

General Purpose Standing Committee No 5

Report on Inquiry into Oil Spills in Sydney Harbour

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Report on Inquiry into Oil Spills in Sydney Harbour

Chair: Richard Jones MLC

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Terms of Reference

1. That General Purpose Standing Committee No. 5 inquire into and report upon the occurrence of oil spills in Sydney Harbour, and in particular:
 - a) the tourism and environmental values of the harbour and the level of threat posed to them by future oil spills,
 - b) how future oil spills could be prevented,
 - c) the necessity for a safety audit of the harbour, in view of the number of spills which have occurred in it over the last five years, and what such an audit should consist of, and
 - d) the appropriateness of the port operator also being a key environmental regulator
2. That the Committee report on the first sitting day in 2000
3. That any documents presented to the Committee or evidence taken by the Committee which, in the opinion of the Committee, may prejudice any prosecution for the oil spill from the *Laura D'Amato* at Gore Cove on 3 August 1999, must be considered in camera and not form part of any report to the House until the legal proceedings have been concluded. The Committee is to have regard to any submission from the Government in relation to a prosecution and may seek its own legal advice. The Committee resolved to extend the reporting date for the inquiry until 12 April 2001 and later to 11 May 2001.

These Terms of Reference were referred to the Committee by the Legislative Council, on the motion of Richard Jones MLC, on 30 November 1999.

Committee Membership

Richard Jones MLC (Chair)	Independent
The Hon Ron Dyer MLC (Deputy Chair)	Australian Labor Party
Jan Burnswoods MLC	Australian Labor Party
The Hon Richard Colless MLC ¹	National Party
The Hon John Jobling MLC	Liberal Party
John Johnson MLC	Australian Labor Party
The Hon Malcolm Jones MLC	Outdoor Recreation Party

¹ The Hon Patricia Forsyth replaced the Hon Richard Bull as a member of General Purpose Standing Committee No 5 following his resignation from the Legislative Council on 29 August 2000. The Hon Richard Colless MLC replaced Hon Patricia Forsyth as a member of General Purpose Standing Committee No 5 from 12 October 2000.

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Chair's Foreword

Clearly a major reason for this inquiry into Oil Spills in Sydney Harbour was the *Laura D'Amato* spill on 3 August 1999. Having had the benefit of access to the reports of three separate official investigations into the spill and the way in which authorities responded to it, and also having access to information about the scientific evaluation of the effect of the spill and its clean up, the Committee has concluded that the clean up operation was conducted in an appropriate and professional manner. It is particularly heartening to see that NSW authorities appear to have noted and avoided replication of the mistakes made during the *Exxon Valdez* clean up.

However, the Committee's inquiry was not limited to the *Laura D'Amato* spill. Indeed, the Committee received evidence that it is the ongoing effect of smaller spills, for example from bunkering operations, and the effects of continual pollution from stormwater runoff and other sources, which poses the greatest threat to the ecosystem of Sydney Harbour. The Committee's report identifies these issues and makes a number of recommendations aimed at reducing the impact of these ongoing threats to the biodiversity of Sydney harbour.

In relation to the protection of the biodiversity of Sydney Harbour, the minutes of proceedings appended to this report make clear that my colleagues were unable to support a number of recommendations that I had proposed. These included proposed recommendations that consideration be given to:

- an increase in the size of the North Harbour Aquatic Reserve;
- the creation of marine reserves within Sydney Harbour; and
- the declaration of Sydney Harbour as a marine park.

In proposing these recommendations I was having regard to the Scientific Consensus Statement made by 161 leading marine scientists and experts on marine reserves published by the National Center for Ecological Analysis and Synthesis at the University of California. This statement referred to "a critical need for new and more effective management of marine biodiversity, populations of exploited species and overall health of oceans" and said that marine reserves are "a highly effective but under-appreciated and under-utilized tool" .

The Co-Chair of the NCEAS Working Group on Marine Reserves, Steven Gaines talks in his paper, "Catastrophes: Where the Unlikely Becomes the Probable", of a need to develop "a method to determine the required 'insurance factor': a multiplier to calculate the additional reserve area necessary to ensure that functional goals of reserves will be met within a given 'catastrophe regime'."

It is clear from the evidence the Committee received that inevitably there will be oil spills in the Harbour in future and it is my belief that we must accept that probability and plan for future 'catastrophes'. Enhanced protection of the biodiversity of Sydney Harbour, whether by the creation of discrete marine reserves or by the declaration of the whole of Sydney Harbour as a marine park, will, I believe, provide the vital insurance necessary to allow the re-building of marine populations after a serious oil spill or other major pollution event.

Although these recommendations were not accepted by other Members of the Committee I would urge the Minister for Fisheries and the Minister for the Environment to carefully consider the evidence presented to the Committee and consider these matters afresh.

I would like to thank all those organisations who made submissions or gave evidence to the inquiry. I would also like to thank the Committee staff for their work on this inquiry, particularly Senior Project Officer, Ms Rachel Simpson, who was responsible for drafting this report.

