 2014. Reconstructing Papua Now Marine Fisheries Catch, 1950-2010. Fisheries Centre Working Paper #20 of British Columbia, Vancouver, 23 p. (http://www.seaaroundus.org/doc/publications/wp/2014/Teh-et-al-Papua-Guinea.pdf).  (4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-report fisheries catch in Pacific island waters. Coral Reefs 34(1): 25-39. [Indust. 2,2,2; Art. 2,2,2; Subs. 2,2,2; Rec	stan.pdf).  1950-2008: sheries catch , University of al-2011- ed small-scale c's total fisheries at needs. Marine
fisheries catches (1950–2010). Fisheries Centre Working Paper #2014-28 British Columbia, Vancouver, 54 p.  (http://www.seaaroundus.org/doc/publications/wp/2014/Hornby-et-al-Pal [Indust. 2,3,3; Art. 2,2,2; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,2,2]  179 Palau 2,4 (2) Lingard, S., Harper, S., Ota, Y. and Zeller, D. 2011. Marine Fisheries of Palau, Total reconstructions: Islands, Part II. Fisheries Centre Research Reports 19(4) British Columbia, Vancouver. (http://www.seaaroundus.org/doc/publications/chapters/2011/Lingard-et-Palau.pdf).  (4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-report fisheries catch in Pacific island waters. Coral Reefs 34(1): 25-39. [Indust. 2,3,3; Art. 3,3,3; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,2,2]  180 Panama 4 Harper, S., Guzman, H.M., Zylich, K. and Zeller, D. 2014. Reconstructing Panama catches from 1950 to 2010: highlighting data deficiencies and manageme Fisheries Review, 76 (1-2): 51-65. doi: dx.doi.org/10.7755/MFR.76.1_2.3 [Indust. 3,3,3; Art. 2,2,2; Subs. 1,1,1; Recr. 1,2,1; Disc. 1,1,2]  181 Panama (Pacific) 4 Harper, S., Guzman, H.M., Zylich, K. and Zeller, D. 2014. Reconstructing Panama catches from 1950 to 2010: highlighting data deficiencies and manageme Fisheries Review, 76 (1-2): 51-65. doi: dx.doi.org/10.7755/MFR.76.1_2.3 [Indust. 3,3,3; Art. 2,2,2; Subs. 1,1,1; Recr. 1,2,1; Disc. 1,1,2]  182 Papua New 1,4 (1) Teh, L.C.L., Kinch, J., Zylich, K. and Zeller, D. 2014. Reconstructing Papua New Guinea (1) Teh, L.C.L., Kinch, J., Zylich, K. and Zeller, D. 2014. Reconstructing Papua New Marine Fisheries Catch, 1950-2010. Fisheries Centre Working Paper #20 of British Columbia, Vancouver, 23 p. (http://www.seaaroundus.org/doc/publications/wp/2014/Teh-et-al-Papua-Guinea.pdf). (4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-report fisheries catch in Pacific island waters. Coral Reefs 34(1): 25-39. [Indust. 2,2,2; Art. 2,2,2; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,2,2]	stan.pdf).  1950-2008: sheries catch , University of al-2011- ed small-scale c's total fisheries at needs. Marine
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British Columbia, Vancouver. (http://www.seaaroundus.org/doc/publications/chapters/2011/Lingard-et-Palau.pdf).  (4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-report fisheries catch in Pacific island waters. Coral Reefs 34(1): 25-39.  [Indust. 2,3,3; Art. 3,3,3; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,2,2]  180 Panama (Caribbean)  4 Harper, S., Guzman, H.M., Zylich, K. and Zeller, D. 2014. Reconstructing Panama catches from 1950 to 2010: highlighting data deficiencies and managemer Fisheries Review, 76 (1-2): 51-65. doi: dx.doi.org/10.7755/MFR.76.1_2.3 [Indust. 3,3,3; Art. 2,2,2; Subs. 1,1,1; Recr. 1,2,1; Disc. 1,1,2]  181 Panama (Pacific)  4 Harper, S., Guzman, H.M., Zylich, K. and Zeller, D. 2014. Reconstructing Panama catches from 1950 to 2010: highlighting data deficiencies and managemer Fisheries Review, 76 (1-2): 51-65. doi: dx.doi.org/10.7755/MFR.76.1_2.3 [Indust. 3,3,3; Art. 2,2,2; Subs. 1,1,1; Recr. 1,2,1; Disc. 1,1,2]  182 Papua New 1,4  Guinea  1,4  (1) Teh, L.C.L, Kinch, J., Zylich, K. and Zeller, D. 2014. Reconstructing Papua Ne Marine Fisheries Catch, 1950-2010. Fisheries Centre Working Paper #20 of British Columbia, Vancouver, 23 p. (http://www.seaaroundus.org/doc/publications/wp/2014/Teh-et-al-Papua-Guinea.pdf).  (4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-report fisheries catch in Pacific island waters. Coral Reefs 34(1): 25-39. [Indust. 2,2,2; Art. 2,2,2; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,2,2]	ed small-scale  's total fisheries nt needs. Marine
(http://www.seaaroundus.org/doc/publications/chapters/2011/Lingard-et-Palau.pdf).  (4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-report fisheries catch in Pacific island waters. Coral Reefs 34(1): 25-39.  [Indust. 2,3,3; Art. 3,3,3; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,2,2]  180 Panama	ed small-scale  's total fisheries nt needs. Marine
Palau.pdf).  (4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-report fisheries catch in Pacific island waters. Coral Reefs 34(1): 25-39.  [Indust. 2,3,3; Art. 3,3,3; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,2,2]  180 Panama 4 Harper, S., Guzman, H.M., Zylich, K. and Zeller, D. 2014. Reconstructing Panama catches from 1950 to 2010: highlighting data deficiencies and manageme Fisheries Review, 76 (1-2): 51-65. doi: dx.doi.org/10.7755/MFR.76.1_2.3 [Indust. 3,3,3; Art. 2,2,2; Subs. 1,1,1; Recr. 1,2,1; Disc. 1,1,2]  181 Panama (Pacific) 4 Harper, S., Guzman, H.M., Zylich, K. and Zeller, D. 2014. Reconstructing Panama catches from 1950 to 2010: highlighting data deficiencies and manageme Fisheries Review, 76 (1-2): 51-65. doi: dx.doi.org/10.7755/MFR.76.1_2.3 [Indust. 3,3,3; Art. 2,2,2; Subs. 1,1,1; Recr. 1,2,1; Disc. 1,1,2]  182 Papua New 1,4 (1) Teh, L.C.L., Kinch, J., Zylich, K. and Zeller, D. 2014. Reconstructing Papua New Guinea Marine Fisheries Catch, 1950-2010. Fisheries Centre Working Paper #20 of British Columbia, Vancouver, 23 p. (http://www.seaaroundus.org/doc/publications/wp/2014/Teh-et-al-Papua-Guinea.pdf).  (4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-report fisheries catch in Pacific island waters. Coral Reefs 34(1): 25-39. [Indust. 2,2,2; Art. 2,2,2; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,2,2]	ed small-scale  's total fisheries nt needs. Marine
(4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-report fisheries catch in Pacific island waters. Coral Reefs 34(1): 25-39.  [Indust. 2,3,3; Art. 3,3,3; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,2,2]  180 Panama 4 Harper, S., Guzman, H.M., Zylich, K. and Zeller, D. 2014. Reconstructing Panama catches from 1950 to 2010: highlighting data deficiencies and management Fisheries Review, 76 (1-2): 51-65. doi: dx.doi.org/10.7755/MFR.76.1_2.3 [Indust. 3,3,3; Art. 2,2,2; Subs. 1,1,1; Recr. 1,2,1; Disc. 1,1,2]  181 Panama (Pacific) 4 Harper, S., Guzman, H.M., Zylich, K. and Zeller, D. 2014. Reconstructing Panama catches from 1950 to 2010: highlighting data deficiencies and management Fisheries Review, 76 (1-2): 51-65. doi: dx.doi.org/10.7755/MFR.76.1_2.3 [Indust. 3,3,3; Art. 2,2,2; Subs. 1,1,1; Recr. 1,2,1; Disc. 1,1,2]  182 Papua New 1,4 (1) Teh, L.C.L, Kinch, J., Zylich, K. and Zeller, D. 2014. Reconstructing Papua New Guinea Marine Fisheries Catch, 1950-2010. Fisheries Centre Working Paper #20 of British Columbia, Vancouver, 23 p. (http://www.seaaroundus.org/doc/publications/wp/2014/Teh-et-al-Papua-Guinea.pdf).  (4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-report fisheries catch in Pacific island waters. Coral Reefs 34(1): 25-39. [Indust. 2,2,2; Art. 2,2,2; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,2,2]	a's total fisheries nt needs. Marine
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1,4 (1) Teh, L.C.L, Kinch, J., Zylich, K. and Zeller, D. 2014. Reconstructing Papua No Marine Fisheries Catch, 1950-2010. Fisheries Centre Working Paper #20 of British Columbia, Vancouver, 23 p.  (http://www.seaaroundus.org/doc/publications/wp/2014/Teh-et-al-Papua-Guinea.pdf).  (4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-report fisheries catch in Pacific island waters. Coral Reefs 34(1): 25-39.  [Indust. 2,2,2; Art. 2,2,2; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,2,2]	
Guinea  Marine Fisheries Catch, 1950-2010. Fisheries Centre Working Paper #20  of British Columbia, Vancouver, 23 p.  (http://www.seaaroundus.org/doc/publications/wp/2014/Teh-et-al-Papua-Guinea.pdf).  (4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-report fisheries catch in Pacific island waters. <i>Coral Reefs</i> 34(1): 25-39.  [Indust. 2,2,2; Art. 2,2,2; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,2,2]	vy Guinaga's
of British Columbia, Vancouver, 23 p. (http://www.seaaroundus.org/doc/publications/wp/2014/Teh-et-al-Papua-Guinea.pdf).  (4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-report fisheries catch in Pacific island waters. <i>Coral Reefs</i> 34(1): 25-39.  [Indust. 2,2,2; Art. 2,2,2; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,2,2]	A 00 University
(http://www.seaaroundus.org/doc/publications/wp/2014/Teh-et-al-Papua-Guinea.pdf).  (4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-report fisheries catch in Pacific island waters. <i>Coral Reefs</i> 34(1): 25-39.  [Indust. 2,2,2; Art. 2,2,2; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,2,2]	4-09, University
Guinea.pdf).  (4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-report fisheries catch in Pacific island waters. <i>Coral Reefs</i> 34(1): 25-39.  [Indust. 2,2,2; Art. 2,2,2; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,2,2]	Maxy
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165 Teta 1 Wendo, 5. and Woshitza-Wendo, C. 2014. Reconstruction of total matrix risheries	catches for Peru
1950-2010. Fisheries Centre Working Paper #2014-21, University of Brit	
Vancouver, 23 p. (http://www.seaaroundus.org/doc/publications/wp/2014	
Peru.pdf).	Wichao et al
[Indust. 3,4,4; Art. 3,3,3; Subs. 3,3,3; Recr. 1,2,2; Disc. 3,3,3]	
184 Philippines 2 Palomares, M.L.D. and Pauly, D. (eds.) 2014. <i>Philippine Marine Fisheries Catche</i>	s: A Rottom-un
Reconstruction, 1950 to 2010. Fisheries Centre Research Report 22(1), U	
British Columbia, Vancouver, 171 p. (http://www.fisheries.ubc.ca/webfm	
[Indust. 2,2,2; Art. 3,3,3; Subs. 3,3,3; Recr. 3,3,3; Disc. 2,2,2]	<u></u>
185 Poland 2,4 (2) Bale, S., Rossing, P., Booth, S., Wowkonowicz, P. and Zeller, D. 2010. Poland	's fisharias
catches in the Baltic Sea (1950-2007). pp. 165-188. <i>In</i> : R. Rossing, S. Bo	
(eds.) Total marine fisheries extractions by country in the Baltic Sea: 195	
Fisheries Centre Research Reports 18(1), University of British Columbia,	
(http://www.seaaroundus.org/doc/publications/chapters/2010/Harper-et-a	
Poland.pdf).	-Daic-ct-ai-
(4) Zeller, D., Rossing, P., Harper, S., Persson, L., Booth, S. and Pauly, D. 2011. T	ha Daltia Can:
estimates of total fisheries removals 1950-2007. Fisheries Research 108:	
Since completing the initial reconstruction, ICES landing statistics became availab	
update the reconstruction, ICES landing statistics for 2008-2010 were accepted as	
landings. The unreported component was calculated using the 2007 IUU rates (by	
were applied to the reported landings. To calculate discards, the 2007 discard rates	species), which
were applied to the sum of reported landings and unreported catches. To calculate	species), which (by species)
catch, population data was first retrieved from Populstat (www.populstat.info), and	species), which (by species) recreational
Important and a second	species), which (by species) recreational I if needed, a
linear interpolation was used to estimate annual population. The 2007 per capita ca	species), which (by species) recreational I if needed, a ttch rate for the
recreational sector was then applied to the 2008-2010 population estimates to calci	species), which (by species) recreational I if needed, a ttch rate for the tlate total
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#	Country	Publ. type	subsistence, Recr. = recreational, plus Disc. = discards.  Source of reconstruction
186	Portugal	1,4	(1) Leitão, F., Baptista, V., Erzini, K., Iritani, D. and Zeller, D. 2014. Reconstruction of mainland
		-,.	Portugal fisheries catches 1950-2010. Fisheries Centre Working Paper #2014-08,
			University of British Columbia, Vancouver, 29 p.
			(http://www.seaaroundus.org/doc/publications/wp/2014/Leitao-et-al-Portugal.pdf).
			(4) Leitão, F., Baptista, V., Zeller, D. and Erzini, K. 2014. Reconstructed catches and trends for
			mainland Portugal fisheries between 1938 and 2009: implications for sustainability,
			domestic fish supply and imports. Fisheries Research 155: 33-50.
			[Indust. 2,3,4; Art. 2,3,3; Subs. 2,2,2; Recr. 2,2,2; Disc. 2,2,2]
187	Portugal (Azores)	4	Pham, C.K, Canha, A., Diogo, H., Pereira, J.G., Prieto, R. and Morato, T. 2013. Total marine
107	r ortugur (r izores)	•	fishery catch for the Azores (1950-2010). <i>ICES Journal of Marine Science</i> . 70(3): 564-
			577.
			[Indust. 3,3,4; Art. 3,3,4; Subs. 2,2,3; Recr. 2,3,3; Disc. 1,1,3]
188	Portugal (Madeira)	1	Shon, S., Delgado, J.M., Morato, T., Pham, C.K., Zylich, K., Zeller, D. and Pauly, D. 2015.
100	ronugai (Madena)	1	Reconstruction of marine fisheries catches for Madeira Island, Portugal, from 1950-2010.
			Fisheries Centre Working Paper #2015-52, University of British Columbia, Vancouver, 13
			p. (http://www.seaaroundus.org/doc/publications/wp/2015/Shon-et-al-Madeira.pdf).
			[Indust. 2,3,4; Art. 2,3,3; Subs. 2,2,2; Recr. 2,2,2; Disc. 2,2,2]
189	Qatar	2,4	(2) Al-Abdulrazzak, D. 2013. Total fishery extractions for Qatar: 1950-2010. pp. 31-37. In: D. Al-
			Abdulrazzak and D. Pauly (eds.) From dhows to trawlers: a recent history of fisheries in
			the Gulf countries, 1950 to 2010. Fisheries Centre Research Reports 21(2), University of
			British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2013/AlAbdulrazzak-Qatar.pdf).
			(4) Al-Abdulrazzak, D., Zeller, D., Belhabib, D., Tesfamichael, D. and Pauly, D. 2015. Total
			marine fisheries catches in the Persian/Arabian Gulf from 1950-2010. Regional Studies in
			Marine Science 2: 28-34.
			[Indust,3,2; Art. 3,3,3; Subs. 1,1,1; Recr. 1,1,1; Disc. 3,3,2]
190	Romania	1	Bănaru, D., Le Manach, F., Färber, L., Zylich, K. and Pauly, D. 2015. From bluefin tuna to gobies:
			a reconstruction of the fisheries catch statistics in Romania, 1950-2010. Fisheries Centre
			Working Paper #2015-48, University of British Columbia, Vancouver, 10 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Banaru-et-al-Romania.pdf).
			[Indust. 2,3,3; Art. 2,3,3; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,2,2]
191	Russia (Baltic Sea)	2,4	(2) Harper, S., Shibaev, S.V., Baryshnikova, O., Rossing, P., Booth, S. and Zeller, D. 2010. Russian
.,.	reassia (Barrie Sea)	-, .	fisheries catches in the Baltic Sea from 1950-2007. pp. 189-224. <i>In:</i> R. Rossing, S. Booth
			and D. Zeller (eds.) Total marine fisheries extractions by country in the Baltic Sea: 1950-
			present. Fisheries Centre Research Reports 18(1), University of British Columbia,
			Vancouver. (http://www.seaaroundus.org/doc/publications/chapters/2010/Harper-et-al-
			Russia-Baltic.pdf).
			(3) Zeller, D., Rossing, P., Harper, S., Persson, L., Booth, S. and Pauly, D. 2011. The Baltic Sea:
			estimates of total fisheries removals 1950-2007. Fisheries Research 108: 356-363.
			Since completing the initial reconstructions, 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 IUU 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 landings and unreported catches. 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 within the 2010 dataset regarding previous years.
			[Indust. 2,2,2; Art. 2,2,2; Subs,-,-; Recr. 1,1,1; Disc. 1,1,1]
192	Russian (Barents	1	Jovanović, B., Divovich, E., Harper, S., Zeller, D. and Pauly, D. 2015. Estimates of total Russian
	Sea)		fisheries catches in the Barents Sea region (FAO 27 subarea I) between 1950 and 2010.
	•		Fisheries Centre Working Paper #2015-59, University of British Columbia, Vancouver, 16
			p. (http://www.seaaroundus.org/doc/publications/wp/2015/Jovanović-et-al-Russia-Barent-
			Sea.pdf).
			[Indust. 3,3,3; Art. 2,2,2; Subs. 1,1,1; Recr. 1,1,1; Disc. 2,2,2]
193	Russia (Black and	1	Divovich, E., Jovanović, B., Zylich, K., Harper, S., Zeller, D. and Pauly, D. 2015. Caviar and
	Azov Seas)	-	politics: A reconstruction of Russia's marine fisheries in the Black Sea and Sea of Azov
			from 1950 to 2010. Fisheries Centre Working Paper #2015-84, University of British
			Columbia, Vancouver, 24 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Divovich-et-al-Russia-Black-
			Sea.pdf).
			[Indust. 2,3,2; Art. 2,3,2; Subs. 2,2,2; Recr. 1,1,2; Disc. 2,2,3]
			[HIGGG, 2,3,4, FII, 2,3,4, GUO, 2,4,4, INCOL 1,1,4, DISC, 2,4,3]

