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A PRESENTATION BY

Walter Starck

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Marine Resource Management

The high cost of precaution

Walter Starck

"Australia rides on the sheep's back." sounds a bit quaint and outdated in today's 21st century nation where 90% of the population rarely sees a sheep, cow or farm. Everyone knows high-tech manufacturing and services are the core of advanced economies and a pristine natural environment is surely more important than the profits of a few primary producers.

Although this seems to be the general view of much of the overwhelmingly urban majority of the population, the reality is quite different. Australian manufacturing is in decline. Two decades ago it comprised 18% of GDP. Now it is just 13%. In NZ it is 19%, the UK 17%, and in China it's 39%. With the ongoing boom in manufacturing in Asia, the huge untapped labour reserve there and our much greater costs, taxes and regulatory burden it seems unlikely that this situation will reverse anytime soon.

In 2005 manufactures accounted for $32 billion of Australian exports while imports of manufactured goods were $126 billion. Primary products exports were $87 billion of which $60 billion were unprocessed raw materials. Imports of primary products were $26 billion. Service exports were $37 billion and imports were $38 billion. Total exports were $176 billion and total imports were $194 billion. The deficit of imports over exports was $17 billion for merchandise (primary and manufactured) plus $1.5 billion in services.

While "the clever country" and "the smart state" make catchy political slogans only the not-so-bright could actually believe in a future prosperity based on our outsmarting everyone else. With our small population and abundance of resources, primary production will clearly continue to play a dominant role in our economic well being for the foreseeable future.

The Eco-burden

There is, however, a significant and growing impediment to any productive activity that involves natural resources or the environment. All across the nation farmers, graziers, fishermen, miners, developers, and just ordinary property owners are finding themselves thwarted by complex ill-conceived environmental regulations enforced by an aggressive uncooperative bureaucracy wielding broad and often arbitrary powers of discretion.

Paperwork, unanticipated requirements, restrictions, delays, uncertainties and costs are all growing. More and more activity is either blocked entirely, or worse yet manages to get started at great effort and cost but ends up so encumbered as to be rendered unprofitable. Even worse still, the costs and demands are becoming beyond the means of all but the wealthy. The tradition of *a fair go* should be listed as an endangered species This situation has steadily grown over the past several decades. Like a cancer, at first it wasn't noticeable. Then it became an uncomfortable niggle which with increasing effort could still be tolerated. Now it is beginning to eat into the vital organs of the economy. Graziers are having their paddocks overtaken by woody scrub they are not permitted to clear. Rural home-owners are finding themselves unable to do anything about an accumulating tinderbox of combustible material just waiting for an inevitable fire to destroy their home. Our fishing industry, the most lightly harvested in the world, is in decline from ever increasing restrictions and demands. Aquaculture, while enjoying a remarkable boom all around the world, is being strangled at birth by impossible demands here. Despite vast areas of undeveloped land almost any productive use confronts large costs, imposts, and restrictions if not prohibited entirely.

Much of this problem has been masked by the boom in commodities, a cultural trait of doggedly struggling on through times of adversity, and the common human tendency of denial in the face of looming unpleasantness. However, we have now reached a level where increasing amounts of productive activity is simply ending up in the too-hard category.

Commodity markets are by nature volatile. When the present boom subsides, as all booms do, the economic impact will be exacerbated by the self-inflicted abuse the nation has imposed across the rural sector. Severely handicapping one's most important natural advantage is hardly "clever" or "smart". To the contrary, it is downright stupid.

In discussing such issues publicly a question is often raised regarding the importance of an "unspoiled: natural environment. Ironically, this is almost always posed by an urban dweller who choses to live where the natural world has been virtually annihilated. It is never asked by a primary producer. Implicit in such questions is the assumption that a problem exists and more regulation is needed. More often than not, either the problem doesn't actually exist at all or the proposed measure is an unnecessarily restrictive means of addressing it.

When not explicitly prohibitive, environmental regulations are becoming so insanely complex, mired in bureaucracy and costly that the effect is the same. Although aquaculture is the fastest growing food producing sector in the world and we have superb natural conditions for it, here in Queensland there have been no new development applications for it in the past three years.

