Annex 1

History of fisheries and biodiversity conservation: A timeline of key events (1850–2012)

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The origin and historical development of fisheries management and conservation of nature (specifically in the oceans) varies according to regions and countries and with the scale at which these are considered (from local to global). This book focused on the international level and refers to international initiatives when it is felt that they signal the beginning of a significant change at global level. However, national and international initiatives are connected by an action-reaction chain and a number of international events described below have their origin in some national event/initiative and vice versa. Mentioning a subject (e.g. the precautionary approach) for the first time (in 1995 when adopted by FAO) may not always mean that this event is the absolute first in that domain. There were some national predecessors. Similarly, important international initiatives are often preceded by preparatory work (e.g. meetings of like-minded countries, preparatory working groups, early debates at conferences) and followed by review meetings to check on implementation and performance. Unless these have produced something of high relevance for the purpose of the book or serve as examples of implementation, they are not referred to.

The table below refers to events which are believed to have had global repercussions, shaping evolution. It is intended to show key milestones but does not pretend to be exhaustive. In the early years, it follows the developments in the Northern Hemisphere where overfishing, fishery and conservation science, State-led governance and international organizations started shaping governance. While the fisheries part of the table is exclusively focused on marine fisheries, the conservation part includes references to the conservation of nature in general and of terrestrial species and ecosystems, as these were precursors for marine conservation (emerging in the 1960s-1970s), biodiversity conservation (after 1992) and the establishment of the CBD. The cells containing events of a cross-sectoral nature of relevance both for fisheries and biodiversity conservation are shaded for better visualization.

| Year | Nature/biodiversity conservation | Fisheries management |
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| 1850–1900 | • Establishment of first national parks in the USA (Christophersen, 1997). Fortress Conservation (parks without dwellers) was the North American Model. That model was used by colonial powers until the 1970s (Büscher and Diets, 2005). It is still used in many former colonies as the dominant model (Cernea and Schmidt-Soltau, 2003). | |
| 1854 | | Overfishing: John Cleghorn of Wick introduced the term 'overfishing' in the British Association for the Advancement of Science (BAAS) in relation to herring fisheries (Roswadowski, 2002). |
| 1860–1870 | Acceleration of industrial development. Growing concern for the environment. | Acceleration of industrial development. Growing concern for resources sustainability. |
| 1860 | | Norway establishes a commission to investigate fisheries problems, building the idea that science should provide the basis for decisions in fisheries (Roswadowski, 2002). |
| 1868 | | The UK Sea Fisheries Act deregulates fishing activities repealing more than 50 fisheries-related Acts established over centuries. The action is based on the advice of the 1883–1885 Royal Commission on Sea fisheries of the United Kingdom and the influence of T.H. Huxley, member of this Commission. |
| 1870 | Creation of a seal reserve and closure of the Pribilof Island fur seal exploitation. | |
| 1871 | | Creation of the 1st US Commission on Fish and Fisheries because of concern about the state of some fishery resources (Atkinson, 1988). |
| 1872 | Creation of the Yellowstone National Park in USA. | Establishment of the first marine research laboratory in Naples (Stazione Zoologica di Napoli). |
| 1882 | | • T.H. Huxley maintains his position, despite years of criticism, in his opening lecture of the Fisheries Exhibition in London (Roswadowski, 2002, p. 28). Forgetting the qualifiers in his statement, it is often cited as having unleashed overfishing. |
| 1883 | Paris Convention on the protection of seals in the Behring Sea. One of the first initiatives to protect species in addition to areas. | |
| 1890 | | The plaice fishery in the North Sea starts stagnating (Gulland and Carroz, 1968). Heinke (Germany) works on the increasingly urgent question of overfishing of the North Sea (Roswadowski, 2002). |

| Year | Nature/biodiversity conservation | Fisheries management |
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| 1899 | • London Convention on the Protection of Wild Fauna in Africa (never ratified). It aimed at (1) creating hunting reserves (excluding traditional hunters); and (2) ensuring conservation of wild, useful or inoffensive animal species. It established a list of protected species and species-based hunting regulations. | At the Stockhom Conference on fisheries, Delegates affirmed that rational exploitation of the sea should rest as far as possible on scientific enquiry (Roswadowski, 2002, p. 34). |
| 1902 | Creation of the International Council for the Kristiania Conference and the Internationa to use scientific inquiry as the basis for a rati | Exploration of the Sea (ICES) following the 1901 I Fisheries Congresses of 1896 and 1898. The principle onal exploitation of the sea in endorsed and ICES will ering both environmental and fishery-related science as |
| | • Paris Convention for the Protection of Birds Useful to Agriculture. In force but superseded. Essentially limited to the protection of small passerines and nocturnal raptors, it lists 'noxious species', including diurnal birds of prey and fish-eating birds such as herons, pelicans and divers, the destruction of which is encouraged (de Klemm and Shine, 1993). | |
| 1903 | | • Establishment of the ICES Overfishing Committee. Following the Kristiana Conference, ICES establishes two committees dealing with: (1) the annual and decadal fluctuations of stocks; and (2) the effect of trawlers (the Overfishing Committee). |
| 1905 | | The haddock fishery in the North Sea starts stagnating (Gulland and Carroz, 1968). |
| 1909 | The Th. Roosevelt initiative to convene a 1st International Conservation Conference in The Hague aborted, obstructed by the US Congress. North American Conservation Conference (Washington) recommends nomination of Conservation Commissioners in each country, to promote collaboration (in fugitive resources) (Ciriacy-Wantrup, 1968). 8th International Zoological Congress, Gratz (Switzerland). The establishment of | |
| | the International or World Commission for the Protection of Nature is considered for the first time (UNESCO, 1948). Conferences in 1923 and 1923 will follow. | (continued) |
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| Year | Nature/biodiversity conservation | Fisheries management |
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| 1911 | • First national agency for protected areas: Canada created the world's first park agency, the Dominion Parks (D. Laffoley, personal communication, 2012). | Convention for the preservation and protection of fur seal in the North Pacific (US, Canada, Japan, Russia) (Atkinson, 1988; Gulland and Carroz, 1968). Terminated in 1941. The problem of common resources. Warming publishes (in Danish) the first systematic study of the problem of overuse of common pool fishery resources. His theory (translated in English by Peder Andersen in 1983) was independently rediscovered 43 years later by Scott Gordon in 1954 and 'immortalized' as 'The tragedy of the commons' by Hardin (1968). |
| 1913 | humpback whales at Norwegian Bay in Weste Park). An example of marine protected area for | sanctuary to protect important calving grounds for ern Australia (currently part of the Ningaloo Marine ocused on the protection of habitats for iconic species, each to conservation and management (D. Laffoley, |
| | World Treaty on Conservation (Bern). Proposes the establishment of an International Commission for the protection of Wildlife. A draft was adopted but the process was aborted by WWI. A new attempt was made in 1923 (UNESCO, 1948). | |
| 1914 | | • Natural fluctuations: Johan Hjort and Einar Lee establish the natural origin of fisheries fluctuations through fluctuation of year-class strength. WWI interrupted progress in that direction (Roswadowski, 2002, p. 85). |
| 1916 | The US National Park Service is established (D. Laffoley, personal communication, 2012) | |
| 1919 | | Very high post-WWI catch rates demonstrate the reality of the overfishing problem in the years before the wars (Gulland and Carroz, 1968). The Commission Internationale pour l'Exploration de la Mer Méditerranée (CIESM) is established (Roswadowski, 2002). |
| 1920s | | Many stocks (Plaice, hake, cod, haddock) are overfished in the North Atlantic (Gulland and Carroz, 1968). Early 1920s: ICES struggles to establish international regulations of the trawling activity, amidst scientific uncertainty, financial difficulties, and industry's opposition (Roswadowski, 2002). Mid-1920s: The fishing industry recognizes the role of science in fisheries regulation. 1929–1930: general recognition that stocks and fisheries could be predicted by monitoring year-class strength (Roswadowski, 2002, p. 85). |

