

The Status, Importance and Future of Australian Fisheries

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Collapsing fisheries

Through numerous media reports everyone knows that fisheries all over the world are collapsing from overfishing. To better appreciate what is actually happening let's look at some statistics. Since 1950 the Food and Agriculture Organization of the U.N. has compiled world fishery statistics and they are available online¹. These are voluminous and include coverage for regions, nations, areas, species and species groupings with options for selecting and displaying information in both tabular and graphic form. The accompanying 14 graphs from this data are instructive.

First, let's look at the overall global picture for total wild capture fishery landings. As seen in Fig.1 they start at about 20 million Metric Tonnes (MT) in 1950 and grew to about 90 million MT by 1990. Since then they have fluctuated between 85 to 96 million MT with no indication of decline. The most recent year on record (2004) was about 92 MT. Although new fisheries could hypothetically be replacing old collapsed ones and/or harvesting might be at an unsustainable level with collapse immanent neither seems to be the case. . There have been no major new fisheries developed in the past one and one-half decades and that amount of time is several generations for most species. While one might well argue that overall yield is near maximal there is little indication of decline, much less collapse.

The graph for Australia (Fig.2) follows a similar pattern of growth until the early 1990s but has trended downward in the decade since them. The U.S. catch (Fig.3). peaked during the late 1980s through early 1990s, dropped abruptly in the late 1990s by about 20% and has since shown evidence of recovery. It should be noted however that while Australian landings have averaged about 220,000 MT over the past decade the U.S. harvest was over ten times that amount in 1950 and is currently over 20 times greater.

Australia has the third largest Exclusive Economic Zone, behind the United States and France, but ahead of Russia, with the total area actually exceeding that of its land territory. Australia's continental EEZ area comes to 6,048,681 Km² and the island territories bring the total to 8,148,250 Km². Disregarding the latter the wild caught harvest comes to just under 40 Kg/ Km² per year or .4 Kg/Ha. In terms of EEZ area Australian fisheries harvest is about $\frac{1}{20}$ that of the U.S. Although there are a few particularly vulnerable and overexploited species such as the very slow growing orange roughy and the school shark with its very low reproductive capability, widespread overfishing at current levels here is simply not credible.

The cartilaginous fishes (sharks, rays and chimaeras) generally grow slow, take years to mature and produce only limited numbers of offspring. The histories of shark fisheries in particular, have shown them to be especially vulnerable to overfishing. Numerous media reports in recent years tell of how shark populations are being devastated by longline fishing and the Asian demand for shark fins. However, the global catch statistics (Fig. 4) even for these particularly vulnerable fishes show no evidence of decline.

A widely cited analysis², published in the scientific journal *Nature* in May 2003, estimated that 90% of large predatory fishes have been fished from the seas in the past 50 years. Tunas and billfishes are by far the most populous and heavily fished of the large oceanic predatory fishes so a massive 90% decline in their numbers should definitely affect catches. Even here the statistics (Fig. 5) show no evidence of decline and the all time peak is the most recent year.

To find examples of decline one must search the statistics for individual species. Here one can indeed find an occasional example of recent decline but in the overall balance they are of limited import. Usually too, it is questionable whether a recent decline is the result of overfishing or simply the downward phase of a natural fluctuation that will reverse itself and of which there are numerous past examples.

Among the tunas the Atlantic bluefin is an example of a species which is currently in a decline generally attributed to overfishing (Fig. 6). Currently though, landings are similar to the average for the past half century and much higher than a low experienced in the early 1970s but similarly down from a peak in the late 1990s. Whether that peak represents overfishing or is just the up-side of a natural fluctuation is open to question but this should become apparent over the next decade. In any case the total bluefin harvest even at its all-time peak was only about 1% of the global catch of tunas and billfishes.

The Atlantic cod presents what is probably one of the clearest and most significant examples of a major fishery decline attributable to overfishing. Cod supported an important line fishery for over 400 years but the introduction of large trawlers in the late 1960s and early 70s resulted in large increase in the catch followed by a collapse of the fishery (Fig. 7). Although there is little disagreement as to overfishing

being the primary cause of this collapse debate has arisen over the role of changed oceanographic conditions vs. the effects of greatly reduced breeding stock in the poor rate of recovery of this fishery despite a major reduction in fishing effort.

Almost never mentioned in connection with the collapse of this fishery has been the concurrent growth in two other fisheries. Cod were the major predator on the northern shrimp (*Pandalus borealis*) and the queen (or snow) crab (*Chionoecetes opilio*). Following the collapse of the cod population there has been a large increase in the landings of these two prey species (Figs. 8 & 9) and the monetary value of their fishery is now much greater than that of the cod they have replaced.

While there is some indication that many of the world's wild caught fisheries may be reaching their limits there is no evidence of widespread collapse. As for Australian fisheries the total harvest is so small in relation to the size of Australia's EEZ that it is clear there must be substantial room for expansion.

