AUSTRALIAN SEAFOOD INDUSTRY COUNCIL

THE SEAFOOD INDUSTRY AND THE ENVIRONMENT

INTERFERENCE OR LEGITIMATE PUBLIC CONCERN?

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THE SEAFOOD INDUSTRY AND THE ENVIRONMENT

INTERFERENCE OR LEGITIMATE PUBLIC CONCERN?

JANUARY 1996

A TWO DAY WORKSHOP ON THE PROBLEMS FACING THE AUSTRALIAN SEAFOOD INDUSTRY IN ENVIRONMENTAL MATTERS

Held at National Surveyors' House, Deakin ACT

Monday 29th and Tuesday 30th January 1996

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What Future Does the Australian Seafood Industry Want?

Duncan Leadbitter

Personal goals can be extremely powerful, especially if they are shared by many others. The commercial seafood industry has many of the characteristics of individuals within the industry, namely a desire to be free of bothersome rules and regulations, to fish forever and to ensure that others, especially family, have the opportunity to continue fishing traditions.

Interestingly, as the industry attempts to come to grips with (supposedly) new environmental concepts and jargon, many individuals have already accepted many of these as a result of either commonsense or personal desires. To fish forever implies in a direct sense ecological sustainability - same concept but different words. In the same manner the desire to hand on a fishing business to children is a direct application of the concept of intergenerational equity. Who would want to give their children a business that was doomed?

Thus there are few fundamental differences between the concerns of environmentalists (as distinct from animal liberationists) and individuals within the seafood industry. Fish for the future and healthy aquatic ecosystems are the mutual touchstones of both groups.

In contrast, the question of access to aquatic resources is more of a social and political one where competition and economics replace ecological absolutes (if these exist). This competition is commonly given an environmental spin but should always be recognised as nothing more than the race for fish, whether it operates within the commercial sector or between fishing sectors.

Given the basis for agreement on environmental management issues, why is there fear in the industry about environmental management?

It seems that the desire to be free from bothersome rules and regulations is a major force that shapes the industry's response to environmental management questions. A yearning for the certainties of the past, when rules were few, access to resources cheap (or free) and public support came as a consequence of supplying a healthy, great tasting product is reinforced by a fear of the uncertainties of the future and the complexities it may hold.

This uncertainty is also generated by the fact that environmental management issues challenge more than just the industry's ability to respond with new technology or put up with new rules and regulations. More seriously, it is a direct challenge to the industry to regain the support of a sceptical public which is happy to eat seafood but squeamish and confused about the methods of supply.

The industry's current struggle to find a new relationship with the community over environmental management is a reflection of the same struggle that is occurring within the industry. Whilst there are some individuals in industry who would rather look at the past through rose coloured glasses than look at the future though green ones the ability of the industry to address community concerns, design solutions and control its own destiny, will be compromised.

Fortunately the people who attended and addressed this workshop have tackled it in a far more practical and less esoteric manner than I have in this editorial. Happy reading!

How did Florida's Net Fishermen Lose and to Whom?

Jerry Sansom, Executive Director
Organised Fishermen of Florida, USA

Jerry Sansom has been the Executive Director of Organised Fishermen of Florida for the past 17 years. Before joining OFF he was involved in governmental affairs/activities with Florida's marine industries associations, as well as managing a boat repair business. Jerry has an undergraduate degree in biology, a master's degree in marine science education and a lifelong interest in commercial fisheries.

During the time Jerry has been Executive Director of OFF, he has been appointed to two terms on the South Atlantic Fishery Management Council (which develops and implements fishery management plans for the federal government in the South-eastern United States of America) and helped develop most of the original management plans now in place in the federal waters adjoining Florida. He also drafted, or was involved in the implementation of, every single piece of Florida state fisheries legislation or agency rule since 1978.

Since 1978, the population growth of almost 50% in the state of Florida has resulted in an unprecedented degradation of the coastal resources and an exponential increase in conflicts with the recreational fishing sector. Jerry's major task as Executive Director has been to resolve, minimise or delay any head-on contests of political strength with the growing recreational fishing sector, as well as work within the commercial fishing industry to resolve those real industry conflicts and problems that also threaten our existence.

You can read excerpts from Florida newspaper articles in the late 1800s where they predicted that when the icehouses came in that there weren't going to be any fish left. It was claimed that all it would take was the development of mechanical ice and that was going to be the downfall of fishery resources and they would all be gone soon after.

There has been a long series of regulations outlawing certain kinds of gear over the years. In the 20s and 30s we used to have a long haul seine fishery or a type of beach seine that was thousands of yards long, and they used to haul it mechanically with engines, donkey winches and things like that to circle large schools of fish and pull them up on the beaches. In most populated places in Florida those nets were outlawed in the early 20s and 30s. In some outlying places though they continued up until the 80s.

There has always been a perception, wherever you have a centre of population, that any mechanism or means that harvests large volumes of fish was somehow detrimental - that just taking fish in large volumes was bad, that one small group of people individually taking large volumes of fish was somehow detrimental to the resource and that large numbers of people taking small volumes of fish, well, that was just no big deal. The holders of such perceptions just didn't put that connection together.

Up until the middle 80s there wasn't that critical mass of recreational interest and fishing pressure that was necessary to cause significant biological and political problems. In the late 1970s there were about 18,000 registered commercial vessels and about 350,000 registered recreational vessels in Florida. Today there's about 12,000 registered commercial vessels and about 850,000 registered recreational vessels. All of these people want to fish and they all have rods and reels. An awful lot of them also live on the waterfront on dredged and filled wetlands, where they stand on the seawalls looking out across the water wondering where did the fish go? We kind of cynically devised a new definition of "environmentalist" in Florida as anyone who owns waterfront property. It gets a little sickening.

As these pressures developed so did pressures within our own industry. While there was not an increase in the numbers of commercial fisherman, our guys were getting better at what they did - there's no denying that. Now we weren't necessarily employing more gear and bigger gear; because clearly those seines that we used to haul the hundreds and thousands of fish in a single catch in the 20s and 30s were much more efficient pieces of gear than a single piece of modern gillnet gear to harvest fish. But, by using smaller boats, moving the motors up into an enclosed well up forward, and being much more creative in our use of mono-filament gillnets, we're able to pursue the fish further and further giving them fewer and fewer opportunities to escape us.

I've got to tell you I think the catching ability of Florida's Coastal commercial fishers will rival or exceed anybody's in the world, and I say that because every time a group of my fishermen tends to go somewhere else they tend to get run off. According to the local guys, they tend to make them to look bad, so pretty soon there's new laws enacted that send them back home. Clearly they must have been catching some fish.

Our fishermen were able to pursue fish very diligently, but because they were so good, in their minds they didn't see any problems with the fish because they were always able to find fish when they needed to go find them and catch them. So they didn't feel that the problems with the overall fish population were as significant as they were.

Now that's not to say that the commercial industry was the major impactor of most of our fisheries in Florida, it was not. There were however certain species like Spanish mackerel, mullet, some of the bait fishes, where we were the primary harvester and impactor, and nets were the primary means of harvest. But through adequate mesh size regulations, adequate minimum size regulations, or quotas, we had already brought back several over-fished fisheries like the Spanish mackerel. We were working on blue fish and some others. In the case of the mullet fishery, which at 25 million pounds per year is our major finfish fishery (one half of the total 50 million pound impact of the net ban) that resource was already in the process of recovery because we had implemented the last stages of the regulations that were to bring that resource back to what all the researchers and scientists felt was the appropriate safe level.

However, in the late 70s a group of recreational fishing interests based in Texas got together and decided that because of a variety of impacts; the growth of the recreational fishers, the recreational financial interest and the continued success of the commercial interest in pursuing the fish that the 'sporties' wanted to catch, that there simply was not going to be enough fish around to satisfy the recreational fishermen's desire to catch fish and that they were going to do something about it. That was when they decided to reallocate all of the finfish in the Gulf of Mexico and South Atlantic Region to recreational fishing interests, with the exception of

menhaden. As a matter of fact we have 2 newspaper articles where they are quoted as saying the only thing that they wished nets were going to be used for was for shrimp (prawns) and menhaden and that everything else was going to be reallocated to the recreational fishing interest in the Gulf of Mexico and South Atlantic. They then proceeded to work on that agenda.

In 1982 they eliminated the commercial harvest of the 2 prime species of finfish in Texas, the spotted sea trout and the red drum. In 1988 they eliminated the use of all nets for any other kinds of finfish. They came to Florida in 1985 and set up a chapter of their organisation, called the Florida Conservation Association with this same goal. When we would ask them, "What about all of these environmental issues that need to be resolved?", they would say "Well, there are enough environmental organisations out there already, that's not our concern, our concerns are allocation." And they were fairly up front about it when talking to us. But you notice the name of the organisation was the Florida Conservation Association. They worked very hard at trying to maintain the appearance before the public and the press that they were in fact a conservation organisation not an allocation organisation.

And these people were not even the rank and file recreational people. They were the more avid recreational folks, they were the more influential folks, the retired business folks, the active business folks, people that knew how to get things done and knew what they wanted. These were people who were used to setting up business plans. They were used to setting up goals and objectives and figuring out how they're going to get there. So they set themselves up a plan and they proceeded to work on it.

Now, much to their disgust, we were a pretty able group and countered most of their plans over the last ten years. We did this by and large by separating what the real issues were in any given situation that they came up with and what the phoney issues were, and as an industry going in and attacking, addressing; solving and resolving, the real issues involved in any particular brouhaha that would come up at a given time, and taking care of that. So what we would do is deflate the real issue and all they would be left with was the rhetoric on the other phoney stuff that they were trying to use to inflate the situation.

For all of the 1980s we were pretty well able, through fancy footwork, to overcome a much larger and potentially more influential and stronger opponent to the commercial fishing industry. In Florida the commercial fishing industry's heyday was the 60s and 70s, those were our growth years. Frankly that's when we had control of the legislature, that's when we had control over the agencies, that's when most of the fisheries were not fully developed yet and profit was easy to make - go out and catch it, there was any number of people to sell it to and frankly it was difficult not to make money in the fishing industry, particularly in the 1960s and 70s.

But in the 1980s the increase in recreational take and increase in recreational desire, the approaching full utilisation of most of our fisheries resources in Florida, and the growing degradation of our marine environment in the state of Florida, brought a change in the whole political climate. I believe, as a marine scientist, that the first indicator of major environmental problems is when you have the user groups fighting with each other. Even when you don't have the studies and the research to show a problem, that ought to be the first indicator that you've got some serious environmental problems. When the user groups are fighting and saying the other user group is the problem etc, there is usually some underlying thing that is

really causing the difficulty. Usually what they're both going after is a shrinking resource, and each of them thinks the other guy 'stole the turkey leg off of the table' when in fact they were one short to start with.

So that kind of thing really got critical in the early 1980s in Florida, and just kept getting worse and worse and the industry, through aggressively identifying the real problems, and doing what it could to resolve those, well, we held off these big conflicts for a long time. All the time the recreational folks kept getting more and more frustrated. "Why can't we outlaw these nets, why can't we put these commercial fishermen out of business?" they would ask. Frankly it was simply that we were operating smarter than they were. They came in with this early arrogant attitude of "we're wealthy, and there's more of us, we're much better educated than these guys, we dress better and we've got fancier boats, and therefore we ought to be smarter than them." Well they weren't!

But they were going through a learning period and unfortunately we taught them very well. They learned something every time we would beat them through better evidence, through better representation before governmental bodies, the legislature and before regulatory bodies. I will give them credit, they learned. Sometimes it took two lessons for them to learn, but they took notes and eventually they learned. It even got to the point where they would take video tapes of our presentations and go back and study those and see how they could better us the next time. It gets to a point where pretty soon you start running out of new things to do to them, and they know all of your bag of tricks and they've gone through and seen just how you do it.

They also come up with their deeper resources. It's like a well coached neighbourhood soccer team going up against a big state team. Pretty soon the depth of sponsors and resources that they can drag in is going to beat even the best coached local team - and that is sort of what happened to us. Also there has always been a faction in our organisation that felt that the right way to fight all of this was simply to dig their heels in, throw out an anchor and fight. Deny that we're causing any problems; say that it's our God given right to go out and harvest those resources; that we're doing it for food and who the hell are these people to tell us we can't do this; and what right do they have etc. - of course all the time forgetting that we didn't plant a single one of these fish and that these fish are a common property resource.

I know some of us get tired of hearing about "common property resources" but it's a fact, they're out there for everybody and we have to manage them wisely, and utilise them and be good stewards of them, like anybody else. We don't have any more right to leave the dock and go out there and harvest them, than anybody else does. Now the fact is that maybe we've been doing it longer and we may have been taking a larger share, - but all that means is that yes it's true that's what we've been doing, but it means nothing more to the future.

This mindset inhibited progress by fishers on issues where change was obviously needed, both in terms of sustainability and the image of the industry. Even if you may eventually solve the problem, you've lost a lot of opportunities for good public relations out amongst the rest of the people that have watched this fight going on and come up with the idea, "Well, these people aren't terribly responsible or the only time you're going to get them to the table is when they're forced to do it, and left to their own devices they're not going to do anything for the benefit of anybody else.

Now we know that's not true - but sometimes that's the impression that this gives for folks on the outside and these recreational groups can use on their side in the battle against you. So, unfortunately in the middle 1990s it came to a head, and unfortunately, we've always had - just like any other industry - a small handful of people that just don't care about anybody else. They don't try to police their own act, they don't try to use best practices, and when they get a few too many fish in their net they let it go down and let hundreds and thousands of dead fish wash up the beach. They think " Big deal, they're only fish, the seagulls will eat them". The fact that the cities had to get out crews to clean it up, and that the bathers up and down the beach, the Chambers of Commerce and everybody else were upset didn't bother them at all. Their attitude was "Who cares about them. That's not any skin off my nose". Those kinds of things build and it gives the impression that the entire industry doesn't care about the resource, doesn't care about its mistakes.

Now we all know you have to properly tend the net to keep unwanted things from coming into it. Well you get guys that don't care, set out 8 or 10 nets, don't pay attention to them, and when a storm comes up they leave them. There is simply no excuse when 10 or 20 juvenile green turtles get caught in those nets and wash up on the beach. The public thinks that there's only a few hundred of those left in the world, so there's 4% laying right there. All you need to wire up the Turtle Conservation Society for 3 or 4 years is one of those events. And then the fishers come back with the attitude of "What the hell, that's only a small group of them, who cares?" Those kinds of things certainly didn't help.

Now that was not the entire industry by any means. Most of the industry condemn poor behaviour and most of the industry worked very hard to put in place regulations that would prevent those things from happening. But because they happened and they occurred, - and you can believe the other side documented them well - you were going to see them over and over. When in 1991 in Florida we had a major confrontation over the mullet fisheries (our most valuable finfish catch) certain sectors of that industry wanted to keep up the cash flow as high as they could, as long as they could which resulted in the necessary management regulations being delayed for a couple of years. Added to this was a conflict within the industry over this issue.

Certain people recognised things needed to be done, others said "no - the data's faulty, this is faulty, that is faulty". They were looking for any excuse to not recognise that something needed to done. True, the managers may have been looking at the data a little funny, they may have been trying to do funny things with it, but if you stepped back and looked at it, if you were honest with yourself, you still had to say "Yeah those guys may be screwing with the data - but there's still a problem". Even if they are messing with the data, even if they weren't there's still a problem there and we need to do something to address it, we need to get ahead of the public perception on this. Well unfortunately that didn't happen. This also happened to be a critical time in our industry in Florida when a large enough group of people decided that we're not going to do any more giving, we're not going to negotiate any more, we're not going to quote, "...give away any more, we just going to fight them". That was when things broke down.

I believe, particularly within our organisation, the secret to our whole success in the recent past was in knowing that we were a small group of people, we didn't have many resources, we didn't have much time and there were only a few of us involved that would actively take time off the water and go do the work necessary to protect our interests. Our way of winning was

to fight smarter because the other folks always had a greater depth. In football terms their bench was deeper then ours. Sure we could throw up a wall and we could hold them off, - first time. But they'd go back and drag up their depth and the second time they'd overwhelm us. So in the fairly short term you could still loose, and where was the advantage in that.