Richard Jones MLC

Committee Chair

Summary of Recommendations and Conclusions

Recommendation 1 *Page 7*

1(a) That the Government compile and evaluate existing ecological information regarding Sydney Harbour.

1(b) Following the evaluation, the Government commission independent ecological research to complete an inventory of biodiversity in Sydney Harbour.

Recommendation 2 *Page 11*

That the area surrounding the little penguin colony near Manly be upgraded from *high* to *extreme* sensitivity and treated accordingly in the event of an oil spill.

Recommendation 3 *Page 11*

That the NSW Department of Transport undertake a formal review of the classification of areas within Sydney Harbour to determine whether or not they are appropriately classified or if they should be considered for upgrade.

Recommendation 4 *Page 24*

That the EPA continue to promote the use of its boat cleaning protocol to boat owners and boat users.

Recommendation 5 *Page 26*

That the Government undertake research into the effectiveness of modifying gross pollutant traps to pick up oil in addition to other pollutants.

Recommendation 6 *Page 26*

That the NSW Government publish results of the evaluation of the Stormwater Trust Fund's program.

Recommendation 7 *Page 26*

Subject to satisfactory evaluation of projects already funded by the Stormwater Trust Fund, that the Fund's program be extended.

Recommendation 8 *Page 29*

That Sydney Ports Corporation give consideration to the deployment of booms during major bunkering operations on Sydney Harbour.

Conclusion regarding official investigations into the *Laura D'Amato* spill *Page 34*

The Committee concludes that the *Laura D'Amato* incident has been the subject of 3 separate, independent and detailed investigations, the findings of which are on the public record (and appended to this Report).

The Committee is satisfied that the reasons for the spill and the way in which relevant authorities responded have been thoroughly investigated.

The Committee is heartened by evidence about the implementation of recommendations from these investigations.

Recommendation 9 *Page 34*

That Sydney Ports Corporation/Waterways Authority in their 2000/2001 annual reports to Parliament include a list of each of the recommendations made in the investigation reports by 1) the State Marine Oil Pollution Response Committee; 2) the Inspector of Marine Accidents, Australian Transport Safety Bureau and 3) the Australian Maritime Safety Authority concerning the *Laura D'Amato* oil spill and details of the specific steps taken to implement these recommendations or detailed reasons for any decision not to implement any recommendation.

Conclusion regarding prosecution for oil spills by Sydney Ports Corporation *Page 38*

The Committee notes the successful prosecution and size of the fine and costs awarded against the owner and chief officer of the *Laura D'Amato*.

The Committee notes the evidence of Sydney Ports Corporation regarding the reasons for prosecuting the ship's owner.

Conclusion regarding scientific evaluation of *Laura D'Amato* cleanup *Page 50*

In determining cleaning methods to be used in future oil spills, the best scientific evidence must be taken into consideration. The Committee commends the clean-up effort in response to the *Laura D'Amato* oil spill, particularly the decision not to use dispersants in the clean-up effort, thus avoiding many of the problems experienced in Alaska as a result of the *Exxon Valdez* clean-up.

Conclusion regarding environmental regulation of Sydney Harbour *Page 53*

The Committee is satisfied that the Sydney Ports Corporation is the appropriate regulatory body.

Chapter 1 Introduction

Background to this Inquiry

- 1.1** On 3 August 1999 a total of 294,000 litres of light crude oil was spilt while the Italian tanker *Laura D'Amato* was discharging its cargo at the Shell terminal in Gore Bay, within Sydney Harbour. The spill was a matter of considerable public interest. The spill was the subject of a number of investigations. Soon after the incident the Sydney Ports Corporation commenced proceedings against the owner of the ship. The spill and its aftermath are discussed in detail in Chapter 3 of this report.
- 1.2** The Legislative Council referred the following terms of reference to the Committee, on the motion of Richard Jones MLC, on 30 November 1999:
1. That General Purpose Standing Committee No.5 inquire into and report upon the occurrence of oil spills in Sydney Harbour, and in particular:
 - (a) the tourism and environmental values of the harbour and the level of threat posed to them by future oil spills,
 - (b) how future oil spills could be prevented,
 - (c) the necessity for a safety audit of the harbour, in view of the number of spills which have occurred in it over the last five years, and what such an audit should consist of, and
 - (d) the appropriateness of the port operator also being a key environmental regulator.
 2. That the Committee provide an interim report on the first sitting day in 2000.
 3. That any documents presented to the Committee or evidence taken by the Committee which, in the opinion of the Committee, may prejudice any prosecution for the oil spill from the *Laura D'Amato* at Gore Cove on 3 August 1999, must be considered in camera and not form part of any report to the House until the legal proceedings have been concluded. The Committee is to have regard to any submission from the Government in relation to a prosecution and may seek its own legal advice.
- 1.3** An advertisement calling for public submissions was placed in the Sydney Morning Herald on 11 December 1999, with a closing date for submissions of 28 February 2000. Initially, 13 submissions were received by the Committee.