| Year | Nature/biodiversity conservation | Fisheries management |
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| 1923 | • First International Congress on the protection of nature, Paris. The attempt to establish an international institution failed (UNESCO, 1948). The concept will be revived with the establishment of IUPN in 1948 and discussed at the first UNESCO-IUCN International Technical Conference on Nature Protection at Lake Success (USA) in 1949 (de Klemm and Shine, 1993). | 3 |
| 1925 | LON attention: (1) the territorial waters regime international projects were formulated: (1) are States rights, and (2) a central Institute for Occesioned data to help define the right. The forecome was supposed to define rational exploschemes, closing seasons, minimum age for a implementation. The project was appreciated nations (which, together, caught more than The preference of the 'big ones' was a set of residual to the state of the seasons. | e and (2) the exploitation of ocean resources. Two of Office for International Waters to deal with coastal ean Resources that would produce the scientific and irst was too controversial and abandoned in 1930. The potation, establish reserves, rotation exploitation capture and efficient methods to control the measures of by many States and opposed by the big fishing million tonnes). A global project was not consensual, egional agreements between interested States and only pecies were marine mammals. The key word was |
| 1928 | International Office for the protection of Nature established in Brussels, for documentation purposes and to facilitate cooperation. | • ICES is internationally recognized. The League of Nations recognizes ICES as 'the appropriate expert body from which to seek advice on marine resources such as whales, seals and fisheries' (Roswadowski, 2002, p. 76). |
| 1930 | should be considered not only in the territori areas beyond national jurisdiction will keep la for the following 80 years (at least). The issue | t'protection of the various species of marine fauna al sea but also out of it'. This question of resources in awyers, biologists, politicians and lobby groups busy will be dropped and taken up again by the newly ni, 1976) and will be partly resolved by the LOSC in 1982. |
| 1931 | | Controlling overfishing? Edward Russel recognized that effort could be adjusted each year if natural stock fluctuations could be accurately predicted. |
| 1932 | First transboundary national park between the USA and Canada, and the first bilateral protected area between Poland and Slovakia. | RFBs: establishment of the International Pacific Halibut Commission (Atkinson, 1988). |
| 1933 | • London Convention Relative to the Preservation of Fauna and Flora in their Natural State. This African Convention had similar objectives to the aborted 1900 Convention for Africa (hunting reserves and protected areas). Remained in force until 1968 when it was replaced (de Klemm and Shine 1993, p. 141) | Optimum yield: Hjort, Jahn and Ottestad establish that maximum catch would be obtained from a population reduced to half its original size. This was a precursor to the concept of Maximum Sustainable Yield (Roswadowski, 2002, p. 91). The concept was further developed by Graham (1935) and Beverton and Holt (1957), and adopted enshrined in the LOSC. (continued) |

| Year | Nature/biodiversity conservation | Fisheries management |
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| 1935 | The 1st MPA for ecosystem protection was probably the Fort Jefferson National Monument marine and coastal park in Florida (D. Lafffoley, personal communication, 2012) | The British Biologist Michael Graham synthesized his Great Law of Fishing, predicting that 'all fisheries that are unregulated become unprofitable'. He also articulated the role that science and scientists should have in fisheries regulations, 'including through the study of economic and social aspects of the industry' (Roswadowski, 2002, p. 77, 89). London Convention for the Regulation of Meshes for Fishing Nets and the Size Limits for Fish (Saetersdal, 1992). It is also called the first London Overfishing Convention (Roswadowski 2002, p. 77). London Convention on Whaling (Roswadowski, 2002, p. 77) International Pacific Salmon Fisheries |
| 1940 | Pan-American Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere. Requires Contracting Parties to adopt appropriate measures to protect migratory birds of economic value or aesthetic interest, or to prevent the extinction of a given species which is under threat including in protected areas (Ciriacy-Wantrup, 1968). President Truman's Declaration on the Policy of the United States with respect to Natural Resources of the subsoil and the seabed of the continental shelf | Commission |
| 1945 | H.S. Truman Proclamation. It set a claim of sovereignty by the USA to the outer continental shelf (OCS) and the resources therein, establishing the right of the US to establish conservations zones 'ir areas of the high seas contiguous to the coasts of the United States'. While recognizing some limite sovereignty over an expanded region of the sea, the proclamation was careful to stipulate that the new US policy did not affect 'the right of free and unimpeded navigation' (Truman, 1945). | |
| 1946 | The Swiss League for the protection of nature facilitates the adoption of an international resolution stating the desirability of an active organization for the protection of nature. | Establishment of FAO. Tensions build up between FAO and ICES. The 1st FAO Technical Committee on fisheries identifies all the key issues that will be addressed for the following 6 decades by the FAO programme of work. Bycatch is seen as a 'waste' issue. Salmon is overfished in the USA (Royce, 1988). The very high catch rates obtained when resuming fishing after WWII confirmed the previously overfished status of many important stocks such as plaice, haddock and hake in the North Sea or bream in the Yellow sea (Gulland and Carroz, 1968). |

| Year | Nature/biodiversity conservation | Fisheries management |
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| 1946 (cont'd) | | London Overfishing Conference and Convention (Gulland and Carroz, 1968; Saetersdal, 1992) calls for regulation of mesh sizes and landing fish sizes and for regulation of fishing fleet capacity. The latter could not be agreed. The Convention became effective in 1954 and was later transformed into NEAFC in 1959 (in force in 1963). RFBs-IWC: The International Convention for the Regulation of Whaling signed in Washington. It adopts MSY as the basis for allocating quotas. Overfishing: ICES express fear that the reconstruction efforts would recreate the pre-war overfishing situation. Proposals by Russel to limit fleet tonnage of countries were turned down. (Roswadowski, 2002, p. 107, 109). |
| 1947 | The International Conference for the Protection of Nature organized by the Swiss League set up a Provisional International Union for the Protection of Nature. UNESCO is asked to convene a follow-up conference in Paris (UNESCO, 1948). | Peru and Chile unilaterally extend their jurisdiction |
| 1948 | • Establishment of the International Union for the Protection of Nature (IUPN) under the auspices of UNESCO. As reflected by the use of 'protection' in its name, IUPN intended to mobilize international support to protect living species and habitats for endangered species from humans (Christophersen, 1997). The name was changed to IUCN in 1956, replacing 'protection' by 'conservation'. | First issue of the State of Food and Agriculture (SOFA) that included small sections on fisheries. In 1997, the State of Fisheries and Aquaculture (SOFIA) took over that function. RFBs-APFIC: Establishment of the Asia-Pacific Fishery Commission. |
| 1949 | • 1st UNESCO-IUPN International Technical Conference on Nature Protection at Lake Success (USA). Discussed again the 1913 concept of a World Treaty on Conservation, revived at an IUCN meeting in Fontainebleau in 1948. Disparities between the conditions and legislations of countries made a treaty unworkable. Regional and sectoral treaties were considered more feasible. The | overfished (Gulland and Carroz, 1968). RFBs-IATTC: Establishment of the Inter-American Tropical Tuna Commission. |
| | | (continued) |

| Year | Nature/biodiversity conservation | Fisheries management |
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| Until 1950s 1950s | | Fishery regulations were largely designed to promote orderly marketing and orderly fishing, not really for the purpose of conservation in the usual sense that we think of it (Royce, 1988) Emergence of a progressively more relevant fishery science for management (Royce, 1988; Roswadowski, 2002). Expansion of North Atlantic fisheries to the Arctic. Discovery of deep-sea stocks (Sebastes). |
| 1950s- 1970s | • Fortress conservation (FC) in Africa. The 'fences and fines' approach, often with exclusion and forced relocation of the poor original communities (Büscher and Dietz, 2005). This approach is deemed to have failed because of a sense of injustice and illegitimacy. | 1950–1965: Overfishing spreads. Most high value stocks of the North Atlantic become overfished (Gulland and Carroz, 1968). Mid-1950s: Emergence of bio-economic models to fisheries management with the work of Gordon and Scott. |
| 1951 | Rachel Carlson (1904–1964) publishes her famous book The Sea Around Us. A fishery biologist by training, she was credited with advancing the environmental movement. | |
| 1952 | | 200 miles: Santiago Declaration on the 200 miles extended jurisdiction (Chile, Peru, Ecuador). |
| 1953 | • 200 miles: A report of the UN proposes: (1) to give to coastal States a management authority on the 200 miles contiguous to its territorial waters in order to establish the prohibitions needed to protect ocean resources from extermination; and (2) to create an International Court of Justice to resolve conflicts. The proposals were opposed as 'favoring too much the coastal nations'. | |
| 1954 | | • The 'Fairtry' industrial factory trawler is launched in the USA (Warner, 1983), initiating the era of long-range factory vessels that will roam the world, discover and deplete resources in just three decades. |
| 1955 | favoured the option of regional agreements (geographical distribution of the species conc | conservation of the Living Resources of the Sea over that of a central institution) based on the erned. It is interesting to note that a similar process, ority for nature conservation (by President Th. Roosevelt the same international preference for regional |
| 1956 | • From IUPN to IUCN: The IUPN Assembly in Edinburgh changed 'International Union for the Protection of Nature (IUPN)', to 'International Union for Conservation of Nature and Natural Resources', reflecting a transition from a so-called 'preservationist' approach towards the utilitarian aspect of 'conservation' as rational long-term resource management, which the 1980 IUCN World Conservation Strategy later codified as 'sustainable development' (Christophersen, 1997). | |

