



Troubled waters: pearl farming in Port Stephens (A)

In November 2001, Australian Radiata Pty Ltd lodged a Development Application with the New South Wales Department of Planning to establish a 94ha commercial pearl farm in Port Stephens. If successful, it would be the first of its kind in the state. NSW Fisheries considered it an opportunity to establish a profitable industry in a short space of time that would have broad economic and social benefits with minimal environmental impact. However, the local community was strongly opposed to the proposal. Many people believed that they had not been properly consulted and that the farm represented a significant threat to marine mammals, port ecology, tourism, existing oyster farmers and the area's natural beauty. After a 2002 Commission of Inquiry, it was up to Planning Minister Andrew Refshauge to determine whether the application would be approved.

A snapshot of the Port

Port Stephens is a large coastal inlet located approximately 50 km north of Newcastle (*Exhibit A*). Comprising some 125 km² of waterways, it is more than twice the size of Sydney Harbour. The Port is characterised by relatively shallow estuarine and oceanic areas, with the exception of several deep channels. It supports a variety of habitats, including the state's largest area of mangroves and second largest area of seagrasses. It is also an important area for migratory birds and boasts diverse and abundant populations of sedentary marine animals.¹ However, Port Stephens is best known for its resident

This case was written by Marinella Padula, Australia and New Zealand School of Government, for Professor John Alford as a basis for class discussion rather than to illustrate either effective or ineffective handling of a managerial situation. The assistance of Darrell Dawson, Frank Future, Wayne O'Connor and Bob Westbury is gratefully acknowledged.

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¹ Cleland, K. 'Commission of Inquiry: Port Stephens Pearl Oyster Industry' June 2002 p.11.

bottlenose dolphin population, totalling some 150 animals, and the 3500 humpback whales which pass through the area during their annual migration periods. A small population of rare Southern Right whales is also known to frequent the Port.²

Port Stephens has a long history of Aboriginal settlement and many culturally significant sites. European settlers began agricultural and fishing activities during the early 1800s and small townships sprang up as a result. The first recorded leases for the edible Sydney rock oysters were granted in the 1870s and the advent of refrigeration and motorised transport saw the industry grow considerably. But the unauthorised release of Pacific oysters in the mid-1980s had a devastating effect on Sydney rock oyster cultivation in the Port (*Exhibit B*).

Port Stephens became a favoured family holiday destination in the 1970s, thanks to improved road access and infrastructure. By the beginning of the 21st century, tourism was the area's main source of employment. However, the area's single largest employer was the Royal Australian Air Force base at Williamtown. Port Stephens was one of the fastest growing destinations in the Hunter Valley region, attracting more than 1 million visitors worth \$200 million annually.³ Of the estimated 100,000 international tourists drawn to the Hunter Valley region, nearly 50 percent of these visitors were from the United Kingdom or other European countries. Fifteen percent came from Asia.⁴ Most domestic visitors were from Sydney or regional NSW. Marketed as a "blue water paradise" and the "dolphin capital of NSW"⁵, whale- and dolphin-watching cruises drew an estimated 200,000 visitors per year worth some \$40 million.⁶ For casual visitors and residents alike, the numerous recreational boating and fishing opportunities were also big drawcards.

The municipality of Port Stephens had close to 56,500 permanent residents, up by more than 10 percent compared to 1996.⁷ Nearly 85 percent of residents were Australian-born and more than two-thirds lived in dwellings they had purchased. Almost one-third of the Port Stephens population was aged over 50 and close to 42 percent of residents were not part of the labour force.⁸ Indeed, retirees from metropolitan centres were increasingly drawn to the area.

Background to the proposal

During the early 1990s, Barrier Pearls Pty Ltd (a Japanese/Australian pearl farming venture operating in Northern Australia) became involved in talks with the then Liberal NSW state government about the potential for pearl oyster farming in NSW waters. From there, the company approached NSW Fisheries and in 1995 Barrier Pearls (which had now evolved into Australian Radiata and was headed by CEO John Nicholas) commissioned

² *ibid* p.34

³ William, N. 'Pearl farms or whale watching' *Daily Telegraph* 21 March 2002.

⁴ *ibid.* p.11

⁵ Scanlon, M. 'Pearly Counting On Port Industry' *Newcastle Herald* 27 August 2001

⁶ *ibid.*

⁷ Australian Bureau of Statistics, *Census of Population and Housing, 2001, 1996 and 1991*

⁸ *ibid.*

the Australian Museum to undertake a survey of NSW waters to see if there were any native oyster species suitable for pearl cultivation.

South Sea pearls had been cultivated for approximately 50 years in the remote tropical waters of northern Australia, most notably, off the coast of Broome in Western Australia. Estimates placed the value of the industry at more than \$200 million annually.⁹ However, Australian Radiata was interested in cultivating pearls from Akoya oysters. Smaller than South Sea pearls but prized for their lustre, Akoya pearls formed the basis of a once thriving industry in Japan but pollution and disease had seen production and quality decline significantly during the past decade.¹⁰ If successful, Australian Radiata stood to gain entry to a market worth at least \$1 billion in Japan alone.¹¹

Akoya oyster species are found in many parts of the world, including Australia's east coast as far south as Sydney.¹² The survey by the Australian Museum uncovered two pearl oyster species in NSW, most importantly, *Pinctada imbricata* which was genetically indistinguishable from the Akoya species used in Japan. No large concentrations of *Pinctada imbricata* were observed anywhere in NSW but the species was widespread and had been found in Port Stephens. The Port's cooler, subtropical waters were similar to Japanese conditions and deemed more likely to yield high quality pearls.

Because the Akoya population in Port Stephens was too small to support a large scale harvest, the research effort turned towards hatchery production and NSW Fisheries. Scientists would take a small amount of wild stock to produce spat (immature oysters) which could then be grown in a trial farm setting to assess the viability of commercial Akoya production. The Port's comparatively clean and sheltered waters, plus the presence of the NSW Fisheries Research Centre at Taylor's Beach, made it a logical candidate for the Department.

NSW Fisheries is the government agency responsible for administering the *Fisheries Management Act 1994*. Its aim was to "...conserve, develop and share the fishery resources of the State for the benefit of present and future generations" which included the development of aquaculture industries (*Exhibit C*). While there was an established common law right for people to fish throughout most waterways in the state,¹³ NSW Fisheries (under Division 3 of *The Act*) also had the authority to lease areas of public water for aquaculture for up to 15 years at a time, although leases could be renewed. Section 164 (*Exhibit C*) outlined the rights and restrictions leaseholders were subject to.

⁹ 'The Pearl In Port Stephens Oysters' *Newcastle Herald* 10 July 1998

¹⁰ O'Reilly E. 'Pearl Of An Idea For Port Stephens Waterways' *Newcastle Herald* 10 July 1998

¹¹ *ibid.*

¹² O'Connor, W. 'Case Study: Developing akoya pearl culture on the Australian east coast, challenges and constraints' NSW Fisheries 2005 p.1

¹³ Fisheries Management Act 1994 No 38 S.3: At common law, the public has a right to fish in the sea, the arms of the sea and in the tidal reaches of all rivers and estuaries. The public has no common law right to fish in non-tidal waters—the right to fish in those waters belongs to the owner of the soil under those waters. However, the public may fish in non-tidal waters if the soil under those waters is Crown land. In the case of non-tidal waters in rivers and creeks, section 38 declares that the public has a right to fish despite the private ownership of the bed of the river or creek. However, the right to fish in tidal or non-tidal waters is subject to any restriction imposed by this Act.

