

Acknowledgements

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References

- AED (1993) Namibia: fishing for growth. *African Economic Digest* 17 May: 4.
- Angelsen A, Fjeldstad OH, and Sumaila UR (1994) *Project Appraisal and Sustainability in Less Developed Countries*. Chr. Michelsen Institute Report R: 1.
- Anon. (1994a) Arguments rage as “flag fleet” grows. *Fish. News Int.* 33 (6): 14-15.
- Anon. (1994b) *Focus on Fisheries and Research* Namibia Brief 18. 115 pp.
- Anon. (1996a) Illegal fishing “doubles Arab catch”. *Fish. News Int.* 35 (10).
- Anon. (1996b) Iceland show heralds industry up-turn – as difficult decade ends. *Fish. News Int.* supplement 35 (9): 1.
- Anon. (1996c) Russia “breaks redfish quota” – Iceland port ban follows. *Fish. News Int.* supplement 35 (9): 32.
- Anon. (1996d) *Agreed Record of Fisheries Consultations on the Management of the Norwegian Spring Spawning Herring (Atlanto-Scandian Herring) Stock in the Northeast Atlantic for 1997*.
- Anon. (1997a) Fjölstofnarannsóknir 1992-1995 (Multispecies research 1992-1995). *Hafrannsóknastofnun Fjölríti* 57: 413.
- Anon. (1997b) Útvegur 1996 (Fishery statistics 1996) Fiskifélag Íslands. 548 pp.
- Anon. (1997c) Bluefin hooked off Iceland. *Fish. News Int.* 36 (1): 5.
- Anon. (1997d) Nytjastofnar sjávar 1996/97. Aflahorfur fiskveithíráith 1997/98 (State of marine stocks in Icelandic waters 1996/97. Prospects for the quota year 1997/98). *Hafrannsóknastofnun Fjölríti* 56: 167.
- Anon. (1997e) *Agreed Record of Fisheries Consultations on the Management of the Norwegian Spring Spawning Herring (Atlanto-Scandian Herring) Stock in the Northeast Atlantic for 1998*.
- Anon. (1998a) *Focus on Fisheries and Research* Namibia Brief 20. 172 pp.
- Anon. (1998b) Interview with the Minister of Fisheries and Marine Resources: 4-7, in *Focus on Fisheries and Research* Namibia Brief 20. 172 pp.
- Arnarson R (1994) *The Icelandic Fisheries, Evolution and Management of a Fishing Industry*. Fishing News Books.
- Arnasson R (1996) On the ITQ fisheries management system in Iceland. *Fish Biology and Fisheries* 6: 63-90.
- Ásthósson ÓS and Gíslason Á (1995) Long term changes in zooplankton biomass in Icelandic waters in spring. *ICES J. Mar. Sci.* 52: 657-668.
- Bakkala RG (1993) Structure and historical changes in the groundfish complex of the Eastern Bering Sea. *NOAA Tech. Rep. NMFS* 114. 91pp.
- Bates Q (1996) Deep waters saves (Iceland’s) fleet. *Fish. News Int.* supplement 35 (9): 20-21.
- Beaudry FH, Folsom WB, and Rovinsky DJ (1993) *World Fishing Fleets: An Analysis of Distant-Water Fleet Operations Past – Present – Future. Volume II. Africa and the Middle East*. National Marine Fisheries Service, National Oceanic and Atmospheric Administration. Silver Spring, Maryland. 51 pp.
- Bjørndal T, Hole AD, Slinde WM, and Asche F (1997) Norwegian Spring Spawning Herring – some Biological and Economical Issues. Foundation for Research in Economics and Business Administration, Bergen. Working paper No. 29/1997. 45 pp.
- Blatt C (1998) Hake industry on threshold of world markets: 29-36, in *Focus on Fisheries and Research* Namibia Brief 20. 172 pp.
- Brulhet J (1976) Etat actuel des pêches maritimes à Nouadhibou. *La Pêche Maritime* 55 (1183): 582-487.
- Cadigan S (1995) *Marine Resource Exploitation and Development: Historical Antecedents in the Debate over Technology and Ecology in the Newfoundland Fishery, 1815-1850*. Geo-Research Programme Occasional Paper, Memorial University of Newfoundland.