Eco-ideology

Environmentalism has become a quasi-religious blend of new-age nature worship, junk science, left-wing political activism and anti-profit economics. Saving the environment supports a mini-industry of activists, bureaucrats and researchers all of whom have a vested interest in promoting the idea of threats, which, of course, require more campaigns, more bureaucracy and more research. Misinformed politicians thinking they are doing the right thing and perceiving popularity at little apparent cost have tended to give rubber stamp approval to the environmentalist agenda. A charade of democratic process is provided by public consultation with "stakeholders" which somehow is deemed to include activists whose only stake is as self-appointed saviours of the environment. Selected results are then bannered to the extent that they support the agenda and ignored or not revealed when they don't. Lapdog "peak bodies" funded by government furnish a façade of industry consultation.

Environmental management is now dominated by ideology, theories, models and a proliferation of regulation with minimal assessment of actual conditions, the efficacy of management measures, the environmental result or the socio-economic consequences. A particularly malignant adjunct of all this has been a general acceptance of the precautionary principle as a politically correct cannon of environmental management. This mandates that any imagined possibility of a problem must be addressed with full measures to prevent it. One simply can't be too careful when dealing with anything so precious as the environment.

Unfortunately this principle makes no reference to assessment of probability, cost, or the possible consequences of risks and it provides a convenient cloak for sundry other agendas. Followed to its logical conclusion it would even preclude itself. Everything we do or don't do, entails risk. This includes precautionary measures themselves. Amazingly, this vacuous and pernicious piece of nonsense has actually been written into various legislation such as the enabling act for the Australian Fisheries Management Authority and legislation protecting wetlands in Queensland. A Google search of the phrase "precautionary principle" restricted to Australia returned some 117,000 links. Nowhere else does precaution appear to have been so wholeheartedly embraced as here. The end result has been a proliferation of restrictions to address problems for which there is no evidence of their actual existence.

Eco-bureaucracy

A Google search of pages from Australia on the words - best managed coral reef - or - best managed fisheries – is also revealing. It turns up numerous links to government, research, and environmental organization websites. Often these self awarded accolades are modestly qualified by the additional phrase "in the world". Reality presents a somewhat different picture. While it is true that we have some of the most pristine waters in the world with little incidence of overfishing, superior management has little to do with it. We also have one of the least productive, heavily regulated and expensively administered fishery sectors in the world and management has everything to do with this situation.

Another Google search I made recently is furthrt instructive. Acid sulphate soil management restrictions and demands have become a major impediment to aquaculture in Australia. A Google search on the phrase "acid sulfate soil" results in some 38,500 web links. Limiting the search to pages from Australia reveals that 28,100 *(i.e.* 73%) of these are from here. The Australian links reveal a mini-industry of government bodies, research institutions, and consultants devoted to managing the problem. It would appear at first glance that we must have the world's worst ASS problem however, a 1985 U.N. report records the global area of such soils as being 12.7 million ha, with all of it in Asia, Africa and the Americas. The figure given for Australia was 0.0ha. One might well wonder how a widespread natural condition which was a non-problem 20 years ago could, for no apparent reason, suddenly become such an important one.

Acid sulphate soil is a common condition in coastal sediments where iron is present.
Anaerobic decay of organic matter in such sediments produces iron sulfides which, if exposed to air oxidise to form sulfuric acid. In the past this process passed un-noted as it is temporary and usually affects only a relatively small area. Once the exposed material has oxidized acid production stops and acid runoff is quickly neutralized by seawater. If such runoff is confined in a limited body of water aquatic life can be detrimentally affected but such instances are only occasional, short lived and cease altogether once newly exposed material has been fully oxidized. Although reports of concerns over the threat are voluminous, documentation of any actual detriment beyond the minor and temporary is difficult to find. The management approach in most places in the world is to ignore it and it goes away.

ASS is not so much an environmental problem as it is one for pond aquaculture. Crustacea such as prawns are particularly adversely affected by acidic conditions. Finfish are generally much more tolerant. Treatment of ponds with lime or repeated flushing with seawater is often used but may be impractical or too expensive depending on circumstances. Aquaculture is a new industry and due diligence in site selection has been the lesson learned elsewhere.

However, what happened here is that in the same year (1985) the U.N. report was published a fish kill in the Tweed River in northern NSW was attributed to acid sulphate. Researchers and bureaucrats were quick to exploit the possibilities for funding and regulation. Whole new departments and complex regulations were spawned to deal with it. For the environmental movement this was the perfect threat. It was widespread and harmless unless disturbed, a ready made objection to coastal development.

Although Australian aquaculture's less than 1/10 of 1% share of global production may look pathetic our whopping 73% share of the global market for concern over acid sulphate soil makes us the undisputed colossus of ASS.

