

# Western Australia Fisheries in Decline

## *From over management, not overfishing*

**Walter Starck**

Last year I was contacted by fishermen operating out of Broome, Western Australia who wanted some independent scientific advice regarding the validity of a need for effort reduction claimed by their Department of Fisheries (DoFWA). Upon looking into the matter I found that seven boats fishing a total of 220 traps with 160 days annual access were said to be overfishing a shelf area in excess of 200,000 Km<sup>2</sup> in the heart of some of the highest primary productivity waters around Australia. I also found that:

- Catches were better than ever.
- Even assuming an overly generous catching area of a Ha per trap, at existing effort it would require about 300 years to cover the fishing grounds just one time.
- The maximum sustainable yield for the fishery estimated by the Department was only 800 tonnes per year total for all species of which there are over a dozen.
- Taiwanese trawlers using 100 m wide pair trawls fished the same region for 25,000 hours in the 1970s and 1980s. Their scientists estimated a sustainable yield of over 50 times greater than the DoFWA estimate.
- The average catch per trap pull was also almost 50 times greater than the average biomass density implied by the DoFWA estimates.
- To explain the catch rate, the Department claimed the fishermen were targeting limited concentrations, yet fishing was widespread over thousands of different locations. Even when fishing nine widely spaced locations along a line near the middle of the fishing grounds selected by the Department for sampling purposes, the catch had been above average.
- Video camera observations revealed that only a small portion of fish seen immediately around a trap were actually being caught.
- Management was effected by remote control from air conditioned offices a thousand miles away in Perth relying on projections from a computer model.
- None of the DoFWA managers had ever been out on one of the boats in the two decades they had managed the fishery.

After my report drew attention to these and other disparities, an independent review was agreed upon. Jim Prescott, a senior field manager from the Australian Fisheries Management Authority, was chosen to conduct the review. Jim has a wealth of experience but is not a computer modeller and the high level of certainty claimed for the Department's stock modelling was the central issue. However, if he was expected to skim over the modelling and approve it without really being able to critically examine it, a bad judgement was made.

When Prescott realised the modelling was the key issue, he sought the assistance of an expert modeller from New Zealand, Dr. Nokome Bentley. Before permitting examination of their model by Prescott and his expert, DoFWA then required signing of a confidentiality agreement which:

*“e) ensures that draft versions of final reports will be made available to DoFWA for review through the Chair of the review panel, allowing DoFWA to ensure that conclusions and analyses are consistent with other analyses so that issues pertaining to limitations of the data are consistently dealt with.’*

and

*“f) ensures that all copies and versions of DoFWA's data, models and model-derived outputs are destroyed at the completion of the review to ensure confidentiality of data and intellectual property of the model”*

Science employing what amounts to censorship, secret methods and results which cannot be disclosed is a travesty of the fundamental principles of science. Worse yet, there is no extenuating circumstance for such secrecy. These are public servants using public funds to manage a public resource. The public, and especially those whose livelihoods are at stake, have a clear right to know what is going on. The intellectual property claim is patent nonsense. The basic model used was developed elsewhere and is openly available. DoFWA can only lay claim to their own implementation of it, the most important value of which would seem to be as a cautionary example of mistakes to avoid.

The Prescott review found that, *“In our view, the assessments presented in the September 2008 DoFWA report were not a sound basis on which to base management decisions.”*

In particular it was found that DoFWA modelling was deficient in several important respects and involved much greater uncertainty than had been claimed. The use of a fixed value for the rate of natural mortality and a deterministic recruitment directly proportional to the size of spawning stock were especially singled out as unlikely and poorly based assumptions used in the modelling. In the real world mortality and recruitment vary considerably with time and place. Some of such variation is influenced by various oceanic cycles but much is chaotic. At best, It can only be estimated by measurement after the fact. It cannot be predicted in advance with any useful degree of certainty.

In addition, the modelling was found to employ a value for increasing efficiency of the fishery and the value used had no defined basis for estimation. It was simply a seat of the pants guess by the modellers, whom it should be noted had never even been out on one of the fishing boats. The review also found that the model had been provided freedom to estimate a “catchability” parameter which served to adjust modelled outcomes to closely match the actual catch. This then resulted in an appearance of much greater certainty in prediction from the model than actually exists.