#	Country	Publ. type	subsistence, Recr. = recreational, plus Disc. = discards.  Source of reconstruction
194	Russia (Far East)	1	Sobolevskaya, A. and Divovich, E. 2015. The Wall Street of fisheries: the Russian Far East, a catch
	reassia (1 ar 2 ast)	•	reconstruction from 1950-2010. Fisheries Centre Working Paper #2015-45, University of
			British Columbia, Vancouver, 65
			p.(http://www.seaaroundus.org/doc/publications/wp/2015/Sobolevskaya-and-Divovich-
			Russia-Far-East.pdf).
			[Indust. 4,4,4; Art. 4,4,4; Subs. 2,3,3; Recr. 2,3,3; Disc. 1,1,3]
195	Russia (Kara Sea)	2,2,4	(2) Pauly, D. and Swartz, W. 2007. Marine fish catches in North Siberia (Russia, FAO Area 18).
	` /		pp. 17-33 In: D. Zeller and D. Pauly (eds.) Reconstruction of Marine Fisheries Catches for
			Key Countries and Regions (1950-2005). Fisheries Centre Research Report 15(2),
			University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2007/Pauly-and-Swartz-North-
			Siberia.pdf).
			(2) Teh, L.C.L., Zylich, K. and Zeller, D. 2015. FAO area 18 (Arctic Sea): Catch data
			reconstruction extension of Zeller et al. (2011) to 2010. Fisheries Centre Working Paper
			#2015-14, University of British Columbia, Vancouver, 5 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Teh-et-al-Arctic-Sea.pdf).
			(4) Zeller, D., Booth, S., Pakhomov, E., Swartz, W. and Pauly, D. 2011. Arctic fisheries catches in
			Russia, USA and Canada: Baselines for neglected ecosystems. <i>Polar Biology</i> 34(7): 955-
			973.
	- · ~		[Indust. 1,1,1; Art. 1,1,1; Subs. 1,1,1; Recr. 1,1,1; Disc. 1,1,1]
196	Russia (Laptev to	1,2,4	(1) Teh, L.C.L., Zylich, K. and Zeller, D. 2015. FAO area 18 (Arctic Sea): Catch data
	Chukchi Seas)		reconstruction extension of Zeller <i>et al.</i> (2011) to 2010. Fisheries Centre Working Paper
			#2015-14, University of British Columbia, Vancouver, 5 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Teh-et-al-Arctic-Sea.pdf).
			(2) Pauly, D. and Swartz, W. 2007. Marine fish catches in North Siberia (Russia, FAO Area 18).
			pp. 17-33 <i>In:</i> D. Zeller and D. Pauly (eds.) <i>Reconstruction of Marine Fisheries Catches for Key Countries and Regions (1950-2005)</i> . Fisheries Centre Research Reports, 15(2).
			(http://www.seaaroundus.org/doc/publications/chapters/2007/Pauly-and-Swartz-North-
			Siberia.pdf).
			(4) Zeller, D., Booth, S., Pakhomov, E., Swartz, W. and Pauly, D. 2011. Arctic fisheries catches in
			Russia, USA and Canada: Baselines for neglected ecosystems. <i>Polar Biology</i> 34(7): 955-
			973.
			[Indust. 1,1,1; Art. 1,1,1; Subs. 1,1,1; Recr. 1,1,1; Disc. 1,1,1]
197	Samoa	2,4	(2) Lingard, S., Harper, S. and Zeller, D. 2012. Reconstructed catches of Samoa 1950-2010, pp.
		,	103-118. In: S. Harper, K. Zylich, L. Boonzaier, F. Le Manach, D. Pauly and D. Zeller
			(eds.) Fisheries catch reconstructions: Islands, Part III. Fisheries Centre Research Reports
			20(5), University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2012/Lingard-et-al-2012-
			Samoa.pdf).
			(4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-reported small-scale
			fisheries catch in Pacific island waters. Coral Reefs 34(1): 25-39.
			[Indust. 2,3,3; Art. 2,3,3; Subs. 2,3,3; Recr. 1,1,1; Disc. 2,2,2]
198	São Tomé and	1,4,4	(1) Belhabib, D. 2015. Fisheries of São Tomé and Príncipe, a catch reconstruction 1950-2010.
	Príncipe		Fisheries Centre Working Paper #2015-67, University of British Columbia, Vancouver, 13
			p. (http://www.seaaroundus.org/doc/publications/wp/2015/Belhabib-Sao-Tome-and-
			Principe.pdf).
			(4) Belhabib, D., Sumaila, U.R., Lam, V.W.Y., Zeller, D., Le Billon, P., Kane, E.A. and Pauly, D.
			2015. Euro vs. Yuan: Comparing European and Chinese fishing access in West Africa.
			PLoS One 10(3): e0118351
			(4) Belhabib, D., Sumaila, U.R. and Pauly, D. 2015. Feeding the poor: contribution of West African
			fisheries to employment and food security. Ocean & Coastal Management 111: 72-81.
100	C 1: A1-:-	2.4	[Indust. 4,4,4; Art. 2,3,3; Subs. 2,3,3; Recr,-,-; Disc,-,-]
199	Saudi Arabia	2,4	(2) Tesfamichael, D. and Pauly, D. 2013. Catch reconstruction of the fisheries of Saudi Arabia in the Gulf, 1950-2010. pp. 39-52. <i>In</i> : D. Al-Abdulrazzak and D. Pauly (eds.) <i>From dhows to</i>
	(Persian Gulf)		trawlers: a recent history of fisheries in the Gulf countries, 1950 to 2010. Fisheries Centre
			Research Reports 21(2), University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2013/Tesfamichael-and-Pauly-
			Saudi-Arabia-Persian-Gulf.pdf).
			(4) Al-Abdulrazzak, D., Zeller, D., Belhabib, D., Tesfamichael, D. and Pauly, D. 2015. Total
			marine fisheries catches in the Persian/Arabian Gulf from 1950-2010 Regional Studies in
			marine fisheries catches in the Persian/Arabian Gulf from 1950-2010. Regional Studies in Marine Science 2: 28-34.
			Marine Science 2: 28-34.
200	Saudi Arabia (Red	2	· · · · · · · · · · · · · · · · · · ·