We worked very hard at this strategy and sometimes, frankly, we even made offers in negotiation that if the other side had taken we'd have been dead. But we knew they couldn't take it because for a long time they took the idea of it's either got to be our way or no way. But then they got smart, because they eventually saw that that attitude was costing them. They were so convinced they were right that even amongst the members of the Florida Legislature and the Marine Fisheries Commission or any other regulatory bodies, they were demanding that this is how it's going to be done and nothing less. You had to be 100% with them. And that caused their downfall for a long time - until they got smarter and they decided well we'll start nibbling away at this a little bit at a time.

And so, as long as we were working at the table with them, as long as we could either force them to come to the table with us or because of the public perception of the issue before the regulatory agency, they were forced to come to the table with us. We could negotiate with them real hard. But in 1991 a major portion of our industry said we're not going to do that any more, we're going to draw a line in the sand, we're going to have a fight, we going to have it out once and for all. Well, there is no once and for all unless one side dies. As long as both sides are still alive the fight is going to continue.

They finally went directly to the people in the state of Florida. They got 350,000 signatures on petitions to put the "Net Ban" on the ballot and actually put in the Florida Constitution, a prohibition on the use of nets in the state of Florida. This is the kind of handouts and pictures that they used to get people to sign their petitions, (displayed examples of handouts). There's not a person around that I know, even in industry, that does want these kinds of things to continue.

Now, the fact of the matter is that at the very time they were getting the petition, all of these things shown were already illegal and all of these specific problems had already been solved. Just the visual images that they were able to put up, combined with the other things that were happening in the world relevant to fisheries was devastating. Those other things do impact on how people respond to you, because the average person out there doesn't know that this doesn't happen in his backyard or in his state or country. He doesn't know that these nets are different or practices are different - a fisherman is a fisherman and a dead fish is a dead fish. He doesn't know that every one of these highlighted problems has already been solved. However, because these incidents had all been fairly public at times, then the public perception was that they were still going on, that things needed to be stopped and that in order to save the environment the net ban had to be pursued.

The commercial industry had unfortunately lost touch with the environmental organisations in our state. We'd worked very closely with them in the 1970s and early 80s, but in the late 1980s and 90s - because some of the same people involved with the recreational organisations were involved in environmental organisations - our industry took the tack "we're not going to deal with any of them". This was a big mistake. And so we kind of pushed the environmental organisations over to the recreational fishing industry's side. We weren't going to have them and they were more than willing to take them.. So in this particular battle it took on the cloak

of an environmental issue when in reality it was simply nothing more than an allocation issue. And all I can say here today is that don't ever ignore the environmental organisations or the environmental issues because they'll come back to haunt you if you do.

We know that nobody is more concerned about the environment and marine environment than the commercial fishing industry. Nobody! Our future is at stake. By contrast everybody else's funds are at stake or their avocation is at stake or their hobby's at stake but it's our livelihood that's at stake. So we're the true environmentalists. Unfortunately a lot of times we spend more time telling ourselves that that's the case than letting the rest of the world know. It's sort of a deal of well, the proof is in the pudding. It's not in what I say, it's in what I do, and you can't let that get away from you.

In Florida it wasn't entirely the commercial industry's problem, the environmental organisations over the years have been co-opted by our developers and by our recreational interest groups because many of the same people serve on both boards. You have to be aware of that and you have to try to work within it and counter it. It is a process that happens because the development community recognises that the environmental community is their biggest stumbling block to getting what they want. So they burrow in, they get involved, they get on the board of directors and they make sure that the recommendations and the actions don't come out adverse to them. We spend too much time catching fish and too much time talking to each other. We have to get more involved in this process.

The bottom line is that we got into this situation in Florida because we stopped negotiating. We went into a much more confrontational mode and to a large degree major segments of our industry denied that there were adverse things going on out there that we could do something about. So even though it wasn't a major resource problem it was a major problem to us continuing our access to the resource. In this business today, reality is not reality, perception is what reality is and you've got to work with the perceptions. Reality is nice to know so that you've got a base line to go from, but it's the perception that you have to work on. If you ever let your industry get in the position of being perceived as being uncaring and environmentally unconscious, unconcerned and greedy, you're in bad shape because it will kill you.

"Save Our Seas" Spreads to Washington State with Potential Effects on the Commercial Fishing Industry

Zeke Grader, Executive Director
Pacific Coast Federation of Fishermen's Associations

For the past 18 years Zeke Grader has served as the Executive Director of the Pacific Coast Federation of Fishermen's Associations (PCFFA), an umbrella organisation representing commercial fishermen - mostly small owner-operator fishing captains and crew - the "family fishermen". Zeke serves on various advisory committees and boards. He is a member of the Environmental Law Section of the California Bar and of the American Fisheries Society. In 1988 he was appointed to the Department of Commerce Marine Fisheries Advisory Committee in recognition of his leadership in fishery conservation and habitat protection.

As PCFFA Executive Director, Zeke worked throughout the 1980s with environmentalists and local governments to halt the expansion of offshore drilling along the California coast and in key fishing grounds off other states. He drafted the successful legislation creating California's salmon stamp program and its limited entry system for salmon and herring. At the federal level, Zeke initiated moves to force regional fishery management councils to address habitat issues affecting fish populations.

In addition to work in the legislative arena, Zeke has spent a great deal of effort building coalitions between commercial and sport fishermen, and between fishermen and environmentalists. Most recently he has worked with family farmers in a program to involve agriculture in fish protection.

I. THE COMMONALITY

Australia, the U.S., Canada and New Zealand share a great deal in common. They are all immigrant nations with a common language. They are also among the world's wealthiest nations and their fisheries are shared among commercial, recreational and traditional native fishers. Australia, the U.S. and Canada have all seen fisheries impacted by either overfishing, fish habitat destruction or a combination of both. All have witnessed a clamour to close many commercial fisheries by either sport fishing groups, environmentalists (greens), or government agencies as a result of fish stock declines.

II. CLOSURES NOTHING NEW

From the California fishery perspective, closures of commercial fisheries due to pressure from sport fishing interests are nothing new. To read the trade press, reporting on closures in Florida, Louisiana, California's Proposition 132 (southern California anti-gillnet initiative), and efforts in Texas, Oregon, Washington (Initiative 640) and Alaska to close commercial fishing would lead one to believe this is a recent phenomena.

In 1934, as a result of new roads (Redwood Highway) making more rural areas more accessible, sport fishers persuaded the California Legislature to close the commercial salmon fishery on the state's north coast rivers -- impacting canning operations as well as native American fisheries. The fish stocks themselves were not in good shape as a result of mining and logging operations, thus making it easier for the sportsfishers to make their case that unless the commercial fishery was stopped the fish would continue to decline.

That same year the Legislature also closed the San Francisco Bay and the Delta to the commercial striped bass, shad and sturgeon fisheries to make them sport only. In the case of striped bass and shad, these were non-native species that had been brought to California (sort of like Lenin in a sealed boxcar) from the east (New Jersey) for the purpose of establishing commercial industries on these two species.

In the 1940's the US Government completed the first two units of the nation's biggest reclamation effort - California's Central Valley Project (CVP) - damming the state's two largest rivers to provide cheap water for growing crops (many of them subsidised) in the Sacramento and San Joaquin Valleys. The Sacramento and San Joaquin Rivers, which converge in a delta and flow to the sea through San Francisco Bay, constituted the second largest salmon producing system in the lower 48 states, surpassed only by the Columbia-Snake system.

The CVP dams and their operations quickly began taking a toll on the fish populations, including the extinction of the once-plentiful San Joaquin spring-run chinook salmon. Within a few short years of beginning operations, the fish were in decline and sportfishers were calling for commercial closures. In 1956, the State legislature closed the San Francisco Bay-Delta salmon gillnet fishery (the state's oldest fishery) that supplied the first canneries on the west coast (which had provided canned salmon to feed the state's gold miners and for export to Australia). This century-old fishery, written about by Jack London (Tales of the Fish Patrol) and others, was destroyed in less than a decade by two dams and the clamour of sportfishers.

Following the closure of the Bay/Delta salmon fishery, there was a clamour much like I am hearing from some here and right now in the U.S. -- the scheduled National Fisheries Forum, for example -- that the industry needs to "circle the wagons", build a warchest and go to war with the sports, the greens or whoever. The fear was that the ocean commercial salmon fishery would be next. California, however, took an interesting turn at that point. Thanks to the political savvy of a least one fish processor and the willingness of some of the fishermen to reach out to some of the more moderate elements of the sport fishery, a strong case was put forward to convince them that if the commercial salmon fishery were eliminated they would be next, and further, it would make more sense to work together to rebuild the resource so there would be more fish for everyone. Out of those discussions a coalition was established of commercial and sportfishers, charter boat operators, fish processors and fishery biologists -- Salmon Unlimited -- that has helped to avert battles between commercial and sport fishers, keeping them focused on the big picture of protecting and rebuilding the fish stock.

In other parts of the U.S. the fishery closures, mostly sought by recreational interests, have commonly been precipitated by stock declines. The loss of habitat to coastal development in Florida has hurt fish stocks -- Jerry will elaborate on that. The massive loss of wetlands in Louisiana and its resulting impact on stocks has led to a ban on the 300 year old gillnet fishery. The pollution of the eastern U.S. and the Chesapeake Bay has had disastrous impacts on striped bass and led to the closure of the 300 year old commercial striped bass fishery of Long Island. (See Peter Matthiessen's Men's Lives).

In Washington State, the Hydro dams of the Columbia River have been killers of king salmon and poor logging practices have devastated coho (silver) salmon runs. The fish declines were blamed on the commercial industry by some of the radical sport groups, in league with the Columbia hydro interests, and nearly led to a ban on the net fishery in Washington State. There, commercial fishermen working with the environmental community, were successful in convincing voters that the sport initiative (I-640) would not save one more fish.

III. WHAT SHOULD INDUSTRY DO?

FISHERFOLK MANIFESTO

The following five principles are proposed for the commercial fishing industry to adopt to assure the future to one of the world's oldest industries.

1. Sustainability. The commercial fishing industry shall endeavour to ensure that all fisheries are managed and/or regulated for sustainable harvest levels. This means ensuring there are adequate research, resource assessment, and enforcement programs, in addition to sound fishing regulations, to ensure long-term sustained yield.

2. Habitat Protection. The commercial fishing industry shall actively and aggressively take all actions necessary, including the promotion of regulations and/or pursuance of litigation to ensure the full protection of habitats, including clean waters, essential to the sustainable production and health of fish and shellfish populations. The loss of fish habitat results in an economic loss to fisherfolk and seafood processors as certain as any theft of catch or governmental denial of fishing activity. Industry shall seek cooperation and alliances with conservation organisations and/or governmental fishery organisations in pursuing the cause of fish habitat protection, but will, if necessary, initiate on its own and lead actions to ensure fish habitat is protected and restored.

3. Selective Fishing. The commercial fishing industry shall identify and initiate actions necessary to avoid wherever possible the bycatch of marine mammals, turtles, seabirds and non-target fish species, regardless of whether such takes are "biologically sustainable". The principle must be: "If you don't use it (or sell it), don't take it". The fishing industry is licensed by the *public* to provide the *public* access to its *public* resources in the market place; it is not a license to take or kill other *public* trust resources for which there is no lawful market. An active program therefore, must be established, for those fisheries where bycatch is a problem, for the modification of existing fishing gear or the adoption of new fishing gear or techniques to avoid bycatch. The program should encourage fisherfolk to identify problems and provide them with the assistance necessary to effectively minimise or totally eliminate bycatch.

4. Maximum Utilisation. The commercial fishing industry shall endeavour to realise the maximum utilisation of all fish taken, eliminate wasteful fisheries, where they exist -- such as the shark fin fishery -- and achieve the greatest economic return to the industry and the public of the harvested resource. The license to fish is not a license to waste.

5. Provide the Best Product Possible. The Commercial fishing industry -- in the harvesting, processing and distribution sectors -- shall endeavour to provide the public a safe, healthful, desirable and, wherever possible, affordable source of protein. The public grant of a license to fish carries with it the responsibility to return to the public the best product possible.

IV. SOME FINAL THOUGHTS

Based on the experience in the U.S., particularly the west coast, I urge the commercial fishing industry to make an effort to reach out to reasonable environmental groups. We have much in common. They bring organisation and public membership, whilst the commercial fishing industry brings the economic reason for protecting fish stocks -- food and jobs. Together it makes for an extremely strong coalition addressing many of the causes of fish stock declines. Additionally efforts should be made to reach out to moderate sportfishing groups -- not all are anti-commercial -- since both sides here have an interest in healthy fish stocks. These types of coalitions make it much more difficult for either radical greens or sporties or government agencies to attempt closing commercial fisheries and it gives the fishing industry a much needed boost in going against some of its real enemies such as polluters and those destroying fish habitat.

The Australian fishing industry, due to its high level of organisation and its good (relatively compared to fishing groups in the U.S. and elsewhere) funding base, is probably in a better position than any other fishing groups in the world to successfully confront both the anti-commercial forces and those who are destroying fish habitat and fish stocks.

Finally, I recommend that this workshop serve as a model for future discussions among the fishing leaders in our nations, perhaps on an annual or bi-annual basis. The representation here from the Australian fishery leadership is great. Additional leaders from the U.S. and New Zealand need to be made participants and, of course, leaders from Canada should be invited. I hope this is not the last I see of any of you and hopefully we'll see one another again, perhaps in Washington, Wellington, Ottawa or even back here in Canberra.

The New Zealand Experience

Vaughan Wilkinson, President
New Zealand Fishing Industry Association

Vaughan Wilkinson is currently the President of the New Zealand Fishing Industry Association which represents about 99% of the New Zealand Industry's players from catchers through to the market place. His role involves about 2 - 4 days per week of largely full-time lobbying activity, etc. for the industry and it is fairly intensive. It is a voluntary, unpaid role and Vaughan is elected (under protest, he says) by the 15 person Council of the Association.

For a living, Vaughan is the Director of Simunovich Fisheries Limited, a medium sized catching, processing and exporting company. Vaughan has worked in the private sector of the industry for 10 years. Previously he was Manager of Fisheries for the Ministry of Agriculture and Fisheries in the northern half of New Zealand. His qualifications are in fisheries management and oceanography and he graduated from the University of Auckland with a Masters degree in Marine Sciences (1st class honours) in 1979.

Initially Vaughan worked as an oceanographer for the New Zealand equivalent of CSIRO, subsequently he was a stock assessment researcher for a range of major commercial fisheries before being recruited to the fisheries management team that introduced the quota management system to New Zealand fisheries. After the QMS was introduced, Vaughan was one of the first government officials head-hunted by the private sector to help them in "balancing the odds" in interfacing with government.

Commercial fishing per se and the nature of interaction of the seafood industry with the environment and other stakeholders in the resources, is more of a passion for me than a livelihood. I grew up on the shores of a fishing community in metropolitan Auckland and from then on I basically pursued a career path of understanding something about the resource and working in that sphere, and becoming dragged into management and dealing with how you set fisheries policies that work for both the fish and communities at large - communities involving both fishermen and other interest groups.

Ultimately I had an interest in commerce and I was poached out into the commercial fishing sector. In a sense of what I do in the commercial fishing sector, there's a personal equity debt of about $NZ 6 million and I've probably got security behind that of about $NZ 1 million, - so I'm somewhat committed to a future in fisheries and if the bank manager calls me up and says "I want it back", an Italian suit and a V8 LTD and a Taikuyo watch isn't going to go a long way. You'd have to say why would, in a sense, the banking community or the financial community, be prepared to back people like that to that extent.

In some ways it's because of the nature of the rights environments in New Zealand. They're relatively secure, and they've evolved into a property character where the financial community can see some longer term potential in the fishery to make a return on investment, and can see that essentially it's something that will persist and endure. I look at your title "The Seafood

Industry and the Environment" and really I say that the issue is an international one. The issue is just trade and the environment and there's nothing particularly unique about fish per se, it's a traded commodity.