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| 1957 | | Beverton and Holt publish their famous book On the Dynamics of Exploited Fish Populations. The North Pacific Fur Seal Convention (replaces the 1911 Agreement). | |
| 1958 | • First UN Conference on the Law of the Sea | (UNCLOS I, Geneva). | |
| 1959 | Protected areas. The United Nations Economic and Social Council (ECOSOC) established a UN List for Nature Parks and Equivalent Reserves and IUCN is asked to prepare and maintain it. Antarctic Treaty, signed in Washington, gave birth to the Convention for the Conservation of Antarctic Seals (in 1972) and the Convention on the Conservation of | Convention on Fishing and Conservation of the Living Resources of the High Seas. In force in 1966. Never really implemented. First 'Cod war' (1958–1961) between Iceland and Britain. It ended with the recognition of Iceland's 12 miles exclusive zone by Britain. Development of the RFBs network: FAO conference authorizes the establishment of regional fishery bodies despite resistance from ICES (Roswadowski, 2002). | |
| | Antarctic Marine Living Resources (CCAMLR in 1980). | | |
| 1960 | Second Conference on the Law of the Sea (UNCLOS II) | | |
| 1960s | ICNP: Creation of the IUCN International Commission on National Parks (CNP). | | |
| 19005 | In the 1960s, the International Biological Programme (IBP) (of UNESCO) was instrumental in raising the level of awareness about the need for conservation. | 12 miles fishing zone: After 1960, several states enacted legislation providing for an exclusive fishing zone beyond 12 miles (Gulland and Carroz, 1968). Creeping jurisdiction: without claiming jurisdiction, some Asian states reserve their rights to regulate fisheries up to 100 miles beyond their territorial sea (Gulland and Carroz, 1968). During the 1960s, overfishing of whales becomes clear. Pirate whaling develops to evade IWC measures Development of long range fleets to the southern hemisphere. Strong emphasis on technological development in FAO programme Development of national statistical systems and fishery research capacity in the developing world. Large-scale fishery resources discovery supported by UNDP and FAO. Large-scale development of the research capacity. Large-scale development of resources assessment capacity and spreading of the science-based fishery management paradigm. Development of the interest for species interactions (food chain) and multispecies fisheries considerations that would develop two decades later (Roswadowski, 2002, p. 247). | |

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| 1961 | WWF: After years with continuing funding problems in IUCN, members decided to create a parallel but complementary body, the World Wildlife Fund, to focus on fund raising, public relations and large-scale public support. (Christophersen, 1997). MPAs. The World Parks Congress on | • RFBs-CARPAS: Establishment of Regional Fisheries Advisory Commission for the Southwest Atlantic (CARPAS). For local political reasons, it remained practically idle after 1974. It was abolished in 1999. |
| | National Parks gives a first international impetus to the MPA movement (D. Laffoley, personal communication, 2012). | |
| 1963 | Red List. The establishment of the IUCN Red List was a prime example of species-based conservation. CITES was another one key example while RAMSAR was an example of space-based approach to conservation. | RFMOs-NEAFC: Establishment of the Northeast Atlantic Fisheries Commission to replace the 1954 London Convention. |
| 1964 | Agreed Measures for the Conservation of Antarctic Fauna and Flora adopted by the Parties to the 1959 Antarctic Treaty, specifically protect a certain number of areas of particular ecological value. | |
| Mid-1960s | Tuna-dolphin issue: the very high mortality raising concern. A 'dolphin safe' label is issued | of dolphins in tuna purse seining in the EC Pacific start under ENGOs pressure. |
| | | By mid-1960s, management starts focusing on technical aspects of management. Creation of numerous RFBs under FAOs constitution. Inadequate management. ICES scientists warn that mesh-size regulations would soon be inadequate to face the rapid rising of fishing capacity (Roswadowski, 2002, p. 189). |
| 1966 | | 1st FAO Committee on Fisheries: focus on fishery bodies and management while the FAO extrabudgetary Field Programme remains focused on development. Scott and Christy again address the central issue of common property with little or no echo in the decision-making quarters. The 1958 Convention on Fishing and Conservation of the Living Resources of the High Seas (adopted at UNCLOS I) enters into force. |
| | | RFBs-ICCAT: Establishment of the International Commission for the Conservation of Atlantic Tuna. |
| 1967 | 'an effective international regime over the sea jurisdiction and to apply the concept of Com seabed beyond national jurisdiction. One mo C (XXV) created the Committee on the Peacel | (Ambassador of Malta) calls on the UNGA to develop abed and the ocean floor' that clearly defines national mon Heritage of Mankind to the resources of the nth later, the UNGA resolutions 2467 A (XXIII) and 2750 ful Uses of the Sea-Bed and the Ocean Floor beyond the he convening of a third Law of the Sea meeting to be |

| Year | Nature/biodiversity conservation | Fisheries management |
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| 1967 (cont'd) | Wreck of the oil tanker Torrey Canyon. A catastrophe that triggered an acceleration in the pressure to conserve marine areas. | RFBs-CECAF: Establishment of the Commission for the Eastern Central Atlantic Fisheries (FAO). RFBs-IOFC: Establishment of Indian Ocean Fishery Commission (FAO). |
| 1968 | | din, 1968) meant to criticize unmanaged use of the n property. The error was acknowledged only in 1998 |
| | UNESCO Conference on the scientific basis of the wise use and conservation of biosphere resources. Stresses environmental degradation and creates the Man and Biosphere Program (MAB) that aims at developing the scientific basis for management of biosphere reserves. African Convention on the Conservation of Nature and Natural Resources (Algiers) signed in the wake of the independence movement (de Klemm and Shine, 1993). | Sequential overfishing. Gulland and Carroz (1968) refer to a 'switch from the preferred [whale] species to the next most preferred species' only after the first has been 'drastically depleted'. First ICES Symposium on the food chain (convener: J. Steele) |
| Late 1960s | Late 1960s-early 1970s: From species to nature conservation: Existing species- based legislation is deemed to provide insufficient and too narrow protection. Broader and stronger protection is called for through the enactment of specific nature conservation legislation. The legitimacy of this approach is no longer linked to safeguarding certain resources and activities, but derived from the increasingly recognized need to preserve species and biological diversity for their intrinsic value and for the use of future generations (de Klemm and Shine, 1993). | Catch limitations (TACs) are introduced in North Atlantic Fisheries on the argument that effort limitations would be impossible to implement (Roswadowski, 2002, p. 190). ICNAF TACs start to be implemented in 1969. |
| 1969 | GESAMP. Establishment of the Group of Experts on Scientific Aspects of Marine Pollution (GESAMP) sponsored by IMO, FAO, UNEP, WHO, WMO, IAEA), UNESCO, IOC and the UN. | RFBs-ICSEAF: Establishment of the International Commission for the South East Atlantic Fisheries. ICSEAF closed after the independence of Namibia. |
| 1970–1990 | • 1970–1990: Shift to community-based conservation (CBC) in Africa but based on western objectives of conservation of aesthetic and intrinsic values of wildlife. The approach met with limited success (Büscher and Diets, 2005). | Mid to late-1970s: Unilateral expansion of numerous national jurisdiction (in fishing zones and then EEZs). Long-range foreign fleets concentrate on Western Sahara, Namibia and the Southwest Atlantic. Pressure on developing countries to open their waters builds up, based on the 'surplus' provision of UNCLOS. Rapid development of national fleets to 'fill the void' left by excluded foreign fleets. |
| 1970 | Launch of the Man & Biosphere Programme of UNESCO | FAO global Species Identification Programme develops in support of research and management. (continued) |

Year Nature/biodiversity conservation **Fisheries management** 1971 • The Ramsar Convention. The Wetlands • FAO first estimate of world fisheries potential Convention on Wetlands of International (100 million tonnes). It warns that many fisheries Importance Especially as Waterfowl Habitat are not sustainable and recommends (Ramsar, Iran). It represents a space-based redistributing existing effort on underutilized approach to conservation and species. management of wetlands included in the **List of Wetlands of International** Importance. Parties are required to promote 'wise use' to establishing nature reserves (de Klemm and Shine, 1993). Wise use of wetlands is defined in the Convention as 'the maintenance of their ecological character, achieved through the implementation of ecosystem approaches, within the context of sustainable development'. • The Man and Biosphere (MAB) programme of Unesco is launched. Biosphere reserves are selected as representing different types of ecosystems. They are new types of protected areas in which human occupation and activities compatible with the purpose of the reserve remain authorized but may be strictly regulated (de Klemm and Shine 1993, p. 153). 1972 • The United Nations Conference on Human Environment (Stockholm) laid the initial basis for sustainable development. The Stockholm Declaration formed the foundation for a number of international instruments laying down general conservation objectives and sometimes very specific conservation rules. This confirmed the evolution of the principle of national sovereignty over natural resources but also the recognition of the real interest of the international community in the conservation of certain of these resources (de Klemm and Shine, 1993). • The Marine Mammal Protection Act (MMPA) in USA requires improved gear design, fishing methods and dolphin release methods to reduce dolphin deaths in tuna fisheries (particularly in the EC-Pacific). • UNEP is established. Collapse of the Peruvian anchoveta fishery. • UNESCO World Heritage Convention for • **Second Cod war** between Iceland and Britain after the Protection of the World Cultural and Iceland declared a 50 miles jurisdiction limit. Natural Heritage is adopted in Paris. The • The FAO Advisory Committee on Marine Convention considers that there should be: Resources (ACMRR) confirmed the poor state (1) a legally recognized duty on the part of all of whales resources. • A 10-year moratorium on whaling States to conserve their natural and cultural heritage; and (2) a corresponding duty on recommended. the part of the world community to • The Assessment of the state of whales contribute financially to the conservation of (1972–1976) began and confirmed the poor that natural heritage in developing countries state and the urgency of constraining measures. (de Klemm and Shine, 1993). Convention for the Conservation of Antarctic Seals. London (under the Antarctic Treaty). • Oslo Convention. Convention for the