Australian Fisheries Management

Despite a large and only lightly exploited EEZ Australian fisheries have shown a downward trend over the past decade while at the same time the national economy has enjoyed a boom. Why are fisheries going backwards? Recently (September 2005) I attended a large fishing industry meeting in Sydney (Seafood Directions 2000)³. One after another fishermen from all over the country got up and spoke with great feeling about their desperate situation. Poor catches were never the problem. Always it was the demands, restrictions and costs imposed by government. That these problems are epidemic and not just the whinging of a few losers is reflected in the numbers of fishing vessels only a few years old being offered for sale at a fraction of their original cost.

In recent years there has been a proliferation of new restrictions and regulations affecting fisheries. In the past fishing was regulated chiefly by fishery departments whose budgets and importance were directly related to the condition of the industry. In recent years however, sundry other regulatory agencies involved with various aspects of health and safety, the environment, and parks have begun to impose demands while both commonwealth and state fishery departments have increasingly expanded and overlapped. Many of these new regulators have little understanding of the realities of the industry or concern for the impact of their demands.

The whole approach to fishery management has also undergone a sea change. In the past maximum sustained yield was the ideal and monitoring of the fishery itself was the primary methodology. Now we have a new generation of fisheries biologists schooled in theories and enthralled by sophisticated computer models based on simplistic assumptions about complex and highly variable phenomena of which we genuinely know very little. Although such models can be of value in gaining insights about the possible dynamics of a resource their output is fraught with many uncertainties. Typically they require generous tweaking to yield results that are within the bounds of credibility and they thus tend to reflect more the assumptions, aims and adjustments of the modeler than anything in reality.

On top of all this has come the rise of environmentalism and a growing attitude across the urban majority of the public, politicians and even those charged with managing the resources that primary producers are exploiters who need to be severely curtailed if not stopped altogether. To many the environment has acquired a near sacred status. Though themselves voracious consumers of natural resources they are divorced from the production that supports their demands and they see the producers who supply them as greedy exploiters and even as defilers of the sacred. Even more ironically, their own chosen lifestyle has virtually annihilated the natural world in the environment in which they choose to live.

The sacred nature of the environment manifests itself in language where fragile and delicate have become almost mandatory adjectives in describing the natural world. A peculiar corollary of all this has been the precautionary principle which mandates that any imagined possibility of an environmental problem must be addressed with full measures to prevent it. One can't be too careful when dealing with anything so precious as the environment.

. Unfortunately this principle makes no reference to probability, cost, or consequences of risks and it offers a ready cloak for other agendas. Followed to its logical conclusion it would have us all wearing crash helmets and condoms and taking chemotherapy, just in case. In fact it even precludes itself as everything we do or don't do entails risk including precautionary measures themselves. Amazingly, this vacuous and pernicious piece of nonsense has even been written into the enabling legislation for the Australian Fisheries Management Authority⁴.

Management of our fisheries has become divorced from the realities of the industry, the nature of the resource itself and our real understanding of its condition and dynamics. Fishing is a demanding and

uncertain, often even dangerous, business. The ability to bear added costs and restrictions is not unlimited and their imposition should only taken with due care.

The marine communities upon which our fisheries are based are not fragile and delicate but rather robust and flexible ones that readily recover from relatively frequent natural perturbations. There is little risk in monitoring fisheries and addressing problems if and when they become apparent, rather than trying to take elaborate pre-emptive action to avoid an endless array of imaginary possibilities. In view of our ignorance and the complexity of the matters involved, it would also be prudent to test measures before applying them on a broad scale and to carefully assess their results when implemented.

In general a much more empirically based approach is needed. Management decisions should be based on what is actually happening in a fishery, not theories and models. Regulation should be imposed only where a demonstrated need exists and results should be monitored and evaluated. Much stronger involvement of the industry in formulating management measures is essential to insure that the form of demands is appropriate to the needs and realities of the fishery. Management by theory without broad and ongoing assessment of actual conditions and results is a recipe for ongoing decline.

Aquaculture

Over the past two decades there has been an explosive growth in aquaculture (Fig. 10). In 2004 global aquaculture production had grown to some 55 million MT. This equals about 60% of total wild caught production or all of wild caught production in 1970. Aquaculture is in fact, the fastest growing food production sector in the world. Since 1970 it has averaged a compounded growth of 9.2 % *per annum*.

Australian aquaculture production (Fig. 11) currently produces about 40,000 MT annually or a bit under $\frac{1}{10}$ of 1% of world production. In comparison, Canada (Fig.12) produces about 4 times this amount despite its limiting climatic conditions. The U.S. (Fig. 13) produces nearly 14 times this amount and Japan (Fig. 14) some 32 times as much. Australia, with 66,530 km of mostly uninhabited coastline well suited for aquaculture, a benign climate and unpolluted waters, clearly has vast undeveloped potential for the expansion of aquaculture.

Aquaculture regulation

Despite ideal natural circumstances development of aquaculture in Australia is stagnating. The only real obstacle to a hugely increased development of the industry here is a morass of environmental regulations. The uncertainties, costs and restrictions imposed by these are prohibitive. Ask anyone who has attempted it. The result is that, despite our natural advantages, we have little large scale aquaculture while the industry is booming throughout the rest of the world.