- Cadigan S (1996) *The Sea Was Common, and Every Man Had a Right to Fish in it: Failed Proposals for Fisheries Management and Conservation in Newfoundland, 1855-1880* Co-Research Programme Occasional Paper, Memorial University of Newfoundland.
- Camhi M (1995) Industrial fisheries threaten ecological integrity of the Galapagos Islands. *Cons. Biol.* 9(4): 715-724.
- Canfield JL (1993) Recent developments in Bering Sea fisheries conservation and management. *Ocean Dev. Int. Law.* 24(3): 257-289.
- Caveriviere A (1994) Le poulpe (*Octopus vulgaris*) au Senegal: une nouvelle ressource, in Barry-Gerard M, Diouf T, and Fonteneau A (eds.) *L'évaluation de ressources exploitables par la pêche artisanale Sénégalaise*, Tome 2. ORSTOM Paris. 423 pp.
- Christensen V and Pauly D (1992): ECOPATH 11 – a system for balancing steady-state ecosystem models and calculating network characteristics. *Ecol. Modelling* 61: 169-185.
- Chuksin Yu V and Kuderskaya RA (1991) Biology, fishery and stock management of Cape horse mackerel. *State of the Fishing Industry's Biological Resources in the Central and South Atlantic and East Pacific Oceans*: 54-85 (in Russian).
- CIA (1997) The 1997 World Factbook www.odci.gov/cia/publications/nsolo/wfb-all.htm.
- Clarke FH and Munro GR (1987) Coastal states, distant water. Fishing nations and extended jurisdiction: a principal-agent analysis. *Natural Resource Modeling*: 81-107.
- Clarke FH and Munro GR (1991) Coastal states and distant water fishing nations: conflicting views of the future. *Natural Resource Modeling*: 345-370.
- Coull JR (1972) *The Fisheries of Europe, an Economic Geography*. Bell and Sons, Ltd., London.
- Cunningham S, N'-Guer A, and Thiam I (1995) Monopsonistic fisheries management: the case of Mauritania: 305-317, in Liao DS (ed.) *International Cooperation for Fisheries and Aquaculture Development: Proceedings of the 7th Biennial Conference of the International Institute of Fisheries Economics and Trade*, Keelung Taiwan, National Taiwan Ocean University.
- de Young B and Rose GA (1993) On recruitment and distribution of atlantic cod (*Gadus morhua*) off Newfoundland. *Canadian Journal of Fisheries and Aquatic Sciences* 50: 2729-2741.
- di Soncino R (1983) Letter to Duke of Milan, 18 December 1497, in *Task Force on Atlantic Fisheries. Navigating Troubled Waters* Supply and Services, Ottawa.
- Diallo M (1994) Quelques éléments sur la compétition des pêcheries artisanales et industrielles pour l'accès à la ressource au Senegal, in Barry-Gerard M, Diouf T, and Fonteneau A (eds.) *L'évaluation de ressources exploitables par la pêche artisanale Sénégalaise*, Tome 2. ORSTOM Paris. 423 pp.
- Dow Jones News Reuters (1998) Russia seizes North Korean trawlers.
- Dunlap WV (1995) Current legal developments: Bering Sea. *Int. J. Mar. Coast. Law.* 10(1): 114-135.
- Economist Intelligence Unit (1998a) Namibia fishing. *Country Profiles* 1 December.
- Economist Intelligence Unit (1998b) Namibia production: fishing. *Country Profiles* 19 December.
- Estrada M and Marrase C (1987) Phytoplankton biomass and productivity of the Namibian coast: 347-356, in Payne AIL, Gulland, and Brink KH (eds.) *The Benguela and comparable frontal systems*. S. Afr. J. Mar. Sci. S. Afr. Tydskr. Seewet(5).
- Fadayomi NO (1987) Investment prospects in marine capture fisheries, in Ita EO, Ajayi TO, Ezenwa B, Olaniawo AA, Udolisa RE, and Taggart PA (eds.) *Proceedings of the 5th Annual Conference of the Fisheries Society of Nigeria, Fison, Ilorin, Sept. 22-25 1986*.
- Ferraris JB, Samb, and Thiam M (1994) Les statistiques de pêche au CRODT: description des systèmes de collecte et de traitement des données: 73-94, in Barry-Gerard M, Diouf T, and Fonteneau A (eds.) *L'évaluation de ressources exploitables par la pêche artisanale Sénégalaise*, Tome 2. ORSTOM Paris. 423 pp.