			subsistence, Recr. = recreational, plus Disc. = discards.
#	Country	Publ. type	Source of reconstruction  Catch reconstruction for the Red Sea large marine ecosystem by countries (1950–2010).  Fisheries Centre Research Reports 20(1), University of British Columbia, Vancouver.  (http://www.seaaroundus.org/doc/publications/chapters/2012/Tesfamichael-and-Rossing-Saudi-Arabia.pdf).
			[Indust. 2,3,3; Art. 2,2,2; Subs. 1,1,1; Recr. 2,2,2; Disc. 2,2,2]
201	Senegal	1,4,4,4,4	(1) Belhabib, D., Koutob, V., Gueye, N., Mbaye, L., Mathews, C., Lam, V.W.Y., Pauly, D. 2013.  Lots of boats and fewer fishes: A preliminary catch reconstruction for Senegal, 1950-2010.  Fisheries Centre Working Papers #2013-03, Fisheries Centre, University of British  Columbia, Vancouver. 34 p.  (http://www.seaaroundus.org/doc/publications/wp/2014/Belhabib-et-al-Senegal.pdf).
			<ul> <li>(4) Belhabib, D., Koutob, V., Sall, A., Lam, V.W.Y. and Pauly, D. 2014. Fisheries catch misreporting and its implications: The case of Senegal. <i>Fisheries Research</i> 151:1-11. doi: 10.1016/j.fishres.2013.12.006</li> <li>(4) Belhabib, D., Koutob, V., Sall, A., Lam, V.W.Y. and Pauly, D. 2015. Counting pirogues and missing the boat: Reply to Chaboud <i>et al.</i>'s comment on Belhabib <i>et al.</i> "Fisheries catch misreporting and its implications: The case of Senegal". <i>Fisheries Research</i> 164: 325-328.</li> </ul>
			<ul> <li>(4) Belhabib, D., Sumaila, U.R., Lam, V.W.Y., Zeller, D., Le Billon, P., Kane, E.A. and Pauly, D. 2015. Euro vs. Yuan: Comparing European and Chinese fishing access in West Africa. <i>PLoS One</i> 10(3): e0118351</li> <li>(4) Belhabib, D., Sumaila, U.R. and Pauly, D. 2015. Feeding the poor: contribution of West African fisheries to employment and food security. <i>Ocean &amp; Coastal Management</i> 111: 72-81.</li> <li>[Indust. 3,3,4; Art. 2,2,3; Subs. 3,3,3; Recr. 2,2,4; Disc. 4,4,4]</li> </ul>
202	Seychelles	2	Le Manach, F., Bach, P., Boistol, L., Robinson, J. and Pauly, D. 2015. Artisanal Fisheries in the World's Second Largest Tuna Fishing Ground - Reconstruction of the Seychelles' Marine Fisheries Catch, 1950–2010. p. 99-109. <i>In:</i> F. Le Manach and D. Pauly (eds.) <i>Fisheries catch reconstructions in the Western Indian Ocean, 1950-2010.</i> Fisheries Centre Research Report 23(2), University of British Columbia, Vancouver.  (http://www.seaaroundus.org/doc/publications/chapters/2015/LeManach-et-al-2015-Seychelles.pdf).  [Indust. 2,3,3; Art. 2,3,3; Subs. 1,1,1; Recr. 1,1,1; Disc. 2,2,2]
203	Sierra Leone	1,4,4	<ol> <li>Seto, K., Belhabib, D., Copeland, D., Vakily, M., Seilert, H., Sankoh, S., Baio, A., Turay, I.,         Harper, S., Zeller, D., Zylich, K. and Pauly, D. 2015. Colonialism, conflict, and fish: a         reconstruction of marine fisheries catches for Sierra Leone, 1950-2010. Fisheries Centre         Working Paper #2015-74, University of British Columbia, Vancouver, 23 p.         (http://www.seaaroundus.org/doc/publications/wp/2015/Seto-et-al-Sierra-Leone.pdf).</li> <li>Belhabib, D., Sumaila, U.R., Lam, V.W.Y., Zeller, D., Le Billon, P., Kane, E.A. and Pauly, D.         2015. Euro vs. Yuan: Comparing European and Chinese fishing access in West Africa.         <i>PLoS One</i> 10(3): e0118351</li> <li>Belhabib, D., Sumaila, U.R. and Pauly, D. 2015. Feeding the poor: contribution of West African         fisheries to employment and food security. <i>Ocean &amp; Coastal Management</i> 111: 72-81.     </li> <li>Indust. 4,4,4; Art. 2,3,4; Subs. 1,1,1; Recr,; Disc. 2,2,4</li> </ol>
204	Singapore	2	Corpus, L. 2014. Reconstructing Singapore's marine fisheries catch, 1950-2010. pp. 137-146. <i>In</i> :  K. Zylich, D. Zeller, M. Ang and D. Pauly (eds.) <i>Fisheries catch reconstructions: Islands</i> , <i>Part IV</i> . Fisheries Centre Research Reports 22(2), University of British Columbia,  Vancouver. (http://www.seaaroundus.org/doc/publications/chapters/2014/Corpus-Singapore.pdf).  [Indust. 4,4,4; Art. 4,3,3; Subs. 4,3,2; Recr. 3,3,4; Disc. 4,3,3]
205	Slovenia	1	Bolje, A., Marčeta, B., Blejec, A. and Lindop, A. 2015. Marine fish catches in Slovenia between 1950 and 2010. Fisheries Centre Working Paper #2015-58, University of British Columbia, Vancouver, 13 p.  (http://www.seaaroundus.org/doc/publications/wp/2015/Bolje-et-al-Slovenia.pdf).  [Indust. 2,3,3; Art. 2,3,3; Subs. 1,1,1; Recr. 1,1,1; Disc. 2,2,2]
206	Solomon Islands	2,4	<ul> <li>(2) Doyle, B., Harper, S., Jacquet, J. and Zeller, D. 2012. Reconstructing marine fisheries catches in the Solomon Islands: 1950-2009, pp. 119-134. <i>In:</i> S. Harper, K. Zylich, L. Boonzaier, F. Le Manach, D. Pauly and D. Zeller (eds.) <i>Fisheries catch reconstructions: Islands, Part III.</i> Fisheries Centre Research Reports 20(5), University of British Columbia, Vancouver. (http://www.seaaroundus.org/doc/publications/chapters/2012/Doyle-et-al-2012-Solomon-Islands.pdf).</li> <li>(4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-reported small-scale fisheries catch in Pacific island waters. <i>Coral Reefs</i> 34(1): 25-39.</li> <li>[Including on p. 129 an addendum which updates the dataset to 2010]</li> <li>[Indust,2,2; Art. 1,1,1; Subs,1,1; Recr,,-; Disc. 2,1,1]</li> </ul>
207	Somalia	1,2	(1) Persson, L., Lindop, A., Harper, S., Zylich, K. and Zeller, D. 2014. Failed state: Reconstruction of domestic fisheries catches in Somalia 1950-2010. Fisheries Centre Working Paper