For example, in Queensland the legal determination of protected coastal wetlands encompasses all areas subject to tidal inundation by the highest astronomical tides. This includes large regions that are "wetlands" only by this definition. Ecologically they would be better described as coastal salt plains. They are characterised by low biodiversity, low productivity communities of a few salt resistant plants struggling to survive on what is normally dry land but is occasionally inundated by salt water. These areas bear no real relationship to the rich highly productive natural communities of genuine wetlands.

Even more insane is the classification of all plants growing in such areas as protected marine plants that cannot be disturbed in any way. This even goes so far as to forbid removal of dead seaweed washed up on beaches. And, this is only for starters. There are a host of additional regulations administered by a variety of different authorities with broad discretionary powers to impose demands and conditions to address problems that do not have to exist or even be likely but simply imagined as possible by the administering authority.

Along thousands of kilometers of coastline there are vast areas of such low lying salt affected areas. Both ecologically and economically they are virtual wastelands as they exist naturally. They are however, ideal for aquaculture development and could be the basis for a multibillion dollar industry with minimal detrimental impact. The only thing preventing this is the regulatory morass.

A 50 hectare barramundi farm can produce about 600 MT of product annually. Moreover, such an operation would also in fact, create a significant area of biologically rich perennial wetland in the form of settlement ponds. The farm gate value of 600 MT of barra is about \$6 million. To produce \$6 million in sugar requires about 2000 ha. of good agricultural land. For cattle it takes about 100,000 ha. of grazing land. From the standpoint of maximal return for minimal environmental impact it is hard to imagine anything more valuable and ecologically beneficial than aquaculture. The only reason it is not a booming industry here is bureaucracy and eco-nonsense.

As with fisheries much of the problem of the industry stems from the pursuit of an imaginary eco-correctness and management by theory and precaution. Again, a much more empirically based approach is sorely needed.

Economic value

The gross annual value of Australian fisheries production is currently about AUD \$3 billion. The industry (including processing) employs about 30,000 workers and earns \$2 billion in income from exports. Seafood imports currently amount to 70% of consumption by edible weight. They cost \$1.8 billion. A CSIRO study estimates that by the year 2020 an additional 610,000 MT will be needed to meet growing demand. This amount represents an almost 400 % increase in imports over the next one and a-half decades. Harry Peters, President of the Australian Seafood Importers Association has stated that: "This must be imported as wild catch resources are at capacity & Australian aquaculture cost of production is much higher than world average."⁵

Although this statement does seem to reflect the current consensus it raises two very important questions. Is the relatively low level of the Australian wild catch fishery really at the limit of capacity for the resource? Is an annual harvest of only 0.4 Kg/Ha. actually the maximum that our waters can sustain.? Stated in these terms it also makes one wonder why so many Indonesian fishermen keep coming so far and facing such risk if the resource is truly so meager. Are they coming here to sunbathe? The other important question posed is why should Australian aquaculture be at a cost disadvantage to Europe, North America or Japan all of which have booming aquaculture industries much larger than Australia's despite more difficult natural conditions plus equal or greater cost for land, labour and equipment. The overwhelming disadvantage of Australian aquaculture is clearly neither natural nor economic but government imposed restrictions, demands, charges and uncertainties.

Seafood in diet and nutrition

In recent decades seafood consumption has increased substantially in most developed countries. Growing affluence and a greater range of food choice combined with changing culinary tastes plus an increased awareness of health benefits from sea food have all contributed to its increased popularity. In the past seafood tended to be a cheaper less desirable alternative to traditional meats from domestic animals. Now it has the status and price of gourmet cuisine. In the late 1930s Australian seafood consumption was only 4.9 kg per capita per year. Annual per capita consumption is now 20 Kg.

Increasing appreciation of the nutritional and health benefits of seafood make further growth in consumption seem probable. Seafood is an excellent source of proteins and is low in fats, cholesterol, and sodium. It is also a good source of minerals and some vitamins, It is easier to digest than red meats and poultry and is among the most nutritionally balanced of foods. It aids weight control and is highly beneficial in preventing heart disease.

In particular, seafood is high in essential omega-3 fatty acids which are deficient in most terrestrial foods. Their consumption has been found to be beneficial in preventing or alleviating asthma, arthritis, diabetes, multiple sclerosis, hypertension, migraine headaches, cancer, and some kidney diseases. They also play a vital role in neurological development and functioning⁶. A diet rich in seafood facilitates brain development in growing children and has been found to be beneficial in the treatment of depression and schizophrenia in adults. Fish really is a brain food and it would quite literally be stupid to continue to mismanage our fisheries. As a Queenslander I find it particularly ironic that we call ourselves "The Smart State" while closing down our fisheries and preventing aquaculture from even getting started.

Other commonly available foods that are high in omega-3s are flaxseed oil, canola oil, pumpkin seeds and walnuts with flaxseed being by far the highest. None of these, however, are likely to replace seafood in the diet of most of the population.