Prevention of Marine Pollution by Dumping from Ships and Aircraft. In force from 1974, it

will merge in OSPAR in 1992.

| Year | Nature/biodiversity conservation | Fisheries management |
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| 1973 | UNCLOS III starts: Launching of the Third Cor Resolution 3067. | nference on the Law of the Sea, in line with UNGA |
| | Endangered Species Convention (CITES) Convention on International Trade in Endangered Species of Wild Fauna and Flora (Washington) entered into force in 1975. Although CITES does not provide for any possibilities of retaliation, Parties have been asked not to accept imports of specimens from countries not complying with the Convention and these prohibitions have been quite effective (de Klemm and Shine, 1993). NGOs: Technically qualified NGOs first accepted as non-voting observers in the CITES process (Article 11 of CITES convention). The Endangered Species Act in USA provides that the identification of a particular area essential to the survival of an endangered species automatically sets in motion habitat protection measures, signalling the transition from species protection to integrated habitat protection for these species. This Act also signals a transition from prohibition measures to positive action such as the implementation of rebuilding plans. | FAO Technical Conference on Fisheries Management and Development (Vancouver): recognized resources limitations, overcapitalization, insufficient science, the problem of free access, environmental degradation and the need for precautionary, adaptive, anticipatory management. FAO experts recomments to lower fishing objective from F_{MSY} to F0.1 or F_{2/3MSY} RFBs-WECAFC: Establishment of the Western Central Atlantic Fishery Commission (FAO). |
| 1974 | RSOs-Helsinki Convention on the Protection of the Marine Environment of the Baltic Sea Area. In force in 1980. Revised in 1992. In force in 2000. Paris Convention. Convention for the Prevention of Marine Pollution from Land-Based Sources was opened for signature in June 1974 and entered into force in 1978. Will merge in OSPAR in 1992. | First FAO meeting on climatic oscillations impacts on resources (Guayaquil) and vulnerable oscillating stocks. |
| 1975 | The Great Barrier Reef Marine Park is established in Australia. It is among the largest marine parks and one containing large commercial fisheries. A reference in MPA management. CNPPA. The international Commission on National Parks becomes the international Commission on National Parks and protected Areas. First International Conference on Marine | Third Cod war between Iceland and Britain after Iceland's unilateral extension of its jurisdiction to 200 miles. |
| | Parks and Reserves Tokyo. | (continued) |

| Year | Nature/biodiversity conservation | Fisheries management |
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| 1976 | RSOs-Convention on the Conservation of Nature in the South Pacific (in Samoa). Entered into force in 1990. Provides for the protection of species and areas. RSOs-Barcelona Convention. Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean. In force in 1978. Revised in 1995. | GFCM sponsors the establishment of the Barcelona Convention for the protection of the marine environment. The US Fisheries Conservation and Magnuson Act represents the first extension of jurisdiction in the developed world with a 200-miles fisheries conservation zone (now the EEZ). It declares the 'prevention of overfishing' as a national goal alongside producing optimal yield out of a fishery. ACFM. The Advisory Committee on Fisheries Management (ACFM) is established in the ICES framework (Roswadowski, 2002, p. 254) and advises the North Atlantic Fisheries Commission (NEAFC), International Baltic Sea Fishery Commission (IBSFC), NASCO, the European Commission and ICES Member Countries. |
| 1978 1978–1981 | RSOs-Kuwait Convention. Regional Convention for Co-operation on the Protection of the Marine Environment from Pollution. In force in 1979. | RFBs-NAFO the North Atlantic Fisheries Organization replaces ICNAF (1949–1978). As ICNAF members are extending their waters to 200 miles, NAFO's jurisdiction is limited to high seas. Social concerns are strongly expressed in advance |
| 1979 | Bonn Convention on the Conservation of Migratory Species of Wild Animals (CMS, the Bonn Convention) aims to conserve terrestrial, marine and avian migratory species throughout their range, established under the aegis of UNEP. In force in 1983. Berne Convention on the Conservation of European Wildlife and Natural Habitats, the regional conservation treaty for Europe, signed under the auspices of the Council of Europe. The European Community Directive on the Conservation of Wild Birds (79/409) sets out a list of species in annex I whose habitats require special conservation measures. | of the catch reductions recommended by ACFM. |
| The World Conservation Strategy (IUCN, UNEP, WWF) elaborated in collaboration UNESCO coins the term 'Sustainable Development'. It identified 3 objectives: (1) ressential ecological processes; (2) preservation of genetic diversity; and (3) sustain species and ecosystems. It meets with some serious opposition from inside, particular northern NGOs, and sympathy from southern NGOs. RFB-CCAMLR (Convention on the Conservation of Antarctic Marine Living Resin Canberra. | | oment'. It identified 3 objectives: (1) maintenance of of genetic diversity; and (3) sustainable use of erious opposition from inside, particularly from the NGOs. |
| | | ICES develops a focus on multispecies modelling, assessment and management. During the following 2 decades, the models will never be used directly for management (Roswadowski, 2002, p. 263). |

| Year | Nature/biodiversity conservation | Fisheries management |
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| 1980s (cont'd) | | FAO pushes a new focus on multispecies fisheries assessment and management, bycatch, direct effort control, resources allocation and SSFs. John Gulland (of FAO) assesses economic losses due to overfishing as one billion US\$ for the Northeast Atlantic (before the Cod collapse). The FAO worldwide resources watch is strengthened through comprehensive regional reviews. The SOFA report stresses the poor state of many resources and calls for improved management, better control of foreign fleets, adjustment of fishing capacity, determination of EEZ boundaries and management of shared stocks. |
| 1980 | CCAMLR: Convention for the Conservation of | Antarctic Living Marine Resources is established. |
| 1981 | RSOs-Abidjan Convention. Convention for Co-operation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region. In force in 1984. RSOs-Lima Convention: Convention for the Protection of the Marine Environment and Coastal Area of the South-East Pacific. In force in 1986. | • Safe biological limits. Focusing on environmental concerns, ACFM adopts the concept of 'safe biological limits' leaving to States the decision to select among options designed to keep stocks within these limits. Single conservation recommendations will still be made for endangered stocks (Roswadowski, 2002, p. 255). |
| 1982 | Adoption of the UN Law of the Sea Convent codification of the rules relating to all aspects | ion (LOSC), after an unprecedented effort of of the use of the marine environment by man. |
| | World Charter for Nature adopted by the UNGA. Based on the work of IUCN. The Charter is a piece of soft law that proclaims principles of conservation by which all human conduct affecting nature is to be guided and judged. It incorporates the Stockholm Principles but also the three objectives of the World Conservation Strategy (de Klemm and Shine, 1993). MPAs. The 3rd World Parks Congress on National Parks calls for the incorporation of marine and coastal (and freshwater) sites into the worldwide network of protected areas (Toropova et al., 2010). Jeddah Convention. Regional Convention for the Conservation of the Red Sea and Gulf of Aden Environment. In force 1985. SPA Protocol. The Protocol Concerning Mediterranean Specially Protected Areas (SPA Protocol). In force in 1986. Revised in 1995 as the Protocol Concerning Specially Protected Areas and Biological Diversity in the Mediterranean (SPA and Biodiversity Protocol). | UNCLOS III ends with the adoption of the LOSC in Montego Bay, Jamaica. 10-year Moratorium on whaling is adopted by the IWC. Recommended in 1972 in Stockholm, it will really start being implemented in 1988. RFBs-NEAFC: The new NEAFC Convention adopted in 1980 enters into force. |
| | • | (continued) |

| Year | Nature/biodiversity conservation | Fisheries management |
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| 1983 | CMS: Convention on the Conservation of Migratory Species of Wild Animals (CMS), 1979, in force 1983. RSOs-Cartagena Convention. Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region. In force in 1986. The World Commission on Sustainable Development is created by the UN. 1st Workshop on Biosphere reserves (Minsk USSR) by UNESCO. | |
| Mid 1980s | Introduction of Integrated Conservation and and Flintan, 2001). The tuna-dolphin issue develops into a crisis | d Development Projects (ICDPs) by WWF (Hughes in the Eastern Central Pacific. |
| 1984 | | The World Commission on Environment and Development (WCED, Brundtland Commission (1984–87) starts its work as an independent body of the UN. FAO Conference on Management and Development of fisheries: With the LOSC, it signals the opening of the new order of the ocean. Priority is on management. The battle for appropriation of resources turns into a battle for access of the new resource owners to foreign markets. Fish trade takes international political importance. Social and economic issues take an upper end. The International Conference of Fishworkers and their Supporters, organized simultaneously in Rome by ICSF as a form of demonstration, drew attention on the importance and problems of the neglected small-scale fisheries. |
| 1985 | Agreement on the Conservation of Nature and Natural Resources (Kuala Lumpur) between the ASEAN nations to achieve global environmental protection, based on the objectives of the World Conservation Strategy. Contains provisions on protected areas (de Klemm and Shine, 1993). ROSs-Nairobi Convention. The Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region. In force in 1996. Protected Areas and Wild Fauna and Flora in the Eastern African Region. The Protocol to the Nairobi Convention is adopted 1985. | FAO COFI Sub-Committee on trade is established. |