In 1997, NSW Fisheries lodged a Development Application with the Port Stephens Council to establish four experimental deep water leases totalling 28 hectares. Once the application was approved, NSW Fisheries sought expressions of interest from industry partners from across Australia to enter into a five year joint experimental program to develop techniques for Akoya pearl production. The successful applicant was Australian Radiata (which also had cultivation experience in Japan). They signed a three-year Memorandum of Understanding whereby Australian Radiata would fund the project at a cost of \$460,000.¹⁴ The experimental lease was due to expire in August 2002.

NSW Fisheries Minister Bob Martin (then also the local MP) announced the project in July 1998, noting the possibility that if the trials were successful, they could result in a fully-fledged industry. He was reported in the *Newcastle Herald* as saying: “This is great news for Port Stephens because it is a very high-value industry with low environmental impact and exciting potential for jobs creation, tourism and generally boosting the local economy.”¹⁵ An editorial in the same paper was positive but guarded:

“Japan’s problems cannot be repeated at Port Stephens. Last year’s sewage-related outbreak of hepatitis A at Wallis Lake had a costly short-term impact on oyster sales nationally and tourism locally. The incident showed the need for careful planning to help protect coastal inlets against pollution and disease. This week’s \$1 million Federal Government package of measures aimed at improving water quality in Wallis Lake and Port Stephens served as a reminder that failure to put adequate safeguards in place can have costly consequences. In the past year, two proposals for major fish-farming operations at Port Stephens have been unveiled. Like the pearl-farming research program, the fisheries are potentially exciting and profitable concepts. But they must be capable of operating without having undue impacts on Port Stephens and its existing usage. Likewise, there will be little point in establishing such industries if their continued health cannot be guaranteed. The Japanese pearling experience shows that.”¹⁶

By late 1999, the first nine-hectare trial farm had been set up at Wanda Head (*Exhibit A*) near the Port Stephens Yacht Club. An environmental monitoring program was established simultaneously. But despite being submerged several metres underwater with few indicators of their presence, the Akoya oysters were about to enter a highly visible phase.

No more smooth sailing

Darrell Dawson, then a local councillor, recalled that the yacht club was first to raise its objections late in 1999. Curious about the black marker buoys in the area, the club set about investigating its new neighbour. Six months later in May 2000, a Port Stephens Council Business Breakfast was held at the Nelson Bay golf club. Dawson claimed this was the first point at which he and the wider Port Stephens community became aware of Australian Radiata’s plans for a pearl farm. “The whole thing was shrouded in secrecy,” said Dawson, recalling the 1997 presentation by NSW Fisheries to the Council’s Estuary

¹⁴ Cleland, K. ‘Commission of Inquiry: Port Stephens Pearl Oyster Industry’ June 2002 pp.27-28.

¹⁵ O’Reilly E. ‘Pearl Of An Idea For Port Stephens Waterways’ *Newcastle Herald* 10 July 1998

¹⁶ The Pearl In Port Stephens Oysters’ *Newcastle Herald* 10 July 1998

Management Committee on potential mollusc farming sites within the port. He asserted that there was no reference to Akoya oysters, nor any mention of Wanda Head as an Akoya pearl farm site. Dawson believed NSW Fisheries did this so that the subsequent Development Application to council could be granted under delegated authority with minimal scrutiny.

Frank Future also found the process suspicious. Owner of Imagine Cruises, which ran dolphin and whale-watching expeditions, Future questioned why a collaboration that was already well advanced had taken, in his opinion, so long to come to light: “There was obviously collusion there either to protect Australian Radiata from other competitors, or from an adverse public reaction. Probably both,” he remarked. Both Future and Dawson were strongly opposed to the plan, as was Bob Westbury, who was chairman of Port Stephens Tourism, a body which consisted of some 300 members. All three opponents felt the farm was an inappropriate development which threatened existing industries and, more crucially, the Port and its wildlife. In September 2000, local environment group EcoNetwork established PortWatch, chaired by Darrell Dawson. Committee members included professional and recreational fishermen, oyster growers, the tourist industry and whale and dolphin watch representatives. EcoNetwork was also affiliated with over 20 other environmental interest groups.

In the meantime, Australian Radiata began building public awareness about the project, a campaign Dawson described as a “promotional strategy masquerading as community consultation.” From November 2000 to March 2001, Australian Radiata distributed brochures, advertised in the local paper, held 15 meetings and surveyed community attitudes.¹⁷ But according to Dawson, the company was making little headway, “The further they went, the more they turned the community against it,” he said.

Dr. Wayne O’Connor, Senior Research Scientist at NSW Fisheries, had joined the project in 1997 to establish the oyster hatchery and the environmental monitoring program. He found it odd that a project opened to tender and supported by the Minister had somehow gone unnoticed by Council, especially as it had been covered by the local paper in 1998. He also stated that the original application had specifically referred to pearl oysters and Wanda Head where the trials were now yielding promising results. In November 2001, Australian Radiata lodged a Development Application and its Environmental Impact Statement with the NSW Government to establish a commercial pearl farm. The scale and unprecedented nature of the proposal meant that it was of “state significance” and up to NSW Planning and Urban Affairs Minister Andrew Refshauge to determine whether it could proceed. He was expected to deliver a decision sometime in February 2002.¹⁸

The pearl farm proposal

Unlike the Port’s edible oyster species, Akoya pearl oysters preferred subtidal waters. The greater variation in temperature and salinity at shallower depths inhibited Akoya growth and survival rates. Akoya oysters also required areas with good currents allowing an

¹⁷ Cleland, K. ‘Commission of Inquiry: Port Stephens Pearl Oyster Industry’ June 2002, p.62

¹⁸ Maguire, P. ‘Plans For \$34m Pearl Farm Up For Comment’ *Newcastle Herald* 15 November 2001.

adequate flow of algal nutrition. But to optimise production in a commercial setting, the oysters would need to be moved around to take advantage of prevailing weather and currents. Australian Radiata identified five sites it sought to develop: three within the Port totalling 32 ha at Mambo Creek, Wanda Head and Pig Station Creek; and two offshore sites at Fly Roads and Providence Bay (aka Yaccaba) totalling 62 ha (*Exhibit D*). A land based site at Cromatys Bay would handle treatment and harvesting procedures.¹⁹ The constellation of factors required for successful oyster production meant that suitable areas were limited. However, the sites selected were consistent with the NSW Government's draft criteria for aquaculture developments. That is, they were not within: a designated navigational area; commercial fishing grounds; 100m of public wharves and mooring areas; or a national park or aquatic reserve.²⁰

Procedures

NSW Fisheries would provide oyster spat until mid-2004 after which point alternative arrangements would be made. Either way, oysters would be cultivated in a hatchery until they reached 2mm in size and then transferred to estuarine (inner port) lease sites where they would grow in mesh bags suspended from longlines (*Exhibit E*). Each week, the bags would be cleaned to remove siltation and biofouling (oyster excrement) and periodically transferred to larger bags at lower stock densities. Once 20mm, they would be placed in meshed pearl cages to grow out, all the while being regularly cleaned, sorted and graded. During the winter, some oysters would be transferred to the warmer waters of the outside oyster leases.²¹

Once implantation size (50mm), sterilised mussel shell beads would be inserted into the Akoya oysters. These are the nuclei around which the nacre forms, creating pearls. After implantation, the oysters would be returned to one of the more sheltered sites. Here, they would be cleaned on a boat every 7-10 days with high-pressure water to allow a constant flow of food and oxygen. No additional food would be introduced to the Port. Oysters would also be periodically removed from the Port to undergo mudworm treatments. Finally, after one-and-a-half to three-and-a-half years the pearls would be harvested.²² The company wanted to grow small-to-medium pearls (up to 12mm) which were the type most sought by the Japanese market.