- Finlayson AC (1994) *Fishing for Truth: A Sociological Analysis of Northern Cod Stock Assessment from 1977-1990*. St. John's Institute of Social and Economic Research.
- Fredin RA (1987) *History of Regulation of Alaskan Groundfish Fisheries*. National Marine Fisheries Service. NWAFC Processed Report 87-07.
- Garcia S and Newton C (1997) Current situation trend and prospects in world capture fisheries: 3-27, in Pikitch E, Huppert DD, and Sissenwine M (eds.) *Global Trends: Fisheries Management*. American Fisheries Society Symposium 20, Bethesda.
- Gerlotto F, Stequert B and Brugge WJ (1979) La pêche maritime artisanale en Afrique de l'Ouest: la pêche au Sénégal. *La Pêche Maritime* 211 : 98-109.
- Gislason Á and Ástþórsson ÓS (1997) Árstíhabreytingar dyrasvifs fyrir norðan Ísland (Seasonal changes in zooplankton in the waters north of Iceland), in *Fjölstofnarannsóknir 1992-1995 (Multispecies research 1992-1995)*. *Hafrannsóknastofnun fjöldar* 17: 11-23.
- Gjosætter H (1994) Pelagic fish and the ecological impacts of the modern fishing industry in the Barent Sea. *Arctic* 48(3): 267-278.
- Goffinet T (1992) Development and fisheries management: the case of northwest Africa. *Ocean and Coastal Management* 17:105-136.
- Guthmundsson G (1981) *Togaraöldin, 1. Bindi, Stórveldismenn og kotkarlar (The Trawler Age)*. Ól og Örlygur, Reykjavík, Iceland.
- Halliday RG and Pinhorn AT (1996) North Atlantic fishery management systems: a comparison of management methods and resource trends. *Journal of Northwest Atlantic Fishery Science* 20. 117 pp.
- Hamre J (1990) Life history and exploitation of the Norwegian spring spawning herring: 5-39, in Monstad T (ed.) *Biology and Fisheries of the Norwegian Spring Spawning Herring and Blue Whiting in the Northeast Atlantic. Proceedings of the Fourth Soviet-Norwegian Symposium, Bergen, 12-16 June.1989*
- Hewitson JD (1988) Catch trends in the multispecies pelagic fishery off Namibia in 1987. *Collect. Sci. Pap. ICSEAF* 15 : 7-17.
- Hewitson JD, Melo YC, and Cooper RM (1989) The Namibian pelagic fishing resource during 1988. *Collect. Sci. Pap. ICSEAF* 16(1): 119-131.
- Hjörleifsson E (1997) A Brief Overview on the Natural History, Fisheries, and Management of Greenland Halibut in E-Greenland, Icelandic and Faeroe Waters. Working paper for a West Nordic meeting on fisheries in Qaqortoq 6-8 August 1997. 18 pp.
- Hjörleifsson E, Pálsson J, and Valtysson HT (1998) Landathur flatfiskafli á Íslandsfjörðum 1950-96 (Catches of flatfish in Icelandic waters 1905-96). *Hafrannsóknastofnun. Flatfiskanefnd, vinnuskýrsla* 1801. 23 pp.
- Hutchings JA (1995) Spatial and temporal variation in the exploitation of northern cod, *Gadus morhua* a historical perspective from 1500 to the present, in Daniel Vickers (ed.) papers presented at the conference entitled *Marine Resources and Human Societies in the North Atlantic Since 1500*. ISER Conference Papers (5). Memorial University of Newfoundland, St. John's.
- Hutchings JA and Myers RA (1994) What can be learned from the collapse of a renewable resource? Atlantic cod, *Gadus morhua* of Newfoundland and Labrador. *Canadian Journal of Fisheries and Aquatic Sciences* 51: 2126-2146.
- Hutchings JA and Myers RA (1995) The biological collapse of atlantic cod off Newfoundland and Labrador: an exploration of historical changes in exploitation, harvesting and management, in Arnason R and Felt L (eds.) *The North Atlantic Fishery: Successes, Failures and Challenges*. Institute of Island Studies, Charlottetown, PEI.
- INPFC (1987) *Statistical Yearbook 1984*. International North Pacific Fisheries Commission, Vancouver, BC. 125 pp.