Fishery Management

Over recent decades the whole approach to fishery management has 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 computer models. 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 are based on simplistic assumptions and very uncertain estimates about complex and highly variable phenomena of which we genuinely understand very little. Usually they require generous adjustment to yield results that are within the bounds of the possible. In practice they tend to reflect more the assumptions and aims of the modeler than anything in reality.

Management of our fisheries has become divorced from the realities of the industry, the nature of the resource itself and our best information of its condition and dynamics. The result has been an imposition of hypothetical solutions to imaginary problems with increasing demands on fishermen that have become impossible for growing numbers of them to meet. Fishing is a demanding, uncertain, often even dangerous, business. The ability to bear added costs and restrictions is limited but in recent years these have been heaped on with minimal regard for the impact on the industry.

The natural communities upon which our fisheries are based are in reality not fragile and delicate but are in fact, decidedly robust and flexible ones that readily recover from 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 as well as to carefully assess their results when implemented.

Although there are a few species (*e.g.* orange roughy and school shark) whose particular biology makes them especially vulnerable to overfishing, the broad picture of the Australian marine environment is that of a vast, very lightly fished and unpolluted region. There is no pressing urgency to impose a rapidly growing morass of restrictions but there is very real need to better understand and evaluate what we are doing.

In general a much more empirically based approach is needed. Management decisions need to 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 realities of the fishery. Management by theory without broad and ongoing assessment of actual conditions and results is a prescription for mismanagement.

The whole endeavour has also taken on aspects of the sacred. This manifests itself in language where fragile and delicate have become almost mandatory adjectives in describing the natural world. It is further reflected in the heavy penalties and zealous enforcement of environmental regulations even when infractions are trivial and no actual damage has been done. Since expansion of the green zones on the Barrier Reef two years ago some 300 people have been charged with fishing in them. The conviction rate has been an unbelievable 99%. In addition to a hefty fine the law imposes a mandatory criminal record. Ninety-eight percent of those convicted have been otherwise law abiding citizens with no previous criminal record. They are now banned for life from many activities. Many, if not most, actually caught nothing but were guilty only of accidentally or ignorantly crossing an imaginary line in the ocean when trolling. They would have been much better off to be caught speeding through a school zone where the fine would be less and the infringement only a misdemeanor. It seems we value a child's life less than that of a mackerel.

Eco-authoritaranism

It would be easy to dismiss all this as the grumblings of a grumpy old man but think again. The picture presented is certainly no less unbelievable than the apparent belief of politicians and bureaucrats that the private sector has a limitless capacity to comply with ever increasing demands. Every year thousands of pages of new laws are enacted and few are ever rescinded. Laws to "save" the environment are popular, usually entail little apparent budgetary cost and are unseemly to oppose. They also come highly recommended by the government's own bureaucrats and researchers as well as publicity savvy environmental groups. Not surprisingly, they tend to be passed with minimal consideration or dissent. It all might be seen as just messy old democracy in action except for one very important omission. Those who will directly be affected usually have little say in the process. Typically they comprise only a scattered un-organized minority who are easily dismissed as ignorant complainers wanting to despoil our precious environment for their own selfish profit.

Desperate fishermen are being driven into bankruptcy where they know from direct personal experience the claimed problems do not really exist. When they try to express their concerns to the managers, researchers and environmentalist the only response they get is unsubstantiated claims of scientific validity accompanied by a semi-polite smile that could easily be seen as smug satisfaction. This is real . I've observed it and this is not just my own unique impression. A number of independent observers have noted and commented along similar lines not to mention numerous fishermen.

Australian fisheries are in decline, not from overfishing, there are plenty of fish out there, but from ill conceived regulation. Despite having the world's third largest fishery zone the total Australian catch is similar to that of Finland, Germany, Poland and Portugal but well below that of New Zealand, France, Ireland and Italy. From 6% of the global EEZ we produce 0.2% of the world's catch. In other words, our harvest rate on an area basis is about 1/30 that of the average. This magnitude of difference goes beyond just poor management. It requires some form of determined rejection of blatantly obvious reality to explain. It's a bit like the decades-long determined insistence of the communist ideal when the reality was clearly an ongoing disaster. Not coincidentally that too was a consequence of management where ideology and bureaucracy had complete control.

Needed Reforms

One person one vote, by itself is not sufficient. The essence of true democracy is consent of the governed. This must entail a decisive voice in decision making for those directly affected, not just some remote majority. The latter is better described as mob rule or perhaps dictatorship of the proletariat. The first reform needed is provision for a real voice by genuine stakeholders. Having operational and economic decisions made by remote administrators and "experts" devoid of direct practical experience with no consideration for socio-economic consequences is a proven recipe for bad management.