| Year | Nature/biodiversity conservation | Fisheries management |
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| 1986 | RSOs-Noumea Convention. Convention of the Protection of Natural Resources and Environment of the South Pacific Region. I force 1990. The IUCN Commission on National parks and protected areas nominates a Vice-Chair for marine areas to accelerate the development of MPAs (Toropova et al., 201 | n S |
| 1987 | to the concept of 'sustainable developme develop its own ways and means to reach | The work of the Commission and the report give content ent' leaving it vague enough so that each country could this ethical goal. The Conclusions of the Brundtland report y as a framework for future cooperation in the field of |
| 1988 | The NGO Conservation International shift to sustainable use. The 4th World Wilderness Congress pass a resolution on MPAs (Kelleher et al., 1995a-d). IUCN sets up the World Conservation Monitoring Centre (WCMC), co-sponsore by UNEP and WWF. UNEP sets up the ad hoc Working Group Experts on Biological Diversity, starting the process leading to the establishment of the CBD in 1992. The Flora and Fauna Guarantee Act of Victoria (Australia) provides, for the first time for the listing of potentially threatening processes, specifying further the notion of 'harm' in addition to 'taking'. Marine conservation objective: IUCN primary goal of marine conservation, wise use understanding and enjoyment of the marine heritage of the world in perpetuity through the creation of a global representative network of MPAs and through the management, in accordance with the principles, of human activities that use or affect the marine environment'. Resolution 17:38, 17th General Assembly, Costa Rica). This puts the management of uses and nat protection as integral part of 'conservation'. E.O. Wilson introduces the term 'biodiversity' in his book Biodiversity, National Academy Press, Washington | ses d of of ne, ne n |
| | DC 1988. | (continued) |

| Year | Nature/biodiversity conservation Fisheries management | |
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| 1989 | • Driftnets: The Wellington Convention for the prohibition of fishing with long driftnets in the South Pacific requires its Parties to prohibit the use of drift nets longer than 2.5 km in areas under their jurisdiction. | |
| | Protocol to the Noumea convention for the Conservation and Management of Protected Marine and Coastal Areas of the South-East Pacific. In force 1994. UNEP establishes the Ad Hoc Working Group of Technical and Legal Experts to prepare an international legal instrument for the conservation and sustainable use of biological diversity. UNGA resolution 44/225 on large-scale pelagic driftnet fishing and its impact on the living marine resources of the world's oceans and seas could be considered a case of radical application of the conservation, despite the lack of explicit reference to the Precautionary Principle. I called for a moratorium to be imposed on all driftnet fishing by 30 June 1992. | |
| 1990 | Drift nets: UN Resolution 44(225) recommends a moratorium on the use of large drift nets in the high seas as from 1 July 1991 unless effective conservation and management measures have been taken. Tuna-dolphin: The Dolphin Protection Consumer Information Act (DPCIA) establishes criteria for labelling canned tuna products as 'dolphin safe' when caught on a trip during which no dolphins were encircled. The crisis is over. PICES: Adoption of the Convention for the North Pacific Marine Science Organization. | |
| | 'Return to the barriers' in Africa. A paradigm develops again arguing that conservation should return to the original values of aesthetic beauty and intrinsic value (Büscher and Diets, 2005). It is said that 'protected areas are the last bastions of biodiversity and wildlife conservation and hence should be protected at all costs and focus on preservation, the strictest form of conservation' (Terborgh and Van Shaik, 2002). SPAW. Protocol of the Cartagena Convention concerning Protected Areas and Wildlife. Sustainable use: The 18th IUCN General Assembly, (Perth, Australia) in Recommendation 18.24 resolved that IUCN should develop guidelines on sustainable use of wildlife. It recognized that 'the ethical, wise and sustainable use, and can be consistent with and encourage conservation, where such use is in accordance with appropriate safeguards'. Establishment of PICES the North Pacific Marine Science Organization (the Pacific ICES) by Canada China, Japan, USSR and USA. Following an early ICES model, PICES was established with no assessment groups and no management-related responsibilities. | |

Sustainable Use of wild Species (SG-SUWS)

| Year | Nature/biodiversity conservation Fisheries management |
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| 1991 | ICES Listings: 1st proposal to list Bluefin Tuna in CITES Appendix II The UN Moratorium on the use of large-scale driftnets in the high seas is applicable. While not binding, UN resolutions have considerable moral force (de Klemm and Shine, 1993). ESD: The Australian Fisheries Management Act introduces Ecologically Sustainable Development (ESD) in fisheries, recognizing their potential impact on the ecosystem (McLoughlin et al., 2008). |
| | Caring for the Earth: A Strategy for Sustainable Living developed by IUCN, UNEP and WWF. It lays down basic principles and actions to be taken to adapt the WCS to the user's needs and capabilities. GEF: Establishment of the Global Environment Facility partnership. Risk: ACFM reformulates its advice formats to take into account the risk inherent in assessments and explicit the implications for management (Roswadowski, 2002, p. 255–256). Responsible fishing. COFI19 invites FAO members to define new concepts to make fisheries more responsible and more sustainable. |
| 1992 | UNCED. UN Conference on Environment and Development (UNCED, Rio Conference). Sets important principles of conservation and development (including Principle 15 of the Rio Declaration on the precautionary approach) and outlines a large diversity of programmes of work (including chapter 17 on oceans and seas and the protection and rational use and development of their living resources). The conference will have a profound influence on policy agendas at all levels. The UN Framework Convention on Climate Change (UNFCCC) is adopted at UNCED. The Convention on Biological Diversity is opened for signature (in force in 1993). The objectives are conservation, sustainable use and the equitable sharing of benefits arising from the utilization of biodiversity and genetic resources. The Convention reiterates (as in the LOSC) the sovereign rights of coastal States over their biological resources as well as the responsibility for conserving their biological diversity and for using them in a sustainable manner. It calls for integration of conservation and development and recognizes the role of indigenous communities in biodiversity protection. Protected areas are an explicit part of the <i>in situ</i> conservation measures (de Klemm and Shine, 1993). CITES Listing: Attempted listing of Tuna species in CITES COP 8. The proposal by Sweden to list Western Atlantic Bluefin Tuna on Appendix I and Eastern Atlantic tropical tunas on Appendix II was turned down (mainly on the arguments that they were managed by ICCAT and were not declared endangered) and withdrawn. The Global biodiversity strategy is published by the World Resources Institute (WRI), IUCN and UNEP as a complement of (or as an attempt to condition) the work of the future CBD. |
| | CBD: The UNEP Nairobi Conference for the Adoption of the Agreed Text of the Convention on Biological Diversity finalizes the draft text of the Convention that to be opened for signatures at UNCED one month later. RSOs-Convention for the Conservation of Biological Diversity and the Protection of Priority Wild Areas in Central America (signed by Costa Rica, El Salvador, Guatemala, Nicaragua and Guatemala, Honduras, Nicaragua and Convention of the Conservation in Adoption of the Cod stocks of Labrador and Newfoundland, Raising concern: A special fishery section of SOFA on fisheries stresses that UNCLOS objectives were being missed, underlining mismanagement, economic losses, social stress, environmental degradation and the need for integrated management. Bycatch emerges as a threat to conservation in addition to a waste. High-seas management is an emerging issue as fleets expand their operations in that area. Cod fishery moratorium: Following the collapse of the Cod stocks of Labrador and Newfoundland, |

Panama) (de Klemm and Shine, 1993).

(continued)

Canada closes the fishery. It is still practically

closed today, 30 years later.

Year Nature/biodiversity conservation Fisheries management 1992 (cont'd) • EU Council Directive 92/43 on the • Responsible fishing: In response to COFI 19, the Conservation of Natural Habitats and of Cancun International Conference on Responsible Wild Fauna and Flora to promote the Fishing Conference takes place in Mexico. maintenance of biodiversity. The Directive provides for two sets of measures covering the protection of species and species' habitats and the protection of habitat types. It is the only recent international instrument combining comprehensive conservation rules and a financial mechanism to assist in their implementation (de Klemm and Shine, 1993). • OSPAR: the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention) is adopted, joining the 1972 Oslo Convention and the 1974 Paris Convention. It will enter into force in 1998 with an annex V that extends its mandate to cover biodiversity concerns. 1993 • The UN Commission on Sustainable Development is established at the UN to follow up the implementation of Agenda 21. • The LME programme starts, supported by GEF and led by NOAA, to assist developing countries in planning and implementing an ecosystem-based management of coastal resources. Originally focused on general environmental analyses and contamination, the programme will progressively integrate and focus on fisheries problems, particularly after WSSD (Sherman, 2008). • The implications of UNCED and the Agenda 21 for fisheries, in terms of precaution, environmental impact and management integration are brought to the attention of COFI 20. The CBD comes into force. • **Compliance agreement:** adoption of the FAO Agreement to Promote Compliance with the International Conservation and Management measures by Fishing Vessels in the High Seas. The Agreement applies to all types of fishery resources, not only the straddling and highly migratory as the 1995 UNFSA. • RFBs-IOTC: Establishment of the Indian Ocean Tuna Commission. • UNCLOS comes into force. 1994 The ICES WG on ecosystem effects of fishing is established.