INPFC (1996) Statistical Yearbook 1992 International North Pacific Fisheries Commission, Vancouver, BC. 115 pp.

IPS (1995) Namibia – fishing: easing troubled waters. Inter Press Service September.

International Commission for Northwest Atlantic Fisheries 1953-1978. Statistical bulletin, Dartmouth, NS.

International Commission for Northwest Atlantic Fisheries (1964) List of Vessels over 50 Gross Tons Fishing in the ICNAF Convention Area in 1962 Dartmouth, NS.

Jakobsson J (1985) Síldarstofnar og stjórn sildveitha í northaustanverthu Atlantshafi (Herring stocks and management of herring fisheries in the north-eastern Atlantic). *Ægir, rit Fiskifélags Íslands* 78(1): 2-9.

Jakobsson J (1992) Recent variability in the fisheries of the North Atlantic. *ICES Mar. Sci. Symp.* 195: 291-315.

Jarre-Teichmann A and Christensen V (1998a) (in press) Comparative modelling of trophic flows in four large upwelling ecosystems: global vs. local effects, in Durand M, Cury P, Mendelsohn R, Roy C, Bakun A, and Pauly D (eds.) *Global vs. Local Changes in Upwelling System*

Jarre-Teichmann A and Christensen V (1998b) (in press) Modelling trophic flows in large upwelling ecosystems: temporal and spatial comparisons. *ICLARM Studies and Review* 24.

Jónsson G and Magnússon MS (eds.) (1997) *Sjávarútvegur* (Fisheries), in *Hagskinna Sögulegar hagtölur um Ísland* (Hagskinna Icelandic Historical Statistics) Hagstofa Íslands (Statistics Iceland) Reykjavík: 299-357.

Jónsson J (1992) *Íslenskir fiskar* (Icelandic Fishes) Fjölví, Reykjavík, Iceland. 568 pp.

Jónsson J (1994) Fisheries of Iceland, 1600-1900. *ICES Mar. Sci. Symp.* 198: 3-16.

Jurgens JD (1991) The fishery industry in Namibia: 39-46, in *Conference Proceedings, Abidjan '91, 1st World Conference on Small Pelagics, Mackerel, Sardine, Herrings* Abidjan, Côte d'Ivoire, 10-12 June.

Kaczynski V (1989) Foreign fishing fleets in the sub-Saharan west African EEZ. *Mar. Policy* Jan. 2: 15.

Kebe M (1994) Principales mutations de la pêche artisanale maritime sénégalaise, in Barry-Gerard M, Diouf T, and Fonteneau A (eds.) *L'évaluation de ressources exploitables par la pêche artisanale Sénégalaise*, Tome 2 ORSTOM Paris. 423 pp.