Conduct of the Inquiry

- 1.4** In April 2000 the Committee tabled an interim report on this Inquiry. To quote from the interim report:

One of the catalysts for the current Inquiry was the oil spill that occurred from the vessel *Laura D'Amato* at the Shell Terminal at Gore Cove, Sydney on 3 August 1999. On 2 March 2000, the matter of *Filipowski v Fratelli D'Amato S.r.l. and Ors* was heard before Justice Talbot of the Land Environment Court of New South Wales.² Justice Talbot handed down a decision on the matter on 16 March 2000. The Committee has been advised by the Minister that a 28 day appeal period applies to the judgement, and that details relating to the case remain sub judice until that period has expired.

Given the legal proceedings associated with the *Laura D'Amato* oil spill, the Committee considers it is prudent to wait for the appeal period for the *Laura D'Amato* judgement to expire before commencing public hearings in relation to the Inquiry. The Committee has focussed its recent activities on its Inquiry into the NSW Rural Fire Service. The Committee intends to table its report on that Inquiry in the Legislative Council in May 2000. By May 2000 the appeal period for the *Laura D'Amato* judgement will have expired, and the Committee should have a clear indication of whether the judgement is to be appealed. The Committee will then be in a position to commence public hearings for this Inquiry into oil spills in Sydney Harbour.³

- 1.5** Following the completion of the Inquiry into the NSW Rural Fire Service, the Committee embarked upon an Inquiry into the Northside Storage Tunnel. Just prior to the conclusion of the Inquiry into the Northside Storage Tunnel on 17 November 2000, the Committee resolved to resume the Inquiry into Oil Spills in Sydney Harbour. The Committee set itself a reporting deadline of 2 April 2000, and a media release was issued announcing the resumption of the Inquiry.
- 1.6** Following the announcement of the resumption of the Inquiry, a further eight submissions were received. A list of submissions received is set out in Appendix 1 to this report.
- 1.7** On Wednesday 21 February 2001, the Committee conducted a day of briefings and site inspections on and around Sydney Harbour, including Gore Bay. Details of the individuals who participated in the briefings are included in the Minutes of Proceedings, which are set out in Appendix 10 to this report.
- 1.8** On Thursday 22 February 2001 the Committee conducted a public hearing at Parliament House, at which nine witnesses gave evidence. A list of witnesses is set out in Appendix 2 to this report.
- 1.9** The Chair's draft report was considered by the Committee at a deliberative meeting on Monday 9 April 2001. The Minutes of Proceedings of this meeting are included in Appendix 10.

² *Filipowski v Fratelli D'Amato S.r.l. and Ors* [2000] NSWLEC50 (Matter Nos 50088 to 50090 of 1999)

³ *Interim Report on Oil Spills in Sydney Harbour*, Report No 5, April 2000, p 2.

Structure of this Report

- 1.10** This is the final report of the Inquiry into Oil Spills in Sydney Harbour. Chapter Two deals with the economic, environmental and tourism values of Sydney Harbour. Chapter Three discusses the incidence of pollution in Sydney Harbour, including the *Laura D'Amato* spill. Chapter Four addresses the response to Oil Spills and clean-up operations. Chapter Five briefly addresses the environmental regulation of Sydney Harbour.
- 1.11** Clearly, it has taken a considerable period of time for this Inquiry to be completed. The reasons for this are outlined above. However, there has been a useful side effect from this timeframe. As outlined in Chapter Four, the fact that the Inquiry was not really activated until November 2000 has meant that the Committee has been able to have regard to evidence relating to the scientific evaluation of the effects of the *Laura D'Amato* spill upon the immediate environment of Gore Bay and of the effects of the clean-up methods used in relation to the *Laura D'Amato* spill.

Chapter 2 **The economic, environmental, tourism and recreational values of Sydney Harbour**

2.1 The economic, environmental, tourism and recreational values of Sydney Harbour are inextricably linked. Together they form the unique character of Sydney Harbour. Sydney Harbour is a focus of Sydney, internationally acclaimed, and draws people from the city and around the world to its water and shores. In the preamble to the *Spectacle Island Declaration* the importance of the harbour was emphasised:

Sydney Harbour defines the character and soul of Sydney. With its rivers and tributaries it is recognised, both nationally and internationally, as one of the world's most beautiful and inspiring natural harbours, situated in the midst of an urban environment. ...

The harbour provides enjoyment and inspiration to the citizens of Sydney and beyond, who use its numerous parks and waterways. It is the nation's major tourist attraction. It is a vital working harbour and transport link. Ships, yachts, boats and ferries moving on the water are central to its character.