Recreational fishing

Recreational fishing constitutes another important use of our fishery resources. The most recent national survey of recreational angling was published in 2003.⁷ This large scale study surveyed the recreational angling activity of some 40,000 households during 12 months in 2000 – 2001. Key findings include:

Some 20% of the population (3.36 million persons) participated in recreational angling in the period of the survey. They put in an estimated 20.6 million fisher days of effort. About 80% of recreational fishing effort was saltwater and 20% in freshwater. An estimated 1.8 million households (24% of total)

contained at least one recreational fisher and the average per fishing household was 1.9 fishers. It was estimated that over 511,000 boats, with a capital value of \$3.3 billion, were used for recreational fishing. On average, recreational anglers fished approximately 6 days over the year and their estimated expenditure attributed to fishing was \$1.8 billion over the survey period.

The recreational harvest was approximately 136 million aquatic animals. This included 60.4 million finfish, 11.5 million baitfish, 6.1 million crabs and lobsters, 47.7 million prawns and yabbies, 1.8 million cephalopods, 7.2 million other molluscs and 1.2 million others. In weight, the total recreational harvest of finfish was in excess of 27,000 tonnes nationally, with the non-fish species amounting to at least a further 3,000 tonnes. To put this in perspective it might be well to note that the total of 30,000 tonnes is about one-eighth of the commercial wild harvest and divided among the 3.36 million recreational anglers comes to about 9 Kg. per angler.

Across northern Australia an estimated 37,000 indigenous fishers also expended an estimated 420,000 fisher days of effort with 91.5% of the population over 5 years in age taking part at least once. Among international visitors 191,000 engaged in fishing while in Australia.

Two items that caught my eye in passing were the indigenous dugong and turtle harvest and the recreational catch figures for Murray cod. Indigenous fishing harvested 1,600 dugong, 6,000 saltwater turtles, 14,000 freshwater turtles and 40,000 turtle eggs. These numbers seem remarkable in view of the alleged "threatened" status of these animals and the level of concern expressed over their occasional accidental catch by commercial fishermen.

The Murray cod is another "threatened" species. A widely cited NSW Fisheries survey in 1995-96 reported that: "A telling indication of the condition of rivers in the Murray region was the fact that, despite intensive fishing with the most efficient types of sampling gear for a total of 220 person-days over a two-year period in twenty randomly chosen Murray-region sites, not a single Murray cod or freshwater catfish was caught." The Murray cod commercial fishery was closed in 2001. The Recreational Fishing Survey estimated that during the survey period recreational fishers caught 483,284 Murray cod of which 374,932 were released and 108,352 weighing 144,222 Kg were kept. As is so often the case the claims and concerns of devout environmentalists and even fishery biologists bear no relation to real world evidence. The astounding disparity between the catch of the biologists and that of the recreational anglers underscores the problem faced in biologists having sole responsibility for management of a fishery.

Sociological considerations

Fishing has traditionally been open to any who might wish to participate. It offered a high degree of freedom and independence but also demanded much of skills, judgment and knowledge as well as plain hard work. It attracted and fostered the hard working, independent, resourceful spirit that is characteristic of fishermen. Unfortunately these characteristics are not so well suited to dealing with bureaucracy as they are to coping with the sea. Few fishermen have the additional time, skills and money required to effectively oppose poorly conceived imposts and restrictions or to challenge ill-founded claims of overfishing and environmental damage. Faced with such vexing problems the response of fishermen has tended to be. "What bullshit! I don't want to know about it, and anyway I have to get back to sea."

Fishermen today face an array of opposing interests and widespread misinformation. Environmentalists, researchers, and the bureaucracy all have a vested interest in environmental problems and with the precautionary principle in place these don't even have to be real but simply possible. Then there are the media always looking for dramatic news and happy to provide coverage for every claimed threat, an increasingly urbanized population who know only what the media reports, and politicians responding to and themselves believing the popular misperceptions.

A further major difficulty with respect to fisheries issues is that the reality is offshore and underwater. Real knowledge is sparse and the little we do know is usually inferred and uncertain. Almost anything can be claimed with little danger of being found untrue. The only people with any direct experience are fishermen and a few researchers. Fishermen have little public voice and when heard are believed only if they agree with the popular view. The few researchers with direct experience and information are either receiving funding to study the "problem" or are employed by institutions to which such funding is important. Disagreeing with the existence of a problem or threat will at the very least ensure personal criticism and ostracism. Most likely it will also have an adverse effect on obtaining one's own research support and could even be career threatening. In the end speaking out is unlikely to have any positive effect. Not surprisingly, dissenting opinion from researchers on claims of marine environmental problems is rare.

The absence of real understanding and a proliferation of office based management coming straight from the degree mills with no experience of fisheries has resulted in a management approach based largely on theories and models with little reference to any empirical assessment of the actual resource and scant regard for the practical realities of the industry. The precautionary principle disposes of any uncertainties while the righteousness of saving the environment justifies any hardships imposed.

There are three degrees of ignorance. Simple ignorance is not knowing but knowing you don't know. Compound ignorance is not knowing but thinking you do know. Then there is malignant ignorance, which is not knowing, thinking you do and believing you must impose what you think on everyone else for the greater good. What relevance this might have to fishery management, politics, and world affairs the reader may decide for themselves.