Kidd, Honourable LD, Minister of Fisheries (1994) Opening address to fourth APEC fisheries working group meeting, in Ministry of Fisheries, *Report of the Fourth Asia-Pacific Working Group Meeting on Fish Annex 3*. Wellington, New Zealand.

Konchina Yu V (1986) Distribution and feeding of south African horse mackerel and hake in the Namibian shelf waters. *Collect. Sci. Pap. ICSEAF* 3(1): 7-18.

Kurlansky M Cod. *A Biography of the Fish that Changed the World* Alfred A Knopf, Canada. 294 pp.

Lasch R (1994) Structure, constraints and development options of fish processing and marketing in Namibia: 1325-1335, in Antona J, Catanzano J, and Sutinen JG (eds.) *Proceedings of the Sixth Conference on the International Institute of Fisheries Economics and Trade* Issy les Moulineaux, France, Paris.

Lear WH and Parsons LS (1993) History and management of the fishery for northern cod in NAFO divisions 2J3K and L, in Parsons LS and Lear WH (eds.) *Perspectives on Canadian Marine Fisheries Management* National Research Council of Canada and Department of Fisheries and Oceans, Ottawa.

Lutjeharms, JRE, Webb DJ, de Cuevas BA, and Thompson SR (1995) Large-scale modelling of the south-east Atlantic upwelling system. *S. Afr. J. Mar. Sci.* 16: 205-225.

MacPherson E and Gordoa A (1992) Trends in the demersal fish community off Namibia from 1983 to 1990: 635-649, in Payne AIL, Brink KH, Mann KH, and Hilborn R (eds.) Benguela trophic functioning. *S. Afr. J. Mar. Sci. S. Afr. Tydskr. Seewet* 12.

Magnússon J and Magnússon JV (1995) Oceanic redfish (*Sebastodes mentella*) in the Irminger sea and adjacent waters. *Scientia Marina* 59(3-4): 241-254.