Another key reform must be to address the lack of bureaucratic accountability for results. Administrators currently have a vested interest in problems but none in results. Problems bring increased funding and authority but results are seldom evaluated. Relating funding to results would have a dramatic and beneficial effect on the approach of administrators. Shifting the bureaucracy toward a more open competitive ecology by removing responsibilities from departments with poor results to those with good ones would also make a huge difference.

Environmental research has become characterized by the exaggeration of threats, selective use of evidence, claims of findings unsupported by or contrary to available evidence, suppression of conflicting information, false claims of certainty and personal denigration of dissenters while ignoring the substance of the dissent. The most needed reform in environmental research is the imposition of fundamental standards of scientific conduct appropriate to all science. Most importantly this includes openness and honesty. It means that methods and materials must be made easily accessible to independent examination, that claims are supported by evidence and conflicting claims or evidence are addressed, not ignored or suppressed. A clear distinction should also be made between scientific findings and advocacy using science to claim authority. While freedom of expressing scientific opinion is essential to good science, advocacy by researchers is not and should be subject to responsibility for consequences.

One can’t say harmful things about individuals with impunity from damage. One can however, freely employ lies, exaggerations and misrepresentations as well as ignore or even suppress evidence in advocating regulations that result in very real harm to many lives. Such abuse is now epidemic and routinely accepted in environmental matters. A much greater accountability for the consequences of dishonesty in this area is well overdue.

All this is eminently doable with little or no need for new laws. All that is really required is the will to do so. Beyond this is one thing more and it would require new legislation although that could be but a single not very complex act. Unfortunately the problem we face is not just in improving the future process. The mess is now already too damaging and trying to review and correct it all via the normal legislative process too cumbersome. Government would have to spend decades doing little else and realistically that is not going to happen. The solution needs to be the creation of means whereby affected interests can challenge the most damaging mistakes and injustices. The ordinary legal process for this is too expensive, lengthy and biased in favour of government. What is needed is an independent ombudsman or review board with real powers to command judicial or legislative action where required, to make recommendations where needed and even to bring legal action where authority has gone beyond the law. A special judicial tribunal to hear such matters might be desirable as an element of the process.

Costs

We are currently spending hundreds of millions of dollars each year trying to prevent Asian fishermen from fishing waters of which we ourselves make no use. Hundreds of millions more are being spent in compensation to pay our own fishermen to go out of business. Another $1800 million per year goes to buying imported sea food we could easily provide ourselves and all this is just the cost for fishing. The costs to other areas of primary production and development from unnecessary, poorly conceived and incompetent environmental management adds billions more to the bill. And all the above is only the immediate direct cost. On top of this can be added the ever increasing future costs of further imports and the loss of foregone productive activity that will never take place.

We cannot go on imposing more and more costly and restrictive measures to prevent problem that don’t even exist nor can we ourselves exist without detectable effect on the natural world. Ecology is above all holistic. Every creature must have its impacts in order to exist.. We are no exception. Aiming to maximize our benefits and minimize our detriments will require trade-offs and balances whereby we seek to spread our impacts across our whole resource base within the bounds of sustainability. Every resource we lock up puts more pressure on others and creates increasing imbalance. An unnecessary restriction in one place becomes an increased impact somewhere else.

The worst catastrophes tend to not come from obvious dangers everyone foresees but rather the unrecognized ones that do not become apparent until they are too late to avoid. Environmental mismanagement is eating away at the very heart of the economy. As a threat to long term national security, terrorism is minor in comparison. Unlike terrorism it is not just something that might happen someday somewhere, in one or a few isolated instances. It is here now, actually happening, ongoing, chronic, epidemic and getting worse. It is also costing billions and wrecking lives.