- ACFM meets with ACME. The Advisory Committees on Fisheries Management (ACFM) and on the Marine Environment (ACME) have their first joint meeting.
- The IUCN Sustainable use Initiative starts in IUCN. The concept was Implicit in the 1980 WCS. It was
 reinforced by the WCED (in 1987), Caring for the Earth (in 1991) and UNCED (in 1992). Reiterated in
 the 1996 World Conservation Congress (WCC, Montreal, Canada) (Christophersen, 1997). It will be
 formally adopted by IUCN in 2000 (WCC, Amman, Jordania).

Year Nature/biodiversity conservation **Fisheries management** 1994 (cont'd) • ICRI. The International Coral Reef Initiative • Social sciences in ICES? The 1994 ICES Statutory is established at CBD CoP 1 by Australia, meeting discusses the need to bring in experts in France, Japan, Jamaica, Philippines, Sweden, economics, sociology and anthropology. USA and UK as well as multilateral Discussions were pursued for 2 more years. The development banks and environmental and difficulties of moving to fishery 'systems' analysis development al NGOs and the private sector. and management advice were considered. (Roswadowski, 2002, p. 257). 1995 The Jakarta Mandate on marine and coastal biological diversity is adopted by CBD CoP2 and a study is called for on the relationship between the CBD and UNCLOS on issues related to conservation and sustainable use of genetic resources of the deep seabed. CoP2 recognizes the use of Integrated Marine and Coastal Area Management (IMCAM) as the most suitable framework for addressing human impacts on marine and coastal biodiversity and promoting its conservation and sustainable use. The implementation of its Programme of work calls for the **precautionary** and the **ecosystem** approaches. • Ecosystem approach is adopted by CBD COP2 in Jakarta (Decision II/8) (Vierros, 2008). • Comprehensive inventory of potential • FAO Code of Conduct for Responsible Fisheries Marine Protected Areas is produced by the (CCRF) is adopted. A cornerstone is the Great Barrier Reef Marine Park Authority, the precautionary approach to fisheries (PAF). World Bank and IUCN (Kelleher et al., UN Fish Stock Agreement (UNFSA), the 1995a-d). Agreement for the Implementation of the • Sustainable use initiative (SUI): Launched Provisions of the UNCLOS of 10 December 1982 to improve understanding of factors relating to the Conservation and Management of affecting sustainability. The regionally based Straddling Fish Stocks and Migratory Fish Stocks is Sustainable Use Specialist Group (SUSG) is adopted. It also reflected the PAF and shifted the launched in support of the SUI. The status of MSY from a target to a limit for fisheries sustainable use initiative was disbanded in development and a target for rebuilding depleted 2001 but a Sustainable Use Team was stocks. Will come into force in 2001. established. The CCRF and the UNFSA integrate the precautionary approach in fisheries

- management.
- The FAO Ministerial meeting adopts the **Rome Consensus on World Fisheries** recognizing overfishing, overcapacity and threats to resources, and calling for improved conservation and management.
- Kyoto Declaration and Plan of Action on the Sustainable Contribution of Fisheries to Food Security (organized by Japan and FAO) called for assessment of stocks and fisheries status on food security, employment, trade and production sustainability.
- **Turbot war.** An international dispute between Canada (supported by the United Kingdom and Ireland) and Spain (supported by the European Union) in which Canada captured a Spanish trawler (Estai) and its crew just outside the 200 miles for illegal fishing on Greenland Halibut.

| Year | Nature/biodiversity conservation | Fisheries management |
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| 1996 | WCPA: The international CNPPA becomes the World Commission on Protected Areas (WCPA) at the IUCN Congress in Montreal. The Commission will hold the World Parks Congresses (1962, 1972, 1982). Sustainable use: the IUCN WCC (Montreal) reaffirms the Sustainable Use principles and calls for a Policy Statement on Sustainable Use to be adopted in 2000. | The FAO SOFA report that 60% of world's fish resources are in need of urgent management, 35% are currently overfished and 20 million tons of fish could be added to total world landings through rehabilitation of degraded resources, responsible exploitation of underdeveloped resources and reduction of discards and waste. |
| 1997 | Shrimp-turtle conflict: India, Malaysia, Pakist against a ban imposed by the US on the imposed to using Turtle Excluder Devices (Trecognized both the right of any WTO member and endangered species and the need to do see the shring transport of the seed to do see the seed to do seed to do see the seed to do seed | tan and Thailand brought a joint complaint to WTO ortation of certain shrimp and shrimp products on all iEDs). With decisions made in 1998 and 2001, WTO er to apply trade restrictions to protect the environment so in a non-discriminatory manner. This was an sures to protect biodiversity from fisheries impacts. |
| | | The ICES Multispecies assessment WG is retired considering the little use made of the assessments and the high cost of the methodology (Roswadowski, 2002, p. 254). A Resources Management Committee is established in ICES to deal with economics, sociology and management advice as well as the effect of natural oscillations and climate change on management decisions (Roswadowski, 2002, p. 257). |
| 1998 | OSPAR comes into force. Its annex V on ecosystems and biodiversity introduces provisions regarding the 'protection and conservation of the ecosystems and biological diversity of the maritime area'. This will lead to the 2003 Recommendation to establish an OSPAR Network of MPAs and the collaboration with NEAFC in identifying EBSAs. Marine genetic resources (MGRs): the CBD Programme of work on marine and coastal biodiversity (decision IV/5) includes an operational objective related to making available information on marine and coastal genetic resources, including bioprospecting. Malawi Principles. 12 principles for the Ecosystem Approach are elaborated by the Workshop on the Ecosystem Approach held in Lilongwe (Malawi) that will be adopted by the CBD CoPV (Decision V/VI) in 2000. | 2002, μ. 231). |

| Year | Nature/biodiversity conservation | Fisheries management |
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| 1999 | Oceans and the Law of the Sea (also called the to facilitate the annual review by the UNGA of (resolution 54/33). | ations Open-ended Informal Consultative Process on e Consultative Process) by the UN General Assembly developments in ocean affairs and the law of the sea apposium on the ecosystem effects of fisheries in |
| | IUCN publishes Guidelines for Marine Protected Areas. | FAO IPOAs. FAO adopts International Plans of Action for (1) reducing incidental catch of seabirds in longline fisheries; (2) conservation and management of sharks; and (3) management of fishing capacity. Precautionary approach: The ICES Advisory Committee on Fisheries Management (ACFM) establishes an operational definition for the precautionary approach to fisheries. FAO Ministerial meeting on IUU fishing. Adopted a Declaration expressing concern at growing IUU fishing. The Ministers agreed to develop an international Action Plan within the framework of the Code of Conduct. |
| 2000 | 18 targets and 48 indicators regarding povert mortality and environmental sustainability. The measuring progress in development. In 2002, plan of implementation for enabling developing progress towards their achievement by 2005. • Census of Marine Life (CoML) starts. This 10 diversity, distribution and abundance of maring stimulated marine science by tackling these is more than 80 nations who participated in 540 produced more than 2600 scientific publicationand registered more than 30 million biodivers System (OBIS). • Adoption of the Sustainable Use concept the | ons, identified more than 6000 potential new species ity records in the Ocean Biogeographic Information he IUCN World Conservation Congress (Amman, e links between sustainable use, human livelihoods, cus across IUCN's programmes and units |
| | GMOs. Cartagena Protocol on biosafety adopted by CBD (entered into force 2003) addresses safe transfer, handling and use of living modified organisms that may have an effect on biodiversity with focus on transboundary movements. CBD CoP V endorses the 1998 Malawi Principles for the Ecosystem Approach. | RFBs-WCPFC: The Convention for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean is opened for signature. It will enter into force in 2004. |
| | | (continued) |

| Year | Nature/biodiversity conservation Fisheries management |
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| 2001 | Sustainable use: Elaboration of the 'White Oak' Principles of sustainable use (IUCN) EAF: FAO adopts the Ecosystem Approach to Fisheries in Reykjavik. FAO IPOA-IUU: to prevent, deter and eliminate Illegal, Unreported and Unregulated Fishing (IUU). RFMOs-SEAFO. Establishment of the Southeast Atlantic Fisheries Organization. Replaces ICSEAF. |
| RFMOs-SEAFO. Establishment of | |
| | Coastal Environment of the Northeast Pacific. • Establishment of the Pelagos Sanctuary in the Mediterranean (87500 km²). |
| 2003 | Sea mounts biodiversity: The UNGA encourages urgent integration and improvement of risk management for marine biodiversity on seamounts (Resolution 57/141). Regular Process: The UNGA requests the UNSG (Res. 58/240) to convene a group of experts to define the 'Regular Process'. VMEs and EBSAs: the UNGA encourages urgent integration and improvement of risk management in threatened and vulnerable marine ecosystems (VMEs) in ABNJ (Resolution 58/240). ICP-4. VMEs. ICP4 adopted recommendations on the protection of vulnerable marine ecosystems. IPBES. G8 Summit (Evian) agrees to act to implement MDGs and the Johannesburg Plan of Implementation. Will lead to the 2005 Paris Conference. |