When you look at world politics, the nature of trade is not severable from environmental issues as it affects the macro-political arena. The best examples of that are in the U.S. After years of GATT and negotiations, no matter how you try and convince the major capital economies like the U.S. to separate trade from environment and popular vote, it won't do it. And it won't do it because the body politic relies on the popular vote and it links trade and it links environment.

One of the examples Zeke gave which I'm reasonably familiar with is the Yellowfin tuna fishery and porpoise on the Pacific West Coast and the San Diego Tuna Boat Owners Association's response to that. The stopping of that fishery and the banning of canning of any form of tuna that was taken in association with porpoise, wasn't decided by regulators, it was decided one Christmas by the chairman of Star-Kist. He decided he could not afford to can tuna taken in association with porpoise because people were going to avoid buying tuna in those cans and were going to swap over to chicken or red meat which is a competing trade item and food.

If you look at the substantial western economies where we trade our fisheries products, places like New Zealand and Australia, they don't have an historical dependency on seafood in their diet. In the US, when the press push it around with a bit of marketing, there's about from 13 to 16 kgs per head of capita. New Zealand is about 11 to 14 kgs depending on how much promotion they might do domestically, Australia I don't imagine is that different. Western people are not culturally persistent in their reliance on fish as part of their dietary component, - they'll shift. If we make it too expensive to eat the fish, they'll eat chicken or they'll eat something else.

It's only when you start looking at economies and cultural preferences in places like Japan or other countries on the Asiatic side of the Pacific Rim or go to Europe and look at Mediterranean countries such as Spain and Portugal and places like that, you find traditional and long established socio-economic bases where seafood is of preference in the diet. To that extent I've always believed that, in the way in which we relate to fisheries in New Zealand personally, nothing is beyond substantial modification.

That's the nature of the world, everything is changing and you only need to look at your own childhoods relative to now, to see the manner in which life is different. I talked to kids on holidays - asked them if they wanted to go camping. Nobody wanted to go camping like we did in our childhood. These days what does a kid want to go camping for when they can do all sorts of other things with the discretion of his mates - life's a lot different. Moreover we live a pretty soft life in the kind of societies that we have in Australia and New Zealand. You might argue about the economic foibles and the macro management of the politics, but we're all reasonably well off, we're well fed and life's not that difficult.

When you get into those circumstances and people have gravitated towards cities, attained a major urban base for the population, it starts to disassociate itself from the past natures of society where people lived closer to the land and they had an affinity working with food. You had butcher shops where meat was cut in front of you and fish shops where fish were chopped

up, you could see dead animals lying around. People are somewhat divorced from that in cities - they go and buy packaged meat, they go and buy most of their other goods packaged up or ready prepared, it's quick and life moves fast.

From what I've seen based on a number of major metropolitan cities round the world, what happens is you start to develop an internal psyche in the community where they want some affinity back with nature. If they're living in condominium structures and they're living in office towers and surrounded by concrete or they're moving quick in their daily lives, in places like Sydney, it's no different. In places like Sydney or London or Tokyo or Los Angeles or New York or Mexico City or Barcelona or any of those places, people want to feel as though they're not entirely divorced from nature. We see it given expression largely in the way of people make discretionary choices about what they do.

I've given up going supermarket shopping with my partner because she works down the aisle and anything that's got green on it, or is recycled, or comes in a pot or refill, gets picked up without any further discretion as to why you might want to do that but it all relates to that it's essentially good. I know even when I stay in the hotel here, the envelopes are 100% recycled paper and it costs more to produce than ordinary paper, but it is probably no better for the environment to do so. The soap is the Natural Collection, - I used it and it's hard and it's rough and it's probably not as good as the Lux soap with a smooth creamy application, but it's what the community calls out for and it's what is supplied.

In that sense I say that the only way ultimately you'll continue an extractive industry like fishing within an economy, is if the body politic at large (if it's responding) want it. If people don't want it - it's dispensable, it's entirely discretionary. Our success in New Zealand, (we've had some relative success in New Zealand) is based on the fact it's a small population, it's only 3 odd million people , it's no bigger than a major suburb in a large metropolitan city around the world.

It's a small community of interest in the fishing industry. We're $1.2 billion and there's about 8 or 9 companies which control the industry. Two major companies take 700 odd million of that total, my company takes 80 to 100 million depending on how good the year is , a few others take the balance - we're small and we're vulnerable. We're vulnerable to the extent that we're accepted in terms of how reasonable the politic and the community sees the way in which we behave. In New Zealand we're fortunate to the extent that's it's always been a small exporting nation, it's got no other ability to earn its way in the world, it's only ever produced food.

Originally we relied on the UK as a market just for sheep meat and a bit of butter and when it got sacrificed to the foibles of the EU and the meat sector, the politic has always taken a fairly critical look and said that of the 4 or 5 export earners that we've got that can underpin the style of life that New Zealand has you can't afford to sacrifice them and fortunately seafood is one of them. It's the 4th or 5th biggest export earner in New Zealand and therefore no matter how it's managed, it won't be managed to the exclusion of not occurring, and that's a benefit to us. It earns $1.2 billion and for that reason alone it's got a buttress place in the economy.

Now if it was earning $200 million it would be entirely sacrificial to the body politic. It's the relative worth to the well being of the country that establishes its right to continue. That's the only basis on which I can suggest to you that it's not beyond substantial modification in New

Zealand and any other economy. I think that if you're not a significant force in the economic community of the nation as a whole and given the fact that eating food is somewhat of a discretion of choice, and given the fact that ultimately the politicians will protect that and it's worth protecting the sacrifice that can be sacrificed to make the other choices, you're vulnerable.

In New Zealand to the extent that we've developed a system that works, it is because the body politic itself at government level has wanted to see the rights of the seafood industry consolidated against other sectors to the extent that it can economically perform. If you strip everything else away that's the underlying motivation - economic efficiency out of the industry, avoidance of over capitalisation, and it had to do that to the extent that through the 80s we developed a debt economy. We were way in the red, we had no reasonable way to earn our way out, we couldn't produce anything more, nobody was to keen to lend us more money, our credit ratings were plummeting internationally, we're not good at developing alternative manufacturing economies and finally - we're not technical wizards.

New Zealand was entirely focused on the fact that the country as a whole was technically insolvent as you look at it as a private sector business - it had to restructure its cost of government and it had to provide within the private sector the ability to utilise capital more effectively and strip away the cost of business compliance right across government administration. It did that fairly radically and you know the contrasts to the New Zealand versus Australia experience as they might be compared by the political sectors.

The New Zealand Government would argue that it's to the betterment of the populace in the end. The fact is that it wasn't good politics because it caused governments to change, it's probably the cause for the existing government to change this year, but it was unavoidable for either of the parties to preserve the quality of life. In that sense the quota management system as it was introduced into New Zealand in 1986, was just another sector of reform. It had all of the virtues that are necessary for conservation of fish stocks and sustainable yield and you can look at those in all of their academic detail but the time was right to be reforming the sector.

In a property rights sense, removing the government more so from the administration arena and trying to empower co-management amongst the stake holders, the industry and the other sectors included reduced the need for the wider community to expend any money on fisheries management. That's taken 10 years and we are now to the point in New Zealand where the industry pays for the complete administration, research and enforcement of fisheries - it's $50 million a year out of $1.2 billion and it's affordable, we argue about it but it's affordable.

What the rationalisation of government process did was focus the industry on working together because they were empowered in a property rights sense and to organise collectively. That's the reason you strip all of the other foibles away and that's the reason why when you have voluntary association and the like everybody belongs. It's also the reason why if we decide something amongst ourselves we can ensure it happens because we're committed to the protection of rights that we have.

Beyond that, you start looking at the issues associated with the subject of this workshop. In a sense of the interference or legitimate public concern debate as we've focused on here, there's really only 2 or 3 facets and characteristics to that when you boil it down. If you have an interaction with recreationalists its inevitably about allocation and it occurs principally in the

shared fisheries and the major metropolitan areas. You can do as much as you can in terms of reasonable negotiation but when the pie is finite it ultimately comes down to a political decision as to what constitutes a reasonable share. Commercial rights aren't beyond substantial modification and nor are the recreational rights, so its a tussle.

To the extent again that the political environment ultimately decides upon what's a reasonable share, it almost inevitably will be conditioned by how valuable you are economically, especially in terms of receipts to the country as opposed to how much the politicians think that they can condition the recreationalists to undertake some other discretionary behaviour, like go and play golf or take up knitting or whatever. Recreationalists are entirely a cost in many respects to the economy in New Zealand to the extent everything's imported for them. They have a tourist component and that's the argument that they mount - positive contribution to the economy from tourism.

Industry mounts the argument of export receipts, employment and related benefits and somewhere in the middle you try and reach a happy accommodation. I don't think there's any quick fix solutions to that but they are political. I don't think they have any underlying rational philosophies that can say how far you want to determine the allocation balance one way or another. They're driven by the foibles of the time. In the environmental context we avoid the major thrust of the environmental claim of overfishing that occurs internationally because we've got a reasonably well constructed management system and most of our fisheries are not overfished. We have the odd argument about MSY and whether Orange Roughy can sustain the current level of activity but we work towards negotiated solutions with our Minister.

Environmentalists may go off to court because it's good publicity internationally if they could win in New Zealand (especially if it's good for raising funds, e.g. Greenpeace). They took the Minister to court and said "You can't manage the Orange Roughy fishery to the framework that you have under MSY", but the Minister won and the industry joined on his side. It was principally because we had been modifying our rights to downsize the level of the fishery and we were able within our commercial community to allow that downsizing to clear in a way that allowed the capital to move out of the fishery and to move somewhere else in a rational fashion.

To the extent that New Zealand is capable of doing that it is because we never really got to the point where our fisheries were overcapitalised. Our revenues were fluctuating around $12 million during the 1980s. At the same time the yields of our stock went up to MSY much the same way. It was a pretty harmonious development. There was the odd mismatch but we haven't had to pull very large amounts of capital out of the fishery and we haven't had to deal with the dislocation issues and to that extent we've been fortunate. To my mind that doesn't really make us that good of an experience to tell other people how to look at over-capitalisation or conflict based issues.

By contrast, we have some substantial off shore fisheries where fishing activity results in incidental catches of marine mammals, principally fur seals. Again its something that the environmentalists are able to sensitise the wider community about. The fur seal population is not threatened but the fishery would be threatened if we didn't reduce the take of fur seals simply because its something the community at large doesn't see as tolerable, so that forces us

then within the commercial sector to find ways to make our members modify their behaviour and activities to avoid taking seals, and you can do that.

There's all sorts of ways - the animals themselves aren't stupid so you modify your shooting practices on trawlers, you modify the way in which you discard headed and gut waste and essentially separate the shooting and retrieval of the gear from the seals. There's some cost in doing that but we've done it relatively successfully. There are some other fisheries where we have a sealion that's one of the rarest in the world in the southern squid fishery, where if you take a few sealions the politic can have the whole fishery shut down. It's an $85 million fishery to New Zealand and its income has come back in recent years because of the poor performance of the South Atlantic squid fisheries. Again we basically work very hard within the small community of interest that fishes it to make sure we don't catch them. The best way to do it is to solve the problem.

I think we're well past in our industry trying to start from the point of view that there isn't a problem. If we're confronted with the problems and they're real then we try and find solutions to them that are practical from the operation of the fishery perspective, not without cost sometimes. When you put it in context there's ultimately a point in some fisheries where it simply may not be worthwhile trying to solve all of the problems. The tuna longline fishery and seabirds is one that we're currently grappling with. However within our industry we still have a view that we think that we can get the baits down without taking a lot of birds and we can convince the body politic that that's acceptable.

There's certain methods that we're trialing not all of which are very successful. Just prior to Christmas in New Zealand we used lead weights on the leaders to sink the baits quickly. There was a fisherman killed because in retrieval of the line a shark took the branch line horizontally away from the main line at the hauler and made it like a boomerang. Then it snapped the leader and the leader came straight back over the boat and rebounded about thirty feet, went straight through the guy's neck and came straight out his throat. He was killed instantly and that modification to the gear was solely for the purpose of trying to get baits to sink to avoid the taking of birds. You say at what cost sometimes, but we persevere in those circumstances to try and find some accommodation.

That aside, in most instances the other area of politics - the so called environmentalists - are a little bit more obscure. It's the ones that aren't really environmentalists - they're socialists who hide under the environmental banner. They're more interested in the wealth redistribution arguments. They largely argue that the private sector and commerce shouldn't be garnering all the wealth from fisheries, and that the State should be taking it back and redistributing it for other goods - health and social welfare issues and education and that sort of thing. That particular sort of redistributive argument they always run under an environmental banner and our approach to dealing with that is largely one of exposure.

That is, for the industry to say that those philosophies aren't related to an environmental issue per se - they're related to redistributive economics and taxation and social goods and so forth. The nature of their core political philosophy doesn't have a lot to do with how you might deal with an environmental issue and we're happy to have a political debate. But let's have it within a political context and I'll compare my capitalistic virtues and goodness to society with your Rousseau-esque type socialism and somebody can make some determinations - but don't mix it up with fisheries issues.

That's by and large how we behave but you have to remember it's a relatively small community. I'm a firm believer that it's not that easy to transfer lessons from one place to another place, because environments tend to be relatively unique. With all of the mixes of societies and how the people interact, and all of the structures and the politic is a little different. It's not really in my experience overly beneficial to be going telling people how to suck eggs. You can share your experiences but the solutions are generally ones that communities bring about that are successful within their own arena.

I am of the view thought that internationally the commercial fishing industries need to be collectively organising themselves against the international movements. They need to be out there selling the message to the Government administrators and officials and elected politicians that there's a need to keep using seafoods for food and that it's detrimental to the interests of food security in the longer term for most nations to stop producing at an optimal level because there isn't a lot that can be substituted for it. The equivalent thing is that you need to produce more from land management practices and there are no lesser problems in doing that.

There is an important place for seafood production just in protein food security around the world and in trade. It's a renewable resource and it's something that can be managed in a relative sense without a great deal of difficulty or all of the hyperbole and emotionalism that surrounds it. That should be stripped away in the context of what are acceptable impacts should be looked at in a sensible light. We need to be selling that message more often than we do.

To do that you need to be collectively organised - the industries have to speak with a unified voice, they have to be able to fund themselves, they have to know that that money they collect from their members is the equivalent of the R&D investment for the industry. They have to know that nothing is beyond substantial modification. I've seen places where fishing industries have just been shut down - it's not what the politic wants as happens in the U.S.

The more discretionary the economies become the more vulnerable you are. I am always of the view that we earn our right in the economy by responsible behaviour. If we can keep behaving rationally and set aside the 'redneck' and emotive character within our own industry, as there is in the other stakeholders groups, then the middle ground will always win through in a common-sense argument. We'll just keep pursuing quietly the middle ground - keep advocating our rights to well-being in terms of how we relate as an industry to the rest of society.

An Historical Perspective on the Forest Industry, Environmentalists and the Public

Dr Robert Bain
National Association of Forest Industries

Dr Robert Bain is the Executive Director of the National Association of Forest Industries. Prior to his appointment to this position he was Director of the Australian Bureau of Resource Economics, and also spent some years as Director of the Australian Fisheries Service. Dr Bain has spent most of his working life in economic research, policy analysis and as a government adviser on issues affecting Australia's primary industries.

In his current position Dr Bain represents Australia's second largest manufacturing industry which employs some 80,000 people. He is responsible for the development of industry policies, negotiations with State and Federal Governments and a public relations program designed to portray accurately all aspects of forest industry to the Australian people.

In a relevantly affluent, high income, very urbanized society where you can be done over so very, very easily in the media and you have no recourse what so ever - any basic resource industry, if it wants to keep going, has to make a major investment in public awareness, public relations and lobbying, and even then you've got no guarantee of success. Forestry really started to get into strife in the late 60s/early 1970s when the woodchip exporting industry got going because people could see very large areas of forest being virtually clear-felled and the chips being sold off overseas at relatively low value added prices.