Recent Quotes

In confirmation that the picture I draw is not just my own extreme fringe perspective, here is a random selection of just a few recent quotes from other well placed observers:

An editorial in the May issue of *Ausmarine* magazine had this to say – *The damage done to Australia's fishing industry by an out-of-control bureaucracy and a malevolent scientific community is well known. …why, when, the fishing industry has been slashed to the tune of 75 per cent of its boats over the past thirty years, the bureaucracy tasked with 'managing' the remaining 25 per cent has steadily and strongly increased.*

On 18 July an article by Greg Roberts in The Australian titled "Creature Discomforts, wildlife protection laws are hampering development", stated - *The biggest concern of some developers is the so-called precautionary principle: that a development should be modified or prevented if it poses a risk. "It is the view of governments that you don't take any risks if you don't have all the facts," says David Finney, Cairns manager of consultancy Natural Solutions. "It's unreasonable. They've gone overboard. For instance, it is difficult for the aquaculture industry to prove that pollution from proposed fish farms will be within prescribed limits. "The rules are so strict that in the case of aquaculture, they are killing the industry," ….*

Hagen Stehr AO one of Australia's most successful aquaculturists had this to say in the July *Ausmarine* - *"Battling against the elements ... and in later years to the present day against the insanity of sometimes brain dead, most times jealous, empty headed bureaucrats in Canberra, who with little understanding, a big stick and a plethora of unnecessary laws created a heavy burden for many fishermen Australia-wide.*

Those draconian and in many instances unworkable laws have handicapped industry with the end result that many in the investment community have doubts about investing in our industry which at an increasing speed is headed into the great abyss. We have by our own geographical nature of Australia one of the best opportunities in creating a seafood industry second to none. Alas the negative attitudes persisting like a cancerous growth in the corridors of AFMA makes it increasingly hard for fishery entrepreneurs and pioneers to take the next step with confidence. Many in our industry believe that bad management practices by our authorities have damaged industry beyond repair."

In the same issue Barry McRoberts in an essay on Management Matters said:
"What is it that has turned Australians from appreciators of enterprise, initiative, and vision into worshippers of management and devotees of the naysayers."

Still another article was entitled "Dignity or Disgrace? - The (latest) mismanagement of Commonwealth Fisheries" by Peter D. Dwyer and Monica Minnegal of the School of

Anthropology, Geography and Environmental Studies, University of Melbourne had this to say - *"Increased surveillance, increased punishment and increased costs. No hints of trust but plenty of illogic. Fishermen cannot guarantee that they will not catch something that they were not targeting. The ocean is too unpredictable. Yet if they catch something but do not hold quota then that's now illegal. If they discard it because they do not hold quota then that's also illegal. And the compliance officers, relaxing in Canberra, far from the water, will be monitoring all those cameras. It's a bureaucratic-Catch 22; new rules and regulations that can be enforced but cannot possibly be obeyed.*

And why the savage cuts to total allowable catches? TACs are supposed to be estimates of the quantity of fish that can be removed from a population without threatening sustainability. For key species, scientists have been doing the sums for more than ten years. Have they been wrong all this time? Was the science so bad that the cuts are now necessary? If that is true then where is the guarantee that the science is now adequate?"

The Publisher's Perspective editorial in the August issue of GoFishing magazine said - *"...recreational fishermen, their organisational bodies and any person who enjoys water sport recreation with a modicum of common sense, are pitched in a relentless battle with authorities over the harsh treatment of recreational fishing. Almost every month, more legislation supporting restrictions on fishing and coastal closures are introduced. The Queensland, New South Wales and Tasmanian governments are most unsympathetic towards recreational fishing, although their hatred of fishing is not just contained to the recreational sector.*

...we have also had examples of the West Australian government getting on the extremist conservation side. But first prize for the least scientifically supported opposition and harsh treatment of recreational fishing must go to the Great Barrier Reef Marine Park Authority (GBRMPA)."