Structures and operations

At the inner port sites, the pearl bags or cages would be suspended a minimum 4m below the surface during low tide, allowing for the passage of boats and marine life (*Exhibit E*). At this level, the oysters would not be visible during at any point of the day. Each longline would also have an anchor as well as additional weights to keep the lines taut and prevent marine animals from becoming entangled. The Mambo Creek and Pindimar sites would each have 21 longlines and 63 surface buoys while the Wanda Head lease would have

¹⁹ Cleland, K. 'Commission of Inquiry: Port Stephens Pearl Oyster Industry' June 2002, p.1

²⁰ *ibid.* p.4.

²¹ *ibid.*

²² *ibid.* p.4

25 longlines and 75 surface buoys. In addition, the corner of each lease would be marked by a 1.2 metre yellow buoy equipped with a flashing light.²³ The proposed hours of operation for these sites were 7am to 2pm weekdays but could be extended.

The outside leases would be similar, with the exception of heavier anchors and ropes to allow for stronger wave action. Surface buoys would be 180 litres and attached to longlines at 50m intervals. It was envisaged that the Providence Bay site would have 33 longlines (165 buoys) while the Fly Roads site would have 11 longlines (55 buoys). Again, each corner would be marked by yellow buoys (this time sitting 2.4m above the surface).²⁴ As there was the risk of overlap with whale migration routes, the company proposed removing the cultivation infrastructure from mid-September to the end of April. Operating hours for these sites would be 6am to 6pm daily. To service the leases, Australian Radiata envisaged a 17 boat fleet including, three 9m covered punts with cleaning equipment, one houseboat for oyster grading and two security vessels for night patrols.²⁵ All boat motors would be silenced to meet the relevant Environmental Protection Authority noise criteria, and fitted with propeller guards.

The land-based site would be used for equipment and waste storage in addition to oyster implantation, treatment and harvest. Proposed operating hours were 6am-6pm weekdays. Material collected from cleaning the oysters (some 180 tonnes per annum) would be disposed of daily to minimise odour. The oyster shell, muscle and viscera left after harvest would also initially be disposed of but it was anticipated that this material could eventually be sold on to other industries. Waste water from the oyster cleaning operations would be recycled for landscape irrigation. Australian Radiata estimated that the pearl farm would create 80 full-time positions and generate \$12 million annually. Approximately \$34 million would be spent over the first seven years with annual running costs expected to total \$6 million.²⁶

Taking sides

Both the Development Application and Environmental Impact Statement were advertised in local and regional newspapers and put on public display from 15 November to 19 December 2001. The NSW Department of Planning (Planning NSW, the government agency responsible for assessing the proposal) received 885 submissions; all but a few opposed the development. Planning NSW recommended that the Minister launch an inquiry.

The Development Application prompted PortWatch to increase its efforts, and on 8 December an estimated 550 people attended a public meeting at the Soldiers Point Bowling Club. Speakers included local Labor MP John Bartlett, along with Australian Radiata CEO John Nicholas and Japanese partner Koichi Ohara. PortWatch chairman Darrell Dawson and whale-watch cruise operator Frank Future recalled that the reception

²³ Cleland, K. 'Commission of Inquiry: Port Stephens Pearl Oyster Industry' June 2002, pp. 5-6.

²⁴ *ibid.* p.7

²⁵ *ibid.* pp. 7-8.

²⁶ *ibid.* p.3.

for the latter two was far from warm, with all but 12 people voting against the farm.²⁷ Ten days later, the Port Stephens Council rejected the proposal unanimously.

In late January 2002, Minister Refshauge announced that a Commission of Inquiry²⁸ would begin in March that year. On 22 February, another public meeting was held. Again, it drew over 500 attendees with the vast majority opposed to the development. “Most of the people who live here,” explained Dawson, “are migrants to the area from Sydney, Melbourne, and Canberra. They come here for its beauty and they’re very conscious about that and the protection of it. They were absolutely outraged that anyone, particularly a government agency [wanted to do this]. No one wanted to give up their recreational waters for gems for the Japanese market.” Added Future:

“When you’ve chosen to live in one spot and that’s it, you get pretty passionate about the place you live. Darrell was born just down the bay but most of us arrived here at some point and chose it as a place to live because it’s a beautiful spot. We all feel in our own way that we’re custodians of the Port and that if the locals don’t try and look after it, who will?”

Dawson and his supporters accepted the existing oyster operations but didn’t see how Akoya cultivation was compatible. “Port Stephens has a very old edible oyster industry,” Future noted, “but they live around the estuaries and mudbanks and people are pretty used to that but this was taking over fairly substantial areas of navigable deep water really close to housing. Nowhere in Australia is there a pearl farm within 1km of a house. The closest would be perhaps in Broome, located well off the coast.” Port Stephens Tourism chairman Westbury agreed: “I believe that we need to live and we need to eat but why do we need to produce Akoya oysters to grow a pearl which is a trinket?” He first visited the Port in 1973 and moved to the area permanently more than a decade ago. A former tour operator himself, he was convinced the farm would compromise the area’s eco-friendly appeal and worse:

“Once you allow industry to start somewhere it just eats up the environment because greed and profit take over from people. In the end it’s about big business and we see this all the time. I’ve been working for 55 years and I understand that hey, somewhere along the line you can’t just let industry take over the whole planet, you’ve got to save some areas for the future. That’s why we’ve been so adamant about saving this in its natural environment.”

For his part, NSW Fisheries scientist O’Connor was surprised that the pearl farm was attracting such controversy: “The [trial] farm was in place for two years with absolutely no complaints,” he said, “it went through council without any dramas and there were no problems whatsoever but the minute it was announced that it might go to a [commercial] farm, things went ballistic.” Despite the outcry, he believed the pearl farm represented a very good opportunity:

“It’s a way of generating high revenue with low environmental impact with a native species that would integrate well with existing industries. For the last 20 years the oyster industry

²⁷ Maguire, P. ‘The Battle of Pearl Harbour’ *Newcastle Herald* 17 December 2001

²⁸ To be conducted by an independent commissioner appointed under the NSW *Environmental Planning and Assessment Act 1979*.

has been declining, many of those farmers have been looking for alternate species and we realised that there was an opportunity there for oyster farmers to diversify into another industry... There was the potential for something like a \$12-\$16 million industry in Port Stephens alone, while the total Sydney rock oyster industry in the state was worth a little bit over \$30 million. So in other words, we could set up one industry, one farm that would potentially become our second biggest aquaculture industry in the space of 3-5 years.”

But he added that, “at the time in Port Stephens, there were a lot of other things going on: there was an expansion in dolphin watching; the number of recreational boats was increasing dramatically; and I think there was interest in a broader debate over water use.”