Now the industry's initial response was to tackle it logically. The main reason that we were in there with the woodchipping was because we had the best part of 200 years of selective logging and nearly all the decent trees had been taken out. If we were going to get that forest to regenerate then you had to have some way of taking the low quality timber out of the place, and the only way to do that and have the tax payer not pay for it is to export woodchips.

It became apparent that the sort of factual response that was being put out by the forest services and the companies just wasn't working in the mid 80s when governments started to become attracted to the green vote. Let's face it there's a lot of seats that change hands by just 1-2% of the vote (less than 100 votes), and their polling was telling them that in some electorates there were votes to be had by going green, by closing down the forest. At the same time the demonstrations were starting - the demonstrations really started around the Franklin Dam - but it quickly spilled over into forestry. We also had Senator Richardson, then Minister for the Environment, who saw a political advantage in polarizing the industry and the greens, and set about very actively to set the two groups at each others throats for whatever political advantage he could get out of it. The more he could be shown with angry loggers the better it was for the Labor Party in a number of urban seats.

And the industry lost very, very heavily through to late 80s and 90s in terms of resource, in terms of our public image, almost by any measure that you'd like to put up, the forest industries lost very heavily and the consequences of that are coming through now. We had to import $3 billion worth of woodfibre last year just to meet domestic demand - it's quite ridiculous for a country with the trees and the resources that we've got, we've closed so much that we're importing $3 billion worth a year. We've lost, in many respects needlessly, thousands of jobs (particularly rural jobs) and a number of major projects that were worth several billion dollars have gone ahead. The most well known one is the Wesley Vale Pulp Mill and the fishing industry had some connection with all of that.

It's now become very, very difficult to attract major investments in to Australia's forest industry despite the fact that we have very good resources out there. In about 1986/87 the industry decided that it had enough and it needed to band together and try to put together a program that would at least stop the rot that they could see. They could foresee the complete closure of the native forests and the loss of about another half of our industry and so they got together to form the National Association of Forest Industries and that they would start a public awareness campaign of their own.

We've set up a campaign that has three streams to it. One is the analytical stream, the next one is public awareness and the third is political/communities. The aim of these three streams; one is to do the analysis - to make sure that the socio-economic work and the scientific studies are being done, being pulled together and finding themselves injected into the policy stream. So we started off with commissioning a series of papers on the industry. We found out that the role of our industry in the economy wasn't well known, wasn't well documented, hadn't ever really been analyzed, that there was a very poor understanding of the science of Australian forestry, which is based on disturbance.

Australian forests are the way they are because of tens of thousands of years of disturbance, principally by bushfire and without ongoing disturbance our forests will be destroyed. So a lot of the wilderness areas that we've locked up in Australia, will eventually be destroyed and they'll be nothing like they were when Europeans first arrived. We've got the makings of some really horrendous bushfires out there but for most politicians it's unlikely to happen before the next election so it's not a serious consideration. With a lot of pressure from us the Resource Assessment Commission was established and its first and only really major inquiry was into Australian forestry. It also did a mining industry inquiry into Kakadu that the miners were not at all happy with.

In contrast we were very happy with what the Resource Assessment Commission did because it basically independently documented, with witnesses under oath, the factual position that we had put it to and then they said - for example - that Australia still had 60% of the forest it had when Europeans arrived. The balance is basically being managed on a sustainable basis and in general, not completely but in general, it supported the sort of positions that we had been putting forward. That came from an independent inquiry that cost many millions of dollars and everybody, including the greens, had the opportunity to give evidence and that led to an industry commission inquiry which really looked at the investment potential of the industry in a gain that was quite satisfactory and that led to what's going on now which is the National Forest Policy Statement which is where all the activity is now.

Tasmania signed on to the latest development of the National Forest Policy Statement a week or two ago. I have a feeling that a couple of other states may have signed very quietly over the weekend because they were worried about the Government going into caretaker mode. We're not happy with all the elements of it but we're working our way through a process that if we get this National Forest Policy Statement fully implemented with agreements between the State Governments and the Commonwealth Government which define the reserve areas, define what forest can be used - then we'll have a much stronger basis for investment for the long term future of the industry than we have now.

Never-the-less that can get significantly tripped up along the way by public perceptions and by the politics of the whole thing - and we can never forget that every decision that is made down here the final decision is politics. All the analytical information is fed in to cabinet and the final decision is politics, - how many seats? Will Jim Snow keep Eden-Monaro if we do this? That is what it comes down to - its pure politics, that's all it is.

Public awareness - we are really a real bastard in the media. Forests make wonderful TV coverage, you can get out there with a helicopter and a camera crew. The greenies, as the ABC arrives, will leap up and down and with a bit of luck someone can persuade a logger to punch a green and you've got wonderful television.

It was clear that we were not getting our message across. Part of the reason for this was that much of the information we put out was based upon the knowledge of industry people. Ironically, this has proven to be a problem because industry people are not average Australians. Their knowledge of the industry and forest ecology is far greater than most people and thus they make things too complex. Moreover, the general public are far more emotionally driven than those close to the industry.

A central plank of our public awareness raising is community polling - finding out what the general public thinks as well as their current level of knowledge about forestry issues. Such opinion polling and market intelligence helps develop the focus for our advertising campaigns, such as the one involving the school teacher which has been on the television in recent times. This television ad is focused on community perceptions of forestry.

The television campaign is only one part of a public relations campaign strategy which involves community education as well. We have, in the past, tried to develop education kits for schools but have abandoned this as we find that school teachers will not touch anything with an industry tag on it. Educational material is only effective if you come in through the curriculum development process and especially if it is made available directly to students. We are currently creating an internet site which can be accessed by students whether they are at school or not.

In recent years the forest industry has become far more politically aware than at any time in the past and makes no bones about its involvement in political processes. After all, governments (and their associated conservation and industry policies) commonly survive or fall on the basis of a few seats or a few votes.

Marginal seats change governments and thus we have an electoral strategy. This strategy is based on the realisation that the political arena is essentially a market place with the currency being votes. This strategy has involved the establishment of a national, community based forest industry network called the Forest Protection Society. Some of you may have met Robyn Loydell.

Robyn exemplifies the need to use women with industry backgrounds as spokespersons for the industry. Definitely don't use paid males in a suit and tie. The network needs to work at the local level, especially in marginal seats as politicians only care about how many seats they win or lose.

Finally the industry must have funds and a strategic vision. NAFI has a budget of around $4 million per annum. Other resources are contributed on a local and regional basis. Much of NAFI's funding comes from large forestry companies and is contributed as a voluntary levy based upon levels of intake. There are various levels of industry levies.

Our strategy is aimed clearly at gaining public support. On a good day support for the industry is as low as 20-30% as both the industry and the government forestry management agencies have a serious credibility problem. I might also add that this is also occurring with fisheries management agencies. Other elements of our strategy include going down the accreditation pathway. In our case we are developing the internationally recognised ISO14000 series specifically for forestry. This is aimed at assuring the public that our activities are scientifically based and independently assessed.

The forest industry has been through a long and protracted fight over access to forest resources and this fight is not over yet. I hope the fishing industry is able to learn from our experiences and avoid the costly (both in financial terms and social terms) impacts to which we have been subjected.

Recreational Fishing Pressures on the Commercial Sector

Martin Bowerman

Martin Bowerman has had a lifelong interest in fish and fishing. He began his career as a journalist with The Courier-Mail *newspaper in Brisbane in 1968 and later worked in public relations there and on magazines in London before joining* Australian Fisheries *magazine (in Canberra) as assistant editor in 1974. In 1980 he became editor of the magazine, a position he held until leaving to return to Brisbane in 1985 to publish the magazine* Queensland Fisherman *for the QCFO. He also produces* The New South Wales Fisherman *for CFAC.*

Martin has written numerous magazine articles on recreational fishing and is the author of three books on recreational fishing, including Fishing Australia, *which has been continuously in print since 1985 and has sold over 100,000 copies. He has acted from time to time as a media and policy adviser to a number of fisheries related organisations.*

Commercial fishing is under greater scrutiny now than it has ever been in the past. Some recreational fishing and environmental groups are arguing in essence that the fishing industry is a short term, profit hungry miner of fish resources with little regard for environmental or conservation issues. Some scientists, perhaps unwittingly, have fuelled these concerns in the quest for more research funds.

We know that the fishing industry in fact is very much concerned with protecting the marine environment. The evidence can be seen in the actions of individual fishermen and in the commitment of fishermen's organisations to the cause. However, the fishing industry must be sure that the general public understands the industry's commitment to protecting the marine environment and in turn to ensuring that fisheries resources are available for future generations.

The degree of genuine interest in environmental issues amongst the Australian community has varied over the years. The then Senator and Labor Party strategist Graham Richardson attributed one Labor Federal election victory to the "green" vote. Probably no-one could credibly argue that the environment vote would quite make or break a Federal election at the present time, but there is no doubt that environment issues remain important in Federal and State elections, and therefore important to politicians, who are our law-makers and ultimate fisheries managers.

Groups with genuine conservation credentials have concerns over some commercial fishing practices (and in many instances those concerns are being worked through in a constructive way in dialogue between industry representatives and the conservation groups concerned). However, there are also groups who are simply opposed to commercial fishing but see environmental issues as a means of achieving their goals of reducing commercial fishermen's access to fisheries resources wherever possible. These "pseudo" conservation groups use the mantle of environmental concern to pursue favourable (to them) reallocation of fisheries resources.

Startling examples of the potential success of this ploy have been provided in the southern States of the USA, notably Texas and Florida, where pseudo-conservation groups comprising recreational fishing interests have worked successfully to help have inshore commercial fishing outlawed. The lessons learned in the US campaigns are being transferred to Australia: it is common to hear arguments to reduce commercial fishermen's access to species or areas couched in terms of environmental concerns. Almost always, the impact of commercial fishing is exaggerated and the impact of recreational fishing understated.

Amongst the "genuine" conservation groups, there are pressures to stretch the truth, to make the most of any opportunity and (like a very few journalists) never let the facts spoil a good story. There is competition for public attention, that is, for membership and financial support, amongst environment groups. The "market" for environment lobby groups -- the number of people prepared to pay membership fees or provide other forms of financial support is limited, possibly static, but the number of environment groups is growing. The result is competition for public support and thus competition to remain in the public eye.

Marketing experts will tell you that logic is okay but emotion is better. Facts are sometimes useful in environment campaigns but not always essential. There is no doubt some environmental groups tell lies, or invent convenient "facts" where real ones don't exist, to help achieve a desired outcome; this can be easily rationalised in their own minds by saying the end justifies the means. This is a problem for the fishing industry.

That's not to say all environment groups are out to get the fishing industry and present a problem. Far from it. Several national and regional environment groups have worked closely with the fishing industry to help *defend* the industry's access to fisheries resources. We can look at this in greater detail in discussion about solutions to environmental challenges.

A few Federal and State government agencies also seem to have their own environment agendas to push that may not necessarily benefit the fishing industry. Many agencies are working co-operatively with the fishing industry but a few seem to begin from an antagonistic, confrontational stance and get worse from there, while others appear reasonable until they need to make a case for continued funding, at which time new or unexpectedly serious problems seem to be "discovered".

This is a snapshot of some of the problems in the environment area for the fishing industry. No doubt many people in the fishing industry would identify many more problems relating to environmental issues. Given that we recognises many of the problems, or "challenges" we might call them, what are the solutions? How the fishing industry can meet these challenges is something I look forward to exploring with fellow delegates tomorrow.

An Overview of the Nature of the Environment and Public Interest in the Seafood Industry

Duncan Leadbitter, Executive Director
Ocean Watch

Duncan Leadbitter is Executive Director of Ocean Watch Ltd, a non profit company set up by the NSW seafood industry in 1989 to carry the industry's concerns about water quality and habitat loss to the government and the public. Duncan is also chairman of the Environment Committee of the Australian Seafood Industry Council.

Prior to joining the seafood industry Duncan worked with a number of environmental consultants providing expert advice on planning issues and environmental impact statements. He also worked for the State's fisheries agency on fish habitat and conservation matters. Duncan holds an honours degree in coastal geography and a master's degree in environmental planning. He is also editor of the scientific journal Wetlands (Australia).

Duncan represents the seafood industry on a number of national committees, including the Biodiversity Advisory Committee, the Interim Australian Ballast Water Advisory Council and the National Wetlands Advisory Committee. At the state level he is active on a number of State committees such as the Acid Sulphate Soils Management Advisory Committee and has served on his local Catchment Management Committee.

INTRODUCTION:

Plea from a lobby of marginalised,
oppressed, disempowered,
disenfranchised and persecuted tuna

I am not sleek & intelligent
like a dolphin,
nor have their constant grin.
I am not cute & furry
like a harp seal.
Lack the size of a whale or elephant.
I am not high up the chain of being
like an orangutan.
I'm lost in great schools
without the charm of identity.

OK I am cold blooded
like a snake.

& even vegetarians
find little harm done in eating me

but my mother
(since netted, gaffed & canned)
loved me
& always told me that I
was just as good
as any son-of-a-bitch mammal

(The Australian Newspaper, January 1996)

The type of meeting we're having now has probably already been held years ago by other industries and it's instructive to reflect on the reasons for this time delay. It's tempting to say we are at a crossroad but in my view, we have already started down a path that will cost the industry dearly in the future. This is not to say we have done nothing at all to protect ourselves but by failing to read and act on the signs that have been apparent for three to five years we've saved some money and continued fishing.

However it's not too late to go back to the crossroads and get it right - it's just going to be more expensive and the longer we leave it the greater will be the cost.

Since World War 2 the commercial sector has been the undisputed king of the oceans and until the need for fisheries management became apparent nobody poked their noses into our activities. As recreational fishing became more common, questions about resource allocation surfaced and were solved by managers closing areas to commercial fishing either in perpetuity or during periods of high angling activity - such as weekends and public holidays. Disguised as conflict resolution the inherent purpose of these closures was to 'save' some fish for the angler, i.e. the reallocation of available fish resources.

The pressure for reallocation has continued to increase as pressure on fish stocks has increased - indeed many anglers have access to technologies that are commercial in nature and they are competing in fisheries that traditionally were only utilised by the commercial sector. As is still the case today this is viewed by fisheries managers as reallocating fish between fishing sectors and not the reallocation of fish from the seafood consuming community to a relatively small number of highly motivated and skilled anglers.

Now concerns about the direct and indirect impacts of fishing operations have also begun to be public issues. Driven by regular media coverage of fish stock collapses and the plight of threatened species the general public is rapidly losing faith in the last of the main resource using industries that has come into public focus.

LEGISLATIVE CHANGES AFFECTING THE FISHING INDUSTRY

The development of environmental legislation has been one of the huge growth areas in law in the past fifteen years. A great deal of this legislation has focussed on pollution control and the management of resource use, especially in terrestrial areas. In many respects this legislation has been beneficial for the seafood industry which is sensitive to pollution and contamination problems and has, increasingly, been active on issues which threaten fish habitats such as wetlands.

Many pieces of environmental legislation also have the capacity to affect the fishing industry and this can happen in a number of ways:

1. Pollution Control Legislation: has the capacity to regulate the disposal of waste products either from vessels or from processing facilities. Of particular note is the legislation derived from the International Convention on Marine Pollution or MARPOL which regulates material disposed of from vessels at sea.

2. Protected Area Legislation: marine and estuarine protected areas (MEPAs) are increasingly on the government's agenda especially in response to initiatives in the Ocean Rescue 2000 program. Legislative approaches to the declaration of MEPAs varies from state to state and even at the national level.

   MEPAs present a variety of challenges to the fishing industry, not the least of which is handling any redistribution of fishing effort arising from any closures (buyouts never happen - fishing effort is merely transferred elsewhere) but, as we have seen in the case of Pumicestone Passage, the issue of equity in the highly politicised business of conservation is a major problem.

   Another major problem is the fact that the most successful marine park model, i.e. that of multiple use, is generally not accepted by most environmentalists and park management agencies. This has created a major tension between these agencies and fisheries managers over who should manage and in what way, marine parks. It is in this arena that recreational fishers do well because of the attitudes of some parks agencies about the commercial use of wildlife and the potential size of the recreational vote.