- Mann KH and Lazier JRN (1991) *Dynamics of Marine Ecosystems. Biological-Physical Interactions in Ocean*. Blackwell Scientific Publications, Boston. 466 pp.
- Maus J (1997) Sustainable fisheries information management in Mauritania. Implications of institutional linkages and the use of remote sensing for improving the quality and interpretation of fisheries and biophysical data. PhD Thesis. University of Warwick. Coventry, England. 269 pp.
- McDorman TL (1991) Canada and the North Pacific ocean: recent issues. *Ocean Dev. Int. Law* 22(4): 365-379.
- McRae D and Munro G (1989) Coastal state rights in the 200-mile exclusive economic zone, in Neher P, Arnason R, and Mollat N (eds.) *Rights Based Fishing*. Kluwer Academic Publishers, Dordrecht: 97-112.
- Merlen G (1995) Use and misuse of the seas around the Galapagos Archipelago. *ORYX* 29(2): 99-106.
- Munro GR (1985) Coastal states, distant water fleets and EFJ: some long run considerations. *Marine Policy* 9: 2-15.
- Munro GR (1989) Coastal states and distant water fishing nation relations: an economist's perspective. *Marine Fisheries Review*: 3-10.
- Munro GR (1990) Extended jurisdiction and the management of Pacific highly migratory species. *Ocean Development and International Law*: 289-307.
- Munro GR (1994) Coastal states and distant water fleets under extended jurisdiction: the search for optimal incentive schemes, in Basar T and Haurie A (eds.) *Advances in Dynamic Games and Applications*. Birkhauser, Boston: 301-317.
- Munro GR (1998) The management of high seas fisheries and the United Nations Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks: a review. Unpublished paper prepared for Project on The Management of High Seas Fisheries. Bergen, Norway.
- Munro GR and Scott AD (1985) The economics of fisheries management, in Kneese AV and Sweeney JL (eds.) *Handbook of Natural Resource and Energy Economics*. Amsterdam, North Holland, II: 623-676.
- Myers RA and Cadigan NG (1995) Was an increase in natural mortality responsible for the collapse of northern cod? *Canadian Journal of Fisheries and Aquatic Sciences*: 1274-1285.
- Namibia Foundation (1994) Focus on fisheries and research. *Namibia Brief* 18. 116 pp.
- Neis et al. (1996) *Northern Cod Stock Assessment: What Can be Learned from Interviewing Resource Managers?* Atlantic fisheries research document 96/45.
- Northwest Atlantic Fisheries Organization (1979-1995) *Statistical Bulletin*. Dartmouth, NS.
- Northwest Atlantic Fisheries Organization (1992) *List of Vessels 1989*. Dartmouth, NS.
- Northwest Atlantic Fisheries Organization (1995) *Statistical Bulletin Supplementary Issue, Fishery Statistics for 1960-1990*. Dartmouth, NS.
- OECD (1997) *Towards Sustainable Fisheries. Economic Aspects of the Management of Living Marine Resources*.
- Ommer R (1994) One hundred years of fishery crisis in Newfoundland. *Acadiensis* XXIII (2) (Spring): 5-20.
- Omori H (1998) Personal communication, June.
- Orebech P, Sigurjonsson K, and McDorman TL (1997) The 1995 United Nations Straddling and Highly Migratory Fish Stocks Agreement: Management, enforcement and dispute settlement. Unpublished.
- Óskarsson, Th (1991) *Íslensk togaraútgérð 1945-1970 (Icelandic Trawler Fishing 1945-1970)*. Sagnfræðirannsóknir, Bindi 11. Bókaútgáfa Menningarsjóths, Iceland. 272 pp.
- Painting SJ, Lucas MI, Peterson WT, Brown PC, Hutchings L, and Mitchell-Innes BA (1993) Dynamics of bacterioplankton, phytoplankton and mesozooplankton communities during the development of an upwelling plume in the southern Benguela. *Mar. Ecol. Prog. Ser* 100 (1-2): 35-53.
- Pálsson ÓK (1983) The feeding habits of demersal fish species in Icelandic waters. *Rit Fiskdeildar* 7(1): 1-60.
- Pálsson Th (1996) *Close to the Sea* (2nd edition). Ministry of Fisheries, Iceland. 32 pp.