Just a few years earlier, Future had founded the Port Stephens Dolphin Watch Association (PSDWA) in response to the growing number of cruise operators. The PSDWA developed a voluntary code of conduct to minimise any potential impact on the dolphin population. Six of the Port’s eleven commercial cruise operators were members.

In July 2000, the NSW Government had introduced a three year, \$3 million Aquaculture Initiative to promote the development of the NSW industry and stimulate investor confidence.²⁹ The Federal Government was also keen to boost Australia’s aquaculture profile but despite their enthusiasm, O’Connor and his colleagues still faced many obstacles: “It’s become very, very difficult to do any coastal aquaculture in NSW. If you can get to areas without large numbers of people, that’s all well and good but what’s happening in NSW is that major, relatively protected waterways that might be attractive to aquaculture are all major population and tourism centres.”

More than 85 percent of NSW’s population lived within 50kms of the coast³⁰ and the “sea change” phenomenon saw increasing numbers of city-dwellers seeking a less frenetic existence by the seaside. He also noted different community attitudes towards terrestrial agriculture versus aquaculture: “We’re quite used to the feeling that on land that there are areas we can and can’t go but quite frankly there’s an attitude that: ‘If it’s wet, I’m allowed to go there’ because there really aren’t too many limitations.” But conversely, the community wasn’t completely opposed to aquaculture³¹ as O’Connor pointed out:

“Only 12 months prior, a snapper farm had been approved outside Port Stephens which went through very smoothly, no great public outcry or concern, and it’s interesting to contrast the two. Why did that particular project get through and why were pearls so controversial only a year or so later? [The pearl farm] was inside Port Stephens, so it was going to be more visible. The land prices around the foreshore of Port Stephens are phenomenally high and particularly those people living at Wanda head were concerned that it would a) spoil the view and b) reduce the value of the property there.”

²⁹ Cleland, K. ‘Commission of Inquiry: Port Stephens Pearl Oyster Industry’ June 2002 p.32

³⁰ O’Connor, W. ‘Case Study: Developing akoya pearl culture on the Australian east coast, challenges and constraints’ NSW Dept of Fisheries 2005 p.2.

³¹ However, the proposal was not completely devoid of opposition. A November 2001 ABC TV *Landline* report ‘Greens and commercial fishermen critical of snapper farm experiment’ detailed EcoNetwork’s concerns, as well as those of some local fishermen.

However, NSW Fisheries was working on a draft aquaculture management plan that O'Connor maintained would see a net reduction in the area of the port given over to such activities, even allowing for a 94 ha pearl farm. He compared the proposal to the 1960s and 1970s where the foreshore of places like Salamander Bay were dominated by Sydney rock oyster leases and couldn't understand the [current] objections on the basis of visual intrusion. He put community resistance down mainly to unfamiliarity, compounded by Australian Radiata's initial reticence to discuss its plans openly. Said O'Connor:

“These guys weren't necessarily trying to get out there and explain what pearl farming was. The directors themselves were not permanently based in Port Stephens, so it wasn't always easy to get information about what was going on. The environment was ripe for a whole series of rumours to sweep around about what pearl farming would do, how it would limit you and so on...A lot of people were looking to the Western Australian industry and saying, 'Well, that's highly secretive and they're very protective of their lease areas, we could end up with the same sorts of things: machine guns and barbed wire around the outside.'”

Soon those for and against would have the opportunity to air their views at the Commission of Inquiry. But even though new local Labor MP John Bartlett claimed that “virtually 100 percent” of Port Stephens residents opposed the proposal,³² Dawson expected the outcome to favour Australian Radiata.

The Commission of Inquiry

Held between March and May 2002, the Inquiry, chaired by the experienced environmental and planning commissioner Kevin Cleland, received a total of 170 separate submissions from individuals and organisations. Forty-seven parties also appeared before the Commission.³³ The majority of submissions opposed the proposal; the most common objections were that the proposal would:

- conflict with the natural and cultural values of the Port;
- restrict access to and alienate users from 94ha of deep public waterways;
- create a navigational hazard;
- adversely affect water quality;
- have a negative effect on biodiversity and ecological integrity;
- have negative visual and noise impacts;
- result in profits sent overseas;
- adversely impact dolphin and whale habitats;
- threaten the tourist industry
- threaten the existing the Sydney Rock oyster industry.³⁴

Entanglement

In its submission, the company maintained that trial monitoring had not revealed any significant impact on surrounding flora and fauna; in fact, dolphins had been witnessed

³² Maguire, P. 'Pearl Farm Risk' *Newcastle Herald* 22 March 2002.

³³ Cleland, K. 'Commission of Inquiry: Port Stephens Pearl Oyster Industry' June 2002, p.28

³⁴ *ibid* pp. 29-49.

entering the area. Other submissions questioned this observation, noting a decline in dolphin activity. Research from Western Australia indicated that female dolphins did avoid pearl culture sites.³⁵ However, Planning NSW said that, “Any alteration to dolphin behaviour is likely to be short-lived as the animals are likely to quickly habituate to the presence of the lease sites.”³⁶

Port Stephens Tourism chairman Bob Westbury was not convinced, stating that if dolphins had been in the area, they were probably curious youngsters who were unlikely to return. Likewise, cruise operator Frank Future was not reassured by the company’s assertions that there had been no reported deaths from entanglements in Australia. “They’re not going to report deaths unless they get discovered,” he said. “The pearl farms in WA are quite a long way off the coast and anything that died out there would be cut adrift quite quickly because it would be a major incident.”

The National Parks and Wildlife Services (NPWS) and National Conservation Council of NSW (NCC) had similar misgivings, the former noting that whales faced the greatest risk of entanglement and that the effectiveness of the “taut rope” method had not been proven.³⁷ NPWS observed in its submission that there was a general paucity of published evidence on issues of habitat alienation and entanglement but did state that, “The proposal poses a long-term risk of mortality or injury to a small local population of the Southern Right whales and is not ecologically sustainable”.³⁸ NSW Fisheries believed that the environmental impact statement was adequate and the likelihood of entanglement was low, stating in their submission that “many of the objections are not based on fact... Environmental concerns such as dolphin entanglement and pollution from the aquaculture activities are all passionately believed by those who propose them but are not backed up by any relevant scientific evidence.”

Tourism

The prospect of entanglement troubled tourist operators greatly. Outside lease sites were especially problematic as they overlapped whale-watching areas but whales also occasionally entered the Port. Local businessman R Yeo contended that operators would suffer if the pearl farm was to proceed:

“They [tourists] will not come to watch pearl oysters grow. They will not come if the recreational pursuits they’re seeking become difficult to find. They won’t come if the natural wonders like dolphins and whales and game fish leave for more friendly habitats. How do I know this? I know this, because I’ve asked them. As an operator of a small tourist accommodation property, I am fortunate to meet and talk to hundreds of visitors to Port Stephens and I can assure you they are unanimous in their praise of our bit of heaven on earth and equally unanimous in their condemnation of anything that might potentially threaten it.”³⁹

³⁵ Scanlon, M. ‘“Pearls pose Dolphin Threat”’ *Newcastle Herald* 23 August 2001

³⁶ *ibid.* p.30.

³⁷ *ibid.* p.33.