On the recreational side of fishing as well, change is occurring and difficulties experienced. Surveys both overseas and in Australia reveal declining participation, especially among the young. Increasing urbanization and diversification of recreational choices undoubtedly play a role in this trend as does changing societal attitudes. Hunting and fishing, as so-called blood sports, are losing both appeal and social approval. Then too there are increased restrictions making participation more difficult. In particular there is growing pressure to impose recreational licensing in states where it is not already in place and to increase fees where it is; plus, a growing mass of regulations governing where, when, what, and how everything must be done with ever increasing minutiae of differing details for every situation.

With regard to recreational fishing one might wonder what difference it makes if more people choose some other recreation than fishing. Might not it even be a good thing from an environmental standpoint? Not really. Recreational angling is extremely spread out and the impact of harvesting a given amount is no more or less whether the motive is commercial or recreation. Recreational angling however has a number of important benefits beyond the 30,000 tonnes of seafood it produces. A key benefit is that it puts people in touch with the real world and the nature of life. It also provides many valuable experiences and skills otherwise unavailable to urban living. It is a great anodyne to the stresses and demands of modern living and can be an especially effective generational bridge to our increasingly alienated young people. All this is not the case with video, electronic games, sporting events and most other such commercial manufactured recreation.

How far current trends will proceed is impossible to predict. Economics plays a key role. Bureaucratic nonsense is costly. It is only affordable in a healthy economy. In a recession decisions of affordability must be made. The amount of new laws and regulations being introduced is unprecedented in human history and their mass tends to be cumulative as few are rescinded. The effort and expense of compliance and their repressive effect on productive activity is not without limits. When and how this limitation may be dealt with is unclear but the eventual necessity seems inevitable. Increasing longevity and a below replacement level birth rate is now characteristic for developed countries, The coming demographic crunch is going to require more food from fewer producers and artificial impediments to their capacity to produce will have to be removed. Imports are a solution of necessity not choice. They only shift the impact of production to someplace else in the one world we all live in and they must still be paid for by some other economic activity with its own attendant impacts in our own nation. Looming over all is the increasing cost of energy, uncertainties regarding its supply and the global politico-economic consequences of its availability and cost. Ideally, we need to utilize all our resources and spread our impact across our entire resource base. Every resource we lock up puts more pressure on others and creates increasing imbalance.

The future of Australian fisheries

In addition to the immediate distress and economic cost created by the current mismanagement of fisheries there is another less obvious but potentially even more damaging risk. Fishing is not just another skill one can learn at TAFE or even at university. It embodies a culture and as such is not so much learned as it is absorbed over time. Like any culture it can die and once gone is not quickly revived. The costs and difficulties being imposed on fishing is already causing many fishermen to quit the industry and for young people to see no entry or future in it for them. The skills, knowledge and entire culture of fishing is dying. Once gone, simply changing some regulations won't bring it back. Revival would require a long slow generational process of rebirth.

In the direction we are headed the end result will be that all of the most valuable fisheries resources will become the private monopoly of a few companies who buy up the licenses and quotas and have the resources and clout to deal with the bureaucracy. Whether such outcome is a considered aim or

simply an inadvertent consequence of incompetence is debatable. Though I tend to favour incompetence rather than conspiracy as behind what is happening such assessment could well be too generous. A few companies would be easier to manage than a bunch of independent fishermen. It would also be quite lucrative for a few and there would be better profits to tax.

A better way forward

Another, better way forward is possible. Despite large differences of opinion there is a common ground from which to start. No one wants to see our resources and the world we live in degraded. Differences over conditions, values, trade-offs and management cannot be resolved by opinions, no matter how "expert", or beliefs, no matter how devout. Real world evidence must be gathered and assessed in an open and transparent manner. All relevant evidence and interpretation must be considered. Balance of evidence, risks, benefits and costs all require consideration. All conclusion should be treated as tentative and subject to change on the basis of additional evidence and assessment. In many of these matters we truly know very little. We need to know that we don't know and be open to new evidence and interpretation. Forget fragile and delicate, these are robust, renewable, resources. If mistakes are made we can pull back or change direction and conditions will soon recover. The precautionary principle is purely an emotive expression of political correctness. Precaution with no evaluation of risk or cost is vapid nonsense and has no place in competent rational environmental management. In short a much more empirical, rational, evidence based, and experimental approach to management is sorely needed.

With respect to fisheries in particular, a far more inclusive, cohesive, organized, determined and effectively aggressive approach must be taken by the industry itself. Commercial fishermen, aquaculturists and recreational anglers all face similar threats from overzealous and incompetent bureaucracy. All must put aside blaming one another and join forces to confront the real enemy. Divide and conquer is the bureaucrats most effective tactic and a united front of opposition is the one thing they and their political overseers cannot ignore. Everyone involved will have to accept some compromises in formulating objectives. Clear, well reasoned demands are badly needed. Legal, political, public relations and scientific expertise is essential and money will have to be spent. In the end a key objective must be for the industry itself to assume a strong role in its own management and regulation. This is entirely in keeping with fundamental democratic principles and the only means of avoiding the kinds of disastrous decisions now being made by academic experts and managers with little knowledge of the realities of the industry.