Year Nature/biodiversity conservation **Fisheries management** 2003 (cont'd) • MGRs and deep seabed. CBD and UNCLOS • Deep sea conference: International Conference secretariats undertake a joint study on on Governance and Management of Deep-Sea Fisheries organized with FAO in Queenstown, New conservation and sustainable use of deep seabed genetic resources beyond national Zealand. jurisdiction (ABNJ). • RFBs-SEAFO: South East Atlantic Fisheries • RSOs-Caspian Convention. Framework Organization established. Convention for the Protection of the Marine • High Seas Task Force on IUU Fishing is Environment of the Caspian Sea. established by ministers from Australia, Canada, • The 5th World Parks Congress recognizes Chile, Namibia, New Zealand and the UK and the suitability of multiple types of international non-governmental organizations governance for protected areas (State-based, (Earth Institute, IUCN, WWF and MSC). community-based, private, etc.). 2004 • Sustainable Use Initiative: formally endorsed at the World Conservation Congress in Amman (Jordania) (Christophersen, 1997). • Sustainable use: CBD COP 7 (Kuala Lumpur) adopts the 14 Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity (Decision VII/14). • CBD and the FAO Code of Conduct. COP7 recognizes and recommends the implementation of the Code and its guidelines as the instruments to implement CBD policies in fisheries (Decision VII/5). Preamble paragraph 7 as well as operational objectives 2.1g and 4.1b. • MPAs and biodiversity: CBD COP 7 (Kuala Lumpur) strengthens the work program on MPAs and high seas biodiversity, highlighting the urgent need for better international cooperation in ABNJ to establish more MPAs and fight against destructive practices. • Destructive fishing: the UNGA calls on States to take interim prohibition measures against destructive fishing (Res 59/25: paras 66, 67). • VMEs: the UNGA calls for action to regulate bottom fishing in VMEs and establish RFMOs where there are none (Resolution 59/25: paras 68, 69). • Regular Process; The GMA International Workshop was held in conjunction with the 5th ICP meeting. It recommends a Task Force to organize an Assessment of Assessments (AoA). • ICP-5. ABNJ. Adopted recommendations on new sustainable uses of oceans, including the conservation and management of the biological diversity of the seabed in areas beyond national jurisdiction (ABNJ). • BBNJ: Resolution 59/24 (paragraph 73) of the UNGA established the Ad Hoc Open-ended Informal Working Group to study issues relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction (BBNJ) to review the activities of the United Nations and other relevant international organizations with regard to the conservation and sustainable use of marine biological diversity in areas beyond national jurisdiction (ABNJ) and provide guidance. • MGRs and the deep Sea. CoP7 in decision • RFBs-WCPFC The Western Central Pacific VII/5: (1) invited Parties and other States to Fisheries Commission enters into force under identify activities and processes under their the Convention for the Conservation and jurisdiction or control with significant adverse Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean. impact on deep seabed ecosystems and species in ABNJ; (2) requested the Secretariat to compile information on the methods for

identification, assessment and monitoring of **genetic resources** of the seabed and ocean floor and subsoil thereof, in ABNJ; and (3) compile and synthesize information on MGRs status and trends, identifying threats and technical options for their protection.

Year Nature/biodiversity conservation **Fisheries management** 2004 (cont'd) • Biodiversity in ABNJ: the UNGA decides to establish an Ad Hoc Open-ended Informal Working Group on issues relating to conservation and sustainable use of marine biological diversity in ABNJ (Res. 59/24). Progress will be followed up in 2006, 2009 and 2011 (61/105, 64/72 and 66/68, respectively). • EBSAs identification criteria are elaborated at the CBD Scientific Experts Workshop on criteria for 2005 identifying ecologically and biologically significant areas beyond national jurisdiction, Ottawa, Canada. • ICP-6. Marine debris: adopted recommendations on fisheries and their contribution to sustainable development, and considered the issue of marine debris. Millennium ecosystem assessment makes • International Conference on the Governance of a negative assessment of the state of the High Seas Fisheries and the United Nations Fish global environment and biodiversity. Agreement - Moving from Words to Action held • The Green Growth concept is adopted at in St John's, Newfoundland and Labrador. Launched the discussions on the RFMO reform. • **GRAMED**. The Global and Regional Assessments of the Marine Environment Database (GRAMED) starts developing (led by UNEP and IOC/UNESCO) to support the 'Assessment of Assessments' and provide support to a future Regular Process. International Conference on Biodiversity, Science and Governance (Paris). This independent conference calls for an international multi-stakeholder consultative process towards establishment of an International Mechanism of Scientific Expertise on Biodiversity (IMoSEB). The process (2005-2007) will lead the establishment of IPBES in 2008. First International Marine Protected Area Congress in Australia in 2005. • IPBES. The Paris International Conference on 'Biodiversity, Science and Governance' organized by France is an important step towards the creation of IPBES in 2010. 2006 • FAO-CITES Memorandum of Understanding is signed. FAO and CITES will review and consult together on the scientific, legal and technical evaluation of commercially exploited aquatic species listed or proposed for listing in the CITES Appendices. Following this agreement, CITES will send to FAO, for examination by the FAO Panel Of Independent experts, the country's proposals for listing fishery species on CITES appendices. • VMEs: UNGA elaborates a framework for management of VMEs (coining the term) in which States authorizing vessels to trawl on the high seas should: (1) conduct assessments of impacts on VMEs; (2) manage impacting activities including through closed-areas prohibit fishing; (3) establish and implement VMEs 'encounter protocols'; (4) implement the precautionary and ecosystem approaches; and (5) sustainably manage deep-sea fish stocks Resolution 61/105 of ICP-7. • Enhanced understanding of ecosystem-based management (EBM), and adopted recommendations on ecosystem approaches (EA) and oceans. • IMCAM. CBD CoP8 stressed again the importance of Integrated Marine and Coastal Area Management.

Year Nature/biodiversity conservation

2006 (cont'd)

- CBD-UNGA cooperation on MPAs in ABNJ.
 CBD COP8 (Curitiba) recognizes the role of the CBD scientific and technical support to the work of the UNGA on MPAs in ABNJ.
- The CBD adopts international targets for MPA coverage starting both a huge effort to meet the target and some criticism about the real value of such targets for improved conservation, in practice. At least 10% of each of the world marine and coastal ecological regions to be protected by 2012.
- MGRs. CBD Decision VIII/21 (1) calls for information on research activities related to deep seabed genetic resources in ABNJ; and (2) indicates options for protection of deep seabed genetic resources in ABNJ; codes of conduct, guidelines and principles; threats reduction and management through permits and EIA, MPAs, prohibition of detrimental and destructive practices in vulnerable areas.
- The 1st UNGA WG on biodiversity in ABNJ discusses issues behind establishment of MPAs in ABNJ.
- The Northwestern Hawaiian Islands
 Marine National Monument is established
 in USA as a sanctuary and as a World
 Heritage Site (in 2010).

Fisheries management

- EAF implementation: The 2006 FAO-Norway Conference on Implementing the Ecosystem Approach to Fisheries is a follow-up to the FAO-Iceland Reykjavik Conference in 2001.
- NEAFC strengthens conservation: it adopts the London Declaration and amends the 1982 Convention, strengthening commitment to conservation.
- 1st Review Conference on the UN Fish Stocks
 Agreement to assess the adequacy of the
 Agreement's provisions and means of
 implementation. Commitment to: (1) integrate
 ecosystem considerations in fisheries
 management; (2) develop a legally binding
 minimum standards for port State measures; (3)
 develop a comprehensive global register of fishing
 vessels; and (4) expand assistance to developing
 countries. Stresses the urgency of (5) reducing
 fishing capacity; (6) strengthening RFMO
 mandates; and (7) reviewing RFMOs performance.
- SIODFA. The Southern Indian Ocean Deep-sea
 Fishers Association is formed. Registered under
 the Incorporated Societies Act of the Cook Islands,
 it promotes responsible management of the
 deepwater fishery resources of the area for
 sustained harvests benthic biodiversity
 conservation. SIODFA voluntarily closed a number
 of SIO areas to its fleets.
- SIOFA. The Southern Indian Ocean Fisheries Agreement is signed. It will come into force in 2012.