³⁸ Cleland, K. ‘Commission of Inquiry: Port Stephens Pearl Oyster Industry’ June 2002 p.33.

³⁹ *ibid.*

However, NSW Fisheries scientist O'Connor pointed to places such as Broome where pearl cultivation had become one of the main tourist drawcards, despite the fact visitors couldn't access the farms.

Westbury was sceptical about the tourist potential of pearls. He, instead, was keen to attract more cruise ships (150-200 passengers) to the area and was worried about the farm's potential encroachment on deep water channels.

Environmental disturbance

The NWPS and the NCC submissions raised concerns about the pearl farm structures and the waste they produced which they believed would not only affect animals passing through, but species living there. NSW Fisheries disagreed. O'Connor contended that the pearl farm would have a positive impact, providing a sheltered zone for fish and ultimately increasing angling opportunities. Oyster shells also absorbed heavy metals, thus had the potential to improve water quality. And because the pearl farm equipment was not permanently fixed to the sea bed, structures could be removed easily, returning the water to its original state quite quickly. "Aquaculture is attracting a lot of flak for a variety of different things," O'Connor commented, "As an aquacultural scientist you sit there and start to compare it with terrestrial agriculture. Not that I'm pointing finger but we are absolute saints in comparison. Terrestrial agriculture by and large requires significant modification of the environment."

Australian Radiata was also satisfied that there were adequate measures to ensure that the impact of noise and sediment was minimal. The Environment Protection Authority had conducted an inspection of the trial site in April 2002 and noted that farming operations created a visible plume of sediment that could make the water hazy for some time afterwards, unless dispersed by winds and currents. The authority suggested that some additional guidelines might need to be put in place to protect the waters and the "visual amenity".⁴⁰ And although it was in overall support of the proposal, Planning NSW noted in its submission that, "The statistical power of the monitoring program is poor, and the Department is very cautious to conclude that bio-sedimentation impacts will be insignificant."⁴¹

Oyster farming

NSW Fisheries contended that the Akoya oyster would not have an adverse effect on the edible oyster industry. O'Connor's data indicated that numbers of Akoya spat had not increased from pre-1999 levels. In addition, the oyster had low tolerance to exposure, and its spat were subject to high levels of predation. The Akoya leases would be sufficiently separate from food oyster leases, stocked at much lower densities and only represented a small increase in overall production, as NSW Fisheries pointed out:

"The maximum annual sustainable yield for Port Stephens has been estimated by NSW

⁴⁰ *ibid* p.34.

⁴¹ *ibid* p.30.

Fisheries to be 40 million oysters. The proposal intends to annually produce 2.2 million oysters. While the proponents intend to divide these oysters between leases within and external to Port Stephens, should they all be grown within the Port, they would represent around 5 percent of the overall current estimated maximum sustainable annual oyster yield for Port Stephens. The proposal would boost the current total commercial oyster production from approximately 37 to 42 percent of the estimated maximum sustainable yield for Port Stephens.”⁴²

However, environmental groups and the Port Stephens Council believed that it was impossible to predict the outcome of introducing large numbers of Akoya oysters. The full impact might not be realised until years later, by which time any negative consequences would be too difficult to redress. Said Westbury: “They go and farm nine hectares and say, ‘Oh it didn’t hurt the environment,’ then they want to go and more than triple it. It’s a bit like taking a prescription that says ‘take two Panadol’ and taking six. How do we know that this spat won’t take over the Sydney rock oyster? They’re saying that scientifically it shouldn’t happen but I’m saying that we should err on the side of caution.”

During the Commission of Inquiry, three oyster farming operations came out in support of the proposal. Many, according to PortWatch’s Dawson, were privately opposed to the farm but reluctant to express their disapproval. Claims emerged in the press that oyster farmers had been “leant on” by NSW Fisheries, Future telling Kevin Cleland that a leading oyster grower was “scared” to put in a submission.⁴³ These claims were vigorously denied by Fisheries and the grower in question and not taken further by the Commission. O’Connor recalled that the oyster farmers were initially wary but as NSW Fisheries explained the proposal more fully, many were now embracing the prospect of converting to Akoya cultivation. “As soon as an oyster farmer comes out and says: ‘I’m worried it’s going to compete with my stock,’ that then goes out to the public and becomes a much bigger deal,” observed O’Connor. “That’s also because people were not on the front foot defending against those kinds of statements. Once the farmers would ask us we could discount it.”

Boating

The company maintained that the 4m allowance between the longlines and the surface was adequate and would not restrict recreational boating. Planning NSW agreed, with the exception of larger craft. Australian Radiata also added in its submission that, “Lease areas will not be floodlit and patrol staff will not be armed, but will have mobile phones and VHF radio.”⁴⁴ However, the Port Stephens Yacht Club was concerned that the farm would affect members and preclude hosting international regattas. The Royal Volunteer Coastal Patrol, the NSW Water Police and recreational and game fishers were also concerned the pearl leases posed a danger. The Water Police submission stated that:

“There have been increases in both recreational and commercial boating activity in recent years and the navigable waters within and around the Port are used extensively by all forms

⁴² *ibid* p.63

⁴³ Williams, N. ‘Fear “keeps farmers silent”.’ *Daily Telegraph* 22 March 2002.

⁴⁴ *ibid*. p.29.

of vessels. The primary concern of the Water Police is the preservation of life and property and the project may lead to the death or serious injury, or damage to the boating fraternity and their vessels. In times of bad weather the Port can be extremely hazardous due to the topography and sea conditions. Placing any artificial hazard in or around the waterways increases the risk substantially, particularly for the inexperienced and those unfamiliar with the area. In the past 5 years the Water Police have responded to 78 incidents within the general area of the proposed external lease sites.⁴⁵

Added Westbury, 'I'm sure once someone accidentally gets caught in there and drags an anchor through the farm, then the company will jump up and say "I'm going to sue you for wrecking my pearl farm because you weren't supposed to be there.'" He also wondered who would be liable for the costs of any rescue effort.

Other issues

Though not addressed directly by the Commission of Inquiry, Dawson and Future believed that the judgement of NSW Fisheries was clouded. In their view, Department employees had little incentive to raise doubts about potentially profitable projects, especially as it might jeopardise future employment prospects in the private sector. Dawson pointed out that the snapper farm, for example, had a former Fisheries scientist on board. Said Future: "NSW Fisheries was so involved in [the pearl farm], it was a joint venture really and a conflict of interest. They were planning to grow the spat for sale and I think there had been some pressure on Fisheries from government to become more self-supporting and entrepreneurial. They saw that the leasing of public waters and the ongoing growing of spat as a source of revenue. Scientists we thought were objective were actually financially involved." He was also worried that that it might set a precedent, asking: "What right does any government department have to gain any remuneration from public waterways? What's stopping them from doing it with the entire port? I might wind up paying rent to Fisheries to run my boat through their waterways."

He also feared that approval would pave the way for more farms. Talking about the research his company had supported, Australian Radiata CEO John Nicholas said, "We are effectively funding our future competitors... [The Government] only allowed us permission to proceed on the basis of us supplying a body of knowledge for others."⁴⁶ But O'Connor downplayed such concerns. He believed that the scarcity of suitable space in Port Stephens would put natural limits on expansion.