#	Country	Publ. type	Source of reconstruction
			#2014-10, University of British Columbia, Vancouver, 10 p.
			(http://www.seaaroundus.org/doc/publications/wp/2014/Persson-et-al-Somalia.pdf).
			(2) Persson, L., Lindop, A., Harper, S., Zylich, K. and Zeller, D. 2015. Failed state: Reconstruction
			of domestic fisheries catches in Somalia 1950-2010. p. 111-127. <i>In:</i> F. Le Manach and D.
			Pauly (eds.) Fisheries catch reconstructions in the Western Indian Ocean, 1950-2010.
			Fisheries Centre Research Report 23(2), University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2015/Persson-et-al-2015-
			Somalia.pdf).
200	0 4 40:		[Indust. 1,2,2; Art. 1,2,2; Subs. 1,1,1; Recr. 1,1,1; Disc. 1,1,1]
208	South Africa	2	Baust, S., Teh, L.C.L., Harper, S. and Zeller, D. 2015. South Africa's Marine Fisheries Catches
	(Atlantic Coast)		(1950–2010). pp. 129-150. <i>In</i> : F. Le Manach and D. Pauly (eds.) <i>Fisheries catch</i>
			reconstructions in the Western Indian Ocean, 1950-2010. Fisheries Centre Research Report 23(2), University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2015/Baust-et-al-2015-South-
			Africa.pdf).
			[Indust. 2,2,2; Art. 2,2,2; Subs. 2,2,3; Recr. 2,2,3; Disc. 1,2,2]
209	South Africa	2	Baust, S., Teh, L.C.L., Harper, S. and Zeller, D. 2015. South Africa's Marine Fisheries Catches
209	(Indian Ocean	2	(1950–2010). pp. 129-150. <i>In:</i> F. Le Manach and D. Pauly (eds.) <i>Fisheries catch</i>
	Coast)		reconstructions in the Western Indian Ocean, 1950-2010. Fisheries Centre Research
	Cousty		Report 23(2), University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2015/Baust-et-al-2015-South-
			Africa.pdf).
			[Indust. 2,2,2; Art. 2,2,2; Subs. 2,2,3; Recr. 2,2,3; Disc. 1,2,2]
210	South Africa	2	Boonzaier, L., Harper, S., Zeller, D. and Pauly, D. 2012. A brief history of fishing in the Prince
	(Prince Edward		Edward Islands, South Africa, 1950-2010, pp. 95-101 In: S. Harper, K. Zylich, L.
	Islands)		Boonzaier, F. Le Manach, D. Pauly and D. Zeller (eds.) Fisheries catch reconstructions:
			Islands, Part III. Fisheries Centre Research Reports 20(5), University of British Columbia,
			Vancouver. (http://www.seaaroundus.org/doc/publications/chapters/2012/Boonzaier-et-al-
			Prince-Edward-Is.pdf).
			[Indust,-,4; Art,-,-; Subs,-,-; Recr,-,-; Disc,-,3]
211	Spain (Balearic	1,3	(1) Carreras, M., Coll, M., Quetglas, A., Goñi, R., Pastor, X., Cornax, M.J., Iglesias, M., Massutí,
	Islands)		E., Oliver, P., Aguilar, R. and Pauly, D. 2015. Estimates of total fisheries removal for the
			Balearic Islands (1950-2010). Fisheries Centre Working Paper #2015-19, University of
			British Columbia, Vancouver, 45 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Carreras-et-al-Balearic-
			Islands.pdf).
			(3) Carreras, M. 2014. Evolucion de la pesca Beleares, Oceana, Madrid, 32 p.
212	Spain (Canary	1	[Indust. 2,2,4; Art. 2,3,3; Subs. 2,2,3; Recr. 2,2,3; Disc. 2,3,4]  Castro, J.J., Divovich, E., Delgado de Molina Acevedo, A. and Barrera-Luján, A. 2015. Over-
212	Islands)	1	looked and under-reported: A catch reconstruction of marine fisheries in the Canary
	isianus)		Islands, Spain, 1950-2010. Fisheries Centre Working Paper #2015-26, University of
			British Columbia, Vancouver, 35 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Castro-et-al-CanaryIs.pdf).
			[Indust,; Art. 3,3,4; Subs. 2,1,2; Recr. 2,2,3; Disc. 2,2,3]
213	Spain	1,4	(1) Coll, M., Carreras, M., Cornax, M.J., Massutí, E., Morote, E., Pastor, X., Quetglas, A., Sáez, R.,
	(Mediterranean	.,.	Silva, L., Sobrino, I., Torres, M.A., Tudela, S., Harper, S., Zeller, D. and Pauly, D. 2015.
	and Gulf of Cadiz)		An estimate of the total catch in the Spanish Mediterranean Sea and Gulf of Cadiz regions
	,		(1950-2010). Fisheries Centre Working Paper #2015-60, University of British Columbia,
			Vancouver, 52 p. (http://www.seaaroundus.org/doc/publications/wp/2015/Coll-et-al-Spain-
			Med-and-Gulf-of-Cadiz.pdf).
			(4) Pauly, D., Ulman, A., Piroddi, C., Bultel, E. and Coll, M. 2014. 'Reported' versus 'likely'
			fisheries catches of four Mediterranean countries. pp. 11-17. In: J. Lleonart and F. Maynou
			(eds.) The Ecosystem approach to fisheries in the Mediterranean and Black Seas. Scientia
			Marina. 78S1.
	a : a: :		[Indust. 3,3,3; Art. 3,3,3; Subs. 1,1,1; Recr. 1,1,1; Disc. 2,2,2]
214	Spain (Northwest)	1	Villasante, S., Macho, G., Giráldez, J., Rivero Rodriguez, S., Isusu de Rivero, J., Harper, S., Zeller,
			D. and Pauly, D. 2015. Estimates of total fisheries removals from the Northwest of Spain
			(1950-2010). Fisheries Centre Working Paper #2015-51, University of British Columbia,
			Vancouver, 21 p. (http://www.seaaroundus.org/doc/publications/wp/2015/Villasante-et-al-
			<u>Spain-NW.pdf</u> ). [Indust. 1,1,2; Art. 1,1,2; Subs. 1,1,2; Recr. 1,1,2; Disc. 1,1,3]
215	Sri Lanka	2	O'Meara, D., Harper, S., Perera, N. and Zeller, D. 2011. Reconstruction of Sri Lanka's fisheries
213	on Lanka	2	catches: 1950-2008, pp. 85-96. <i>In</i> : S. Harper and D. Zeller (eds.) <i>Fisheries catch</i>
			reconstructions: Islands, Part II. Fisheries Centre Research Reports 19(4), University of
			reconstructions. Islands, 1 art 11. I islandes contact research reports 17(4), University 01

			subsistence, Recr. = recreational, plus Disc. = discards.
#	Country	Publ. type	Source of reconstruction
			British Columbia, Vancouver. (http://www.seaaroundus.org/doc/publications/chapters/2011/OMeara-et-al-Sri-
			(http://www.seaaroundus.org/doc/puoncarions/cnapters/2011/OMeara-et-ar-str- Lanka.pdf).
			Since completing the initial reconstruction, FAO data became available to 2010. To update the
			reconstruction, the total reconstructed catch was carried forward 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
			pelagics, 90% of sea cucumbers, and 80% of some of the sharks. Thus, the same pattern was
			followed for 2009. However, due to large increases in the reported pelagics in 2010, the 2009
			tonnages allocated to inside the EEZ were flatlined 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 IUU 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 IUU
			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).
			[Indust. 1,2,2; Art. 1,2,2; Subs. 1,1,1; Recr. 1,1,1; Disc. 1,1,1]
216	St. Kitts and Nevis	2	Ramdeen, R., Zylich, K. and Zeller, D. 2014. Reconstruction of total marine fisheries catches for
			St. Kitts and Nevis (1950-2010). pp. 129-136. <i>In</i> : K. Zylich, D. Zeller, M. Ang and D. Pauly (eds.) <i>Fisheries catch reconstructions: Islands, Part IV</i> . Fisheries Centre Research
			Reports 22(2), University of British Columbia.
			(http://www.seaaroundus.org/doc/publications/chapters/2014//Ramdeen-et-al-SKN.pdf).
			[Indust. 2,3,3; Art. 2,3,3; Subs. 2,2,2; Recr. 1,1,1; Disc. 1,1,1]
217	St. Lucia	1	Mohammed, E., Lindop, A. and Joseph, W. 2015. St Lucia, reconstructed fisheries catches, 1950-
			2010. Fisheries Centre Working Paper #2015-53, University of British Columbia,
			Vancouver, 25 p. (http://www.seaaroundus.org/doc/publications/wp/2015/Mohammed-et-
			al-St-Lucia.pdf).
218	St Vincent and the	1	[Indust. 2,3,3; Art. 2,3,3; Subs. 2,3,3; Recr. 1,1,1; Disc. 1,1,1] Mohammed, E. and Lindop, A. 2015. St. Vincent and the Grenadines: Reconstructed Fisheries
210	Grenadines	1	Catches, 1950-2010. Fisheries Centre Working Paper #2015-54, University of British
			Columbia, Vancouver, 27 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Mohammed-et-al-St-Vincent-and-
			the-Grenadines.pdf).
210	0.1	2	[Indust. 3,3,3; Art. 3,3,3; Subs. 2,2,2; Recr. 2,2,2; Disc. 2,2,2]
219	Sudan	2	Tesfamichael, D. and Ekawad, A.N. 2012. Reconstructing Red Sea fisheries of Sudan: foreign aid and fisheries. pp. 51-70. <i>In</i> : D. Tesfamichael and D. Pauly (eds.) <i>Catch reconstruction for</i>
			the Red Sea large marine ecosystem by countries (1950-2010). Fisheries Centre Research
			Reports 20(1), University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2012/Tesfamichael-and-Elawad-
			Sudan.pdf).
	a :		[Indust. 2,3,3; Art. 2,3,3; Subs. 1,1,1; Recr. 1,1,1; Disc. 1,1,1]
220	Suriname	1	Hornby, C., Harper, S., MacDonald, J. and Zeller, D. 2015. Reconstruction of Suriname's marine
			fisheries catches from 1950-2010. Fisheries Centre Working Paper #2015-49, University of British Columbia, Vancouver, 14 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Hornby-et-al-Suriname.pdf).
			[Indust. 2,3,3; Art. 2,3,3; Subs. 1,1,1; Recr. 1,1,1; Disc. 1,1,1]
221	Sweden (Baltic)	2,4	(2) Persson, L. 2010. Sweden's fisheries catches in the Baltic Sea (1950-2007). pp. 225-263. <i>In:</i> R.
			Rossing, S. Booth and D. Zeller (eds.) Total marine fisheries extractions by country in the
			Baltic Sea: 1950-present. Fisheries Centre Research Reports 18(1), University of British
			Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2010/Persson-Sweden-Baltic.pdf).
			(3) Zeller, D., Rossing, P., Harper, S., Persson, L., Booth, S. and Pauly, D. 2011. The Baltic Sea: estimates of total fisheries removals 1950-2007. <i>Fisheries Research</i> 108: 356-363.
			Since completing the initial reconstructions, 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 IUU 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 landings and unreported catches. 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 within the 2010 dataset regarding previous years.
		·	

#			subsistence, Recr. = recreational, plus Disc. = discards.  Source of reconstruction
#	Country	Publ. type	[Indust. 2,3,3; Art. 2,3,3; Subs. 2,2,2; Recr. 2,2,2; Disc. 2,2,2]
222	Sweden (West Coast)	1	Persson, L. 2014. Reconstructing total Swedish catches on the west coast of Sweden: 1950-2010.  Fisheries Centre Working Paper #2015-24, University of British Columbia, Vancouver, 10 p. (http://www.seaaroundus.org/doc/publications/wp/2015/Persson-Sweden.pdf).  [Indust. 2,3,3; Art. 2,3,3; Subs. 2,2,2; Recr. 2,2,2; Disc. 2,2,2]
223	Syria	1,4	<ul> <li>(1) Ulman, A., Saad, A., Zylich, K., Pauly, D. and Zeller, D. 2015. Reconstruction of Syria's fisheries catches from 1950-2010: Signs of overexploitation. Fisheries Centre Working Paper #2015-80, University of British Columbia, Vancouver, 26 p. (http://www.seaaroundus.org/doc/publications/wp/2015/Ulman-et-al-Syria.pdf).</li> <li>(4) Ulman, A., Saad, A., Zylich, K., Pauly, D. and Zeller, D 2015. Reconstruction of Syria's fisheries catches from 1950-2010: Signs of overexploitation. <i>Acta Ichthyologica et Piscatoria</i> 45(3): 259-272.</li> <li>[Indust. 1.5,2.5,2.5; Art. 1,3,4; Subs. 1,1,1; Recr. 1,1,1; Disc,-,-]</li> </ul>
224	Taiwan	1,2	<ol> <li>(1) Divovich, E., Färber, L., Shon, S. and Zylich, K. 2015. An updated catch reconstruction of the marine fisheries of Taiwan from 1950-2010. Fisheries Centre Working Paper #2015-78, University of British Columbia, Vancouver, 7 p. (http://www.seaaroundus.org/doc/publications/wp/2015/Divovich-et-al-Taiwan.pdf).</li> <li>(2) Kuo, D. and Booth, S. 2011. From local to global: a catch reconstruction of Taiwan's fisheries from 1950-2007. pp. 97-106. <i>In:</i> S. Harper and D. Zeller (eds.) <i>Fisheries catch reconstructions: Islands, Part II.</i> Fisheries Centre Research Reports 19(4), University of British Columbia, Vancouver. (http://www.seaaroundus.org/doc/publications/chapters/2011/Kuo-and-Booth-Taiwan.pdf).</li> </ol>
225	Tanzania	2,2	<ul> <li>[Indust. 2,3,3; Art. 2,3,3; Subs. 1,2,2; Recr. 1,1,1; Disc. 2,2,2]</li> <li>(2) Jacquet, J. and Zeller, D. 2007. Putting the 'United' in the United Republic of Tanzania: Reconstructing marine fisheries catches. pp. 49-60. <i>In</i>: D. Zeller and D. Pauly (eds.) <i>Reconstruction of marine fisheries catches for key countries and regions (1950-2005)</i>. Fisheries Centre Research Reports 15(2), University of British Columbia, Vancouver. (http://www.seaaroundus.org/doc/publications/chapters/2007/Jacquet-and-Zeller-Tanzania.pdf).</li> <li>(2) Bultel, E., Doherty, B., Herman, A., Le Manach, F. and Zeller, D. 2015. An Update of the Reconstructed Marine Fisheries Catches of Tanzania with Taxonomic Breakdown. pp. 151-161. <i>In</i>: F. Le Manach and D. Pauly (eds.) <i>Fisheries catch reconstructions in the Western Indian Ocean</i>, 1950-2010. Fisheries Centre Research Report 23(2), University of British Columbia, Vancouver. (http://www.seaaroundus.org/doc/publications/chapters/2015/Bultel-et-al-2015-Tanzania.pdf).</li> <li>[Indust. 2,3,3; Art. 2,3,3; Subs. 1,2,2; Recr. 1,2,2; Disc. 2,2,2]</li> </ul>
226	Thailand (Andaman Sea)	1	Teh, L.C.L., Zeller, D. and Pauly, D. 2015. Preliminary reconstruction of Thailand's marine fisheries catches: 1950-2010. Fisheries Centre Working Paper #2015-01, University of British Columbia, Vancouver, 14 p.  (http://www.seaaroundus.org/doc/publications/wp/2015/Teh-et-al-Thailand.pdf).  [Indust,2,3; Art. 2,2,3; Subs. 2,2,3; Recr. 1,1,1; Disc. 2,2,3]
227	Thailand (Gulf of Thailand)	1	Teh, L.C.L., Zeller, D. and Pauly, D. 2015. Preliminary reconstruction of Thailand's marine fisheries catches: 1950-2010. Fisheries Centre Working Paper #2015-01, University of British Columbia, Vancouver, 14 p.  (http://www.seaaroundus.org/doc/publications/wp/2015/Teh-et-al-Thailand.pdf).  [Indust,2,3; Art. 2,2,3; Subs. 2,2,3; Recr. 1,1,1; Disc. 2,2,3]
228	Timor-Leste	2	Barbosa, M. and Booth, S. 2009. East Timor's fisheries catch reconstruction (1950-2009): Fisheries under different regimes. pp. 39-51. <i>In</i> : D. Zeller and S. Harper (eds.) <i>Fisheries catch reconstructions: Islands, Part I.</i> Fisheries Centre Research Reports 17(5), University of British Columbia, Vancouver.  (http://www.seaaroundus.org/doc/publications/chapters/2009/Barbosa-and-Booth-Timor-Leste.pdf).  To update the reconstruction the total reconstructed catch was carried forward, unaltered, to 2010. 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. In addition, all data was assigned as unreported, so first the correct amount of unreported artisanal catches were reassigned as reported, followed by subsistence if there was not enough artisanal. All reported catches were assigned as artisanal going forward, with the difference between the FAO reported data and the artisanal landings assigned as subsistence landings. All unreported catches were assigned as subsistence going forward. The taxonomic breakdown for both the reported and unreported components was based on the percentage breakdown in 2009.