A Postscript on Structural Adjustment

Just as I was finishing the writing of this article a new \$220 million structural adjustment package was announced by the Federal government. It is intended as compensation payments in a plan to reduce the Commonwealth licensed fishing fleet by half (from 1200 to 600 vessels). This would be hard to believe if it were not true. After loading the industry with increasing demands and restriction which make it impossible for growing numbers of fishermen to profitably operate, the resulting difficulties and reduced catches are being used to justify further cutbacks.

The following quote from Sen. Ian Macdonald, Commonwealth Minister for Fisheries, Forestry and Conservation reveals just how removed from reality our fisheries management has become.: "...despite having the third largest EEZ on the planet, the Australian seafood harvest can't meet the demand for the Australian seafood consumer. And the underlying reason for this I'm told is that Australia is in the middle of, you might say, a fish desert. Unlike South Africa and South America, we don't have any major sub-Antarctic currents carrying the very nutrient rich cold water towards the equator where it mixes with the warm tropical waters and creates a perfect environment for what we might consider "super" fish production."⁸

This statement makes clear that the Minister has been badly misinformed. While it is true that Australian waters do not have the "super" productivity of those of South Africa or Peru, productivity here is far from being a "a fish desert" and is similar to that of most tropical and warm-temperate regions around the world. This is readily apparent in satellite measurements of chlorophyll content, a basic indicator of marine productivity. (Fig. 15).

Comparison with fishery production of some other countries is also revealing⁹.

Fishery Production in Metric Tonnes for 2003

Nation	Aquaculture	Wild Caught
Australia	38,559	219,473
Vietnam	937,502	1,666,886
Malaysia	167,160	1,287,084
Thailand	772,970	2,817,482
Mexico	73,675	1,450,000
Bangladesh	856,956	1,141,241
Philippines	459,615	2,169,164
Burma	257,083	1,349,169
U.S.A.	544,329	4,938,956

All these nations except the U.S. have only a fraction of the EEZ area of Australia and are producing over 5 times or more wild caught harvest than Australia in addition to as much as 25 times greater aquaculture production. In the U.S. the relatively small sub-tropical Gulf coast region alone produces over three times the total commercial catch as all of Australia while the Florida Keys with about 1% the reef area of the GBR sustainably supports a larger catch than the entire GBR.

Senator Macdonald might well find that a fact finding visit to Vietnam or Bangladesh would be more genuinely informative for him than the advice coming from his own experts. He might also gain much from listening carefully to more of our own fishermen.