Findings and conclusions

In June 2002, Kevin Cleland delivered his report. He found that "The proposal would have environmental impacts including some restriction on the use of public waterways in the lease areas, complicating navigation in and around the lease areas in bad weather, intruding on some largely natural views, and posing a low risk of marine animal entanglement, whales being of particular concern."⁴⁷ He also made reference to the high

⁴⁵ *ibid* p. 34

⁴⁶ Scanlon, M. 'Pearly Counting On Port Industry' *Newcastle Herald* 27 August 2001.

⁴⁷ Cleland, K. Commission of Inquiry: Port Stephens Pearl Oyster Industry June 2002 p.i

level of community opposition but concluded that “the proposal as recommended will be unlikely to significantly affect the natural attributes of Port Stephens or its tourism industry.”⁴⁸

Instead, he considered that the proposal would bring many social and economic benefits to the region. Subject to the deletion of the Fly Roads lease, he found that “environmental aspects do not preclude approval of the proposed Port Stephens Pearl Oyster industry.”⁴⁹ However, he did make 38 recommended conditions of consent to minimise the potential risks. A month later, Planning NSW delivered its own report. It agreed that, with amendments, the environmental impacts and risks could be managed. However, in a supplementary briefing document, Planning NSW stated that:

“The Minister is aware of the community outrage and opposition to this development proposal, which persist despite the comprehensive assessment process, including a Commission of Inquiry. Notwithstanding the Inquiry’s findings that most adverse impacts (particularly those on the biophysical environment) could be managed by way of conditions of consent, there will be a residual risk. There are also uncertainties in finalising the extent of that risk particularly as regards adverse impacts on marine fauna, specifically dolphins and whales. Reliance on conditions of consent particularly to mitigate this and water quality impacts may not suffice.”⁵⁰

Another consideration was that although the experimental lease was due to expire in August 2002, there was still considerable stock left to grow out. If the lease was to be dismantled immediately, it would result in an estimated \$3 million loss. Furthermore, an election was due in 2003. Planning NSW identified the three main options for the Minister:

1. Approve the Development Application with conditions;
2. Defer the decision until the regional aquaculture strategy is completed and more research information is available, including the outcome of public consultation as regard the strategy. This will at least put the development and the decision in a strategic context; or
3. Refuse the Development Application on this occasion. The outcome of the regional aquaculture strategy together with associated additional research on key aspects and community consultation could be used should a future development application be made for commercial oyster pearl activity in the region.⁵¹

The supplementary briefing did not outline Planning NSW’s preferred option but advised the Minister to “adopt an outcome in the public interest.”⁵² John Bartlett had already led delegations to several Ministers, including then Fisheries Minister Eddie Obeid who was

⁴⁸ *ibid.*

⁴⁹ *ibid.*

⁵⁰ Minister’s determination of a development proposal by Australian Radiata Pty Ltd to establish a commercial pearl oyster operation at Port Stephens: supplementary advice and consideration of options.’ Department of Planning NSW 2002 p.5

⁵¹ *ibid.*

⁵² *ibid.*

later replaced by Ian MacDonald. Meanwhile, Greenpeace vessel *Arctic Sunrise* entered Port Stephens to lend support. But amidst the discussions taking place, there was another surprise visitor:

“A young southern right whale which has made Port Stephens his home for more than a week has become a symbol of hope for locals fighting a proposed multi-million dollar pearl oyster farm. [The] photograph and a video of the whale - an endangered species - feeding and playing ‘right in the middle’ of the proposed farm will be shown to NSW Planning Minister Andrew Refshauge today in a bid by a Port Stephens delegation to persuade him to reject the \$34 million project, which will grow pearls for jewellery. The 8m whale, which was born in Port Stephens four years ago, returned again on July 6 - without his mother for the first time. ‘Bart’, as locals have named him after the cartoon character Bart Simpson, is a star with locals and tourists. But his favourite choice of feeding, rest and play areas north of Yacaaba headland has locals and whale-watchers concerned it is ‘right in the middle’ of part of the proposed pearl farm.”⁵³

⁵³ Williams, N. ‘Beauty or the behemoth - Pearl farm threat to whale's sanctuary’ *Daily Telegraph* 17 July 2002.

Exhibit A: Port Stephens locality map

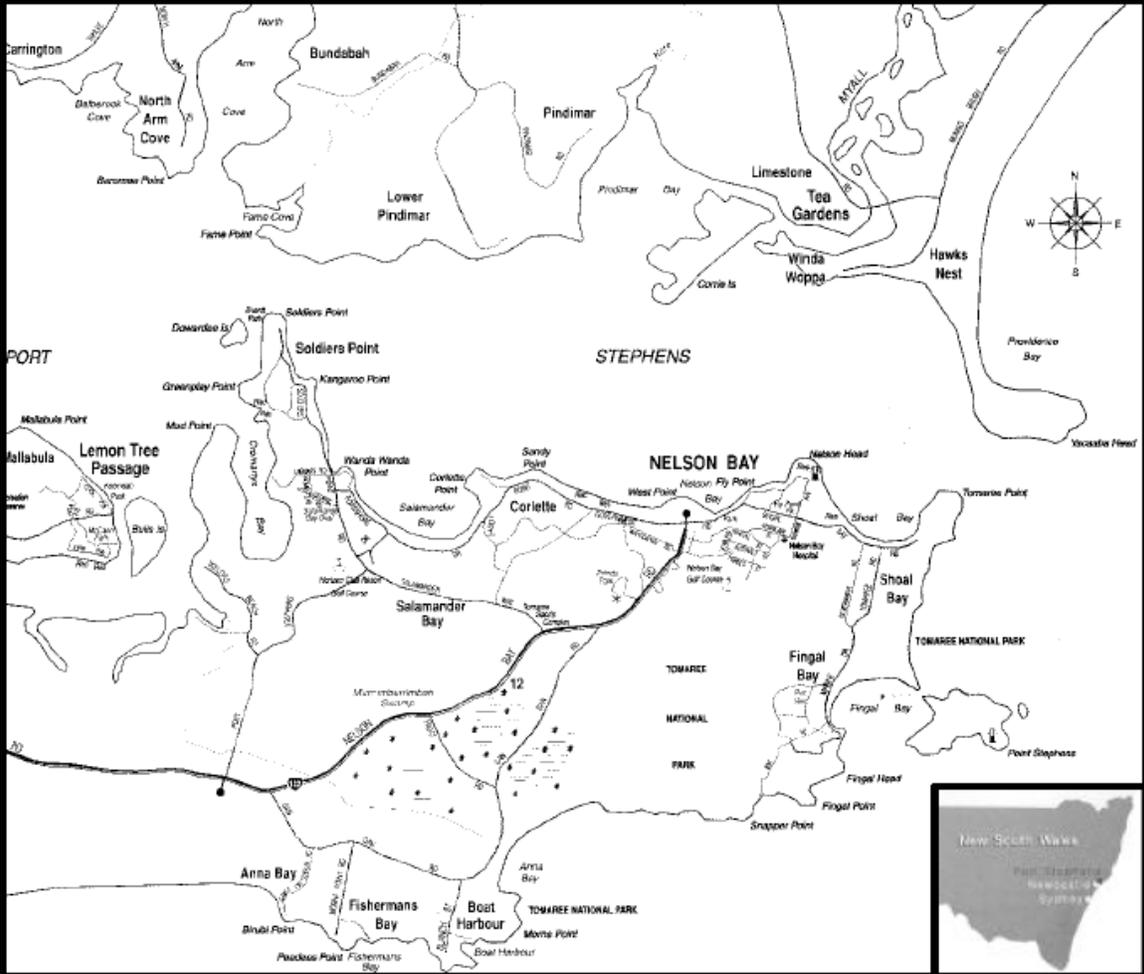


Exhibit B: Oyster farming in Port Stephens

At one stage it was estimated that 75% of all oysters in NSW originated in Port Stephens.⁵⁴ Farmers relied on the abundant, naturally occurring spat (immature oysters) which formed after spawning. These spat would swim through the water before affixing themselves to a stable spot, preferably in a clean and protected estuarine environment where there were sufficient nutrients and salinity. Sydney Rock oyster spat would also be taken from Port Stephens and grown elsewhere. As a result, New Zealand rock oyster was introduced in the late 1800s to boost local stock.⁵⁵