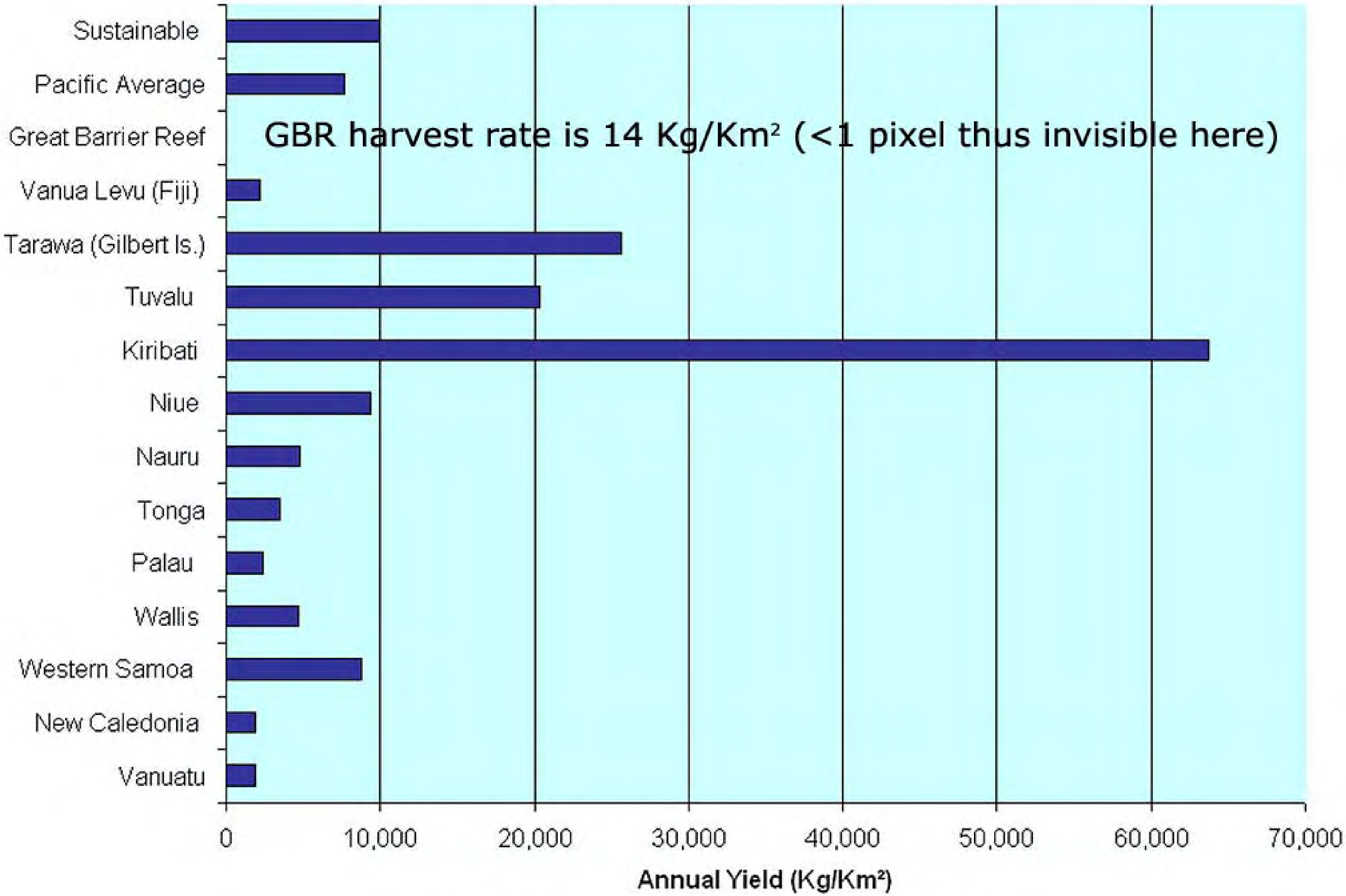
Just this month came a critical review from the Fisheries Centre, University of British Columbia, Vancouver, Canada. It is entitled Misguided Claims of Overfishing in New South Wales: Comment on "Empty Oceans Empty Nets. An evaluation of NSW fisheries catch statistics from 1940 to 2000". A University of Hawaii web page in a note on this review said – *"The temptation to cross the line and abandon science for advocacy is as strong as ever. Robyn Forrest and Tony Pitcher from the University of British Columbia Fisheries Center published a devastating critique of a Pew-sponsored junk science "analysis" of a fishery in Australia."*

Typical GBR aerial views.

Not a boat in sight.