The modelling deficiencies as well as performance indicator shortcomings identified by the review resulted in any increase in catch from a good recruitment year being attributed to increases in efficiency and catchability which was then seen as a concern of overfishing . This would be further confirmed by a increase in younger fish and decrease in the proportion of older fish in the catch being attributed to increased fishing mortality in older fish rather than an increase in new recruitment. Conversely, the inevitable decline in catch after a peak year would also be seen as additional evidence of overfishing. Either way, regardless of whether catches went up or down, it's always viewed as overfishing and every change in catch ratchets restrictions up another notch.

The review strongly recommended adoption of an Adaptive Management Experiment as a means to obtain better understanding of the resource and hopefully reduce the existing high level of uncertainty regarding the condition of the stocks. The review also specifically endorsed my own recommendation of a need for a more empirical approach to gain better understanding of the fishery. In short, more attention should be accorded real world information from the fishery itself instead of relying highly on predictions from a very uncertain theoretical model.

### **Comments from Independent Experts**

To confirm whether the review findings would be seen by other independent experts to be soundly based, I sought the opinion of a number of highly respected senior fisheries scientists elsewhere. All of the four who responded were strongly supportive of the review criticisms. In view of professional courtesy and the stature of the individuals involved, all were also surprisingly strong in their criticism of the modelling and the management of this fishery. It should be noted as well that these criticisms were not simply generic or subjective in nature but involved matters of fact regarding specific issues. Taken as a whole, it would not be an exaggeration to characterise the responses as a devastating critique of DoFWA management.

A claimed decrease in spawning stock of goldband snapper which had so concerned the Department about overfishing was based solely on a decrease in the proportion of fish older than 15 years in a sample taken in 2006 compared to three earlier samples taken in 1997 to 1999. However, the more recent sample also differed in several other important respects from the earlier ones.

The 1997-99 samples were taken from catch shipped to fish dealers in Perth from several different boats fishing a variable mix of unknown locations at differing times. Selection of fish by size for different markets sometimes occurs in Broome before shipping. Whether such bias may have affected any of the catch sampled in Perth is unknown. During 1997-99 there was also a significant line fishing catch component which targeted large goldband in midwater. Whether any of this catch was included in the age sample is also unknown. In contrast, the 2006 sample was taken in 9 consecutive days of fishing from onboard a single vessel at 9 widely spaced predetermined points near the longitudinal mid-line of the main fishing grounds. On this research trip the vessel's captain and crew felt that in the first few days, age sampling was not fully representative for larger fish and this was expressed to the DoFWA technicians taking the samples. In addition, the difference in the percentage of older fish in the 2006 sample amounted to only about two dozen fish in a total sample of 441 fish and it is likely that sampling along the seaward side of the zone would result in an increased portion of older fish.

However, even if there really was a decrease in the portion of older fish, the simplest, most likely explanation for this would be an increase in younger fish coming into the fishery from a period of increased recruitment. This too would be a much more likely reason for the improved catches being experienced than some inexplicable increase in "catchability".

### **Implications**

For many years DoFWA Research has effectively controlled critical Department decision making. Using secret models made inaccessible to open scrutiny by claims of intellectual property concerns, they have functioned as virtual oracles whose pronouncements must be accepted on faith alone. Without basis in any criteria or comparison they have proclaimed theirs to be the world's best fisheries management and seem to believe it, even if no one else does.

It is now clear that over reliance on dubious modelling has resulted in costly, uncertain and increasingly restrictive management. Unfortunately, this situation is not limited to the Broome trap fishery. Similar use of fixed natural mortality, deterministic recruitment, arbitrary efficiency creep and a freely adjustable “catchability” parameter appear to have been widely employed in other WA fisheries including that of the very important Western Rock Lobster, Australia’s most valuable fishery. That such is the case is not just apparent. It has also been indicated and defended by DoFWA’s head of research in a lengthy list of objections to the Prescott review findings.

It is further worth noting that the same modellers responsible for the NDSF fiasco have been also been instrumental in the modelling which has resulted in greatly increased restrictions on recreational fishing recently imposed around Perth. Never mind that nowhere in the world has recreational line fishing ever resulted in a collapse of stocks in a marine species. According to DoFWA the relatively light pressure of recreational fishing in WA must be halved. The model has spoken. It must be believed.