#	Country	Publ. type	Source of reconstruction
			[Indust. 1,1,1; Art. 2,2,2; Subs. 2,2,2; Recr. 1,1,1; Disc. 1,1,1]
229	Togo	2,4,4	(2) Belhabib, D., Kutoub, V. and Pauly, D. 2015. The marine fisheries of Togo, the 'heart of West
			Africa,' 1950 to 2010. pp. 37-50. In: D. Belhabib and D. Pauly (eds). Fisheries catch
			reconstructions: West Africa, Part II. Fisheries Centre Research Reports 23(3), University
			of British Columbia
			(http://www.seaaroundus.org/doc/publications/chapters/2015/Belhabib-Togo.pdf)
			(4) Belhabib, D., Sumaila, U.R., Lam, V.W.Y., Zeller, D., Le Billon, P., Kane, E.A. and Pauly, D.
			2015. Euro vs. Yuan: Comparing European and Chinese fishing access in West Africa.
			PLoS One 10(3): e0118351
			(4) Belhabib, D., Sumaila, U.R. and Pauly, D. 2015. Feeding the poor: contribution of West African
			fisheries to employment and food security. <i>Ocean &amp; Coastal Management</i> 111: 72-81.
230	Tonga	2,4	[Indust. 3,3,3; Art. 3,3,3; Subs. 3,3,3; Recr,2,2; Disc. 1,1,2] (2) Sun, P., Harper, S., Booth, S. and Zeller, D. 2011. Reconstructing marine fisheries catches for
230	Tonga	2,7	the Kingdom of Tonga: 1950-2007. pp. 119-130. <i>In</i> : S. Harper and D. Zeller (eds.)
			Fisheries catch reconstructions: Islands, Part II. Fisheries Centre Research Reports 19(4),
			University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2011/Sun-et-al-2011-Tonga.pdf).
			(4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-reported small-scale
			fisheries catch in Pacific island waters. <i>Coral Reefs</i> 34(1): 25-39.
			[Indust. 2,3,3; Art. 2,3,3; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,2,2]
231	Trinidad and	1	Mohammed, E. and Lindop, M. 2014. Trinidad and Tobago: reconstructed fisheries catches, 1950-
	Tobago		2010. Fisheries Centre Working Paper #2015-55, University of British Columbia,
	•		Vancouver, 42 p. (http://www.seaaroundus.org/doc/publications/wp/2015/Mohammed-
			and-Lindop-Trinidad-and-Tobago.pdf).
			[Indust. 2,2,3; Art. 2,2,2; Subs. 1,1,1; Recr,-,-; Disc. 1,1,1]
232	Tunisia	1	Halouani, G., Lasram, F., Khalfallah, M., Zeller, D. and Pauly, D. 2015. Reconstruction of Marine
			Fisheries catches for Tunisia (1950-2010). Fisheries Centre Working Paper #2015-95,
			University of British Columbia, Vancouver, 11 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Halouani-et-al-Tunisia.pdf).
			[Indust. 2,2,3; Art. 2,2,3; Subs. 1,2,3; Recr. 1,1,1; Disc. 2,3,3]
233	Turkey (Black	4	Ulman, A., Bekişoğlu, Ş., Zengin, M., Knudsen, S., Ünal, V., Mathews, C., Harper, S., Zeller, D.
	Sea)		and Pauly, D. 2013. From bonito to anchovy: a reconstruction of Turkey's marine fisheries
			catches (1950-2010). Mediterranean Marine Science 14(2): 309-342.
224	T 1 01	4	[Indust. 2,3,3; Art. 2,3,3; Subs. 1,2,2; Recr. 1,2,2; Disc. 3,3,4]
234	Turkey (Marmara	4	Ulman, A., Bekişoğlu, Ş., Zengin, M., Knudsen, S., Ünal, V., Mathews, C., Harper, S., Zeller, D.
	Sea)		and Pauly, D. 2013. From bonito to anchovy: a reconstruction of Turkey's marine fisheries catches (1950-2010). <i>Mediterranean Marine Science</i> 14(2): 309-342.
			[Indust. 2,3,3; Art. 2,3,3; Subs. 1,2,2; Recr. 1,2,2; Disc. 3,3,4]
235	Turkey	4	Ulman, A., Bekişoğlu, Ş., Zengin, M., Knudsen, S., Ünal, V., Mathews, C., Harper, S., Zeller, D.
233	(Mediterranean)	7	and Pauly, D. 2013. From bonito to anchovy: a reconstruction of Turkey's marine fisheries
	(Mediterranean)		catches (1950-2010). Mediterranean Marine Science 14(2): 309-342.
			[Indust. 2,3,3; Art. 2,3,3; Subs. 1,2,2; Recr. 1,2,2; Disc. 3,3,4]
236	Turks and Caicos	1	Ulman, A., Burke, L., Hind, E., Ramdeen, R. and Zeller, D. 2015. Reconstruction of total marine
230	Islands	1	fisheries catches for the Turks and Caicos Islands (1950 -2010). Fisheries Centre Working
	Islands		Paper #2015-63, University of British Columbia, Vancouver, 23 p.
237	Tuvalu	2,4	[Indust,-,-; Art. 2,3,3; Subs. 2,3,4; Recr. 2,3,4; Disc,-,-] (2) Crawford, K., Harper, S. and Zeller, D. 2011. Reconstruction of marine fisheries catches for
		,	Tuvalu (1950-2009). pp. 131-143. In: S. Harper and D. Zeller (eds.) Fisheries catch
			reconstructions: Islands, Part II. Fisheries Centre Research Reports 19(4), University of
			British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2011/Crawford-et-al-Tuvalu.pdf).
			(4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-reported small-scale
			fisheries catch in Pacific island waters. Coral Reefs 34(1): 25-39.
			[Indust. 1,2,3; Art. 1,2,3; Subs. 1,2,3; Recr. 1,1,1; Disc. 1,2,3]
238	Ukraine	1,4	(1) Ulman, A., Shlyakhov, V., Jatsenko, S. and Pauly, D. 2015. A reconstruction of the Ukraine's
			marine fisheries catches, 1950-2010. Fisheries Centre Working Paper #2015-86,
			University of British Columbia, Vancouver, 23 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Ulman-et-al-Ukraine.pdf).
			(4) Ulman, A., Shlyakhov, V., Jatsenko, S. and Pauly, D. 2015. A reconstruction of the Ukraine's
			marine fisheries catches, 1950-2010. <i>Journal of the Black Sea and Mediterranean</i>
			Environment 21(2): 103-124.
220	TT:4. J A 1	2.4	[Indust. 2.5,3,2; Art. 3,4,2; Subs. 1,1,2; Recr. 1,1,2; Disc,-,-]
239	United Arab	2,4	(2) Al-Abdulrazzak, D. 2013. Estimating total fish extractions in the United Arab Emirates: 1950-
	Emirates		2010. p. 53-59. In: D. Al-Abdulrazzak and D. Pauly (eds.) From dhows to trawlers: a