This outstanding work of nature has always been and remains the heart of a great coastal city.⁴

Environmental values

2.2 Environmental values of a natural resource often only become apparent when the environmental quality has been lost or degraded. An acceptance that (environmental) resources are not unlimited has led to greater awareness of their value. However, in the absence of a 'market' for environmental resources, it becomes difficult to measure their value, and consequently, for a value on their degradation to be factored into decisions. In response to these difficulties, common yardsticks to measure environmental values have been developed. The NSW Environmental Protection Authority (EPA) has produced a database of studies that estimate values for environmental goods - Envalue.⁵ In the accompanying documentation, the EPA discusses environmental valuation, its role and application.

2.3 Ascribing environmental resources a monetary value gives them an importance and relevance in decision making that they might not otherwise enjoy. This is particularly

⁴ Conserving the Natural Heritage of the Sydney Harbour Catchment, known as the Spectacle Island Declaration, adopted 15 April 2000, preamble. The Spectacle Island Declaration represents community input into the conservation, enjoyment and management of Sydney Harbour and its tributaries. Signatories to the Declaration wish to provide the community, government managers and business with a scientifically accurate description of the natural environment of the harbour and why it is significant. The purpose of the Declaration is to initiate a process whereby this might be achieved.

⁵ This database can be accessed via the EPA's website <http://www2.epa.nsw.gov.au/envalue/>.

important for a natural feature such as Sydney Harbour where decision makers must weigh ecological, recreational, amenity, tourism, bequest and altruistic values.⁶ Different categories of value have been defined for the environment, such as 'use values', which derive from the actual use of the environment and the increased utility as a result of improved environmental quality, 'option values' which reflect the value associated with potential use of the environment as opposed to actual present use and 'existence values' which are derived from an environmental good independently of its actual or potential use. An example of an existence value is the knowledge that a wilderness area exists even where people have no intention of visiting it.⁷ Environmental valuation gives decision makers a means by which these competing values can be measured against each other.

- 2.4** No studies measuring the economic value of the Sydney Harbour environment have been carried out. Where a study has been undertaken at a site, the monetary valuations determined for that site can be transferred to a different site. This is called 'benefit transfer'. Benefit transfer is used to avoid the substantial cost and lead time involved in conducting studies at every site of interest. However, given the uniqueness of Sydney Harbour and the scarcity of studies of similar sites⁸ it is likely that any attempt to transfer the benefits from an existing study to Sydney Harbour would not be successful.

Biodiversity of Sydney Harbour

- 2.5** Professor Underwood, from the Commonwealth Special Research Centre into the Ecological Impacts of Coastal Cities at the University of Sydney, stated in his evidence before the Committee:

It is currently impossible to be very clear about what is the biodiversity of the harbour and how it varies from place to place. There has been no, sustained, systematic inventory.⁹

- 2.6** Professor Underwood further explained this in a supplementary submission to the Inquiry requested by the Committee:

⁶ 'Bequest value' is derived from a natural resource being preserved and passed from one generation to the next.

⁷ Environmental Protection Authority of New South Wales, *Envalue – NSW EPA Environmental Valuation Database*, 1995, p 2.

⁸ Environmental Protection Authority of New South Wales, *Envalue – NSW EPA Environmental Valuation Database*, 1995, p 9. For a study to be deemed suitable for benefit transfer a number of factors are taken into account. These include that:

the original study and second site are similar;

the environmental change under consideration at the second site is similar to the proposed change at the original site, and

the socioeconomic characteristics of the populations or other site details are similar.

⁹ Evidence of Professor Underwood, Ecological Impacts of Coastal Cities Research Centre, University of Sydney, 22 February 2001, p 76.

One of the serious issues in any analysis of appropriate responses to such environmental hazards as oil spills is the lack of coherent ecological information to guide responses and inform decision-making. In Sydney Harbour (as elsewhere on our coast) there are two major gaps in knowledge that hamper progress:

1. There is no clear ecological understanding of the current state and consequences of fragmentation of habitat. Urban development and infrastructure have radically changed the extent of beaches, mangrove forests, mud-flats, rocky intertidal regions throughout the Harbour. This coupled with development of built structures (sea-walls, pilings, etc.) has changed the connectivity, patchiness and interactions of populations of animals and plants.
2. There is no comprehensive information about biodiversity of major components of ecological systems – specifically invertebrate animals and seaweeds – in the Harbour. It is currently impossible to relate knowledge about habitats and processes to knowledge about threats to or management of sustainability of diversity.

Consequences for management of disturbances like oil-spills (and for planning and regulation of all other activities in the Harbour) are:

1. There is no predictive capacity about consequences of disturbances (or development) to biodiversity, ecological sustainability or environmental well-being.
2. Current strategies and plans, e.g. the Atlases for responses to oil-spills, are based on very imprecise understanding of habitat and relationships of diversity and ecological processes to habitat.
3. Specific assessment of hazards, risks and responses to potential disasters is not available. So, decisions about cleaning oil, where to focus most effort, how to avoid making things worse are not possible.¹⁰

2.7 The need for further scientific investigation of the biodiversity of Sydney Harbour was also stressed by the National Parks Association of NSW, who stated in evidence before the Committee:

We draw your attention to the need to prevent such spills and to plan for such spills, which includes mapping out the sensitive areas that may be affected by such spills.¹¹

2.8 This point was also made in their submission to the Inquiry:

... we urge that your Committee map and recognise the high biodiversity value and historic sites in and around Sydney Harbour.¹²

¹⁰ Professor Tony Underwood, supplementary submission to the Inquiry, 22 March 2001, p. 1.