### **DoFWA Integrity in Question**

When information regarding the findings of the Prescott Review, comments by the independent experts and a summary of implications for management were forwarded to the Minister for Mines and Petroleum; Fisheries; and Electoral Affairs, Mr. Norman Moore, no response was received. As clear evidence of serious questions in regard to DoFWA research appeared to be of too little concern to merit even the courtesy of an acknowledgment of receipt, I decided to see if a serious question of departmental integrity might also be ignored.

In July last year I received a series of photos by email from a fisherman in Broome. I was informed that they had recently been taken by another fisherman at a local trucking company depot which the fishermen regularly use to ship refrigerated catch to Perth. The fisherman who took the photos had gone to the depot on other business when he noticed a pallet of about 400 Kg of frozen reef fish fillets addressed to a research scientist at DoFWA Research in Perth. He was aware that the department research vessel *Naturaliste* was in port and shipping company personnel confirmed that the shipment was being made by persons from the vessel.

The amount of high quality fillets involved was not trivial. Four hundred Kg represents about \$15,000 to \$20,000 in retail value . The fact that these were fillets, not whole specimens or tissue samples and there appeared to be no labelling or coding such as would be expected with scientific samples, seemed to indicate the shipment was intended for consumption rather than research. It should also be noted that the amount involved was far in excess of personal possession limits in WA.

At a meeting with DoFWA last October I presented the findings of my own review of the Broome trap fishery, the NDSF. My presentation included a slide show in which the last image was a composite of three images of the shipment of fillets. The researchers name on the shipping address was clearly visible and the slide was accompanied by a recorded voice narration which said:

*“I will close with a final matter for consideration. These are three images from a series taken by a fisherman in Broome who happened to come across a pallet of some 400 Kg of fillets being shipped by personnel from the research vessel Naturaliste when it docked there during a recent voyage in the area. It represents about a tonne of whole fish or nearly half the total CSIRO lutjanid catch during their three seasons of work in the area. It might serve as a useful reminder of just how minimal is the data the all important estimate of virgin biomass is based upon. “*

Several senior DoFWA personnel were present at the slideshow. These included the researcher who was said to have made the shipment. No comment or explanation regarding the slide was offered by any DoFWA personnel, either then or later. It thus seems reasonable to conclude that the photos are not a fabrication. In view of the obvious questions presented by the fillet shipment, it would seem incumbent on DoFWA management to have dispelled any possible misperception if some simple innocent explanation were available. As no such explanation has ever been offered, one might reasonably assume that none exists. Copies of the slideshow were left with the Department after the meeting.

Although no comment on the fillets shipment was made there was a short but noticeable period of somewhat awkward silence immediately afterward. The meeting chairman then suggested that a management review take place and further proposed restrictions be deferred until after the review. The result was the Prescott Review.

DoFWA has been instrumental in imposing strict regulations and restrictions on the taking and possession of fishes and other marine life. The trap fishermen are prohibited from even having a handline on their boat. Cray fishermen are not allowed to keep the occasional fin fish that comes up in their pots. Recreational anglers are subject to numerous restrictions including bag and possession limits as well as labelling requirements. All of these regulations are vigorously enforced by DoFWA. Presumably DoFWA personnel acting outside their departmental duties are subject to the same laws as everyone else.

When 5 days passed after raising the fillets issue with the Minister and no reply had been received, I contacted the media in and the story appeared the next day in *The West Australian* newspaper. The Minister then immediately posted a news release on his web page saying he had ordered the matter investigated and that I had not given him time to respond. One wonders how long may be needed to acknowledge receipt of an email presenting information of such importance.

The Minister also questioned why I waited so long to bring the fillets matter to his attention. That question would seem better to be asked of his department as they had been presented the evidence and had copies of it for almost a year. Although I had raised no questions of impropriety, the appearance was obvious and I wished to afford opportunity for an innocent explanation if such should be the case. None was ever offered and I had been preoccupied with more critical concerns of the fishermen. When the Minister chose to ignore my well founded concerns over important scientific matters, only then did I decide to see if an undeniable appearance of malfeasance in his department would also be ignored.

After the "Filletgate" affair attracted media attention, additional witnesses came forth with allegations of other such shipments and a long standing practice of similar malfeasance in the Department. These included allegation of use of very expensive research vessel time for what was perceived to be holidays where little or no actual research was conducted.