			subsistence, Recr. = recreational, plus Disc. = discards.
#	Country	Publ. type	Source of reconstruction
			recent history of fisheries in the Gulf countries, 1950 to 2010. Fisheries Centre Research
			Reports 21(2), University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2013/AlAbdulrazzak-UAE.pdf).
			(4) Al-Abdulrazzak, D., Zeller, D., Belhabib, D., Tesfamichael, D. and Pauly, D. 2015. Total
			marine fisheries catches in the Persian/Arabian Gulf from 1950-2010. Regional Studies in
			Marine Science 2: 28-34.
			[Indust,; Art. 3,3,3; Subs. 1,1,1; Recr. 1,1,1; Disc. 2,2,3]
240	United Arab	1	Khalfallah, M., Zeller, D. and Pauly, D. 2015. Reconstruction of marine fisheries catches for
	Emirates (Gulf of		Fujairah (UAE) (1950-2010). Fisheries Centre Working Paper #2015-57, University of
	Oman)		British Columbia, Vancouver, 13 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Khalfallah-et-al-Fujairah.pdf).
			[Indust. 2,3,3; Art. 2,3,3; Subs. 2,2,2; Recr. 1,1,1; Disc. 1,2,2]
241	United Kingdom	1	Gibson, D., Cardwell, E., Zylich, K. and Zeller, D. 2015. Preliminary reconstruction of total marine
			fisheries catches for the United Kingdom and the Channel Islands in EEZ equivalent
			waters (1950-2010). Fisheries Centre Working Paper #2015-76, University of British
			Columbia, Vancouver, 20 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Gibson-et-al-UK-and-Channel-
			Is.pdf).
			[Indust. 3,3,3; Art. 2,2,3; Subs. 1,1,1; Recr. 2,2,2; Disc. 2,2,2]
242	United Kingdom	2	Ramdeen, R., Zylich, K. and Zeller, D. 2014. Reconstruction of total marine fisheries catches for
	(Anguilla)	-	Anguilla (1950-2010). pp. 1-8. <i>In:</i> K. Zylich, D. Zeller, M. Ang, and D. Pauly (eds.)
	(ringuina)		Fisheries catch reconstructions: Islands, Part IV. Fisheries Centre Research Reports 22(2),
			University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2014/Ramdeen-et-al-
			Anguilla.pdf).
242	United Kingdom	2	[Indust. 2,3,3; Art. 2,3,3; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,2,2]
243		2	Booth, S. and Azar, H. 2009. The fisheries of St Helena and its dependencies. p. 27-34. <i>In</i> : D.
	(Ascension)		Zeller and S. Harper (eds.) Fisheries catch reconstructions: Islands, Part I. Fisheries
			Centre Research Reports 17(5), University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2009/Booth-and-Azar-St-
			Helena.pdf).
			Since completing the initial reconstruction, FAO data became available to 2010. To update the
			Ascension Island reconstruction, the 2010 total reconstructed catch was estimated using this
			formula: (population*per capita kg/1000)-imports, and the data points between 2006 and 2010 were
			generated using linear interpolation. A population estimates for 2010 was combined with the per
			capita catch rate and imports were used to update trends to 2010. The taxonomic breakdown used
			for Saint Helena was adopted for this island.
			[Indust. 1,2,2; Art. 1,2,2; Subs. 1,2,2; Recr. 1,1,1; Disc. 2,2,2]
244	United Kingdom	1	Divovich, E., Teh, L.C.L., Zylich, K. and Zeller, D. 2015. Updated reconstruction of Bermuda's
	(Bermuda)		marine fisheries catches, 1950-2010. Fisheries Centre Working Paper #2015-96,
			University of British Columbia, Vancouver, 18 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Divovich-et-al-Bermuda.pdf).
			[Indust,-,-; Art. 2,3,3; Subs. 2,2,2; Recr. 1,2,2; Disc,-,-]
245	United Kingdom	2	Harper, S., Bothwell, J., Bale, S., Booth, S. and Zeller, D. 2009. Cayman Island fisheries catches:
	(Cayman Islands)		1950-2007. pp. 3-11. In: D. Zeller and S. Harper (eds.) Fisheries catch reconstructions:
	,		Islands, Part I. Fisheries Centre Research Reports 17(5), University of British Columbia,
			Vancouver. (http://www.seaaroundus.org/doc/publications/chapters/2009/Harper-et-al-
			Cayman.pdf).
			To update this reconstruction 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 and split 50/50
			between the EEZs of Honduras and Colombia (which follows the pattern of the original
			reconstruction). The unreported component was assigned to sectors as follows: 1 t to subsistence, ~
			25 t to recreational, 1 t to artisanal in Cayman Island's EEZ, ~ 0.78 t to artisanal in Honduras's
			EEZ. This also follows 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 within the 2010 dataset regarding previous
			years.
246	11;4-31V. 1	2	[Indust,-,-; Art. 2,2,2; Subs. 2,2,2; Recr,2,2; Disc,-,-]
246	United Kingdom	2	Zeller, D. and Pauly, D. 2014. Reconstruction of domestic fisheries catches in the Chagos
	(Chagos		Archipelago: 1950-2010. pp. 17-24 <i>In:</i> K. Zylich, D. Zeller, M. Ang and D. Pauly (eds.)
	Archipelago)		Fisheries catch reconstructions: Islands, Part IV. Fisheries Centre Research Reports 22(2).

#	Country	Publ. type	Source of reconstruction
			University of British Columbia, Vancouver. (http://www.seaaroundus.org/doc/publications/chapters/2014/Zeller-and-Pauly-
			(http://www.seaaroundus.org/doc/publications/chapters/2014/Zener-and-Paury- Chagos.pdf).
			[Indust,-,-; Art,-,-; Subs. 1,1,2; Recr,-,1; Disc,-,-]
247	United Kingdom	1	Gibson, D., Cardwell, E., Zylich, K. and Zeller, D. 2015. Preliminary reconstruction of total marine
	(Channel Islands)		fisheries catches for the United Kingdom and the Channel Islands in EEZ equivalent waters (1950-2010). Fisheries Centre Working Paper #2015-76, University of British
			Columbia, Vancouver, 20 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Gibson-et-al-UK-and-Channel-
			<u>Is.pdf</u> ).
240	YY '- 1YZ' 1	2	[Indust. 3,3,3; Art. 2,2,2; Subs. 1,1,1; Recr. 1,1,1; Disc. 2,2,2]
248	United Kingdom (Falklands Islands)	2	Palomares, M.L.D. and Pauly, D. 2015. Reconstruction of the marine fisheries catches of the Falkland Islands and the British Antarctic Territories 1950-2010. <i>In:</i> M.L.D. Palomares
	(Tumunus Islanus)		and D. Pauly (eds.) Marine Fisheries Catches of Sub-Antarctic Islands, 1950 to 2010. pp.
			1-19. Fisheries Centre Research Reports 23(1), University of British Columbia,
			Vancouver. (http://www.seaaroundus.org/doc/publications/chapters/2015/Palomares-and-
			<u>Pauly-2015-Falkland-Islands.pdf</u> ). [Indust. 1,3,4; Art. 1,1,1; Subs,-,-; Recr,-,-; Disc. 1,3,4]
249	United Kingdom	2,4	(2) Chaitanya, D., Harper, S. and Zeller, D. 2012. Reconstruction of total marine fisheries catches
	(Pitcairn Islands)		for the Pitcairn Islands (1950-2009), pp. 87-94. In: S. Harper, K. Zylich, L. Boonzaier, F.
			Le Manach, D. Pauly and D. Zeller (eds.) Fisheries catch reconstructions: Islands, Part
			III. Fisheries Centre Research Reports 20(5), University of British Columbia, Vancouver. (http://www.seaaroundus.org/doc/publications/chapters/2012/Chaitanya-et-al-Pitcairn-
			Islands.pdf).
			(4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-reported small-scale
			fisheries catch in Pacific island waters. <i>Coral Reefs</i> 34(1): 25-39. Incl. on p. 91 a short addendum which updates the dataset to 2010.
			[Indust. 2,3,2; Art. 2,3,3; Subs. 2,3,3; Recr. 1,1,1; Disc. 1,1,1]
250	United Kingdom	2	Booth, S. and Azar, H. 2009. The fisheries of St Helena and its dependencies. pp. 27-34. <i>In</i> : D.
	(St Helena)		Zeller and S. Harper (eds) Fisheries catch reconstructions: Islands, Part I. Fisheries
			Centre Research Reports 17(5), University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2009/Booth-and-Azar-St-Helena.pdf).
			Since completing the initial reconstruction, FAO data became available to 2010. To update the
			reconstruction, the FAO data 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 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 to 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 was assigned as industrial, and the sectoral breakdown for the
			unreported component was based on the percentage breakdown in 2006. The taxonomic breakdown
			for the unreported component was based on the percentage breakdown in 2006 (by sector).
251	YY '- 1YZ' 1	2	[Indust. 1,2,2; Art. 1,2,2; Subs. 1,2,2; Recr. 1,1,1; Disc. 2,2,2]
251	United Kingdom (South	2	Palomares, M.L.D. and Pauly, D. 2015. Reconstruction of the marine fisheries catches of the Falkland Islands and the British Antarctic Territories 1950-2010. <i>In:</i> M.L.D. Palomares
	Georgia/South		and D. Pauly (eds.) Marine Fisheries Catches of Sub-Antarctic Islands, 1950 to 2010. pp.
	Sandwich Islands)		1-19. Fisheries Centre Research Reports 23(1), University of British Columbia,
			Vancouver. (http://www.seaaroundus.org/doc/publications/chapters/2015/Palomares-and-
			Pauly-2015-Falkland-Islands.pdf). [Indust. 2,3,3; Art. 2,2,2; Subs. 1,2,2; Recr. 1,1,1; Disc. 2,2,2]
252	United Kingdom	2	Palomares, M.L.D. and Pauly, D. 2015. Reconstruction of the marine fisheries catches of the
	(South Orkney		Falkland Islands and the British Antarctic Territories 1950-2010. In: M.L.D. Palomares
	Islands)		and D. Pauly (eds.) Marine Fisheries Catches of Sub-Antarctic Islands, 1950 to 2010. pp.
			1-19. Fisheries Centre Research Reports 23(1), University of British Columbia, Vancouver. (http://www.seaaroundus.org/doc/publications/chapters/2015/Palomares-and-
			Pauly-2015-Falkland-Islands.pdf).
			[Indust. 2,3,3; Art,-,-; Subs,-,-; Recr,-,-; Disc. 2,3,3]
253	United Kingdom	2	Booth, S. and Azar, H. 2009. The fisheries of St Helena and its dependencies. pp. 27-34 In: D.
	(Tristan da Cunha)		Zeller and S. Harper (eds.) <i>Fisheries catch reconstructions: Islands, Part I.</i> Fisheries Centre Research Reports 17(5), University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2009/Booth-and-Azar-St-
			Helena.pdf).