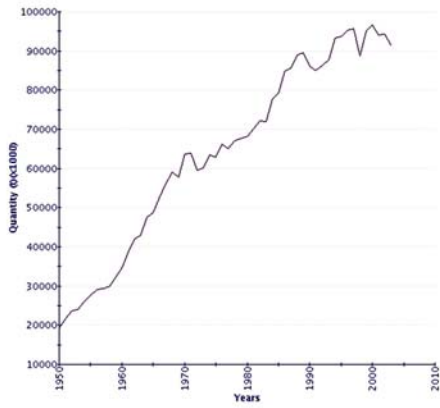


Fig. 1 - Global fishery wild caught production

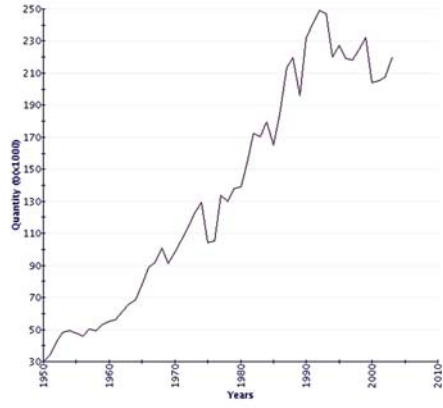


Fig. 2 - Australian fishery wild caught production

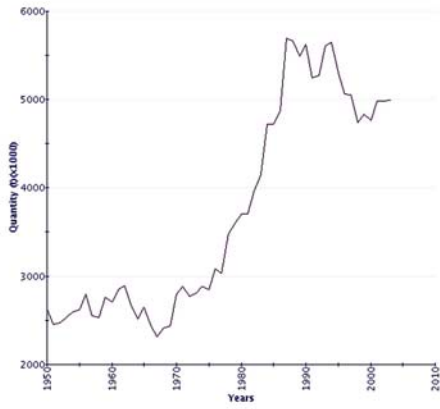


Fig. 3 - U.S. fishery wild caught production

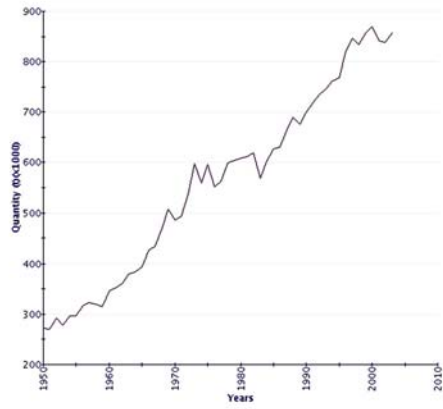


Fig. 4 - Global sharks, rays and chimaeras

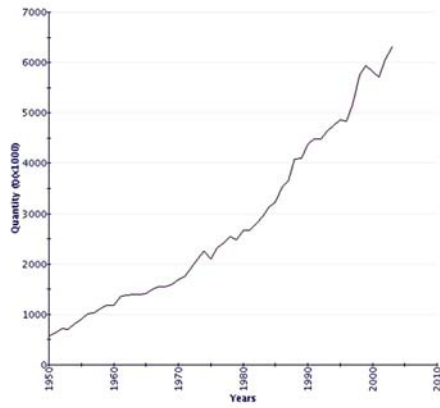


Fig. 5 - Global Bonitos, tunas and billfishes

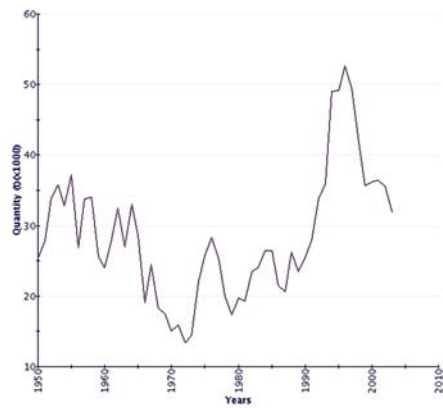


Fig. 6 - Atlantic bluefin tuna

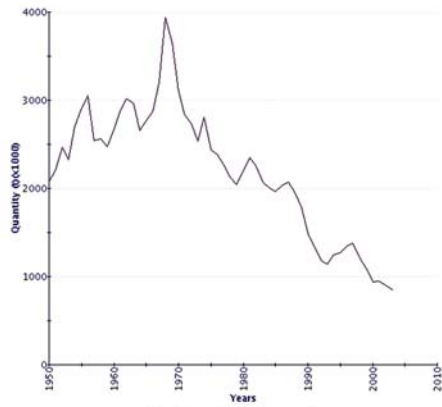


Fig. 7 - Atlantic cod

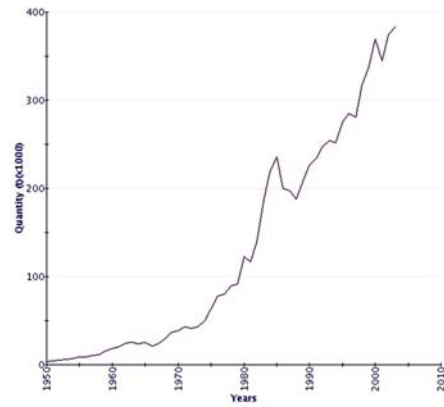


Fig. 8 - Northern prawn

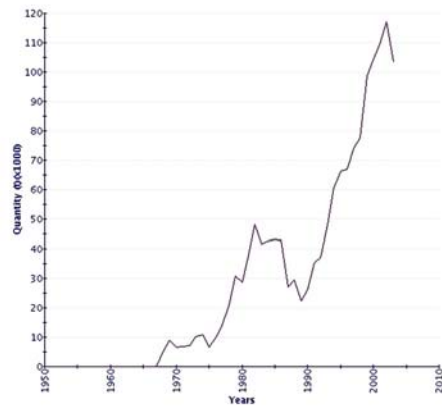


Fig. 9 - Queen crab

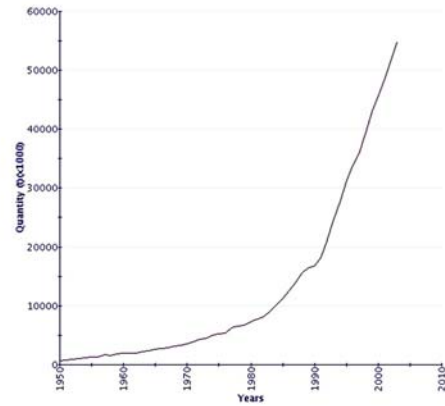


Fig. 10 - World aquaculture production

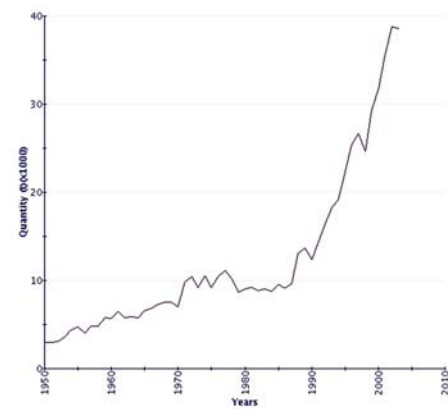


Fig. 11 - Australian aquaculture production

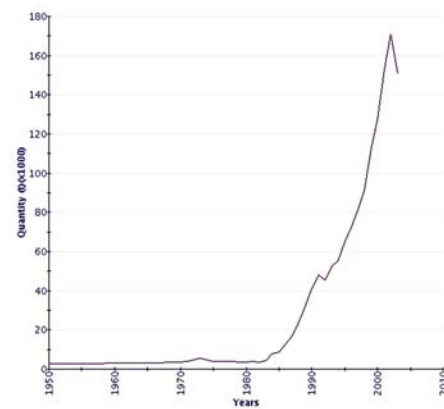


Fig. 12 - Canadian aquaculture production

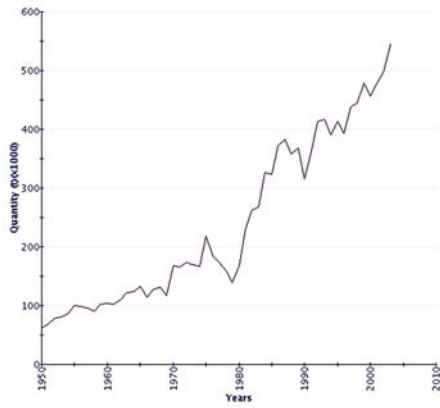


Fig. 13 - U.S. Aquaculture production

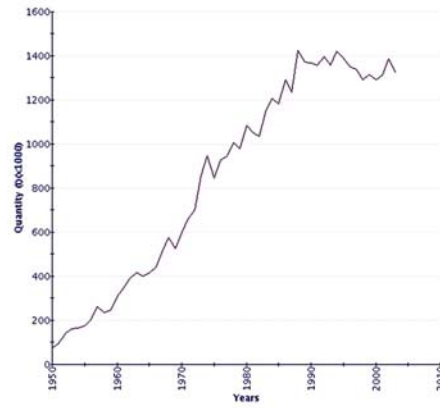


Fig. 14 Japan aquaculture production

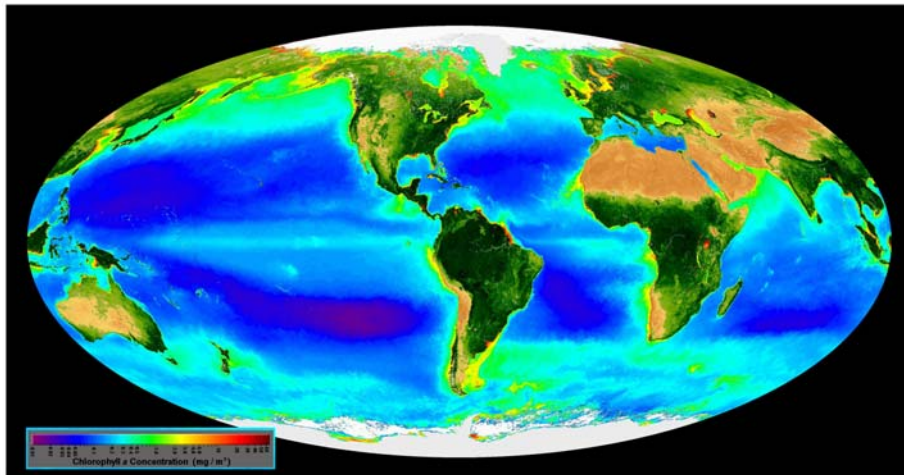


Fig. 15 Oceanic Chlorophyll concentration (satellite measurement)

Notes:

- ¹ FAO Fisheries Global Information System (FIGIS)
Statistics page: <http://www.fao.org/fi/statist/statist.asp>
- ² Ransom A. Myers and Boris Worm - Rapid worldwide depletion of predatory fish communities. *Nature* 423, 280-283 (15 May 2003)