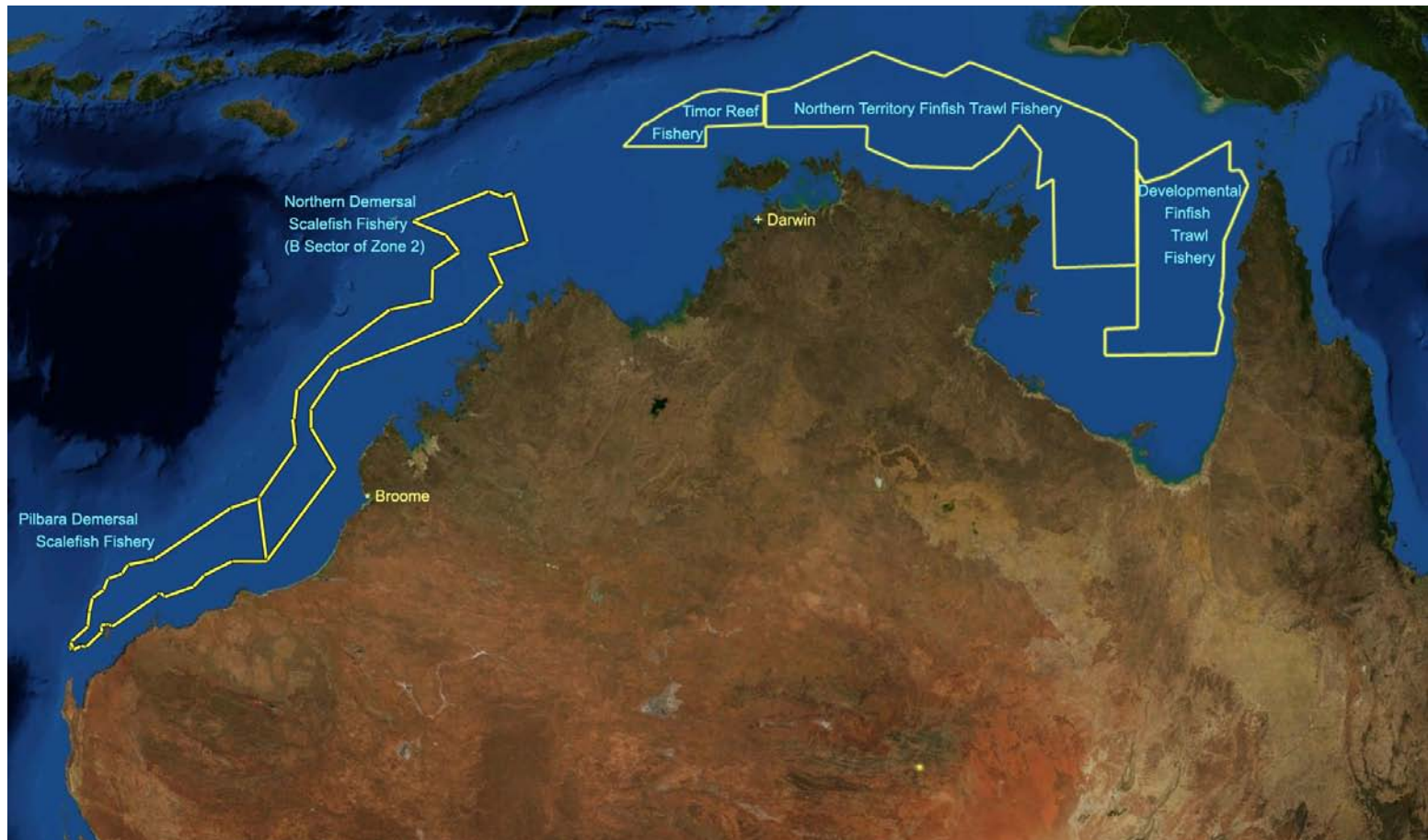
A major criminal investigation is now in progress.