¹¹ Evidence of Mr Anderson, National Parks and Wildlife Association of NSW, 22 February 2001, p 25.

¹² Submission No 17, National Parks Association of NSW, 16 February 2001, p 1.

2.9 The submission gave reasons for mapping these areas:

- a) protection of the inherent value of marine life forms and habitats;
- b) protection of high biodiversity sites as representing the vital components of ecosystems;
- c) protection of the economic benefits (food, medicine) able to be generated from high biodiversity sites;
- d) preservation and enhancement of the growing ecotourist value of Sydney Harbour, and
- e) protection of the aesthetic and cultural values presented by high biodiversity and historic sites.¹³

2.10 The Committee recognises the need for baseline ecological data upon which decision making and assessment can be based, particularly in light of the increasing urbanisation and development of Sydney and its effect on ecological resources.

Recommendation 1

1(a) That the Government compile and evaluate existing ecological information regarding biodiversity in Sydney Harbour.

1(b) Following the evaluation, the Government commission independent ecological research to complete an inventory of biodiversity in Sydney Harbour.

Coastal Resource Atlas for Oil Spills in Port Jackson

2.11 In 1994 the EPA published a *Coastal Resource Atlas for Oil Spills in Port Jackson*.¹⁴ The Atlas assesses resources at risk in three groupings: ecological resources; socio-economic resources and cultural resources. Each resource is assigned to one of four categories relating to the sensitivity of that resource to an oil spill. The categories are: extreme, high, moderate and low. The Department of Transport co-ordinates development of the Atlas, in close consultation with the EPA, National Parks and Wildlife Service and other relevant parties. Classification is based on principles such as consequences of oil contact, ease of cleaning or potential for recovery.

Extreme sensitivity

¹³ Submission No 17, National Parks Association of NSW, 16 February 2001, p 1.

¹⁴ Environmental Protection Authority of New South Wales, *Coastal Resource Atlas for Oil Spills in Port Jackson*, 1994, pps 5 – 23.

2.12 Resources are considered ***extremely sensitive*** due to one or more of the following characteristics:

- they have a high potential to retain oil, and may suffer severe or irreparable damage from an oil spill;
- they are of international significance or are considered rare, vulnerable or threatened with extinction;
- they cannot be restored or replaced after an oil spill, and
- they cannot be cleaned without compounding the damage.

2.13 Extremely sensitive areas include mangroves, saltmarshes, intertidal seagrass beds and birds that are protected under international treaties or are listed in CAMBA (Agreement between the Government of Australia and the Government of the People's Republic of China for the Protection of Migratory Birds and their Environment, 1988), JAMBA (Agreement between the Government of Australia and the Government of Japan for the Protection of Migratory Birds in Danger of Extinction and their Environment, 1981) or Schedules 1 and 2 of the *Threatened Species Conservation Act 1995*.

High sensitivity

2.14 Areas are considered ***highly sensitive*** to oil spills if they have one or more of the following characteristics:

- they have high potential for retention of oil and can be seriously damaged by oil spills;
- they are of national or regional significance;
- they would require a difficult and protracted clean-up operation that may be only partially successful, and
- they would be difficult and/or expensive to replace or restore after an oil spill.

Highly sensitive resources have been identified to include subtidal seagrass beds, oyster and mussel leases and birds that are not protected under international treaties. Most native birds are not considered threatened or rare and endangered, and are not covered by international treaties. This does not reduce their sensitivity to oil spills. However they are only classed as highly sensitive. This includes the little penguin colony near Manly. In the *Coastal Resource Atlas* the NSW EPA stressed the incongruity of the classification for the little penguins, and recommended that the area surrounding the little penguin colony near Manly be upgraded to extreme sensitivity. Penguins, who spend most of their time in the water, are at greatest risk in the event of an oil spill. Oil can quickly affect penguin's plumage, reducing water-proofing of the feathers and causing waterlogging. This in turn leads to loss of buoyancy and insulation.

Moderate sensitivity

2.15 *Moderately* sensitive areas generally have the following characteristics:

- they have a low potential for retaining oil and will recover rapidly if damaged by oil;
- they can be cleaned reasonably effectively and economically, and
- they do not normally come into contact with floating oil, but may be damaged during the clean-up operation by land-based equipment.

2.16 Moderately sensitive resources include commercial and recreational fisheries, fish nursery and spawning grounds, sheltered rocky shores, heritage sites, recreational beaches and boats and moorings.

Low sensitivity

2.17 Resources that are considered of *low* sensitivity to oil spills generally have the following characteristics:

- they have little or no potential to retain oil and will suffer relatively little damage from an oil spill;
- they have little or no commercial value;
- they have high potential for natural recovery or recolonisation, and
- they have high potential for natural degradation of contaminants but may be damaged by inappropriate clean-up measures.