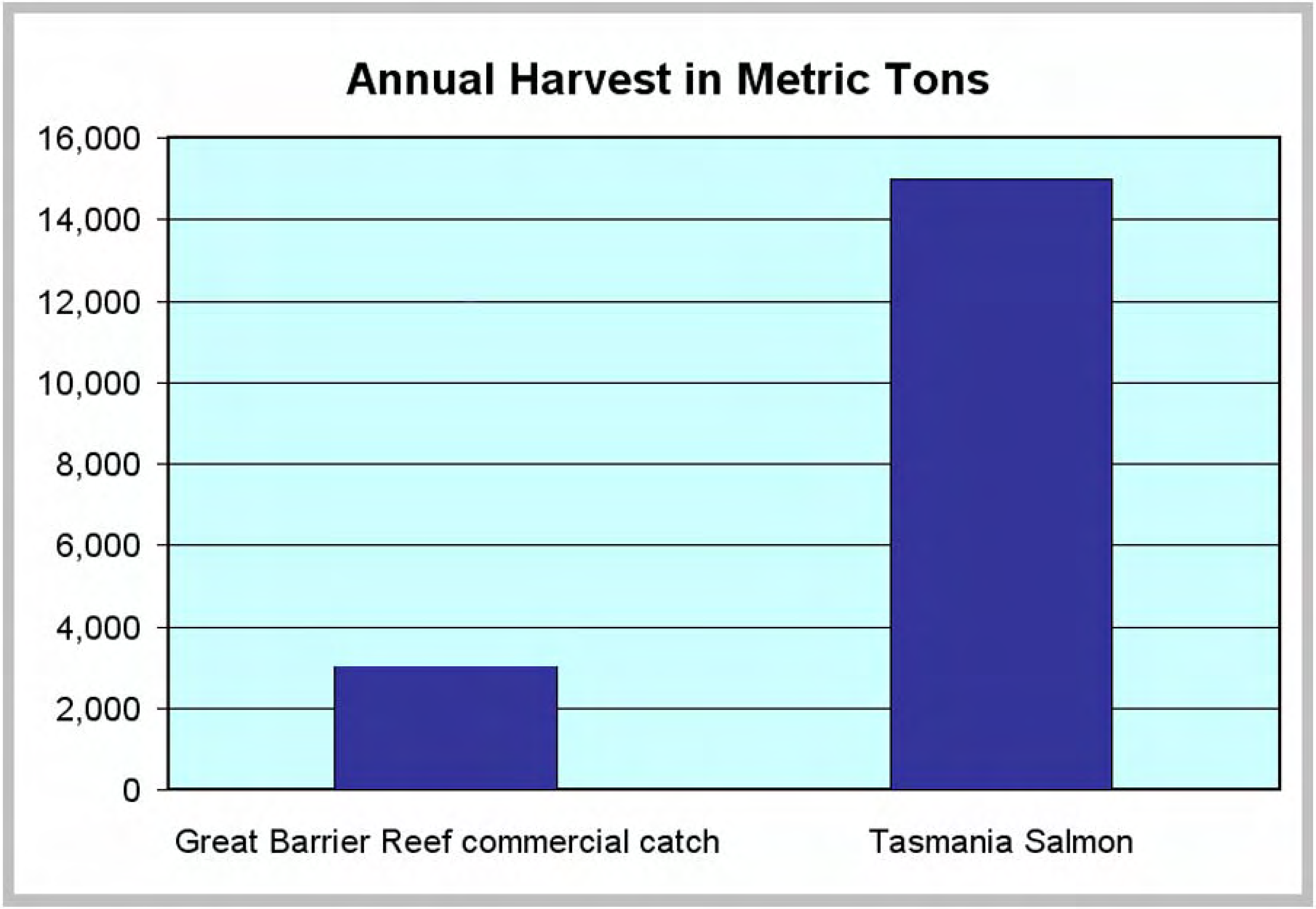
Escape Reef with my vessel at anchor.

My reseaarch vessel *El Torito* anchored at Escape Reef as seen in the previous image.