3. Fisheries Management Legislation: resource management legislation is moving to incorporate broader, environmental management concepts. For example, the NSW Fisheries Management Act, 1994 makes reference to the precautionary principle in the setting of Total Allowable Catches. Increasingly, fishery regulators are concerned about the impacts of fishing operations and are using their own legislation to address the issues.

4. Species Protection Legislation: concern about the population status of some species has led to the promulgation of legislation designed to protect species under threat and to take action against those activities which may be causing a decline. The seafood industry has already had experience of this via the listing of tuna longlining as a threatening process and the nomination of prawn trawling as a threatening process.

Although the ins and outs of legislation could be discussed for a long period of time there are several points that need to be made:

- There is an increasing amount of legislation that is applicable to fisheries management. This creates potential conflicts and co-ordination problems.

  The agencies responsible for fisheries management are slowly multiplying and now include fisheries agencies and 'conservation' agencies as well as, in some areas, agencies responsible for protected areas.

- In the hierarchy of legislation, fishery laws tend to be subservient to many other laws, including species protection and marine park legislation.

'Conservation' and parks agencies tend to isolate themselves from industry so as to remain untainted and, as a consequence, these agencies are becoming the defacto fishery managers without any reference to industry and with few opportunities for bi-partisan, co-management approaches to be taken. In addition to a retreat to the old style of command and control fisheries management there are also major cost implications of duplicating fisheries management personnel.

What is also becoming more apparent is the increasing role of international agreements on the promulgation of domestic law and practice. Such agreements include conventions that are binding on the government and can be enforced via national law such as the World Heritage Convention. They also include international and regional agreements which, whilst not always enforceable by law, commonly provide a great deal of moral leverage. The international instruments affecting the seafood industry are well covered by the recently released FRDC report on the subject prepared by Tsamenyi and McIlgorm and I don't intend to duplicate its findings today.

As I will note later the pressure for international laws and agreements comes from a variety of angles, not the least of which are globally oriented environment groups. Moreover there is an increasing interest in the marine environment beyond pollution and the issue of benthic trawls as a perceived threat to biodiversity has already been raised in international forums.

IN THE PUBLIC'S EYE

I am not aware of any surveys that have been undertaken that have assessed the public's view of the industry, and in particular its environmental performance. Anecdotal reports from fishermen suggest that the general public does not support the commercial fishing industry and whilst they are keen consumers of seafood they are uncomfortable with commercial fishing activity. It is worthwhile to reflect on these observations. Some reasons for this could include:

1. Some irresponsible commercial fishermen are blatantly rude to the general public and do their industry no end of harm.

2. Most commercial activities are conducted out of sight, either offshore or at night, and the general public has had little exposure to them. With the increasing exposure of the public to these activities their acceptability is being tested.

3. The media has brought images of the industry to the public which emphasise practices labelled as destructive and wasteful.

4. There are many fishing practices which, if conducted in the wrong manner are quite obviously wasteful.

5. The general public does not trust industry and therefore expects the worst. In the comprehensive 1994 NSW Government EPA survey of environmental attitudes amongst the public it was found that most people thought that controls on industry

(manufacturing, forestry and mining) are too lax and they rated industry last (behind church leaders, government departments etc) as sources of reliable environmental information.

6. As a political issue the environment is well entrenched in the mind of the public and consistently rates in the top five of election issues and more often than not in the top three. For example, two Saturdays ago The Australian had a poll which rated environment as number three and that this position had been stable since September 1994. Both The Australian and the Herald have had major stories on the green vote in the last week.

7. Probably the greatest problem is the fact that we have a highly urbanised population comprised of people who have lost contact with the environment and the inherently messy business of resource extraction. As we have seen with forestry, people are happy to use wood and paper, they just don't want trees cut down, they're happy to use metals but they don't want mining and they're happy to eat meat but are very squeamish about animals being killed.

In short, we don't really know what the public thinks but I suspect that if we did the surveys we would find that they think we are taking all the fish and destroying other components of the ecosystem to get them.

ENVIRONMENTAL PRESSURES ON THE FISHING INDUSTRY

Environmental pressures on the commercial sector have grown in recent years and the sources of such pressures are by no means limited to environmentalists. A brief overview of some of the interested parties is as follows:

1. The commercial sector itself

Probably the most damaging disputes have been sourced from within the industry itself due to the credibility that having a dissident group inside the industry lends to the issue in question. One example of this is the recent dispute between dropliners and trawlers in our southern waters where, despite the real issue being resource allocation, the tactics used to gain media attention and thereby public support involved allegations about the impacts of trawlers on benthic communities. Similar disputes have occurred in the United States and similar arguments have been used.

2. Recreational fishing groups

The new style of recreational fishing club is increasingly tackling environmental issues. In NSW we have seen the rise of activist fishing clubs with names like Fish Watch, Anglers Action and Concerned Anglers Group. These groups are far more politically active than the traditional 'pub club' and, in some cases, have co-operated with the commercial sector on pollution and habitat loss problems.

However, we have also seen environmental and even animal liberation arguments used by these groups to justify commercial fishing closures. An example of the former is the ongoing

dispute over the use of scallop dredges in Port Phillip Bay whilst in New South Wales we had the Australian Fishing Tackle Association label floating kingfish traps as 'cruel and inhumane'.

3. Sectoral Interest Groups

In the last year or so we have also seen the rise of one organisation which has involved itself in the resource reallocation debate between the commercial and recreational sectors. The Surfrider Foundation has been pursuing an environmental agenda on many coastal issues and has teamed up with gamefishing associations and a National Party member of the senate to pursue an end to commercial tuna fishing in Area E off the northern Great Barrier Reef.

Whereas such alliances are at present rare, the combination of the campaigning skills of environmental interests with the financial power of recreational fishing interests is very potent and worth learning from.

4. Community groups

Progress associations and similar local community groups are the sources of a considerable amount of pressure on the commercial sector. In coastal areas the prevalence of retired people with time on their hands, many of them having a professional background, is a significant problem and the traditional resource re-allocation arguments are increasingly having an environmental slant.

These groups are the major sources of pressure on not only commercial fishermen but also oyster farmers and intending aquaculturalists. Ironically, many of these people, in retiring to the coast contribute to the destruction of the waterways by wanting to live close to the water, pressuring councils to keep foreshores 'clean' by removing seagrasses and substantially increasing the runoff of oils, nutrients, faecal coliforms, silts and various toxic chemicals.

5. Politicians

In the political arena the issue of fishing is never one of major state or national significance and thus the attitudes of politicians, even within the same party, is highly variable. Some examples of this include:

- The Democrats - Senator Coulter proposed the removal of Orange Roughy from the parliamentary dining room menu because of concerns about harvesting rates. In NSW however Richard Jones despises recreational fishing but is supportive of commercial fishing as long as it is conducted on an ecologically sustainable basis.

- The Greens - we have a good relationship with our NSW Upper House Green, Ian Cohen, but I'm not sure of the experiences of industries in other states.

  Labor - can be highly variable. Some of the major impacts on the commercial sector have come from Labor politicians and it is clear that the recreational sector has targeted Labor as the party to support their claims. Pressure to close estuaries in both Queensland and in NSW (under the Wran government) were driven by recreational fishing interests and federal MPs like Peter Knott from the NSW seat of Gilmore on the South Coast are ardent opponents of commercial fishing in estuaries.

- Nationals - generally supportive but can take a populist slant on certain issues. A notable event in the last year has been the support of National Party Senator, Bill O'Chee for the Surfrider Foundation/gamefishing association pressure on Area E.

- Liberals - generally supportive but vulnerable to pressure pitched in business terms. More recently the promised closure of the Port Phillip Bay scallop fishery demonstrates how fickle political parties can be - even if they don't need the votes.

- Independents - independents are becoming increasingly common in parliaments and have, especially in NSW, held the balance of power in times past. Some run on their green credentials, some have God on their side and some like guns. All are under-informed about commercial fishing issues and need information.

The views of politicians appear to depend upon the following:

1. attitude often depends on who got there first,

2. amount of pressure,

3. how much work we do,

4. personal whim and interests, and

5. media coverage

Finally, given the shifting balances of power, and in particular the increasing tendency for very close elections, the cross benches are worth taking note of.

6. Environmental groups

The interest of environmentalists in commercial fishing activities in Australia has been relatively slow to develop. With a few exceptions (notably in the area of marine parks) it has only been in the last five years ago that there has been anything other than a localised, issue-driven interest in any commercial fishing activities. By contrast with many other resource using industries many states' fishing industries have had a reasonably close relationship with environmental groups as our interests in clean water and healthy fish habitats have coincided. Indeed water pollution topped the list of public concerns in the 1994 survey I referred to earlier.

In the past two years the widely covered issue of by-catch plus some overfishing problems have now been incorporated into the range of issues monitored and acted upon by some environmental groups. In the last year we have seen the emergence of a US based organisation (the Humane Society) which has successfully targeted the commercial fishing industry over by-catch issues.

To their credit the main environment groups that have involved themselves in fishery issues have stayed out of resource allocation disputes. Both ACF, which commented on the kingfish trap dispute in NSW, and the Australian Marine Conservation Society, which was involved in the Pumicestone Passage issue carefully targeted sustainability questions.

By contrast environment groups have sporadically involved themselves in fishery impact issues especially in regard to the effects of trawling and scallop dredging, one example being questions over the compatibility of scallop and prawn trawling in the Shark Bay World Heritage Area.

This patchiness reflects the fact that there is little continuity in representation on fishery issues by most environment groups (due to resource limitations) and a general lack of policy development in the fisheries area.

THE ENVIRONMENT MOVEMENT

It could be argued that, compared to the basically selfish resource re-allocation interests of the groups previously discussed, environmentalists are at least coming at the issues from a putatively noble cause although this can be heavily qualified in a number of ways; such as ignorance about detail, the need to obtain campaign resources and philosophical concerns about the commercial use of wildlife amongst some groups, amongst others.

It is clear that the environment movement has the following characteristics:

a. It is heterogeneous in its views on environmental issues. There is considerable variation in the philosophical bases for the environmental groups which constitutes a spectrum. At one end are the Deep Ecologists which some politicians call the 'Deep Greens' who believe that humans are but part of the ecosystem and have no special rights. In the middle of the spectrum are those that believe in the need for stewardship of natural resources. At the other end of the spectrum and generally perceived to be outside the sphere of environmentalism are those groups in society who believe that every problem has a solution and that when one resource runs out another will be found.

Elements of the fishing industry can be found at various parts along this spectrum although most of us fit into the area of resource stewards and I'd like to think that there are few, if any, who couldn't care less about the future.

b. It has a lot of grass roots support. As a political issue environment has consistently rated in the top five and commonly the top three issues affecting voting intentions in local, state and federal elections. Greenpeace alone has 80,000 members in Australia and gets no government funding. When one adds up the members of the myriad environment groups the total is more than most political parties.

Such grass roots support provides the machinery for a considerable amount of unpaid work to be conducted. Many offices have volunteer workers who include university students, the unemployed and retirees. Many professionals give free time on particular issues and there would have to be tens of thousands of dollars worth of free photocopying, faxing and phoning billed to private companies and the public sector each year.

c. There is a spectrum of workers ranging from raw, fire-in-the-belly recruits to seasoned campaigners with a shrewd sense of politics. What makes the environment movement so successful is the diversity of approaches that such a range of workers

undertake. These range from sitting front of bulldozers, direct canvassing of the public for funds (Greenpeace has a small army who target different suburbs each night), the 'suits and ties' for lobbying politicians to back-room people calculating voting intentions and distribution of preferences.

d. It operates at all levels. In terms of size environment groups range from a few members of a local action group to major international organisations such as Greenpeace. Their budgets range in size from the proceeds of a lamington drive to hundreds of millions of dollars. Thus, such groups can be influential in international forums, as we have seen with the IUCN, Agenda 21 and others, and at all levels of political organisation.

e. There is a diversity in political views. The diversity of environmental philosophies generates a variety of political views - including the view that environmentalism is beyond politics. Some elements of the environment movement are well connected with conservative politicians. The appreciation of nature and a desire to protect it commonly comes with affluence and many early laws for the protection of natural areas were derived from this connection.

More radical views of the need for environmental action have positioned environmentalists with parties that have traditionally promoted social reforms, such as the Australian Labor Party. Interestingly, a number of the political planks of environment groups have a deal of support amongst some fishing industry participants. Such planks include greater community (as opposed to government) control over decision making.

With the ongoing fight over the electoral middle ground by the major parties it is not surprising that many environmentalists have walked away from the Labor Party to set up alternative political structures.

What is surprising is the fact that Green Parties do not necessarily represent the views of major environment groups, as the Queensland election starkly brought into focus. In this case the political aspirations of the Greens were at odds with the deal making strategies of the major environment groups.

Like any brand of politics, Green politics is not simple and it pays to be open minded at the end of the day.

INDUSTRY ACTION TO DATE

Very few industries these days are silly enough to be blatantly anti-green - at least in public. Moreover, most have changed their practices substantially in response to public pressure. In a number of places around the country the fishing industry has also been involved in environmental debates - from two basic angles; the first being action on environmental damage that affects our interests and the second action on our own impacts.

1. Action on pollution and habitat losses

Fish and the fishing industry depend on clean water and well managed fish habitats. Neither of these needs are guaranteed and the fishing industry does not own these means of production. Moreover, the lack of property rights dictates that traditional remedies for damages are not available and this has influenced the tactics used by fishing industries when faced with major environmental problems.

Although industry concerns about various environmental problems ranging from ocean dumping to wetland loss date back thirty years or more but it was the QCFO which was the first state council to take a more focused and strategic approach to dealing with habitat loss along the Queensland coast. The formation of Ocean Watch followed in 1989 after the NSW seafood industry lost millions of dollars due to public concern about contamination in fish.

Both QCFO's Environment Committee and Ocean Watch have taken a public and activist style in their approach, even to the extent of a direct blockade of major dredging in Botany Bay. Both states have worked towards ensuring that state agencies take more notice of the importance and value of fish habitats.

The general public has been generally supportive of the approach taken by the industry although some have labelled our actions publicity stunts designed to distract attention from all the overfishing problems whereas others have grudgingly acknowledged 'better late than never'. On balance it appears that the industry has gained a lot of public support on issues of concern and has also gained a lot of street credibility with environment and community groups.

Other states have adopted an issue by issue approach to water quality and habitat issues and have formed temporary alliances with kindred groups on such projects as the Gippsland sewage pipeline and the opening of Lake Bonney, in South Australia.

Its fair to say that enlightened self interest has driven some states to become highly active on some environmental issues that are commonly ignored by many environmental groups. The state of many of our coastal waterways is a disgrace due to the impacts of agricultural activities. If fishers had property rights things would be different as the fishing industry would possibly be able to apply common law to solving pollution problems.

2. Action on our own impacts

The impacts of the industry include effects on the abundance of targeted species and also the effects on other components of aquatic ecosystems.

Problems with resource sustainability are many and complex but its safe to say that both industry and government have been partners in both the successes and failures of fisheries management in this country. What has changed is that the general public now thinks of fisheries issues not as resource management but as environmental management.

They don't trust industry and are less prepared to trust fishery managers - hence the support for purportedly independent environmental/conservation agencies. This has occurred in other areas of resource management, notably water. The new administrative model separating regulator and operator or gamekeeper and poacher is increasingly popular.

However it is the area of impacts on non-target species that is the ballooning area of interest for not only industry but environmentalists, recreational fishermen and the public at large. Interestingly, recreational fishermen have been expressing concern about trawl by-catch for years but they have been singularly ineffective in making it a public issue despite the fact that this is reputedly a multi-billion dollar industry. One environment group with a budget less than the fuel and grog bill for a gamefishing boat has made it a national issue.

What has the industry done on fishing impact issues? To our credit we have participated in and funded some major research projects into the issues. This research has tackled by-catch in particular from three angles, namely attempting to assess ecological impacts, designing more environmentally friendly fishing gear and increased utilisation of previously unused species

We have also found new markets for and made new products from species that were previously unmarketable. In a management sense we have also been involved in other actions to reduce by-catch. Such actions include area and temporal closures and changes in fishing operations.