2.18 Low sensitive areas include exposed rocky shores, boat ramps and diving areas.

2.19 The map appended in Appendix 3 shows the sensitivity of resources in Port Jackson. The EPA stressed, in the Atlas and its Submission to the Inquiry, that 'if there is an oil spill, the first priority is to protect the more sensitive areas'.¹⁵ Gore Cove, the site of the *Laura D'Amato* oil spill, is classified as highly sensitive, and is in an area where the EPA recommends dispersants not be used in clean up.¹⁶ The EPA's submission also commented

¹⁵ Submission No 10, Environmental Protection Authority of New South Wales, 29 February 2000, p 1.

¹⁶ In the clean up of the *Laura D'Amato* oil spill dispersants were not used. The oil spill and clean up operation are discussed in detail in Chapter 4 below (page 39).

on the relationship between ecological and tourism values in determining a resource's sensitivity to an oil spill:

Low energy rocky shores (which form a large proportion of the Harbour's foreshores) have low to moderate ecological sensitivity to oil but heritage and tourism values can increase the sensitivity of particular sections (eg Fort Denison).¹⁷

2.20 The Committee notes the concerns regarding the limitations of the Atlas in managing oil spills raised by Professor Underwood who stated that

The trouble [with the Atlases] is that we do not actually know scientifically if the way that has been mapped is actually mapping the thing we want to know. For example, we can look at a patch of mangrove forest and say it looks pretty good so perhaps it is good for biodiversity. It does not necessarily follow that this is true.¹⁸

2.21 However, the value of coastal resource atlases is demonstrated by the development of a National Oil Spill Response Atlas (OSRA) as part of the National Plan to Combat Pollution of the Sea by Oil. The atlas will provide a uniform national oil spill response atlas in a computerised Geographic Information System (GIS). In its description of the OSRA, the Australian Maritime Safety Authority explained their value:

Oil and chemical spills in the marine environment can have wide spread impact and long-term consequences on wildlife, fisheries, coastal and marine habitats, human health and livelihood, as well as recreational resources of coastal communities. Resource atlases containing coastal and marine environmental information are an essential tool in contingency planning and in decision making during these marine pollution incidents. These atlases provide a means of determining marine and coastal areas of sensitivity that could be impacted in the event of a pollution incident as well as providing valuable resource and logistical information for combat authorities.

Detailed computerised environmental resource atlases help identify marine and foreshore ecosystems and biological resources for the determination of protection priorities and provide information to authorities on response options for example for boom deployment, chemical dispersant use, foreshore clean-up techniques to be employed and disposal sites for wastes generated.¹⁹

2.22 The Committee recognises the importance of Atlases in planning responses to oil spills and notes the EPA's concern at the classification of the area surrounding the little penguin colony near Manly. The National Parks and Wildlife Service is currently contracted to the

¹⁷ Submission No 10, Environmental Protection Authority of New South Wales, 29 February 2000, p 1.

¹⁸ Evidence of Professor Underwood, Ecological Impacts of Coastal Cities Research Centre, University of Sydney, 22 February 2001, p 77.

¹⁹ Australian Maritime Safety Authority, 'Oil Spill Response Atlas (OSRA) Project', <http://www.amsa.gov.au/me/NATPLAN/TOOLBOX/Osra.htm>, accessed 7 March 2001.

Department of Transport to review the bird information in the Atlas, incorporating any new data and changes to protection status. Additional information expected to be contained in the revised Atlas includes bird use areas, detailing which species, what time of year and their use of the area (for feeding, breeding or roosting, for example).

Recommendation 2

That the area surrounding the little penguin colony near Manly be upgraded from *high* to *extreme* sensitivity and treated accordingly in the event of an oil spill.

Recommendation 3

That the NSW Department of Transport undertake a formal review of the classification of areas within Sydney Harbour to determine whether or not they are appropriately classified or if they should be considered for upgrade.

Sydney Harbour National Park

2.23 The environmental value of Sydney Harbour foreshores was recognised by the establishment of the Sydney Harbour National Park in 1975. Initially, parts of North Head, Dobroyd Head, Bradleys Head and Clarke Island in were included in the Park 'in order to protect the scenic gateway to the city and the remnant vegetation of Sydney Harbour'.²⁰ Land previously used for defence purposes was added to the Park in 1979 and, more recently, Fort Denison and Goat Island were added to the Park in 1995. Sydney Harbour National Park is listed on the Register of the National Estate for its 'combination of foreshores, cliffs, headlands, heath and gully forests, recreation opportunities, Aboriginal engravings, defence history and its associations with the development of Sydney'.²¹ A number of sites within Sydney Harbour National Park have been individually listed on the Register of the National Estate and also by the National Trust.²²

²⁰ NSW National Parks and Wildlife Service, *Sydney Harbour National Park Plan of Management*, p 2, attached to Submission No 8, NSW National Parks and Wildlife Service, 28 February 2000.