### **Ecologically Sustainable Development**

On top of all this, federal government ESD certification of the Broome trap fishery (officially the Northern Demersal Scalefish Fishery or NDSF) as an ecologically sustainable fishery is now due for renewal of its five year duration and fishermen have challenged the validity of a number of claims made by DoFWA in their renewal application. It is not that the fishermen think their fishery is

unsustainable; but rather, that it is actually a much larger resource than is being claimed. Most importantly, the picture of a well managed fishery being presented to the Federal Minister is inconsistent with the findings of the Prescott Review and is in conflict with the ongoing claims by DcFWA of overfishing with a need for further reductions in effort which are still being made to the fishermen.

In reviewing the Broome fishery ESD renewal it came to my attention that right next door to the NDSF, off the Northern Territory coast, there was another ESD certified trap fishery, the Timor Reef Fishery or TRF. Both fisheries are similarly situated on the outer continental shelf in similar depths and comprised of the same species. They are separated by a gap of only about 300 Km (see map and Table below).



## Timor Reef Fishery vs. NDSF Zone B (2007 figures)

Feature	Timor Reef	NDSF B Zone only
Area in Km <sup>2</sup>	26,000 Km <sup>2</sup>	92,000 Km <sup>2</sup>
Area in %	28%	100%
MSY (all species)	2200 t+	800 t
Goldband estimated biomass	9,000 t	1511 t (2007)
GB average biomass/Ha	3.5 Kg	0.16 Kg
GB catch (2007)	403 t	393 t
Goldband trigger point	900 t	323 t
GB catch/boat/day	.29 t	.58 t
GB catch/trap pull	3.2 Kg	9.2 Kg
GB catch area at average biomass	0.9 Ha	58 Ha
Licenses	12 total, 11 active boats	11 total, 7 active boats
Traps per license SFD	45	20
Days fished	1340 @ 45 traps/day	1077 @ 20 traps/day
Trap days fished	60,300	21,540
Fishing days access/year	365	104
Average days fished per license	122	98

The contrast between the two fisheries is remarkable:

- The estimated and approved maximum Sustainable Yield of all species for TRF is 2.75 times greater than for NDSF.
- NDSF B ZONE fishing grounds are 3.5 times larger than TRF; yet, the estimated Goldband Snapper biomass of the TRF is 6 times larger (9000t) than the NDSF Zone B (1511t). (Goldbands are the most important species in both fisheries and comprise over half the total catch.)
- With 6 times the amount of fish in 3.5 times less area this would mean 21 times greater density of fish in the TRF. However, the TRF catch per trap per day is somehow less than half that of the NDSF. In terms of the Fisheries WA modelling, this would seem to indicate that the TRF fish must be over 42 times less “catchable”.
- At the average density implied by the biomass estimates, each TRF trap set would have to catch every Goldband in about a hectare. In the NDSF, each trap on each pull would have to catch every Goldband in almost 60 hectares.
- NDSF fishermen are restricted to 28% of the days and 44% of the traps permitted the TRF fishermen. This amounts to NDSF fishermen only having 12% of the trap/days of effort per license permitted in the TRF.
- Both fisheries have ESD accreditation and neither shows any indication of collapse.

Obviously there is a grossly impossible disparity between catch rates and biomass estimates in the two fisheries. General experience of trap fisheries and direct video observations in the NDSF indicate that the effective fishing area of a trap is well below a hectare and that a trap only catches a small portion of fishes which approach it. In addition, it appears that about four-fifths of the GB catch is restricted to around 20% of the TRF area while much higher NDSF rates appear to be widely distributed across the NDSF B Zone.

Although the real biomass of the TRF is likely to be higher than is estimated, it seems a reasonable and prudently conservative one in view of the uncertainties involved. On the other hand, the NDSF biomass estimate is ridiculously low in comparison to the widespread catch rate in the fishery. If a

9000 t Goldband biomass estimate is to be accepted for the TRF, then the 2.8x greater catch per trap pull and 3.5x greater area of the NDSF would indicate a 10x greater biomass. To accept the current level of restrictions on fishermen in the NDSF with no evaluation at all of socio-economic impacts of the management regime would be a serious violation of ESD guidelines.

There is overwhelming evidence to indicate that the NDSF is a much larger resource with almost triple the density of Goldband population than is found in the TRF. There is no evidence that the TRF is being overfished and sound reason to believe the NDSF is being grossly and unfairly over restricted. To maintain that both are well managed fisheries would present the appearance of ESD certification being only an elaborate bureaucratic charade which rubber stamps approval of whatever is put before it. It is essential to the integrity of the ESD process that this obvious disparity be resolved.