Recently we called for the protection of a highly public species, the Great White Shark, and the Tasmanian government was the first state to do this.

We've also had the spin doctors working overtime on the phrase by-catch. Whether we call it incidental catch, secondary catch, non target species or what ever, the bottom line is the same.

The big question is, have we done enough? My view is that we haven't.

How many environmentally friendly trawls are there in operation? Where are the environmentally friendly scallop dredges? Why was it necessary for longlining to be listed as a threatening process if we knew how to reduce albatross by-catch before the nomination?

The other area where we have done very little is in the arena of informing the public about fishing industry matters. We promote seafood but not the industry that supplies it. Most of our magazines are in-house and we do not use the tremendous amount of support in the food industry to get our messages across.

SO, WHERE IS THE INDUSTRY?

At the start of this discussion I made the claim that we had already passed the crossroads and I trust that the preceding discussion has supported this assertion. To summarise the key points:

1. The perception of fishing as an environmental issue is still relatively new but it is spreading rapidly due to greater public interest in the state of the marine environment. Although I did not present any clear evidence I believe that the public's view of the industry is poor - and declining.

2. Environmental law is a fact of life and has and will continue to impact on fishing operations.

3. The environmental pressures on the industry come from a variety of sources. Whilst the environment movement is highly skilled and competent on campaigning tactics but relatively ignorant about the marine environment, this situation is changing rapidly.

4. Environmental concerns are one of a number of pressures on resource access for the industry. In my opinion recreational fishing pressure is probably more serious, at least in the inshore areas due to economics and votes - both still more powerful than environmental considerations on their own.

5. Tackling recreational fishing and environmental pressures together reflects the central concerns of the commercial sector about access to resources. It also provides some opportunities for solutions to be identified that are appropriate to both problems.

6. The attitudes and philosophies of those groups and individuals that take a profile on environmental issues is fickle and highly variable. This presents both enormous challenges but also great opportunities.

7. The fishing industry has a degree of support and credibility amongst many environment groups because it has been prepared to come out and act on the degradation of aquatic environments.

8. The industry is singularly unprepared to deal with any serious and focused threat. It spends the least of any resource industry promoting its needs and points of view.

Emphasis on short term profits and not long term survival will be our downfall. Investing in lobbying capacity is just as important as investing in a boat or a net. In short, the industry is where it is by nothing more than good luck and this can't continue.

What Is The Public's Perception Of Aquaculture?

Dos O'Sullivan, Facilitator
Australian Aquaculture Forum

David "Dos" O'Sullivan has completed a Bachelor of Science with Honours in marine biology. He has been working as a research scientist, consultant and lecturer in fisheries and aquaculture for more than 15 years. Dos has lectured at the National Key Centre for Teaching and Research in Aquaculture, University of Tasmania at Launceston, Curtin University of Technology and Fremantle Maritime and Aquaculture College. He was the founding editor and publisher of the industry periodical Austasia Aquaculture Magazine for four years and is now the senior correspondent. Dos also contributes articles to several overseas publications.

Through Pacific Seafood Management Consulting Group Pty Ltd, Dos provides consultancy and advisory services to the industry in Australia and has been involved in several overseas projects. He has recently completed a major environmental impact study into mussel farming and has prepared the discussion document for a mussel management plan, so he has recent experience in conflict mitigation and coastal resource management.

INTRODUCTION

Worldwide, aquaculture has been developing quickly. Estimates by the Food and Agricultural Organisation (FAO) of the United Nations have shown that production has increased from around 5 million tonnes in 1973 to more than 22.6 million tonnes in 1993 (including seaweeds), worth US$35.7 billion. FAO predictions suggest that there will be a further doubling of aquaculture production over the next 10 years. In Australia the value of production has increased from $150 million in 1988-89 to more than $430 million in 1994-95, and it is expected to continue to show an annual increase in excess of 10 % for several more years.

More than 50 % of world aquaculture production originates from brackish and marine environments, and most of that comes from the coastal zone. In fact, coastal aquaculture produces more than 90% of the molluscs, crustaceans and seaweeds in the world harvest. In Australia, in excess of 80 % of the volume and 90 % of the value of production is from coastal aquaculture.

Unfortunately this growth in coastal aquaculture has come at a price in many countries as development has often occurred with little regard to the carrying capacity of the receiving waters.

"Over the past decade, the general public has come to perceive that water-based aquaculture systems, most notably the coastal farming of salmonids, have caused considerable environmental harm, and that expanded activities might compound the negative effects" (Rosenthal, 1994).

In addition, the trend toward intensification has caused considerable socio-economic conflicts. This has occurred in many areas where aquaculture developed without public involvement. Rosenthal (1994) notes that it must be made clear that aquaculture is not only good for the investor but also good for the community at large. This will be discussed in the second part of this paper.

POTENTIAL AREAS OF CONFLICT AND IMPACTS

Worldwide situation

As with almost any activity or development, aquaculture can, and does, have adverse impacts. In many parts of Asia large scale clearing of mangroves has led to the displacement of the mangrove habitat with shrimp or fish culture transferring a multi-user/multi-use coastal resource into a privately owned single-purpose operation (Pollnac, 1992). For example, in the Philippines more than 50% of the total area of mangroves has been turned into brackish water fish ponds. In addition to the conservation value, mangroves provide many products for inhabitants of rural coastal areas such as food, building materials and fuel. The rights of endemic populations or natives/indians to occupy land or fish in a specific area has often been ignored in these aquaculture developments (Purser and O'Sullivan, 1993a).

Impacts from aquaculture can be divided into two main categories, socio-economic and environmental or ecological. These are only mentioned briefly here, see Purser and O'Sullivan (1993a, 1993b) for full discussion.

Socio-economic conflicts

The coastal waters lands are a multi-use resource with a number of activities taking place which can be affected by aquaculture. These include :

- Swimming.
- Fishing (both recreational and commercial).
- Boating.
- Agriculture.
- Forestry.
- Industrial and residential development.
- Other aquaculture operations.
- Tourism and recreation.
- Conservation.

While sites are never perfect for culture (Purser, 1992), siting of the facility is vitally important, not only to production performance, but also to reduce conflicts with these other user groups.

Environmental and ecological impacts

These have been reviewed by GESAMP (1991), Rosenthal *et al.* (1988), Purser (1992), O'Sullivan and Purser (1993) and Purser and O'Sullivan (1993a, 1993b). They include :

- Sedimentation and obstruction of water flows.
- Organic and inorganic wastes.
- Chemicals.
- Habitat modification or degradation.
- Promotion of algal growth.
- Increases in diseases and parasites.
- Reduction/increase of food levels.
- Escape of the cultured species.
- Exotic species introductions.

This has lead to the perception that aquaculture operations pollute the environment (especially in the over developed industries of the northern hemisphere). In addition, aquaculture can result in conflicts with most of the other users of the resources. It should be noted that self-pollution and other negative feed-backs can occur if there are too many aquaculture operations in one area.

In the United States there is growing opposition to certain forms of aquaculture (especially coastal) that has stalled development and increased the costs of obtaining permits almost exponentially. Stickney (1988) observes that in the U.S. opponents will go to any extreme to stop aquaculture development which they see as an insidious threat to their personal lifestyles. He notes that "those opponents tend to be well organised and live by the NIMBY (not in my backyard!) creed"

Litigation is often the recourse in the U.S. for dispute settlement. According to Stickney (1988), in most instances they (opponents to aquaculture) have avoided the courts by employing a modification of the previously stated credo 'If you are opposed to an aquaculture permit application, you take 'em to a public hearing'. If questions raised by opponents at such meetings do not result in immediate denial of a permit, they typically call for more study and, thus, additional hearings. The process can be drawn out for months or even years. The cost to the aquaculturist may be so high that when and if the permit is obtained, there is little capital left for development.

Situation in Australia

It would no doubt be a sore point with many farmers (who have had to beat their way through a jungle of red tape and bureaucracy to obtain their licences or permits) but I believe that aquaculturists can be thankful that the various government departments have limited the number, location and size of aquaculture operations in Australia. In addition, due to pressure from these agencies, aquaculture operations have had to be reasonably environmentally friendly with techniques and equipment designed to reduce wastes. Thus, we have been prevented from greed or just plain enthusiasm causing us to expand too quickly, a fatal mistake made so often overseas.

Nevertheless, we had to contend with a huge number of rules and regulations, many of which can be considered draconian or downright unfair when compared with the freedom in which many of our competitors overseas can operate. However, that topic can be discussed at another time and place.

Possibly through this "good luck" (I couldn't think of a more appropriate phrase) rather than good management, it can be argued that Australian aquaculture production is more sustainable with less environmentally impacts than similar industries overseas, particularly the northern hemisphere. We have a reputation, along with much of the wild capture industry, for the production of high quality seafoods. Such a reputation is easily lost, yet very difficult to regain, so the measures placed on our exports by AQIS may in fact be protecting many producers from being their own worst enemy.

I believe that some apathy has crept into the aquaculture sector regarding our environmental record. Too often we push out our chests and declare that aquaculture is a sustainable development, that farming is a much better way to exploit resources than the hunter-gather existence of the fishing sector. We need to recognise that we are part of the Australian seafood industry and we should never try to gain brownie points by denigrating the fishing industry.

Have you ever noticed how most motor-bike riders are fearless on the roads, weaving in and out of traffic and racing off at the lights? It is as if they believe that they put on a helmet of invincibility and nothing can hurt them. In much the same way we must avoid believing too much in our own advertising that as we are farming a crop, then we aren't having any impacts on the environment.

Sure, the intensity of aquaculture in Australia is low, and much of our technology world class, however there have been many mistakes made in the past, quite a number are still being made, and you can bet that more will occur in the future. And there are many people out there ready to point an accusing finger and try to close us down.

A prime example of the adverse public reaction to an aquaculture development can be seen in the issues of concern raised about a proposal for some mussel farms in Twofold Bay, Eden, NSW. Of all the types of aquaculture operations, shellfish farming would seem to be the most benign due to the fact that they obtain their nourishment from food in the water. No artificial feeds have to be provided, only a substrate onto which the molluscs attach. An area of some 100 ha out of the 3,300 ha bay was proposed, however the local press and the Fisheries Department were inundated with letters of complaint. These included :

- The Bay will be cluttered with thousands of floats (a figure of 70,000 floats was quoted in the local press).
- Local beaches will be covered with dead mussels, ropes and buoys from damaged mussel farms.
- Tourism will decline due to unsightly farms spoiling the view.
- Tourism will decline due to the loss of whales which will avoid the Bay because of the presence of 'foreign' objects.
- Mussels will produce a black slime which will cover the surrounding beaches and sediment will build-up beneath the leases.
- Mussels produce a toxin that in turn produces toxic algae blooms in the Bay.

- Mussels will kill off all "life" surrounding the farms.
- Fish stocks will be depleted in the Bay since there will be no food left for them to eat.
- Whales and dolphins may be caught up in longlines.
- Damage will be caused to boats by adrift longlines and floats.
- Damage will be caused to fishermen's nets which become caught on mussel farming structures.

Whilst this particular proposal has generated quite a deal of unwarranted criticism (mainly through miss-information generated by a few well-resourced and motivated individuals), it does clearly show the knowledge gap between the public, including, some sectors of the commercial and recreational fishing industry and the aquaculture industry. Let's be honest, not all of those concerns are from fairyland, some have a strong ring of truth about them.

A major environmental impact study has been undertaken on behalf of the NSW Commercial Mussel Growers Association. This project even included a detailed fauna impact statement to assess the effects of the longlines on whales, other marine mammals and seabirds. The case has already been to court once, and with the imminent release of an EIS/FIS reasonably favourable to the development, the likelihood of further court action is high.

Thus it is a fact of life that existing operators and proponents of new ventures will be held responsible for their actions and will have to prove that the impacts of their farms on the environment are acceptable to a public increasingly concerned about the health of the coastal regions.

LACK OF LOCAL RESEARCH AND DATA

I believe that the main root to our problem is the newness of our industry. With the exception of the Sydney rock oyster sector, coastal aquaculture has only developed during the past two decades. At this same time, there has been increasing movement of the population to coastal areas resulting in a number of conflicts. The general public are unsure about aquaculture, and this often leads to knee-jerk reactions that are unfavourable to us.

Unfortunately, research on the environmental impacts of aquaculture in Australia has been very limited. This has created a reliance on the considerable research undertaken in the northern hemisphere where aquaculture is more intensive and highly developed. There are many examples of major environmental degradation which has not only impacted on the coastal ecosystems and communities, but has caused severe disruption to the aquaculture operations themselves.

Thus, armed with a huge body of evidence of the impacts of aquaculture in the northern hemisphere, critics of the local industry have been able to argue very strongly. They can use very persuasive visions of bays almost covered in longline buoys or rafts, prawn farm slums pouring effluent from one farm into the intake of another, thousands of hectares of mangroves swamps ripped up and destroyed forever, toxic algal blooms that extend for hundreds of square kilometres and exotic species overtaking the natural waterways. Not a pretty sight.

The Sydney rock oyster farming industry is now an extremely important part of the NSW fishing industry with an annual value in excess of $40 million. However, I believe that in this political and socio-economic climate, plans to start such an industry along the NSW coast would fail due to public and environmental pressures. Benefits such as jobs, infrastructure development, capital investment and the many economic multiplier effects, would have no bearing over the public's requirements to keep the rivers and waterways free for recreational and conservation reasons (even these two uses conflict with each other).

It should also be recognised that aquaculture can also be compromised by other activities. Therefore it is necessary to examine the whole arena of the conflicts resulting from the development of coastal and land-based aquacultural farms. Aquaculture development has been the primary reason for coastal management plans being established around Australia (refer Section 2.3).

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Solutions to the Issues

Introduction

To date the industry has relied on good luck, the ignorance of the public at large, a lot of free work by a few people and the support of government and some of their agencies in order to maintain its position. The FINS report was even more blunt about the current capacity of the industry stating it has no united effective representation and is under-resourced.

Like it or not, the increasing involvement of recreational fishing groups and environmentalists is a reality and, as demonstrated yesterday, these groups bring a considerable amount of money and expertise to the pursuit of their goals.

1. Jerry Sansom

The Forest Products Association approach is the way to go in the sense that it is structured and based upon the political reality that votes are a major determinant of industry viability. In this sense it is one dimension of the view commonly discussed here that the general public is the final arbiter of the industry's survival.

In some senses the need for a political campaign is an indication that the public relations campaign has either failed or not been implemented in the first place. However, if a political campaign is needed it is neccesary to be structured and focused. A critical path analysis is valuable and this would help the targeting of marginal seats.

It is important to use local fishermen and their families to tell their own story. Decision makers and politicians need to understand that they are dealing with people, not numbers. Other important tactics include the need to develop relationships and networks and to work these relationships on a regular basis.

Finally I think it is important to support organisations such as Ocean Watch. An independent group such as this is necessary because the general public do not believe information from industry, especially when the industry's survival is at stake.

2. Zeke Grader

There is still a certain romance about fishing, it is very much a people industry and this should be used to our advantage. Emphasising these aspects will help maintian the public's support for commercial fishing and this can be enhanced by producing information cards on the industry containing important facts about value, jobs, management etc..

However, there is also much to be gained by doing the 'Preventative medicine', ie ensuring that the industry deserves a good public profile. Three elements are important, namely:

1. Protect the resource,
2. Eliminate unnecessary catch (by-catch), and
3. Produce quality product.

This can be conducted in a stged manner but the industry needs to act on and be seen to be acting upon resource management problems in a positive way.

3. Vaughan Wilkinson

Do not be ashamed to admit your motivation is profit but that the basis of maintaining profit is the onservation/sustainability of resource. This basis needs to be argued up front as to ignore it gives the perception of greed.

Then negotiate the rights to participate in the taking of that resource. This is a political process foremost and needs the following:.

a. maintain a collective representation and message. If this is reasoned and responsible it will be respected.

b. keep industry in the electorate offices of politicians every week. The message is simple, 'So long as stock is sustainable, commercial fishing should be maintained'.

The recreational fishing magazines need to maintain some balance. The commercial sector should work on the editors, publishers and even the owner. Work your patch.