#	Country	Publ. type	subsistence, Recr. = recreational, plus Disc. = discards.  Source of reconstruction
#	Country	i ubi. type	Since completing the initial reconstruction, FAO data became available to 2010. To update the
			reconstruction, the FAO data for Tristan da Cunha rock lobster and Octopuses, etc. nei were used as the reported component. The ratio between the FAO reported component and total reconstructed catch for 2005 was applied to FAO categories for 2006 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 was 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 2005 (by sector). [Indust. 1,2,2; Art. 1,2,2; Subs. 1,2,2; Recr. 1,1,1; Disc. 2,2,2]
254	United Kingdom (Virgin Islands)	2	Ramdeen, R., Harper, S., Zylich, K. and Zeller, D. 2014. Reconstruction of total marine fisheries catches for the British Virgin Islands (1950-2010). pp. 9-16. <i>In</i> : K. Zylich, D. Zeller, M. Ang and D. Pauly (eds.) <i>Fisheries catch reconstructions: Islands, Part IV</i> . Fisheries Centre Research Reports 22(2), University of British Columbia, Vancouver. (http://www.seaaroundus.org/doc/publications/chapters/2014/Ramdeen-et-al-BVI.pdf). [Indust. 2,2,1; Art. 2,2,1; Subs. 1,1,1; Recr. 1,1,1; Disc. 1,1,1]
255	Uruguay	1	Lorenzo, M.I., Defeo, O., Roshan Moniri, N. and Zylich, K. 2014. Fisheries catch statistics for Uruguay. Fisheries Centre Working Paper #2015-25, University of British Columbia, Vancouver, 6 p. (http://www.seaaroundus.org/doc/publications/wp/2015/Lorenzo-et-al-Uruguay.pdf).
256	USA (American Samoa)	4,4	<ul> <li>[Indust. 2,3,4; Art. 2,2,3; Subs. 2,3,3; Recr. 1,2,2; Disc. 1,1,2]</li> <li>(4) Zeller, D., Booth, S., Craig, P. and Pauly, D. 2006. Reconstruction of coral reef fisheries catches in American Samoa, 1950-2002. <i>Coral Reefs</i> 25: 144-152.</li> <li>(4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-reported small-scale fisheries catch in Pacific island waters. <i>Coral Reefs</i> 34(1): 25-39.</li> <li>[Indust,-,-; Art. 2,3,3; Subs. 1,1,1; Recr,-,-; Disc,-,-]</li> </ul>
257	USA (Alaska, Arctic)	1,2,4	(1) Teh, L.C.L., Zylich, K. and Zeller, D. 2015. FAO area 18 (Arctic Sea): Catch data reconstruction extension of Zeller et al. (2011) to 2010. Fisheries Centre Working Paper #2015-14, University of British Columbia, Vancouver, 5 p. (http://www.seaaroundus.org/doc/publications/wp/2015/Teh-et-al-Arctic-Sea.pdf).  (2) Booth, S. and Zeller, D. 2008. Marine fisheries catches in Arctic Alaska. Fisheries Centre Research Reports 16(9), University of British Columbia, Vancouver. (http://www.fisheries.ubc.ca/webfm_send/137).
258	USA (Alaska,	1	<ul> <li>(4) Zeller, D., Booth, S., Pakhomov, E., Swartz, W. and Pauly, D. 2011. Arctic fisheries catches in Russia, USA and Canada: Baselines for neglected ecosystems. <i>Polar Biology</i> 34(7): 955-973.</li> <li>[Indust. 3,3,3; Art. 4,4,4; Subs. 4,4,4; Recr,-,-; Disc. 2,3,3]</li> <li>Doherty, B., Gibson, D., Zhai, Y., McCrea-Strub, A., Zylich, K., Zeller, D. and Pauly, D. 2015.</li> </ul>
230	Subarctic)		Reconstruction of marine fisheries catches for Subarctic Alaska, 1950-2010. Fisheries Centre Working Paper #2015-82, University of British Columbia, Vancouver, 34 p. (http://www.seaaroundus.org/doc/publications/wp/2015/Doherty-et-al-Alaska.pdf).  [Indust. 3,3,4; Art. 3,3,4; Subs. 1,1,2; Recr. 1,2,3; Disc. 1,2,4]
259	USA (East Coast)	1	McCrea-Strub, A. 2015. Reconstruction of total catch by U.S. fisheries in the Atlantic and Gulf of Mexico: 1950-2010. Fisheries Centre Working Paper #2015-79, University of British Columbia, Vancouver, 46 p.  (http://www.seaaroundus.org/doc/publications/wp/2015/McCrea-Strub-US-Atlantic-and-Gulf.pdf).  [Indust. 4,4,4; Art. 4,4,4; Subs,-,-; Recr. 2,3,4; Disc. 2,2,3]
260	USA (Guam)	4,4	<ul> <li>(4) Zeller, D., Booth, S., Davis, G. and Pauly, D. 2007. Re-estimation of small-scale for U.S. flagassociated islands in the western Pacific: the last 50 years. <i>U.S. Fisheries Bulletin</i> 105: 266-277</li> <li>(4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-reported small-scale fisheries catch in Pacific island waters. <i>Coral Reefs</i> 34(1): 25-39.</li> <li>[Indust. 2,2,2; Art. 2,2,2; Subs. 1,1,1; Recr. 1,1,1; Disc. 2,2,2]</li> </ul>
261	USA (Gulf of Mexico)	1	McCrea-Strub, A. 2015. Reconstruction of total catch by U.S. fisheries in the Atlantic and Gulf of Mexico: 1950-2010. Fisheries Centre Working Paper #2015-79, University of British Columbia, Vancouver, 46 p.  (http://www.seaaroundus.org/doc/publications/wp/2015/McCrea-Strub-US-Atlantic-and-Gulf.pdf).  [Indust. 4,4,4; Art. 4,4,4; Subs,-,-; Recr. 2,3,4; Disc. 3,4,4]
262	USA (Main Hawaiian Islands)	1,4	(1) Gibson, D., McCrea-Strub, A. and Zeller, D. 2015. Updated reconstruction of Hawaiian fisheries 1950-2010. Fisheries Centre Working Paper #2015-83, University of British Columbia, Vancouver, 8 p. (http://www.seaaroundus.org/doc/publications/wp/2015/Gibson-et-al-Hawaii.pdf).

#	Country	Publ. type	Source of reconstruction
	·	V 1	(4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-reported small-scale
			fisheries catch in Pacific island waters. Coral Reefs 34(1): 25-39.
			[Indust. 3,3,4; Art. 3,3,3; Subs. 2,2,2; Recr. 2,2,2; Disc. 1,2,2]
263	USA (Northern	4	Zeller, D., Booth, S., Davis, G. and Pauly, D. 2007. Re-estimation of small-scale for U.S. flag-
	Mariana Islands)		associated islands in the western Pacific: the last 50 years. U.S. Fisheries Bulletin 105:
			266-277.
			[Indust. 2,3,4; Art. 2,3,4; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,3,3]
264	USA	1,4	(1) Gibson, D., McCrea-Strub, A. and Zeller, D. 2015. Updated reconstruction of Hawaiian
	(Northwestern		fisheries 1950-2010. Fisheries Centre Working Paper #2015-83, University of British
	Hawaiian Islands)		Columbia, Vancouver, 8 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Gibson-et-al-Hawaii.pdf). (4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 20154. Synthesis of under-reported small-scale
			fisheries catch in Pacific -island waters. <i>Coral Reefs</i> 34(1): 25-39.
			[Indust. 1,2,3; Art,-,-; Subs,-,-; Recr,-,-; Disc. 1,1,1]
265	USA (Pacific	4	Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-reported small-scale
203	Small Island	7	fisheries catch in Pacific -island waters. Coral Reefs 34(1): 25-39.
	Territories)		[Indust,; Art,; Subs,; Recr. 1,1,1; Disc,]
266	USA (Puerto Rico)	1	Appeldoorn, R. and Sanders, I. 2015. A 61 year reconstruction of fisheries catch in Puerto Rico.
_00	CBIT (Tuello Inico)	•	Fisheries Centre Working Paper #2015-44, University of British Columbia, Vancouver, 15
			p. (http://www.seaaroundus.org/doc/publications/wp/2015/Appeldoorn-and-Sanders-
			Puerto-Rico.pdf).
			[Indust. 2,3,3; Art. 3,3,3; Subs. 2,2,2; Recr. 2,2,2; Disc. 2,2,2]
267	USA (Virgin	1	Ramdeen, R., Zylich, K. and Zeller, D. 2015. Reconstruction of total marine catches for the US
	Islands)		Virgin Islands (1950-2010). Fisheries Centre Working Paper #2015-64, University of
			British Columbia, Vancouver, 9 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Ramdeen-et-al-US-Virgin-Is.pdf).
2.00	YYG L GYY L G		[Indust. 2,3,3; Art. 2,3,3; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,3,3]
268	USA (West Coast)	1	Doherty, B., Harguth, H., McCrea-Strub, A., Jenkins, L.D. and Figueira, W. 2015. Reconstructing
			catches along Highway 101: Historic catch estimates for marine fisheries in California,
			Oregon and Washington from 1950-2010. Fisheries Centre Working Paper #2015-81, University of British Columbia, Vancouver, 66 p.
			(http://www.seaaroundus.org/doc/publications/wp/2015/Doherty-et-al-US-West.pdf).
			[Indust. 4,4,4; Art. 4,4,4; Subs,-,-; Recr. 2,3,3; Disc. 2,1,2]
269	Vanuatu	2,4	(2) Zylich, K., Shon, S., Harper, S. and Zeller, D. 2014. Reconstruction of total marine fisheries
20)	, andata	2, .	catches for the Republic of Vanuatu, 1950-2010. pp. 147-156. <i>In</i> : K. Zylich, D. Zeller, M.
			Ang and D. Pauly (eds.) Fisheries catch reconstructions: Islands, Part IV. Fisheries Centre
			Research Reports 22(2), University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2014/Zylich-et-al-Vanuatu.pdf).
			(4) Zeller, D., Harper, S., Zylich, K. and Pauly, D. 2015. Synthesis of under-reported small-scale
			fisheries catch in Pacific island waters. Coral Reefs 34(1): 25-39.
			[Indust. 1,2,2; Art. 2,3,3; Subs. 2,2,2; Recr. 1,1,1; Disc. 2,3,3]
270	Venezuela	1	Mendoza, J. 2015. Rise and fall of Venezuelan industrial and artisanal marine fisheries: 1950-2010.
			Fisheries Centre Working Paper #2015-27, University of British Columbia, Vancouver, 15
			p. (http://www.seaaroundus.org/doc/publications/wp/2015/Mendoza-Venezuela.pdf).
271	* * * ·		[Indust. 3,3,3; Art. 1,2,2; Subs. 1,1,1; Recr. 2,3,3; Disc. 1,2,3]
271	Vietnam	1	Teh, L.C.L., Zeller, D., Zylich, K., Nguyen, G. and Harper, S. 2014. Reconstructing Vietnam's
			Marine Fisheries Catch, 1950-2010. Fisheries Centre Working Paper #2014-17, University
			of British Columbia, Vancouver, 11 p. (http://www.seaaroundus.org/doc/publications/wp/2014/Teh-et-al-Vietnam.pdf).
			[Indust,-,2; Art. 2,2,1; Subs. 2,2,1; Recr,-,-; Disc,2,2]
272	Yemen (Gulf of	2	Tesfamichael, D., Rossing, P. and Awadh, H. 2012. Reconstruction of Yemen's catches in the Gulf
212	Aden)	2	of Aden, 1950–2010. pp. 135-152. <i>In:</i> D. Tesfamichael and D. Pauly (eds.) <i>Catch</i>
	racii)		reconstruction for the Red Sea large marine ecosystem by countries (1950-2010). Fisheries
			Centre Research Reports 20(1), University of British Columbia, Vancouver.
			(http://www.seaaroundus.org/doc/publications/chapters/2012/Tesfamichael-Yemen.pdf).
			(http://www.scaaroundus.org/doc/publications/chapters/2012/1estamichael-1emen.bur).
			[Indust. 2,3,3; Art. 3,3,3; Subs. 1,1,1; Recr. 1,1,1; Disc. 2,2,2]
273	Yemen (Red Sea)	2	[Indust. 2,3,3; Art. 3,3,3; Subs. 1,1,1; Recr. 1,1,1; Disc. 2,2,2]
273	Yemen (Red Sea)	2	<u> </u>
273	Yemen (Red Sea)	2	[Indust. 2,3,3; Art. 3,3,3; Subs. 1,1,1; Recr. 1,1,1; Disc. 2,2,2] Tesfamichael, D., Rossing, P. and Awadh, H. 2012. The marine fisheries of Yemen with emphasis
273	Yemen (Red Sea)	2	[Indust. 2,3,3; Art. 3,3,3; Subs. 1,1,1; Recr. 1,1,1; Disc. 2,2,2]  Tesfamichael, D., Rossing, P. and Awadh, H. 2012. The marine fisheries of Yemen with emphasis on the Red Sea and cooperatives. pp. 105-134. <i>In:</i> D. Tesfamichael and D. Pauly (eds.)  Catch reconstruction for the Red Sea large marine ecosystem by countries (1950-2010).  Fisheries Centre Research Reports 20(1), University of British Columbia, Vancouver.
273	Yemen (Red Sea)	2	[Indust. 2,3,3; Art. 3,3,3; Subs. 1,1,1; Recr. 1,1,1; Disc. 2,2,2]  Tesfamichael, D., Rossing, P. and Awadh, H. 2012. The marine fisheries of Yemen with emphasis on the Red Sea and cooperatives. pp. 105-134. <i>In:</i> D. Tesfamichael and D. Pauly (eds.)  Catch reconstruction for the Red Sea large marine ecosystem by countries (1950-2010).  Fisheries Centre Research Reports 20(1), University of British Columbia, Vancouver.  (http://www.seaaroundus.org/doc/publications/chapters/2012/Tesfamichael-Yemen-
273	Yemen (Red Sea)	2	[Indust. 2,3,3; Art. 3,3,3; Subs. 1,1,1; Recr. 1,1,1; Disc. 2,2,2]  Tesfamichael, D., Rossing, P. and Awadh, H. 2012. The marine fisheries of Yemen with emphasis on the Red Sea and cooperatives. pp. 105-134. <i>In:</i> D. Tesfamichael and D. Pauly (eds.)  Catch reconstruction for the Red Sea large marine ecosystem by countries (1950-2010).  Fisheries Centre Research Reports 20(1), University of British Columbia, Vancouver.