### **Where We Are and Where We Are Headed**

It seems that environmental claims have become so divorced from reality that even patently absurd, quantitatively impossible and self-contradictory claims can be seriously proposed and accepted as sound science. Poor management decisions stemming from unquestioning acceptance of faulty research by a department wherein fundamental integrity is even in question, threatens the economic viability of not just the Broome trap fishery but of the entire fishing industry. There is now firm reason to question the validity of any claims by DoFWA Research. They must be required to make their materials and methods open to independent examination in accord with fundamental principles of good scientific practice. They must also be required to address reasonable criticism, not just belittle and dismiss it.

Still, with no demonstrated problem of overfishing, but simply as “*precautionary measures*” to address hypothetical projections from computer models, office bound bureaucrats continue to restrict the fishing industry all around Australia. This is unneeded, unethical and unaffordable. These resources could easily sustain a fishery harvest several times larger than the present one, eliminate the need for imports amounting to two-thirds of domestic consumption and still maintain the most lightly harvested and pristine marine environment in the world. This potential is virtually unrecognised and won't improve unless an aroused public begins to demand it. Appeals to unverified computer models, claims of scientific authority by office based experts and wafflings of eco-gibberish aren't good enough. Show us the evidence.

So how did all this happen, where is it going and what can be done about it? Unfortunately the problem of a growing morass of environmental bureaucracy, red tape and restrictions is not limited to fisheries but is widespread across all productive activity involving use of natural resources. The only difference in fisheries is that they are out there, underwater and underdeveloped so even utterly unreal claims can be granted credence if they come from some supposed authority.

There are three key elements which interact synergistically to create and amplify this situation.

One is the propensity of government for an ongoing proliferation of regulation and bureaucracy constrained only by the limits of available revenue.

Another is the shrinking portion of the population engaged in production which has been made possible by technological advance and the increasing portion of predominantly urban non-producers that has resulted. Although they choose to live in the tiny fraction of the land where nature has been virtually annihilated, many subscribe to a romanticised quasi-religious notion of a pure, perfect,



delicately balanced natural world. They express strong opinions and great concern over remote things they have never seen and know nothing about. They view nature as a sacred trust which is being defiled by greedy rapacious humans who must be stopped. Their understanding of the system of production which supports them begins at the shop and ends at the rubbish bin. Although totally surrounded by technology and utterly dependant on it, their technical capability is challenged by a dull knife or leaking tap. Nevertheless, their vote can determine government and politicians pander for it.

The third element is an academic/research system which produces volumes of certified experts in things about which little is actually known and most of what we think we know is probably wrong. Along with a fictitious expertise, the products of the degree mills are indoctrinated with a politically correct eco-salvationist ethos. However, there is rarely any formal training at all in the philosophy and ethics of science. Although their degree indicates they are Doctors of Philosophy, their training is that of a technician, not a philosopher.

In addition, the climate of academic research in the life sciences has come to be dominated by competitive bidding for government funding wherein the currency of the bids is the degree of purported threat. The more serious and urgent a threat, the more likely is funding approval. Research funded to investigate a problem never finds there really isn't one or that it's only trivial or temporary. Good news about the environment is unwelcome and suspect. If it can't be explained away, good news is simply shelved. Publication of such would be unlikely to get past peer review anyway and, if somehow it did, it would only subject the author to denigration. Too many right thinking colleagues would be sure from everything they understand about the world that it just couldn't be true.

### **What to Do**

Established cultural practices are remarkably persistent. Short of war, revolution or economic collapse they only evolve rather than dissolve, even when obviously dysfunctional. However, evolution is often characterised by punctuated equilibrium when some new development opens the way to a period of relatively rapid change. In environmental and resource management issues three modest, politically practical reforms could open the way to important change.

One would be to index budgets and remuneration of environmental bureaucracies to the outcomes of their management including the productivity and profits of the economic sector involved. Just purporting to save things from hypothetical threats is not enough, costs and benefits must be considered. This would effect a huge change for the better in the management mindset.

Another simple effective reform would be a requirement for openness and transparency involving all scientific evidence on which regulations are based. This need only entail posting the information on a web site where it would be open to review and critical comment. Use of unsupported claims, inaccessible data and undisclosed methods in management of public resources is a travesty of democracy.