Go to the heads of companies that supply fuel, gear, engines, packaging etc, to seek support your cause. Make sure that you seek their action on your behalf.

Finally, seek solutions to problems immediately. Be up front with policy makers.

Nothing is beyond substantial modification.

4. Dr Robert Bain - Where from here?!

The industry needs to be well prepared and well funded if it is to handle the pressures to come. Most important is the need to have an agreed strategy. The forest industries has such a strategy which is based upon three streams - analytical, public awareness and political.

A) Analytical

Having access to good data is critical for influencing decision makers. Information used by the forest industries include:

- Determining demand requirements in Australia for wood.
- Data on supply levels.
- Market Intelligence - public want independent assessment against international criteria.
- Levels of Quality - work up international treaties on environment. Work on ISO standards for forestry. ISO14000 is environment level and will come in to assess your management system for forest Customers also requesting this standard.

B) Public Awareness

The general public are bombarded with all sorts of information. The industry neds to make sure that its own facts are included. It is important to ascertain which sectors of the community need information and they then need to be coninced that the industry is doing the right thing. This can be achieved by:

- Public awareness surveys to find out who/where more interested in the forest issues - jobs, exports etc.
- Take the high moral ground - this approach puts green groups on the receiving end of international arrangements.

C) Political

There is a need for greater sophistication of approach so as to influence outcomes of elections and/or marginal seats. The Senate is very important especially when minor parties hold the balance of power. Some suggestions include:

- The industry has set up the Forest Protection Society to use grass roots political lobbying.
- Make use of consultants for advice.

Finally, the industry needs a properly funded and effective head office. Large timber companies provide much of the funding for the National Assocaition of Forest Industries. These companies can also lend a hand when it comes to public relations.

In order to keep costs under control there has to be sufficient staff to manage programs whilst consultants can be used for specific functions.

Solutions to Environmental Problems

Martin Bowerman

Firstly, it needs to be said that the fishing industry is contributing to improving the marine environment and is conscious of the need to harvest seafood in ways that are both sustainable for the resource and benign for the environment.

We need only look at the work of environment officers employed by seafood organisations throughout Australia, backed up by committees of environmentalist fishermen, to see the industry's contribution. These individuals and groups of fishermen are making major contributions to protecting and enhancing the marine environment. This is particularly the case in protecting fisheries habitats such as seagrass beds and mangroves from the ravages of coastal development and pollution.

This protection of the environment is fundamentally important to the future of both commercial and recreational fishing. No habitat = No fish! The seafood industry has put enormous energy and time, and very considerable funding, into practical projects to protect fisheries habitat.

At a time when the general community is becoming increasingly conscious of environmental issues in general, and in particular demonstrates a marked concern for coastal environment issues, it is vital that the seafood industry communicate the contribution it is already making to protect the environment.

In achieving this one obvious area is to call on the assistance of the media. It is not true that the media only runs "bad news" stories. Every newspaper in fact every media outlet, likes to run at least a few positive, optimistic stories every day lest their readers/viewers/listeners simply get too depressed and switch off.

Stephen Tapsall, the fulltime Environment Manager with the Queensland Commercial Fishermen's Organisation (QCFO), has made several trips along the coast investigating environmental issues. On a number of these trips, he has called in on local media (usually with the QCFO's locally based Environment Committee members) to discuss environment issues. This has been successful in highlighting environmental problems and also making the media aware of QCFO's involvement in environment issues.

The QCFO has recently organised a briefing for the media, centred on light refreshments at which details of their environmental activities were outlined. This was quite successful. In particular Stephen Tapsall made valuable contacts in the media which have since proved very helpful.

Journalists generally are "neutral" and are prepared to run the seafood industry's side of any story. However, it is up to us to make sure they get our side of the story. This can be done with regular briefings and background reports on what the industry regards as important environmental issues.

Similarly, politicians need the facts. One point of view that public relations practitioners often adopt is that politicians are not ignorant, just misinformed. It's our task of course to make sure that no politician, on a federal, State or even local government level remains misinformed about the seafood industry.

Both ASIC and State organisations are in regular contact with relevant Parliamentarians to discuss current issues. It is important too that local representatives of fishermen's organisations and other seafood groups provide information to their local MPs. I know that all fishermen are kept busy just fishing, but it is important to try to make a little time available to inform the media, politicians and the broader community about the industry.

When it comes to informing the broader community, one successful vehicle has been "fishermen's fairs" in fishing ports. These typically involve, firstly, a lot of fresh local seafood, and, secondly, displays of fish, fishing gear, fishing boats and a range of information about the industry, plus displays by related organisations and businesses (such as the Fisheries Department and fishing gear suppliers).

A number of the fishermen's fairs organised in Queensland have had a strong environment theme.

One annual fair at Tin Can Bay involves the participation of local environment groups beyond the fishing industry and raises funds specifically dedicated to local marine environment issues. Funds raised at this fair supported research that discovered a wasting disease that kills seagrass. This is of fundamental importance because of the role that seagrass plays in the life cycle of many marine species ranging from micro-organisms to dugong and turtles.

The general community in the Tin Can Bay region certainly is aware of the commercial fishing industry's commitment to the marine environment and the practical action fishermen have taken to protect and enhance fisheries habitat.

There is no doubt that lobby groups actively working to remove commercial fishing will seek to attack the industry on environmental grounds.

An issue of interest in commercial fishing is the "effects of fishing" question. For instance, does trawling have any substantial effects on the marine environment and can unwanted bycatch be efficiently excluded from nets while fishing (rather than being discarded after the contents of the net are lifted onto the sorting tray)? Scientific research is being conducted into these and other questions right now, and industry has given wholehearted support to these projects. Research will no doubt dispel some of the "popular myths" about the effects of fishing in many cases and in others suggest ways of reducing any unwanted impacts that are discovered. This is positive research and, with industry support, will no doubt contribute to more efficient fisheries and to answer public questions about fishing practices.

It is important that the industry have the ammunition of scientific fact in its armoury. The industry's opponents may rely to a large extent on emotion (in preference to facts) but it is important that the industry be in a position to rebut their arguments. Scientific research, backed with practical observations from fishermen, is a valuable defence.

However, in the final analysis, the fishing industry itself holds the most important key to protecting its future against attacks on environmental issues. Overseas experience, and limited experience to date in Australia, strongly suggests that money and commitment make the difference. No matter how many fine facts the industry may have, it has to be able to communicate the message to the general public, and that may often mean paid advertising and media events. (The fishing industry's opponents are certainly using both already.) That costs money. And it needs commitment by the fishing industry, in fact all sectors of the seafood industry, to put in the time and effort required to fight the good fight. Fisheries management today is based on ecologically sustainable development, a concept the fishing industry has committed itself to. The fishing industry must communicate that good news to the general public at every opportunity.

The Solutions to Industry Problems

Duncan Leadbitter

To date the industry has relied on good luck, the ignorance of the public at large, a lot of free work by a few people and the support of government and some of their agencies in order to maintain its position. The FINS report was even more blunt about the current capacity of the industry stating it has no united effective representation and is under-resourced.

Like it or not, the increasing involvement of recreational fishing groups and environmentalists is a reality and, as demonstrated yesterday, these groups bring a considerable amount of money and expertise to the pursuit of their goals.

The solutions I will outline are not specific to dealing with environmental issues and, as I outlined yesterday there are cost savings in addressing some elements of recreational fishing and environmental issues as a package. In broad terms elements of the strategy have already been covered in both the FINS report and in the FRDC report on international environmental instruments and the following suggestions flesh out important components of these reports.

A STRATEGY

In strategic terms the aims of the solutions provided are as follows:

1. To engender public support for the continuation of an economically viable and ecologically sustainable commercial seafood industry.

2. To minimise the reallocation of fish resources from the commercial to the recreational sector.

The solutions provided are a mixture taken from both the FINS report and Tsamenyi & McIlgorm's report plus a few observations of my own.

1. Community Education

The community needs to receive more information about the commercial fishing industry with the aim of ensuring that the links between seafood on the plate and the hard yakka at sea become clear. Suggestions include:

- Linking images of fishing operations to seafood promotions. This occurs to some degree already but could be enhanced to cover different types of fishing operations. It would help enhance the promotion of access issues without necessarily utilising any specific budget for this.

- Production of an education package for schools.
- Increased number of industry open days and seafood festivals.

- Advertising in local newspapers and similar outlets.

2. Community Credibility

To address the scepticism in the community about the performance of industries in general on environmental issues there needs to more independent evaluations of the seafood industry's activities. Suggestions include:

- Ensuring non fishing independents on MACs.

- An industry environmental audit involving an independent panel of experts. This would provide an assessment of which areas the industry was performing well in and which areas required change. This could be a prelude to the Australian Code for Responsible Fishing recommended by Tsamenyi & McIlgorm.

- Other industry codes of practice which provide guidance for acceptable practices in the eyes of the public need to be developed and/or where this has already been done given some teeth.

- Environmental management and resource allocation issues need to be explicitly addressed in industry training courses.

- Implement change in areas where there is either sufficient evidence to require new practices or technologies or where cost effective technology exists to reduce impacts.

3. Lobbying

More information is needed for both government and other influential decision makers and the industry needs to become a more sophisticated player in understanding government decision making processes, especially given the increasing number of decision makers affecting fisheries management. Suggestions include:

- Ensure that each state council and the national council has one full time employee on resource access and community relation issues. The FINS report mentioned a budget for resource access issues but it is far too small.

- Ensure that all politicians and other decision makers have access to general background information on the industry and that they are kept up to date on industry issues.

- Ensure that industry personnel (including grassroots fishermen) have the tools and information to keep their local decision makers (e.g. local government, regional departmental offices, tourism associations) informed about industry needs and issues.

4. Networking

The industry needs to substantially expand its network of supporters and sources of information. As noted in the FINS report the industry already has synergies with some competing interests that are not well recognised. Suggestions include:

- Continue the liaison with environment groups at the national level and set up similar systems at the state level.

- As recommended by Tsamenyi & McIlgorm the industry needs to avoid invective against environment groups in its magazines. Such attacks are often counter-productive and achieve little.

- Ensure regular contact with industries that rely on or service the seafood industry such as tourist associations, catering and restaurant associations and food writers, amongst others.

5. Become proactive

Industry needs to become more proactive on environmental and resource issues. Suggestions include:

- Getting into the driver's seat on policy matters. Many of the new environmental terms are nothing more that jargon for concepts that have been around for a long while. As mentioned in Ray Hillborn's article in the New Zealand Professional Fisherman, the precautionary principle is code for common sense and industry needs to define the boundaries before it is done by others.

- The industry could seek government support for an incentives for change program. Incentives for the implementation of environmentally friendly technologies in the farming sector are increasingly well accepted and there should be no reason for the same not to be available to the seafood industry.

- The industry needs to be seen to be proactive by ensuring that change and innovation becomes news. Moreover industry action on habitat and pollution issues also need to viewed as part of the profile of the industry.

- A clear policy position on the future management structures for Australia's marine environment needs to be developed to grapple with the often competing roles of the increasing number of players, both government and non-government.

In summary many of these suggestions have been provided before. Already we have the evidence that lack of action is affecting the industry and to believe that we can cope with any further action without significant losses is unrealistic.

What Needs To Be Done to Convince the Public to Support Aquaculture as a Legitimate User of Coastal Resources

Dos O'Sullivan

Promotion of Benefits

It is important that aquaculture promotes itself as a reasonable user of coastal resources.

As detailed in the first part of this paper, the 'NIMBY' creed is prevalent throughout much of Australia. To beat the critics, the aquaculture industry needs to promote itself a lot more. It needs to win more friends in the general public by publicising its many good points and advantages (see below).

The aquaculture industry can offer many advantages, and these need to be 'sold' to the general public, government and conservation groups :

- Production of high quality seafood, with ability to supply most markets year round;
- Opportunity to tailor product to market preferences (live, size, colour, shape);
- Opportunity for augmentation or support of traditional fisheries and propagation and re-introduction of endangered species;
- Capital investment and local purchases;
- Tourism opportunities;
- Improved recreational fishing as farming structures act as fish aggregating devices;
- Provision of opportunities for school groups to learn about the marine environment, its fragility and the need for care to protect it;
- The processing of seafoods can use non-skilled labour thereby providing jobs for long-term unemployed non-skilled people, especially in rural areas;
- The turbidity and nutrient levels in the water may be lowered by the increased filter feeding by shellfish biomass;
- Increased scientific knowledge;
- Regular monitoring of a wide range of water quality parameters - the farmers will be the first to know if there is a change in these (acting as watchdogs on environmental quality); and
- The requirement of aquaculture farms for clean waters will provide a commercial incentive to prevent the input of pollutants or the development of activities which are likely to reduce the water quality. (eg. ban on antifouling paints that use tri-butyl-tin).

These last two points present strong planks which can be used to bridge the gap with the environmental groups. Aquaculture, like capture fisheries, requires access to clean waters for a livelihood and we should be working closely with these groups to monitor and protect that resource.

Research

There is an urgent need for appropriate research to be undertaken on the level of environmental impacts - we need to prove that the level of impacts from Australian

aquaculture operations are small and are acceptable. We also need research on methods to mitigate these problems.

ASIC has taken the initiative and has arranged funding for the project "Aquaculture Environmental Codes of Practice". The objective is to establish a framework around which industry specific codes of practice (COP) can be established to ensure environmental protection. The first stage of the project will be to determine the issues which need to be addressed in the COP, including reviews of the research and legislation. In stage two, three case studies will be undertaken : intertidal oyster farming in Tasmania, farming prawns in ponds in northern NSW and southern Queensland and finfish cage/pen farming (salmon in Tasmania and tuna in South Australia). From these case studies the framework guidelines will be developed.

Appropriate site selection criteria, conflict amelioration and environmentally friendly culture techniques will be a feature of these COPs.

This initiative is far sighted and illustrates the strong support of ASIC for our industry. The COPs will be crucial to our industry's efforts to prove its sustainability and show that it has a right to use coastal resources. It will assist in the push to have aquaculture recognised as a preferred coastal use in Australia.

Aquaculture Management Plans

It is important that aquaculture is considered in local planning, especially in the coastal zone. Joyce (1992) suggested that the best strategy for overcoming conflicts between aquaculture and other users is through clear environmental planning by the government at an early stage. A properly structured zone management plan could be developed with specific guidelines for the use of all aquatic resources and monitoring by all parties. Then it would be possible for all water users to work within this framework in order to avoid conflicts and criticisms.

Coastal management plans with zones for aquaculture are being developed for some areas around Australia, particularly Tasmania and South Australia (e.g. Anutha and O'Sullivan, 1992; Resource Assessment Commission, 1992).

Some of the general guidelines for site selection include

- Establishment of a minimum distance between farms and tourist/historic sites, State Reserves and shack/residential settlements;
- Reduction of visual impacts through low profile farming structures;
- Promotion of public tours through farms, and general education on advantages of aquaculture;
- Avoidance of recognised or significant anchorages, navigational channels, recreational fishing areas and traditional commercial fishing areas;
- Avoidance of seagrass meadows or other nursery areas;
- Promotion of a 'good neighbours policy' to other user groups; and
- Low density of aquaculture developments to reduce interference between farms.

In the case of Twofold Bay mussel proposal, a number of other criteria were used when selecting lease sites which considerably reduced the number of conflicts and environmental impacts. It was recommended that :

a). Lease sites **should not** be sited in areas:

- immediately off residential areas - leases should be at least 250 m from the lowest astronomical tide level of beaches and at least 100 m offshore from rocks or cliffs;
- which are in conflict with commercial shipping channels or navigation zones;
- which are influenced by sewage, stormwater or other pollution inputs;
- which are influenced by large continuous influxes of freshwater;
- which experience mussel diseases, parasites and other problem organisms; and
- which support sea grass beds.

b). Leases **should** be sited in areas:

- well away from culturally or historically significant zones;
- with high primary productivity (i.e. high concentrations of plankton) since mussel yields are directly related to food availability;
- with deep water (minimum of 6 m below MLLW) to allow adequate flow of water under culture ropes;
- which are characterised by well mixed saline waters (salinity greater than 30 ppt);
- which are characterised by moderate currents (greater than 0.1 knot but less than 3.0 knots) for water exchange and dispersal of wastes;
- which have sandy or mud floors rather than rocky or reef bottoms;
- which have a resident population of mussels or regular spat settlement to provide seedstock;
- which normally experience waves which are consistently less than 1 m in height and swells that are less than 2 to 3 m.