²¹ NSW National Parks and Wildlife Service, *Sydney Harbour National Park Plan of Management*, p 2, attached to Submission No 8, NSW National Parks and Wildlife Service, 28 February 2000.

²² These include the Quarantine Station, North Head and Bradleys head fortifications, Clark, Shark and Rodd Islands and a number of places in Ashton Park (National Register only), and Fort Denison, the ammunition store complex, harbour masters cottage and water police station on Goat Island, fortifications on Middle Head and Shark Point, Greycliffe House and the Hornby (South Head) Lighthouse cottages (National Trust NSW listing): NSW National Parks and Wildlife Service, *Sydney Harbour National Park Plan of Management*, p 2, attached to Submission No 8, NSW National Parks and Wildlife Service, 28 February 2000.

Marine Protected Areas²³

2.24 Environmentally significant areas may be declared marine parks, aquatic reserves or intertidal protected areas. Marine and estuarine portions of national parks (for example foreshores of islands in Sydney Harbour National Park, discussed in part 2.1.2 above) are also protected.

Marine Parks

2.25 Marine Parks are areas of coastal, estuarine or oceanic waters and lands permanently set aside to protect the organisms that live in that environment, including plant life, fish species, birds and other animals. The aim of marine parks is the conservation and sustainable use of the marine environment. They are declared and managed by the Marine Parks Authority under the *Marine Parks Act 1997*. There are presently three marine parks in NSW – Solitary Islands Marine Park north of Coffs Harbour, Lord Howe Island Marine Park and Jervis Bay Marine Park. For the purposes of identifying and rationalising marine protected areas NSW has been divided into six discrete regions in NSW. Sydney Harbour falls within the Hawkesbury region, which extends from Newcastle to Wollongong.

2.26 For a marine park to be declared, it is first necessary to conduct a systematic assessment of the biodiversity of the relevant region, which is used to identify potential candidates for marine protected areas. An assessment utilises social, economic and cultural criteria and extensive community consultation. It is the responsibility of the Marine Parks Authority, utilising staff from the National Parks and Wildlife Service and NSW Fisheries, and other agencies where appropriate. Currently, the Manning bioregion, extending from Stockton to Nambucca Heads is being assessed. Assessment of the Hawkesbury bioregion will commence in mid-2001. Once declared, use of a marine park is subject to a zoning plan, which provides details of different levels of protection and the manner in which certain activities can operate. There are four zones which may be applied to a marine park: sanctuary zones, habitat protection zones, general use zones and special purpose zones.²⁴

2.27 Marine parks and marine reserves have been declared in a number of countries around the world, and in other Australian states. For example, in Tasmania, four fully protected marine reserves were declared in 1991 ranging from 7km to 1km in size. Although the reserves were established to fulfil a variety of objectives, including promoting recreation in the area,

²³ Information for this section is taken from the Marine Parks Authority Website: www.mpa.nsw.gov.au and the Fisheries NSW Website: www.fisheries.nsw.gov.au.

²⁴ Solitary Island Marine Park is the only marine park with a zoning plan currently in place. Sanctuary zones provide the highest level of protection, applied to areas with sensitive natural features, high conservation value and/or natural or cultural significance. Habitat protection zones are in place to protect sensitive habitat and areas with significant natural or conservational values. They are often a buffer around sanctuary zones and allow limited use of natural resources. General use zones are the least restrictive and provide for the ecologically sustainable use of marine animals and plants, including a wide range of commercial and recreational activities. Special purpose zones protect areas which for some reason may not be suitable for inclusion in other zones. They are intended to be tailored to the specific levels of protection required and would generally be small in size.

a common expectation of all the reserves was to restore populations of over-exploited species, including rock lobsters and certain species of fish. There has been considerable success. For example, in Maria Island, the largest reserve, the number of fish species has increased by 5% whereas in nearby unprotected areas it fell by 23%. In relation to large fish (greater than 33cm in length), numbers have increased from an average of 2.6 to 9.2 per 500m² over six years, a rise of 240%. This compares favourably to densities outside protected areas which remained constant at about 1 per 500 m². Similar results have been recorded for marine reserves in New Zealand.²⁵

2.28 Mr Bohm from the Marine and Coastal Community Network spoke of the bioregional assessment process being undertaken by the Marine Parks Authority:

Yesterday [on a site visit by the Committee on Sydney Harbour] I alluded to the bioregional process going on to assess the Sydney-Hawkesbury bioregion in the next couple of years, to look more generically at candidate areas for marine protected areas. This is the process that the Marine and Coastal Community Network is intensely involved with. It is intensely involved in talking with the community about the benefits of that process. However, I would like to emphasise that this is a long-term process. It is a very convoluted and complex process, with a lot of agendas being run by various stakeholders involved in the process.