The third reform is for industry to take responsibility for the research necessary for effective management. They are far better positioned to provide effective logistic support, practical assistance and management supervision than is a government department. In coordination with their own research programme it would also be relatively easy and cost effective to use modified fishing effort to achieve much better sampling and greatly improved knowledge of the resource. In addition to gains in quality, quantity and cost, industry directed research would eliminate the conflict of interest

inherent in having regulators controlling the research which supports their authority and budgets. Then too, industry directed research would greatly improve the transparency problem as such research would have to meet the needs of both industry and regulators as well as answer the criticisms of outside reviewers and the broader community. Such an approach is not just an untried hypothetical. It is a nascent trend already showing positive results in some fisheries. In the Broome trap fishery it is now being considered as a hopeful way out of the current management difficulties.

### **The Bigger Threat**

If all this were only an isolated instance of neglected management in a small remote fishery somewhere at the ends of the Earth, it might be of little concern to any but those directly involved. Unfortunately, this situation is not unique but characteristic across all of Australia's grossly over regulated fisheries. It differs only in the degree of absurdity about overfishing.

At the same time we are obsessing over hypothetical solutions to imaginary problems and closing down whole sectors of our primary production, there is total denial of a very real, obvious and imminent threat of far greater severity. Although it is staring us in the face, there seems a strange reluctance to even consider it.

The imminent reality facing us is not the demise of the Great Barrier Reef, collapse of the most lightly harvested fisheries in the world or catastrophic climate change decades away (maybe). It is simply that of a growing world demand for oil beginning to exceed supply sometime in the next few years, or perhaps even months if economic recovery continues to improve. With any shortage, supply goes to the highest bidder, large users seek to hedge against further increases by buying futures contracts and speculators jump in. The oil price spike in July 2008 precipitated the credit crisis and crashed the global economy within a few weeks. Another spike in oil price will install Global Recession 2.0 when backup and restore capacity is already exhausted from dealing with the current version. The problem will then be how to keep a complex high energy economic engine running with half its cylinders misfiring and the other half not working at all.

Most critical of all will be how to produce enough food at a price people can afford in a depression. To make matters worse, our food producing capacity is increasingly being restricted and burdened by ill-conceived constraints imposed as a sop to the eco-delusions of urban greens. The accumulating morass of often moronic regulations has already driven many primary producers out of business and is a severe constraint on those who remain. In a recession this burden will become unviable for many more. For consumers this will inevitably mean shortages and spiralling prices. A recent survey indicates that food prices over the past few years have increased more in Australia than any other developed nation.

Threats to the environment and the climate change "crisis" are hypothetical arguments presided over by people who have never built, grown, manufactured or produced anything and whose practical ability is challenged by changing a light bulb. They glibly speak of saving things or switching to renewable energy as if doing so is only a matter of installing a few regulatory control switches and flipping the entire world economy over to "sustainable" or "renewable" at little cost or inconvenience to anyone. Never mind the uncertainties, delays, failures, and cost blowouts which plague far less complex and uncertain projects. The faceless "they" who supply all our material needs will just have to make whatever changes are necessary. Where food comes from is not a problem parasites need to think about.

Known reserves of cheap abundant fossil energy are depleting at a growing rate. Discovery of new reserves is increasingly falling behind depletion and new finds are more and more ones which are increasingly costly to produce. Much new development has been cancelled or put on hold as a

result of the recession. With oil in particular, existing production capacity barely meets current demand. Assured shortages are now in the pipeline whenever demand recovers.

Without some unimaginable breakthrough in technology, the era of cheap abundant energy is rapidly drawing to a close. Along with it will go the capacity to pander to the eco-fantasies of a large urban population of non-producers or even to support them. In an energy constrained world, those who can will (eat). Those who can't, won't. Ironically, the eco-fantasists may be granted their desire to enrich the biosphere by themselves fertilising it.

Australia is better situated than any other nation to cope with what is coming but can only do so by a full and rational utilisation of our resources. It cannot do so with a severely restricted productive sector having to support a parasitic majority of bureaucrats and drones whose main purpose in life is to interfere with those who support them. All this is not someday, maybe, if. It is staring us in the face. When are we going to wake up?