In addition, the EIS/FIS included recommendations on equipment specifications and farm layout, as well as techniques for culture, maintenance, monitoring, environmental management, harvesting and processing. Best practice is a feature of these techniques.

The setting aside of specific geographical areas for aquaculture "parks" or zones has been suggested by several authors (e.g. DeVoe *et al.*, 1992; Fridely, 1992) emphasising the importance of selecting appropriate sites for aquaculture (Dickson, 1992; Pillay, 1992; Pollnac, 1992).

It is important to understand that aquaculture operations require specific seawater sites, not just any area. When water-use plans are being formulated, due consideration must be given to factors such as depth, bottom types, water exchange, etc., for aquaculture leases. Optimising site selection is the primary option for reducing environmental impacts as well as optimising fish performance.

However problems may occur by locating too many farms in the same area. It is best that the intensity of culture not be too high for that region, and different species from different trophic

levels should be used, i.e. crustaceans, molluscs and seaweeds, such as that followed in Japan (Murai, 1992). This integration of different species allows for efficient utilisation of nutrients and stimulation of natural purification functions, though operators should be mindful of potential contamination between species.

Case Studies

To illustrate the point that the Australian aquaculture industry is environmentally aware, two case studies can be examined, both from Tasmania - salmonid farming and Pacific oyster culture (refer O'Sullivan and Purser, 1992 for a full description of both).

Salmonid farming in Tasmania

Since the early 1980s a State Government supported development program in Tasmania has resulted in significant seacage culture production of salmonids, mainly Atlantic salmon (*Salmo salar*) but also rainbow trout (*Oncorhynchus mykiss*). The industry is now worth more than $50 million a year with more than 50 % of the 4,500 tonnes being exported. However, the industry has been limited by restrictions on the size and number of sites, as well as concerns over the possible environmental impacts.

To increase profitability at the same time as reducing impacts on the environment, the Tasmanian salmonid growers have had to develop specialised management techniques. In an over supplied world market for salmon, Tasmanian farmers aim more for quality rather than quantity. In conjunction with the Tasmanian Department of Sea Fisheries, a quasi-environmental code of practice has been developed to minimise environmental and socio-economic impacts :

- Appropriate site selection (e.g. current speed, depth, exposure, water quality, etc.);
- Reduced stocking densities and numbers of cages per ha;
- Development of appropriate cage sizes and shapes;
- Non-chemical control of biofouling;
- Spreading of solid wastes and fallowing of sites;
- Reduction of feed wastage ("Smart" feeders, improved formulations);
- Research into algal blooms;
- Non-chemical disease control;
- Humane predator control; and
- Research into polyculture.

Pacific oyster farming in Tasmania

The Pacific oyster (*Crassostrea gigas*) was introduced from Japan into Australia by the Commonwealth Scientific and Industrial Research Organisation (CSIRO) in the late 1940s and 1950s. Introduction into Tasmania took place between 1947 and 1952 (Sumner, 1987). Following research undertaken at the Fisheries Research Laboratory, Taroona, and the establishment of a hatchery at Bicheno in 1980, state-of-the-art intensive rearing systems were developed through the 1980s. Production rose steadily and by 1994-95 there were almost 90 farms occupying more than 1,250 hectares of inshore waters, producing around 3 million

dozen oysters, worth approximately $12 million. Tasmanian production now contributes around 20-25 % of the Australian oyster market.

Most of the oyster farms are located in the south-east of the state where population levels are relatively high. This has resulted in a number of conflicts, however, the intensification of the industry has taken place at the same time as the development of techniques to reduce potential conflicts, including

- Appropriate site selection;
- Specialisation of culture phases (nursery, growout and finishing);
- Reduction of visual impacts (subtidal longlines, cages);
- Monitoring of algal blooms;
- Fallowing of sites; and
- Research into carrying capacities.

Action Plan

Guidelines are given by Barg (1992) for improved environmental management of coastal aquaculture based on an overview of selected published experiences and concepts. In this excellent document, there are 54 specific actions categorised under the following steps :

1. Understand the context of coastal aquaculture and the environment.
- determine the benefits and potential adverse effects of aquaculture;
- coastal pollution implications for aquaculture; and
- social implications of aquaculture.

2. Define factors influencing environmental performance of coastal aquaculture.
- site, culture species, culture method;
- skills of workers/managers, technological standards; and
- access to financing and credit, economic viability, legal status.

3. Assess environmental hazards and impacts of coastal aquaculture.
- address general issues of marine pollution assessment;
- select aquaculture-specific methods for pollution assessment; and
- determine role and functions of environmental impact assessment.

4. Improve environmental management of coastal aquaculture development.
- examine environmental management options and implement appropriate ones;
- assess opportunities for integrated coastal area management; and
- ensure there is appropriate legislation to enact policies/regulations.

I believe that Barg's recommendations should be adopted as national policy, although some adaption to specific Australian conditions may be necessary.

References

As per page 46

Workshop Synthesis and Solutions

Duncan Leadbitter

The workshop sessions addressed the need for the industry to decide on which direction it must take on environmental management issues, the elements of a strategy that could move the industry in this direction and the network of support and advice that is available to help the strategy become reality.

In addition the speakers in session two have also put forward their solutions and these have been integrated into the outcomes of the workshops.

Credibility in the eyes of the community was deemed an important goal and a fundamental basis for this was ensuring that the industry's exploitation of fish resources in Australia was conducted on a sustainable basis. These two goals are inextricably linked, indeed community credibility in the face of resource sustainability problems.

The workshop outcomes can be encapsulated as follows:

Goals

1. Community confidence in the fishing industry.
2. Sustainable utilisation of resources by commercial fishers by the year 2000.

Themes

A strategy to achieve the abovementioned goals has to address the following themes:

A) Networks

The catching sector cannot solve the industry's problems by itself. Making use of strong and even temporary alliances can help put into place the building blocks of success. Allies may, or may not, include government agencies, wholesalers/processors, environmentalists and recreational fishers.

B) Credibility

Nothing speaks louder than actions that constructively solve problems. There should be no gap between rhetoric and reality in terms of the industry's ability to solve environmental management problems caused by industry itself. Moreover, success stories need to be told to the community.

C) Database

Creating and maintaining a database of facts about the industry, the state of resources and the nature of environmental issues (including those affecting industry as well as industry impacts) will provide a strong basis for lobbying and ensuring credibility.

D) Spokespersons

The industry needs to identify and train spokespersons who can deal effectively with the media and with government decision makers.

E) Identify Weaknesses

A list of factors that may weaken the image or the bargaining position of the industry needs to be compiled and updated on a regular basis. This will provide the basis for prioritising research, community liaison and lobbying, amongst others.

F) Devise and Implement Solutions

The industry needs to think more widely (and encourage governments to think more widely) about solutions to problems. Financial instruments and incentive programs have been under-utilised and the current reliance on regulation continues. New approaches to community liaison need to be devised. Making the solutions work is vital.

G) Create Awareness

Getting the facts to people, including industry participants, is a necessary precursor for making sensible decisions. Communications strategies need to be devised and all opportunities to promote the industry's point of view need to be exploited.

H) Negotiate

Ignoring a problem or refusing to negotiate may lead to outcomes that are inimical to industry interests. Taking opportunities to negotiate and promoting industry solutions to the general public will enhance the industry's credibility and power.

I) Political Action

Politics pervades all aspects of industry activity and the industry needs to deal in the political world if its interests are to be accommodated. A strategy for informing and liaising with politicians from all parties (including independents) needs to be devised and implemented.

J) Identify Strengths and "Sell" Them to the Community

The seafood industry contributes much to the community. In addition to the much talked about jobs and money there are intangibles such as contributions to the public good (e.g. on water quality and habitat), at-sea search and rescue, 'colour' and character of the coast and a sense of history, amongst others. More effort needs to be expended on 'selling' these strengths to the community at large, especially city dwellers.

The speakers in session two have suggested a number of actions that could be initiated to address each of the abovementioned themes. Other sources of suggested actions include the FINS (Fishing Industry National Strategy) Report and the report on International Environmental Instruments prepared by Tsamenyi and McIlgorm.

Agenda

Monday 29 January

10.00	Registration
10.30	Introduction - Brian Jeffriess, Duncan Leadbitter
10.45	How Did Florida's Net Fishermen Lose and to Whom? *speaker - Jerry Sansom*
11.30	Save Our Seas Spreads to Washington State With Potential Effects on the Commercial Fishing Industry *speaker - Zeke Grader*
12.15 to 1.00	**LUNCH**
1.00	The New Zealand Experience *speaker - Vaughan Wilkinson*
1.45	A Historical Perspective on the Forest Industry, Environmentalists and the Public *speaker - Dr Robert Bain*
2.30 to 3.00	**AFTERNOON TEA**
3.00	Recreational Fishing Pressures on the Commercial Sector *speaker - Martin Bowerman*
3.45	An Overview of the Nature of Environmental and Public Interest in the Seafood Industry *speaker - Duncan Leadbitter*
4.30	What is the Public's Perception of Aquaculture? *speaker - Dos O'Sullivan*
5.15	General Discussion

Appendix 1

Agenda

Tuesday 30 January

How can we solve these issues facing the industry?

9.00	Jerry Sansom
9.30	Zeke Grader
10.00	Vaughan Wilkinson
10.30 to 10.45	**MORNING TEA**
10.45	Robert Bain
11.15	Martin Bowerman
11.45	Duncan Leadbitter
12.15	Dos O'Sullivan
12.45 to 1.30	**LUNCH**
1.30	Workshop Introduction - Duncan Leadbitter
1.40 to 3.00	Concurrent Workshop Sessions led by Facilitators

1. Directions for the Australian seafood industry on environmental liaison and management.
2. Elements of a seafood industry strategy for responding to environmental issues.
3. Potential linkages with other seafood industry sectors and strategies (such as FINS).

3.00 to 3.30	**AFTERNOON TEA**
3.30	Workshop Analysis - Duncan Leadbitter
4.30	Review and Farewells - Duncan Leadbitter & Brian Jeffriess

Appendix 1

Conference Participants

Contact	Surname	Company Name	Street	Town	State	Postc	STD	Phone	Fax
Perry	Smith	Aust Bureau Agricultural & Research Economics	19 Jemalong St	Duffy	ACT	2611	(06)	2722024	2722338
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Richard	Hogg	Dept Industry, Science & Technology	GPO Box 9839	Canberra	ACT	2601	(06)	2761683	2761306
Mary	Harwood	DPIE, Fisheries & Aquaculture Branch	GPO Box 858	Canberra City	ACT	2601	(06)	2725044	2724215
Murray	Johns	DPIE, Fisheries & Aquaculture Branch	GPO Box 858	Canberra City	ACT	2601	(06)	2724613	2724215
Ian	Freeman	Fins Pty Ltd	7 Boniwell St	Higgins	ACT	2615	(06)	2547559	2547559
Peter	Dundas-Smith	Fisheries Research & Development Corporation	PO Box 222	West Deakin	ACT	2600	(06)	2854485	2854421
Robert	Bain	National Association of Forest Industries	PO Box E89	Queen Victoria Tce	ACT	2600	(06)	2853833	2853855
Peter	Pownall	Northern Prawn Fishery Industry Organisations	15 Pudney St	Farrer	ACT	2607	(06)	2861539	2863390
Michael	Mobbs	Consultant	58 Myrtle St	Chippendale	NSW	2008	(02)	93102930	93101893
David	Bateman	East Coast Tuna MAC	PO Box 515	Eden	NSW	2551	(064)	961442	963452
Judy	Bateman	East Coast Tuna MAC	PO Box 515	Eden	NSW	2551	(064)	961442	963452
Duncan	Leadbitter	Ocean Watch	PO Box 247	Pyrmont	NSW	2009	(02)	96602262	95523574
Peter	Sloane	SCP Fisheries Consultants Australia	Level 10, 80 Mount St	North Sydney	NSW	2060	(02)	99661916	99661917
Stephen	Buckless	Trawler Owners' Association of Australia Ltd	8 Yule Street	Eden	NSW	2115	(064)	961297	963499
Neil	Kelly	Trawler Owners' Association of Australia Ltd	8 Yule Street	Eden	NSW	2115	(064)	961297	963499
Tony	Thiel	Anjoy Nominees Pty Ltd	5/6 Carey St	Darwin	NT	0800	(08)	89831186	89831259
Nigel	Scullion	Northern Territory Fishing Industry Council	GPO Box 618	Darwin	NT	0801	(08)	89815194	89815063
Martin	Bowerman		PO Box 6822	Gold Coast MC	Qld	4217	(07)	55251800	55303993
Joe	Ruiz-Avila	AKT Consultants Pty Ltd	PO Box 50	Nambour	Qld	4560	(07)	54453644	54458117
Colin	Bishop	QCFO	PO Box 392	Clayfield	Qld	4011	(07)	32626855	32627650
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Roger	Green	Torres Strait Prawn Entitlement Holders Assn	138 Esplanade	Innisfail	Qld	4860	(070)	612661	616172
Tom	Angelakis	Angelakis Bros Pty Ltd	30 Field St	Adelaide	SA	5000	(08)	82126544	82311254
Rebecca	Fisher	SA Fishing Industry Council	PO Box 3058	Port Adelaide	SA	5015	(08)	83032786	83032791
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Brian	Jeffriess	Tuna Boat Owners' Association of Australia	PO Box 416	Eastwood	SA	5063	(08)	83732507	83732508
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Bob	Lister	Tasmanian Fishing Industry Council	PO Box 960	Sandy Bay	Tas	7006	(03)	62242332	62242321
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Robert	Iversen	Pacific Fisheries Consultants Australasia	1/4 Dickens St	Elwood	Vic	3184	(03)	95346457	95939262
Karen	Clifton	Victorian Fishing Industry Federation	Suite 7, 20 Commercial Rd	Melbourne	Vic	3004	(03)	98208500	98208338
John	Cole	WA Fishing Industry Council	PO Box 55	Mt Hawthorn	WA	6016	(09)	2442933	2442934
Guy	Leyland	WA Fishing Industry Council	PO Box 55	Mt Hawthorn	WA	6016	(09)	2442933	2442934
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Conference Participants

Vaughan	Wilkinson	NZ Fishing Industry Association	Simunovich Fisheries	Auckland	NZ		649	3779165	3795930
Jerry	Sansom	Organized Fishermen of Florida	PO Box 740	Melbourne, FL	USA	32902	(407)	7730212	7794884
Zeke	Grader	Pacific Coast Federation of Fishermen's Assoc.	PO Box 989	Sausalito, CA	USA	94966	(415)	3325080	3312722

Appendix 2

Marinet Workshop Evaluation Summary

Attendees	42
Respondents	23
% Response	55%

Sector		
Private	78%	
Government	4%	
Research	9%	
Combination	9%	100%

Total Cost	$17,000
$ DIST	$ 3,000
% DIST	18%
Publications	1

		Government	Private Industry	Education	Research	Combination	Total
1	What sector are you from?	1	18		2	1 Govt/Research 1 Ind/Research	23
		Agree Strongly	Agree	Undecided	Disagree	Disagree Strongly	
2	The workshop was well organised	13	10	0	0	0	23
3	This workshop promoted communication between science and industry.	4	11	6	1	0	22*
4	I made useful business/networking contacts at this workshop.	9	11	2	0	0	22*
5	This event promoted export awareness and/or opportunities.	2	6	6	8	0	22*
6	I gained useful information from the workshop.	17	6	0	0	0	23
7	The presenters were knowledgeable about the subject matter.	16	7	0	0	0	23
8	This event is likely to produce commercial outcomes.	9	7	7	0	0	23
9	I knew of the Department's MARINET marine industries networking initiative before attending this event.	4	6	1	11	1	23

* One of the research respondents put N/A to these three questions