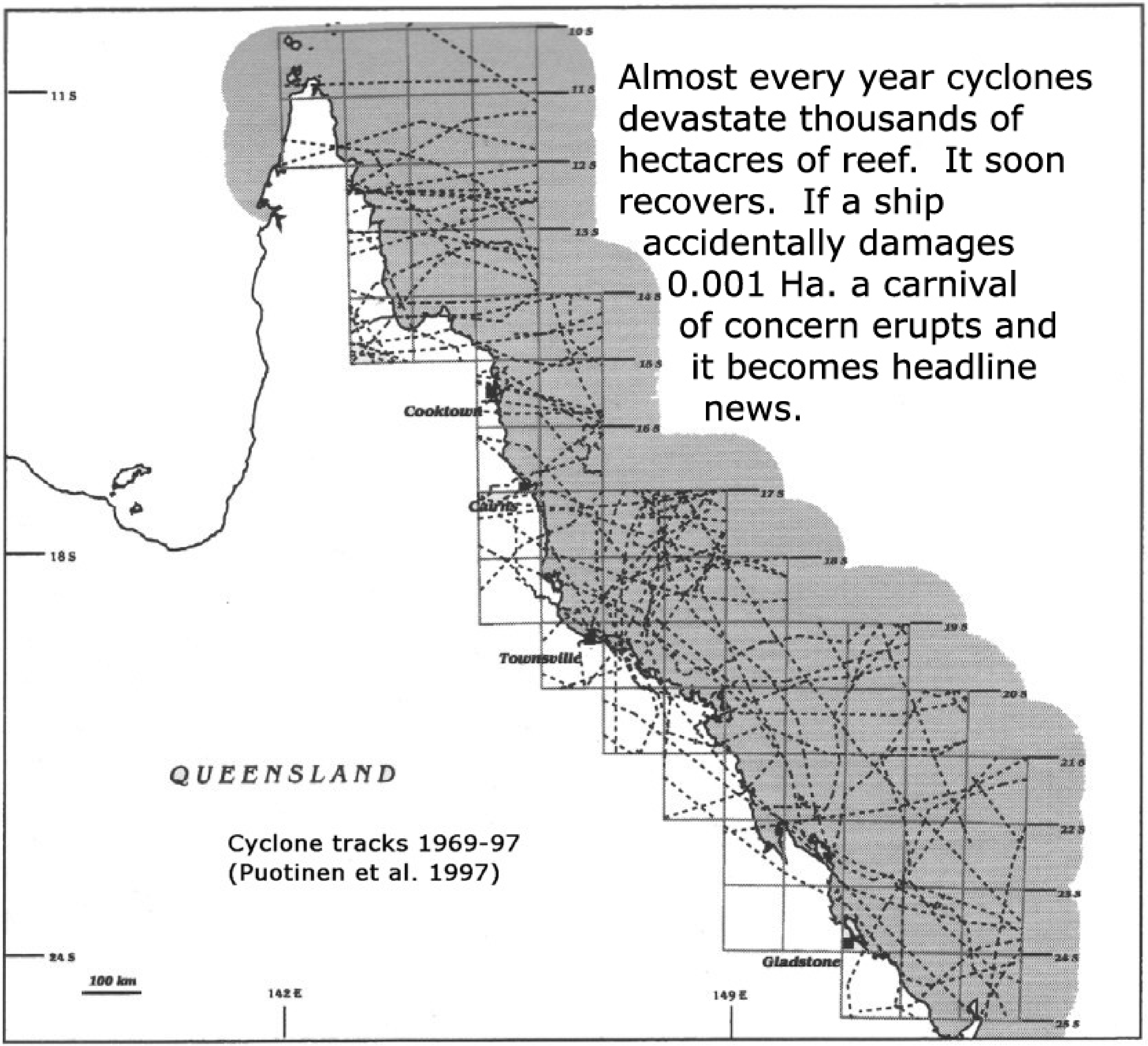


GBR harvest rate is 14 Kg/Km² (<1 pixel thus invisible here)

Pacific islands fishery data from Adams *et al.* 1996


Annual Harvest in Metric Tons
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
Great Barrier Reef commercial catch
Tasmania Salmon

Almost every year cyclones devastate thousands of hectacres of reef. It soon recovers. If a ship accidentally damages 0.001 Ha. a carnival of concern erupts and it becomes headline news.



Cyclone tracks 1969-97
(Puotinen et al. 1997)

“Environmentalism...is a form of religious belief which fosters a sense of moral superiority in the believer, but which places no importance on telling the truth.”

Bob Foster -The Lavoisier Group

About Walter Starck

Walter Starck grew up on an island in the Florida Keys and began catching fish in salable quantities off the family dock at age five. At 6 he helped his grandfather build his first boat with which he began diving using a face mask. He started scuba diving in 1954 (before scuba was a word). In 1964 he completed a PhD degree at the Institute of Marine Science of the University of Miami. In the process he determined that the world of academia was not to his taste so started his own business as well as a private research foundation. In 1968 he took delivery on a purpose built 150 ton research vessel, *El Torito*, and spent the next two decades exploring widely from the Caribbean to the Western Pacific. He arrived in Australia before boat people became unfashionable and in 1979 established a home base on a 164 acre rainforest property on the north shore of the Daintree River.

His research interest has centered on coral reef biology and has included research grants and contracts from the National Science Foundation, Office of Naval Research and National Geographic Society as well as various private foundations and individuals. He has been a research associate of the Institute of Marine Science in Miami, the Bishop Museum in Hawaii, The Australian Museum in Sydney and the Western Australia Museum in Perth. His wide experience of reefs around the world has encompassed the full spectrum of conditions ranging from heavily impacted to untouched as well as several opportunities for decade or longer familiarity with individual reefs. His views on reef biology derived from direct observation are not always in accord with popular theories.

For more on Walter Starck from a different perspective see: www.goldendolphin.com and click on the **About the Editor** link in the contents list on the left. For access to .pdf copies of a selection of his recent environmental writings click on the **Eco Issues** item.