- Pauly D et al. (1998) Fishing down marine food webs. *Science* 279 (Feb.).
- Pitcher TJ and Preikshot DB (1998) RAPFISH: A rapid appraisal technique to evaluate the sustainability status of fisheries (submitted).
- Pitcher TJ, Mackinson S, Vasconcellos M, Nøttestad L, and Preikshot DB (1998a) Rapid appraisal of the status of fisheries for small pelagics using multivariate, multidisciplinary ordination, in Baxter B (ed.) *Proceedings of the 15th Lowell Wakefield Fisheries Symposium, Oct. 8-11, Anchorage, Alaska*, Fairbanks, Alaska Sea Grant (in press).
- Pitcher TJ, Bundy A, Preikshot DB, Hutton T and Pauly D (1998b) Measuring the unmeasurable: a multivariate interdisciplinary method for rapid appraisal of health of fisheries: 31-54, in Pitcher TJ, Hart PJB, and Pauly D (eds.) *Reinventing Fisheries Management*, Chapman and Hall, London.
- Preikshot DB and Pauly D (1998) A multivariate interdisciplinary assessment of small-scale tropical fisheries, in Baxter B (ed.) *Proceedings of the 15th Lowell Wakefield Fisheries Symposium, Oct. 8-11, Anchorage, Alaska*, Fairbanks, Alaska Sea Grant (in press).
- PANL (1962) *Fisheries Conference, St. John's, 24 September*. Provincial archives of Newfoundland and Labrador MG 644, file 287: 1-40.
- PANL (1964) The inshore cod fishery of Newfoundland and Labrador (by Alister Fleming) in *Summary of Proceedings of Industrial Development Section, 22-23 June*. Provincial archives of Newfoundland and Labrador GN 34/2, file 11/80/6 v3.
- Sæmundsson B (1926) *Íslensk dyr I. Fiskarnir Þíðes Islandae* (*Icelandic Animals I. The Fishes Þíðes Islandae*). Bókaverslun Sigfúsar Eymundssonar, Reykjavík, Iceland.
- Samba A (1994a) Présentation sommaire des différentes pêcheries sénégalaises, in Barry-Gerard M, Diouf T, and Fonteneau A (eds.) *L'évaluation de ressources exploitables par la pêche artisanale Sénégalaise*, Tome 2, ORSTOM, Paris. 423 pp.
- Samba A (1994b) Evaluation des ressources exploitables par la pêche artisanale au Sénégal: bilan des recherches effectuées, in Barry-Gerard M, Diouf T, and Fonteneau A (eds.) *L'évaluation de ressources exploitables par la pêche artisanale Sénégalaise*, TomORSTOM, Paris. 423 pp.
- Schopka SA (1994) Fluctuations in the cod stock off Iceland during the twentieth century in relation to changes in the fisheries and environment. *ICES Mar. Sci. Symp.* 198: 175-193.
- Sedletskaya VA (1995) Effect of hydro-meteorological factors on the formation of spawning concentrations of the horse mackerel *Trachurus trachurus* L. at the northwestern coast of Africa: 29-36, in *Biology and Population Dynamics of Fishes and Invertebrates in the Atlantic Ocean* (*Biologiya I Dinamika Chislennosti Ryb I Bespozvonochnykh Atlanticheskogo Okeana*), ATLANTNIRO, Kaliningrad Russia.
- Shelton PA (1992) Detecting and incorporating multispecies effects into fisheries management in the North-West and South-East Atlantic: 723-737, in Payne, AIL, Brink KH, Mann KH, and Hilborn R (eds.) Benguela trophic functioning. *S. Afr. J. Mar. Sci. S. Afr. Tydskr. Seewet* 12.
- Stefánsson U (1962) North Icelandic waters. *Rit Fiskdeilda* 3: 1-269.
- Stefánsson U and Ólafsson J (1991) Nutrients and fertility of Icelandic waters. *Rit fiskdeildar* 12 (3): 1-56.
- Templeman, Wilfred (1966) Marine Resources of Newfoundland Bulletin No. 154. Fisheries Research Board of Canada, Ottawa.
- The Vancouver Sun (1998) Russians kill two Chinese on poaching ship. 27 May.
- Thiam M and Gascuel D (1994) L'évolution de la pêcherie chalutière demersale du plateau continental sénégalais, in Barry-Gerard M, Diouf T, and Fonteneau A (eds.) *L'évaluation de ressources exploitables par la pêche artisanale Sénégalaise*, Tome ORSTOM Paris. 423 pp.
- Thoms MJ (1996) Illegal conservation: two case studies of conflict between indigenous and state natural resource management paradigms. MSc., Trent University, Peterborough, England.
- Thór JTh (1982) *Breskir togarar og Íslandsmynd 1889-1916* (*British Trawlers in Icelandic Waters. History of British*