- ³ <http://www.seafooddirections.com/>
- ⁴ Section 516A of "The Fisheries Management Act 1991 requires AFMA to pursue the objective of ensuring that the exploitation of fisheries resources and the carrying on of any related activities are conducted in a manner consistent with the principles of ecologically sustainable development and the exercise of the precautionary principle." - from the AFMA website.
- ⁵ Harry Peters - The importance of imported seafood to Australia. Seafood Directions Conference 2005. Online at: <http://www.seafooddirections.com/presentations/Harry%20Peters.pdf>
- ⁶ For a fascinating account of the role of the omega-3 fatty acids in the evolution and functioning of the human brain see: David Horrobin - *The Madness of Adam and Eve: How Schizophrenia Shaped Humanity*. Bantam Books, N.Y (April, 2002), 275 pages.
- ⁷ G. W. Henry and J. M. Lyle (Eds.) - *The National Recreational and Indigenous Fishing Survey*. Australian Government Department of Agriculture, Fisheries and Forestry (2003), 190 pp.
Online at: http://www.affa.gov.au/corporate_docs/publications/pdf/fisheries/final_recsurvey_report.pdf
- ⁸ Speech by Sen. Ian Macdonald at the launch of "The Australia Seafood Handbook: An Identification Guide to Imported Species. Online at" <http://www.mffc.gov.au/speeches/2003/seafood2003.html>
- ⁹ Fisheries of the United States - 2004. NOAA Fisheries
Online at: <http://www.st.nmfs.gov/st1/fus/fus04/>