**Supplementary Table 6.** Sources used in the creation of tuna and large pelagic dataset (Layer 3), by ocean.

Ocean basir		Adlantia	Indian	Pacific		- Southern <sup>a</sup>
Ocean basii	l	Atlantic		Eastern	Western	Southern
RFMO		ICCAT	IOTC	IATTC	WCPFC	CCSBT
Data	Nominal	website	website	website	website	Provided by staff
	Spatialized	website	website	www.fao.org/figis/ge	website	website
				oserver/tunaatlas		
Spatial resolution		1°x1°	1°x1°	5°x5° (b)	5°x5°	5°x5°
		5°x5°	5°x5°			
		5°x10°	10°x10°			
		10°x10°	10°x20°			
		10°x20°	20°x20°			
		20°x20°				
Number of	Countries	114	57	28	41	11
	Gears	48	35	11	9	8
	Species	142	45	19	9	1

<sup>&</sup>lt;sup>a</sup> This RFMO covers all three oceans, but only deals with southern bluefin tuna (*Thunnus maccoyii*). Note that the other RFMOs also sometimes report this species (here not considered as double-counting).

<sup>&</sup>lt;sup>b</sup> A number of these cells straddle the Pacific and Atlantic Oceans. Their catch was split into these two ocean basins in proportion to the surface of the cells included in each ocean.

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<sup>&</sup>lt;sup>1</sup> Sea Around Us, Global Fisheries Cluster, University of British Columbia, Vancouver, BC, V6T 1ZA, Canada

<sup>&</sup>lt;sup>2</sup> University of Palestine, Faculty of Applied Engineering, Al Zahra, Gaza, Palestine

<sup>&</sup>lt;sup>3</sup> H.T. Harvey & Associates, Los Gatos, CA 95032, USA

<sup>&</sup>lt;sup>4</sup> College of Marine Science, University of South Florida, St. Petersburg, USA

<sup>&</sup>lt;sup>5</sup> School of Resource and Environmental Management, Simon Fraser University, Burnaby, BC, V5A 1S6, Canada

<sup>&</sup>lt;sup>6</sup> Department of Marine Sciences, University of Puerto Rico, Mayagüez, Puerto Rico 00681-9000, USA

<sup>&</sup>lt;sup>7</sup> Fisheries Research Institute of Slovenia, Spodnje Gameljne 61a, 1211 Ljubljana-Šmartno, Slovenia

<sup>8</sup> Aix-Marseille Université, Institut Méditerranéen d'Océanologie, Campus de Luminy, 13 288 Marseille, France

<sup>&</sup>lt;sup>9</sup> School of Geography and Environment, Oxford University Centre for the Environment, Oxford, OX1 3QY, England

<sup>&</sup>lt;sup>10</sup> OCEANA, Plaza España Leganitos, 47. 28013. Madrid, Spain

<sup>&</sup>lt;sup>11</sup> Department of Biology, University of Las Palmas de Gran Canaria, Canary Islands, Spain

<sup>&</sup>lt;sup>12</sup> Changing Ocean Research Unit, Global Fisheries Cluster, University of British Columbia, Vancouver, Canada

<sup>&</sup>lt;sup>13</sup> Department of Fisheries, Ministry of Industry and Primary Resources, Berakas BB3910, Brunei Darussalam

<sup>&</sup>lt;sup>14</sup> Fisheries Economics Research Unit, Global Fisheries Cluster, University of British Columbia. Vancouver, Canada

<sup>&</sup>lt;sup>15</sup> Institut de Ciències del Mar (ICM-CSIC), Passeig Marítim de la Barceloneta, n° 37-49, Barcelona 08003, Spain

<sup>&</sup>lt;sup>16</sup> Department of Marine and Environmental Science, Hampton University, Hampton, Virginia 23668, USA

<sup>&</sup>lt;sup>17</sup> WWF Panama, Ciudad del Saber – Building 235, Clayton, Republic of Panama

<sup>&</sup>lt;sup>18</sup> Department of Maritime Civilizations, Faculty of Natural Sciences, University of Haifa, Haifa 31905, Israel

<sup>&</sup>lt;sup>19</sup> Department of Fisheries and Aquatic Environmental Management, University of Uyo, Akwa Ibom State, Nigeria

<sup>&</sup>lt;sup>20</sup> Universidade Federal de Sergipe, Departamento de Engenharia de Pesca e Aquicultura, São Cristóvão, Brazil

<sup>&</sup>lt;sup>21</sup> GEOMAR, Helmholtz-Zentrum für Ozeanforschung, Düsternbrooker Weg 20, 24148 Kiel, Germany

<sup>&</sup>lt;sup>22</sup> Muséum National d'Histoire Naturelle, Station Marine de Concarneau, France

<sup>&</sup>lt;sup>23</sup> University of the West Indies, Cave Hill, St. Michael, Barbados

<sup>&</sup>lt;sup>24</sup> National Agronomic Institute of Tunisia, 43 Av. Charles Nicolle 1082 Tunis, Tunisia

<sup>&</sup>lt;sup>25</sup> School of Marine Science and Engineering, Plymouth University, Drake Circus, Plymouth, PL4 8AA

<sup>&</sup>lt;sup>26</sup> Universidad de San Carlos de Guatemala, Ciudad Universitaria, Guatemala

<sup>&</sup>lt;sup>27</sup> Faculty of Fisheries, University of Istanbul, Laleli, Istanbul, Turkey

<sup>&</sup>lt;sup>28</sup> Centro de Ciências do Mar, Universidade do Algarve, Campus de Gambelas, 8005-139 Faro, Portugal

<sup>&</sup>lt;sup>29</sup> Flanders Marine Institute VLIZ, Wandelaarkaai 7, 8400 Oostende Belgium

Stephanie Lingard<sup>1</sup>, María Inés Lorenzo<sup>30</sup>, Jessica MacDonald<sup>1</sup>, Hatem H. Mahmoud<sup>31</sup>, Sanja Matić-Skoko<sup>32</sup>, Ashley McCrea-Strub<sup>1</sup>, Jaime Mendo<sup>33</sup>, Jeremy J. Mendoza<sup>34</sup>, Dana D. Miller<sup>14</sup>, Elizabeth Mohammed<sup>35</sup>, Telmo Morato<sup>36</sup>, Dimitrios K. Moutopoulos<sup>37</sup>, Manal R. Nader<sup>38</sup>, Kjell Nedreaas<sup>39</sup>, Francis K. E. Nunoo<sup>40</sup>, Devon OʻMeara<sup>1</sup>, Allan Padilla<sup>1</sup>, Maria-Lourdes Palomares<sup>1</sup>, Lo Persson<sup>1</sup>, Christopher K. Pham<sup>41</sup>, Chiara Piroddi<sup>42</sup>, Patrice Pruvost<sup>43</sup>, Robin Ramdeen<sup>1</sup>, Nardin Roshan Moniri<sup>1</sup>, Peter Rossing<sup>1</sup>, Isaac Trindade Santos<sup>44</sup>, Laurenne Schiller<sup>1</sup>, Katherine Seto<sup>45</sup>, Soohyun Shon<sup>1</sup>, Glenn Simmons<sup>46</sup>, Nicola S. Smith<sup>47</sup>, Anna Sobolevskaya<sup>48</sup>, Konstantinos I. Stergiou<sup>49</sup>, Patricia Sun<sup>1</sup>, Wilf Swartz<sup>50</sup>, Louise S.L. Teh<sup>14</sup>, Lydia C.L. Teh<sup>1</sup>, Dawit Tesfamichael<sup>1</sup>, Pablo Trujillo<sup>1</sup>, Hadayet Ullah<sup>51</sup>, Aylin Ulman<sup>1</sup>, Sadiq Vali<sup>1</sup>, Hreiðar Þór Valtýsson<sup>52</sup>, Liesbeth van der Meer<sup>1</sup>, Liane Veitch<sup>1</sup>, Sebastian Villasante<sup>53</sup>, Kyrstn Zylich<sup>1</sup>

<sup>30</sup> Dirección Nacional de Recursos Acuáticos. Constituyente 1497, 11200 Montevideo, Uruguay

<sup>&</sup>lt;sup>31</sup> College of Fisheries Technology & Aquaculture, Arab Academy for Science, Technology & Maritime Transport, Alexandria, Egypt

<sup>&</sup>lt;sup>32</sup> Institute of Oceanography and Fisheries, Meštrovićevo šetalište 63, P.O.Box. 500, 21000 Split, Croatia

<sup>&</sup>lt;sup>33</sup> Facultad de Pesquería, Universidad Nacional Agraria La Molina, Av. La Molina, Lima, Perú

<sup>&</sup>lt;sup>34</sup> Instituto Oceanográfico de Venezuela, Universidad de Oriente, Cumaná, Venezuela

<sup>&</sup>lt;sup>35</sup> Caribbean Regional Fisheries Mechanism Secretariat, Eastern Caribbean Office, St Vincent and the Grenadines

<sup>&</sup>lt;sup>36</sup> Department of Oceanography and Fisheries-University of the Azores, Horta, Azores, Portugal

<sup>&</sup>lt;sup>37</sup> Technological Educational Institute of Western Greece, Department of Aquaculture and Fisheries, Greece

<sup>&</sup>lt;sup>38</sup> Institute of the Environment, University of Balamand, Lebanon

<sup>&</sup>lt;sup>39</sup> Institute of Marine Research, P.O. Box 1870, 5817 Bergen

<sup>&</sup>lt;sup>40</sup> Department of Marine and Fisheries Sciences, University of Ghana, P.O. Box LG 99, Legon, Accra. Ghana

<sup>&</sup>lt;sup>41</sup> Departamento de Oceanografia e Pescas, Universidade dos Açores, Horta, Portugal

<sup>&</sup>lt;sup>42</sup> Joint Research Centre, European Commission, Ispra, Italy

<sup>&</sup>lt;sup>43</sup> Muséum National d'Histoire Naturelle, Paris; France

<sup>&</sup>lt;sup>44</sup> Instituto Nacional de Desenvolvimento das Pescas (INDP), Mindelo, Cabo Verde

<sup>&</sup>lt;sup>45</sup> Department of Environmental Science, Policy, and Management, University of California at Berkeley, Berkeley, California, USA

<sup>&</sup>lt;sup>46</sup> New Zealand Asia Institute, The University of Auckland, Private Bag 92019, Auckland, New Zealand

<sup>&</sup>lt;sup>47</sup> Department of Marine Resources, Ministry of Agriculture, Marine Resources and Local Government, Nassau, Bahamas

<sup>&</sup>lt;sup>48</sup> Institute of East Asian Studies, Duisburg–Essen University, Germany

<sup>&</sup>lt;sup>49</sup> Institute of Marine Biological Resources and Inland Waters, Sounio Ave., 19013 Anavissos Attica, Greece

<sup>&</sup>lt;sup>50</sup> Nereus Program, University of British Columbia, Vancouver, Canada

<sup>&</sup>lt;sup>51</sup> WorldFish – Bangladesh Office, House 22B, Road 7, Block F, Banani, Dhaka 1213, Bangladesh

<sup>&</sup>lt;sup>52</sup> University of Akureyri, Borgir v/Nordurslod, IS-600 Akureyri, Iceland

<sup>&</sup>lt;sup>53</sup> University Santiago de Compostela, Faculty of Political Sciences, Santiago de Compostela, A Coruña 15782, Spain