- Steam Trawling off Iceland 1889-1916 and the Anglo-Icelandic Fisheries Dispute 1896-1897. Íslenska Bókmennatafélög Iceland. 237 pp.
- Thór JTh (1995) British Trawlers and Iceland 1919-1976. Fiskeri-og Søfartsmuseets Studieserie 6, University of Göteborg. 269 pp.
- Thórhardsdóttir Th (1995) Plöntusvifth og frumframleithni í sjónum vith Ísland (The phytoplankton and primary production in Icelandic waters), in Stefánsson U (ed.) Íslendingar, hafith og authlindir thess (Icelanders, the Ocean and its Resources). Vísindafélag Íslendinga, Reykjavík: 65-88.
- Thorleifsson H (1974) Saga íslenskrar togaraútgerðar fram til 1917 (History of the Icelandic Trawl Fisheries until 1917). Sagnfræðirannsóknir 3. Bindi. Bókaútgáfa Menningarsjóths, Reykjavík, Iceland. 212 pp.
- Traynor JJ, Karp WA, Sample TM, Furusawa M, Sasaki T, Teshima K, Williamson NJ, and Yoshimura T (1990) Methodology and biological results from surveys of walleye pollock (*Theragra chalcogramma*) in the eastern Bering Sea and Aleutian Basin in 1988: 69-99, in Low L (ed.) Proceedings of the Symposium on Application of Stock Assessment Techniques to Gadids. NPFC Bull. no. 50.
- United Nations (1982) United Nations Convention on the Law of the Sea Doc. A/Conf. 62/122.
- United Nations (1992) The Law of the Sea: The Regime for High Seas Fisheries, Status and Prospects. UN Division for Ocean Affairs and the Law of the Sea, Office of Legal Affairs, New York.
- United Nations (1995) United Nations Conference on Straddling Fish Stocks. Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks Doc. A/Conf./164/37.
- Walters C, Christensen V, and Pauly D (1997) Structuring dynamic models from trophic mass-balance assessment, reviews in *Fish Biology and Fisheries* 7(2): 139-172.
- Wespestad VG (1993) The status of Bering Sea pollock and the effect of the “donut hole” fishery. *Fisheries* 18 (3): 18-27.
- Wright M (1997) Frozen fish companies, the state, and fisheries development in Newfoundland, 1940-1966. *Business and Economic History* 36(2) (Winter).
- Wright M (1997a) Fishing in the Cold War: the international politics of the twelve-mile fishing limit, 1958-1969. *Journal of the Canadian Historical Association*.
- Wysokinski A and Czykieta H (1989) Stocks of major fish species off Namibian coast. *Biul. Morsk. Inst. Ryback. Gdynia* (Bull. Sea Fish. Inst. Gdynia) 20 (1-2): 18-28 (in Polish).

Appendix 1

DWFNs and the cumulative catches 1950-1994 outside of their own FAO Statistical Areas

DWFN	Cummulative (t x 10 ³) 1950-1994	DWFN	Cummulative (t x 10 ³) 1950-1994
USSR	74,372	Ecuador	87
Japan	49,569	Samoa	58
Spain	22,860	Iraq	57
Korea Rep.	11,086	Chile	57
Russian Fed.	10,453	Denmark	55
Poland	8,201	Greenland	48
Taiwan	7,370	Peru	48
Portugal	7,095	Netherlands	39
Germany	6,847	Bermuda	32
France	6,044	Libya	31
Ukraine	4,209	Sri Lanka	30
Norway	2,819	St Vincent	26
Romania	2,530	Ireland	19
Cuba	2,323	Nigeria	16
United States	2,254	Malta	14
Bulgaria	2,140	Brazil	14
Latvia	1,886	Cayman Is.	14
Italy	1,808	Costa Rica	9
Lithuania	1,790	Australia	8
Estonia	1,455	Argentina	4
Faeroe Is.	1,439	El Salvador	4
UK	696	Vanuatu	3
Greece	660	Cape Verde	2
Iceland	513	Sierra Leone	1
Georgia	425	Bahamas	1
Panama	369	Sweden	0.353
China	302	New Zealand	0.176
Ghana	261	Philippines	0.146
Israel	182	South Africa	0.132
Venezuela	168	Tonga	0.026
Egypt	152	St Helena	0.010
Canada	101	Somalia	0.007
Honduras	92	Colombia	0.001
Mexico	89		