2007

- ICP-8. MGRs: discussed issues particularly related to marine genetic resources. Delegates were unable to agree on key language referring to the relevant legal regime for marine genetic resources in areas beyond national jurisdiction and, as a result, no recommendations were adopted. However, a Co-Chairs' summary report was forwarded to the General Assembly for consideration.
- **Regular Process. AoA**: 1st Meeting of the Group of Experts for the start-up phase, Assessment of Assessments (AoA) of the Regular process for the global reporting and assessment of the state of the marine environment, including socio-economic aspects.
 - RFMOs best practices. Meeting of the Chatham House Independent Panel to develop a model for improved governance by RFMOs. The Panel recommended a set of Best Practices (Lodge et al., 2007).
 - FAO Workshop on Vulnerable Marine
 Ecosystems and Destructive Fishing in Deep Sea Fisheries. Clarifies issues regarding ecosystem
 vulnerability, destructive fishing and related
 impacts. These guidelines are important for the
 implementation of the resolution UNGA 61/105
 and to bridge nature conservation and fisheries
 management in vulnerable marine ecosystems.

| Year | Nature/biodiversity conservation | Fisheries management |
|------|---|---|
| 2008 | Unregulated (IUU) Fishing on Marine Biodiver Fisheries Experts Group). | istainable Fishing and Illegal, Unreported and sity and Habitats (Rome, facilitated by the IUCN and shortcomings of the Consultative Process in its |
| | IUCN produces a new set of guidelines for protected areas categories, including a new definition replacing the 1994 definition. Sustainable use and livelihoods. IUCN 4th WCC establishes the Sustainable Use and Livelihoods Specialist Group (SULI). EBSAs: The 3rd UNGA WG on biodiversity in ABNJ calls on States to work towards a common methodology for the identification and selection of marine areas to be protected. EBSAs criteria: CBD CoP9 (Bonn) adopts Scientific Criteria for Identifying EBSAs in Need of Protection in Open Ocean Waters and Deep-Sea Habitats, as well as scientific guidelines for selecting areas for representative MPAs networks. IPBES. 1st IMoSEB-Millennium Assessment meeting on strengthening the Intergovernmental Science-Policy Interface on Biodiversity and Ecosystem Services, under the auspices of UNEP. A concept note is elaborated about an Intergovernmental Science-Policy platform on Biodiversity and Ecosystem Services (IPBES). CBD-SBSTTA 13: looks at options for preventing and mitigating the impact of some activities to selected seabed habitats, and at ecological criteria and biogeographical classification systems of marine areas (and networks of MPAs) in need of protection. Green Growth. OECD adopts a Declaration on Green Growth at the Council at Ministerial Level (C/MIN(2009)5/ADD1/FINAL. | FAO adopts the International Guidelines for the management of deep-sea fisheries in the high seas after 2 years of preparations. The guidelines clarify the VME concept. 'The most vulnerable marine ecosystems are ones that are both easily disturbed and are very slow to recover, or may never recover. Vulnerable ecosystem features may be physically fragile, but some may be functionally fragile even if physically robust.' OSPAR and NEAFC sign a memorandum of understanding in order to facilitate collaboration on high seas MPAs. |

Year Nature/biodiversity conservation **Fisheries management** 2009 • Regular Process: In its Resolution 65/37 A (para 202) the UNGA decide that the Regular Process is accountable to the UNGA and should be an intergovernmental process guided by international law, including the UN LOSC and other applicable international instruments, and take into account relevant UNGA resolutions. The Regular Process would be overseen and guided by an Ad Hoc Working Group of the Whole of the General Assembly composed of Member States (para. 203, 204). The year 2014 was selected as the deadline for the first integrated assessment. • Biodiversity in ABNJ. GEF initiates a global pilot program focused on the protection of marine biodiversity in Areas Beyond National Jurisdiction (ABNJ). • CBD Strategic Plan 2011–2020 is adopted by CoP10 (Nagoya), with the objective to protect effectively and equitably, by 2020, at least 10% of coastal and marine areas, noting that the determination of EBSAs and the selection of conservation and management measures is a responsibility of States and competent intergovernmental organizations. Further collaboration with FAO on fishery matters is invited. • EBSAs and VMEs. SBSTTA deals with EBSAs and VMEs and calls for the establishment of a CBD global inventory of EBSAs, sharing info with the FAO VMEs initiative. • IPBES. Following intergovernmental and • Port States Agreement: FAO adopts a legally multi-stakeholders meetings in Malaysia binding Agreement on Port State Measures to (2008), Kenya (2009) and Korea (Busan, Prevent, Deter and Eliminate Illegal, Unreported 2010), governments decided that an and Unregulated Fishing (IUU). Intergovernmental Platform on • RFBs-SPRFMO. Adoption of the Convention on **Biodiversity and Ecosystem Services** the Conservation and Management of High Seas (IPBES) should be established. In 2010, the Fishery Resources in the South Pacific Ocean. Busan Outcome was welcomed by CBD Establishment of the South Pacific RFMO. It will CoP10 in Nagoya and considered by UNGA. enter into force in 2012. UNEP was requested to convene a plenary • Flag State Performance, FAO Expert Consultation meeting to fully operationalize IPBES. on Flag State Performance. Agreed on draft criteria • CBD Nagoya Protocol on MGRs. (Decision for flag State performance self-assessment and X/1). The Nagoya Protocol on Access to international/multilateral assessment. Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is adopted and settles the use of MGRs in EEZs. Article 10 opens the possibility for negotiating a future multilateral benefit-sharing mechanism, possibly under UNCLOS rather than CBD. CBD Expert Workshop on Scientific and Technical Guidance on the use of **Biogeographic Classification Systems and Identification of Marine Areas beyond** national jurisdiction in need of protection (Ottawa, Canada).

| Year | Nature/biodiversity conservation | Fisheries management |
|-----------|---|---|
| 2010 | concept. • Aichi Targets: In Decision X/2, CBD COP 10 (N | ty is developed at UN level to try to operationalize the Nagoya, Aichi Prefecture, Japan) adopted a revised and Jing the Aichi Biodiversity Targets , for 2011–2020. |
| | GEF ABNJ Program: GEF 41st Council adopts a programme for Global sustainable fisheries management and biodiversity conservation in the areas beyond national jurisdiction (ABNJ) (Program 4580/4581) developed in conjunction with the 5 tuna RFMOs, FAO (implementation leader), UNEP and the World Bank. EBSAs identification. A series of regional meetings are initiated at CBD to identify EBSAs. Aichi Targets: CBD COP 10 adopts the Aichi Targets. | 2nd Review Conference on the UN Fish Stocks Agreement to assess the progress made in implementing the 1995 United Nations Convention on the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks. Noted progress in relation to RFMOs. Confirmed concern about overfishing. Called for stronger action. Deep seas guidelines. FAO Workshop on the Implementation of the International Guidelines for the Management of Deep-sea Fisheries in the High Seas: Challenges and Ways Forward, Busan, Republic of Korea. VMEs: The UNGA review was preceded by a two-day workshop to discuss implementation of resolutions 61/105 and 64/72, addressing the impacts of bottom fishing on vulnerable marine ecosystems and the long-term sustainability of deep-sea fish stocks (A/66/566). The next review will take place in 2015. |
| 2009–2010 | establish IPBES as an interface between the sometime build capacity for and strengthen the use of strengthen initiatives: the International Mechanism of | ncil, based on the 2010 UNGA resolution, decides to cientific community and policy makers that aims to science in policy making. The process brought together of Scientific Expertise on Biodiversity (IMoSEB) 07) and the follow-up processes to the Millennium |
| 2011 | | • RFBs-North Pacific RFMO. The Convention on the Conservation and Management of High Seas Fisheries Resources in the North Pacific Ocean. Successful negotiations on the draft text. The draft Convention will be opened for signature. |
| 2012 | Rio + 20. The new United Nations Conference on Sustainable Development, 20 years after UNCED, led to mixed outcomes. It confirmed all previously agreed commitments but did not come up with any new solution to existing problems. The Heads of State simply renewed their political commitment to sustainable development and declared their commitment to the promotion of a sustainable future. The document largely reaffirms previous action plans such as Agenda 21. No decision was made towards establishment of a global environment agency or to improve the high seas biodiversity management framework. The meeting illustrated the tension between the developed and developing worlds on the issue of 'green economy', the new avatar of the tensions between development and conservation. Global Partnership on Oceans. The GPO is a growing alliance of over 100 governments, international organizations, civil society groups, and private sector interests that will mobilize knowledge and financial resources to address threats to ocean health, resilience and productivity. Its three pillars are: (1) protected areas; (2) fishing rights; and (3) wealth accounting. | |
| | | • NEDS-SIUFA COINES INTO TOICE. |

Acknowledgements

Many thanks to K. Gjerde, K. Hoydal, D. Miller, L. Ridgeway and M. Vierros for their contributions.

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