However, the imports also brought mudworm – a bottom-dwelling parasite. To avoid infestation, oyster spat were grown out on sticks in the intertidal zone, which was submerged at high tide but exposed at low tide. Methods evolved but remained similar in principal; oyster spat attached to tarred hardwood sticks were set into timber frame trays (1.8m x .9m) with plastic mesh bottoms.⁵⁶ More recently, farmers were using PVC piping. It typically takes 3.5 years for Sydney Rock oysters to reach market weight.⁵⁷

Production peaked in 1977 with 50 million oysters produced over 1200 hectares of leases⁵⁸ and an estimated 50 million more translocated to grow out elsewhere.⁵⁹ However, disaster was about to strike. The Pacific oyster was brought from Japan into Tasmania in 1947 by the CSIRO⁶⁰ and although never officially released in NSW, it appeared in Port Stephens in 1973. However, in 1984-85, the species was suddenly found in large numbers, suggesting a deliberate introduction. The responsible party was never established and decades later it was a matter subject to abiding rumour and suspicion.

Being larger and more vigorous, the Pacific oyster spread throughout Port Stephens. Farmers were forced to regularly remove Pacific Oyster spat which had become attached to Sydney Rock oyster shells, depriving them of space and nutrients. NSW Fisheries required farmers to remove any Pacific oysters found on their leases but because these oysters had become so embedded in the Port, local farmers were exempt.⁶¹ However, the transfer of spat from Port Stephens also became problematic.

From its peak, oyster cultivation in Port Stephens dropped to 11.5 million in 2000/2001.⁶² Pacific Oyster removal costs and demand for smaller ‘bistro’ oysters had cut profitability. Being filter feeders, edible oysters were very also vulnerable to disease and pollution scares. Many oyster farmers had abandoned their leases, costing the NSW government millions of dollars to clean up. Approximately 70 oyster farmers remained in the area⁶³ with leases totalling approximately

⁵⁴ Cleland, K. ‘Commission of Inquiry: Port Stephens Pearl Oyster Industry’ June 2002 p. 63.

⁵⁵ Nell, John A. ‘The History of Oyster Farming in Australia.’ *Marine Fisheries Review* Vol. 63(3) 2001 p.15.

⁵⁶ *ibid* p.17.

⁵⁷ *ibid*.

⁵⁸ Maguire, P. ‘The Battle of Pearl Harbour’ *Newcastle Herald* 17 December 2001

⁵⁹ Cleland, K. ‘Commission of Inquiry: Port Stephens Pearl Oyster Industry’ June 2002, p.11

⁶⁰ Ayres, P. ‘Introduced Pacific Oysters in Australia’ Maryland Sea Grant www.mdsg.umd.edu/oysters/exotic/gigas.html accessed 31 October 2006

⁶¹ Nell, John A. ‘The History of Oyster Farming in Australia.’ *Marine Fisheries Review* Vol. 63(3) 2001 p.19.

⁶² Cleland, K. ‘Commission of Inquiry: Port Stephens Pearl Oyster Industry’ June 2002 p.63

⁶³ Maguire, P. ‘The Battle of Pearl Harbour’ *Newcastle Herald* 17 December 2001

700 hectares.⁶⁴ Nonetheless, the Sydney Rock oyster was still the most valuable oyster industry in the country, worth close to \$30 million in 1999/2000.



(PVC pipe oyster lease, Wallis Lake)



(Sydney Rock Oyster trays, Port Stephens)

Source: Nell, John A. 'The History of Oyster Farming in Australia.' *Marine Fisheries Review* Vol. 63(3) 2001

⁶⁴ Op cit p.25.

Exhibit C: Fisheries Management Act 1994

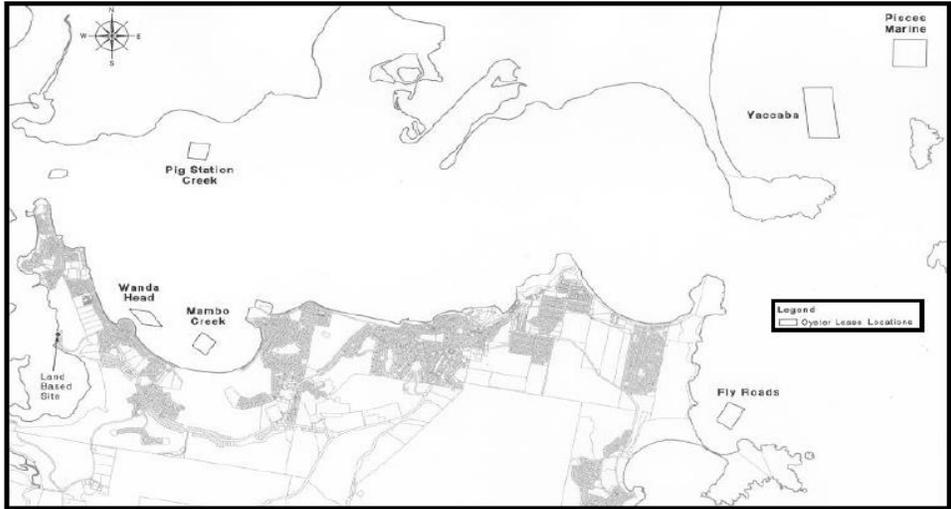
The objectives of the *Act* are to:

- (a) conserve fish stocks and key fish habitats, and
- (b) conserve threatened species, populations and ecological communities of fish and marine vegetation, and
- (c) promote ecologically sustainable development, including the conservation of biological diversity, and, consistently with those objects:
- (d) promote viable commercial fishing and aquaculture industries, and
- (e) promote quality recreational fishing opportunities, and
- (f) appropriately share fisheries resources between the users of those resources, and
- (g) provide social and economic benefits for the wider community of New South Wales.

Section 164

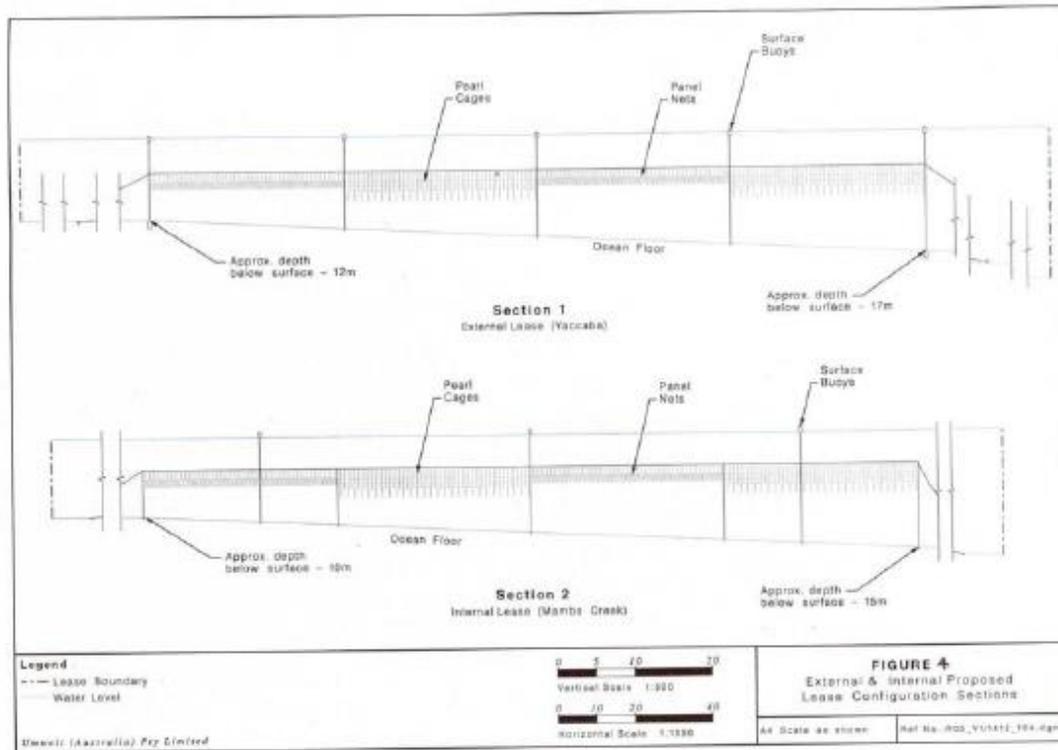
- (1) An aquaculture lease vests in the lessee, the lessee's executors, administrators, and assigns:
 - (a) the exclusive right during the currency of the lease to cultivate within, and to take from, the leased area the species of fish or marine vegetation specified in the lease, subject to the provisions of or made under this Act and the provisions of the lease, and
 - (b) the ownership of all fish or marine vegetation specified in the lease that are within the leased area.
- (2) An aquaculture lease does not confer the right of exclusive possession of the leased area.
- (3) An aquaculture lease is subject to the public right of fishing and to any right recognised by the regulations, except as provided by subsection (1) and the other provisions of or made under this Act.
- (4) Nothing in this section authorises a person to interfere with or damage anything on the leased area.

Exhibit D: Proposed lease sites

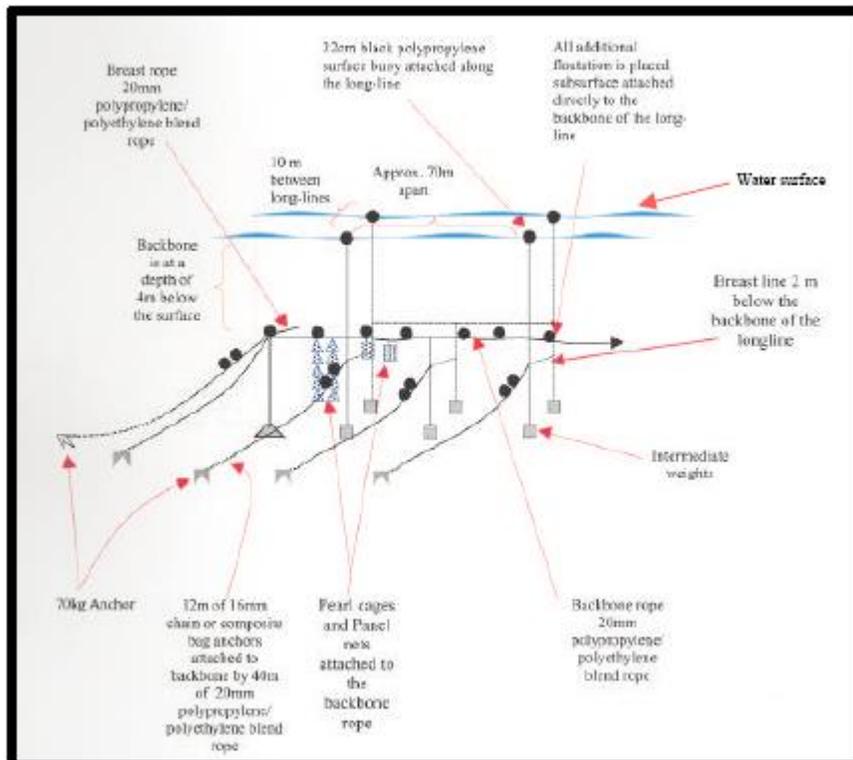


Source: Cleland, K. 'Commission of Inquiry: Port Stephens Pearl Oyster Industry' June 2002

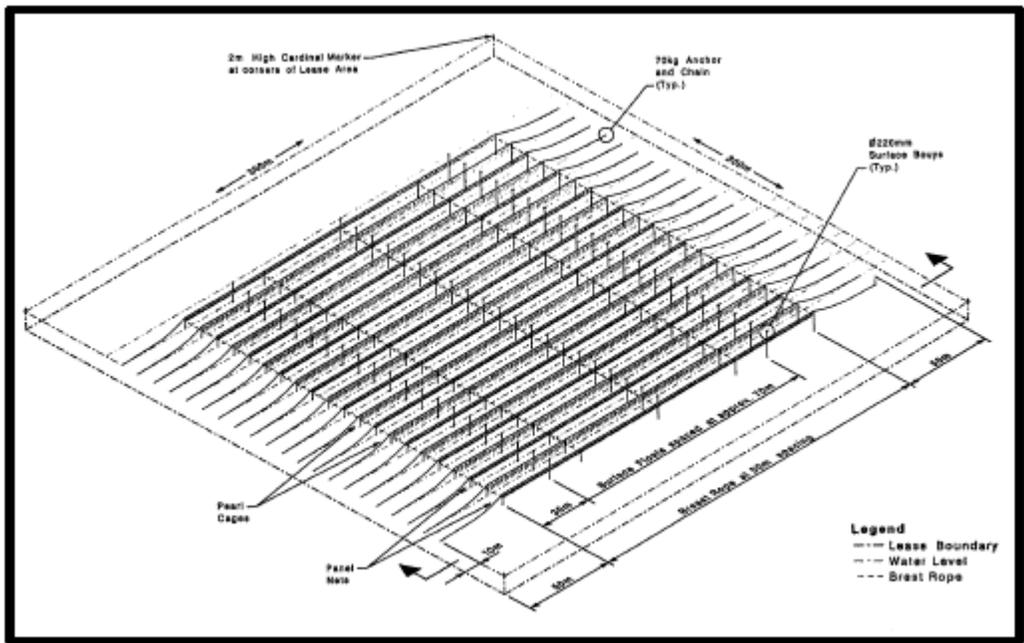
Exhibit E: Lease infrastructure



Configuration of longlines



Configuration of longlines (2)



Layout of longlines

Source: 'Assessment Report: Proposal by Australian Radiata Pty Ltd to establish a commercial pearl oyster operation at Port Stephens' Department of Planning NSW July 2002