I am strongly of the belief, from the perspective of the New South Wales office of the Marine and Coastal Community Network, that this process and the outcomes on the ground in the Sydney region in terms of conserving biodiversity as part of the marine park process may come at the cost of some of our biodiversity if we are not careful. It is a personal assumption that perhaps there will be a cost to the biodiversity, but, taking this precautionary approach, I would like to see action far earlier than perhaps six or seven years down the track when the actual on-ground outcome zoning plans that are part of the marine park process see the light of day on the ground in the Sydney region. That is why I urge the Committee not to revert to the bioregional process to look at ways of implementing marine protected areas in this region, and that we could really get in here before the process comes along, because it is long and it is slow. I do not think, from the history to date of this process, that we will necessarily see strong conservation outcomes from that process.²⁶

Marine/Aquatic reserves

2.29 Marine or aquatic reserves are smaller in size than marine parks and are managed by NSW Fisheries under the *Fisheries Management Act 1994*. Aquatic reserves may be zoned for different uses and may prohibit or regulate the taking of fish or marine vegetation from the reserves (these are often referred to as 'no take zones').

²⁵ 'No Take' Marine National Parks: what happens after they are established?, Marine and Coastal Community Network, June 2000, p. 3.

²⁶ Evidence of Mr Bohm, Marine and Coastal Community Network, 22 February 2001, p 26.

2.30 There are currently eight aquatic reserves listed in NSW, including Long Reef at Dee Why, North Harbour Aquatic Reserve at Manly, Towra Point Aquatic Reserve at Kurnell and Shiprock Aquatic Reserve at Port Hacking. The positive effect of marine reserves was explained to the Committee by Mr Anderson from the National Parks Association of NSW in response to a question from the Chair regarding the capacity of species to cope with catastrophes such as oil spills and ongoing pollution:

That question goes to the concept of marine reserves as an insurance policy in the marine environment such that, for example, if you maintain a healthy ecosystem in one part and another part collapses, there is a capacity to regenerate that part. In other words, if you have a collapse of biodiversity in one area down the coast or in the harbour but have healthy systems in another part of the coast, the capacity to regenerate is sustained to some extent. If there is a collapse in a whole range of connected areas, that capacity to regenerate is diminished.²⁷

2.31 In their submission to the Inquiry the Marine and Coastal Community Network advocated the extension of the North Harbour Aquatic Reserve:

The opportunity exists to extend the outer boundaries of this Reserve and increase the protection afforded by it to the level of a marine sanctuary. There is limited commercial and boat-based recreational fishing in the area of the Reserve, and with the exception of a few sacrificial land-based recreational fishing areas this fishing effort could be removed. There is also the potential for many ... areas to be included into an expanded Sydney Harbour Marine Sanctuary.²⁸

2.32 Other areas within Sydney Harbour that the Marine and Coastal Community Network recommended be included in a marine reserve include:

- Manly Cove, incorporating the popular dive spot at Fairlight.
- North Head, which supports diverse and spectacular benthic fauna in the form of sponge gardens. This area is also complemented by the presence of a large tract of the land-based Sydney Harbour National Park.
- Bantry Bay (northern Middle Harbour) is an area of high biodiversity, and has been previously flagged as a potential marine protected area. It is also adjacent to the land-based Garigal National Park, which complements the Bay's conservation values.
- Sugarloaf Bay (Middle Cove) is complemented by the presence of land-based reserves and parks such as Harold Reid Reserve, and adjoins Bantry Bay.
- Middle Head to Bradley's Head. This tract of coast is almost entirely covered by the land-based Sydney Harbour National Park, and includes areas of high

²⁷ Evidence of Mr Anderson, National Parks Association of New South Wales, 22 February 2001, p 28.

²⁸ Submission No 15, Craig Bohm, The Marine and Coastal Community Network, 31 January 2001, p 3.

biodiversity as well as a popular dive and picnic site at Clifton Gardens, which boasts particularly high biodiversity.

- Balmoral Beach is a popular beach and dive site.
- South Head. Includes Camp Cove, a popular dive site, and adjoins a portion of the land-based Sydney Harbour National Park.
- Bottle and Glass Rocks (Vaucluse) is also an area of high biodiversity, and has previously been flagged as a potential marine protected area, and adjoins the land-based Neilsen Park reserve.
- Homebush Bay, Brays Bay, Yaralla Bay and Majors Bay on the Parramatta River. These areas still contain significant wetlands and mangrove stands.²⁹

2.33 The effect of marine protected areas on the harbour's ability to cope with oil spills was questioned by Professor Underwood in evidence before the Committee:

The discussion of marine reserves begs a number of ecological questions and it is not fair to leave it on record that these are inevitably good. The 15 per cent figure used this morning as a desirable outcome included the notion in answer to one question that this could probably increase the number of fish and potentially have spillover effects for restocking fish elsewhere. ... One must realise that the studies that have been done, particularly in South Africa, demonstrate that you will get this fish spillover effect probably if you preserve 40 percent of the coastline. Talking about it in response to 15 per cent is ignorant to the known science.³⁰

Intertidal protected areas

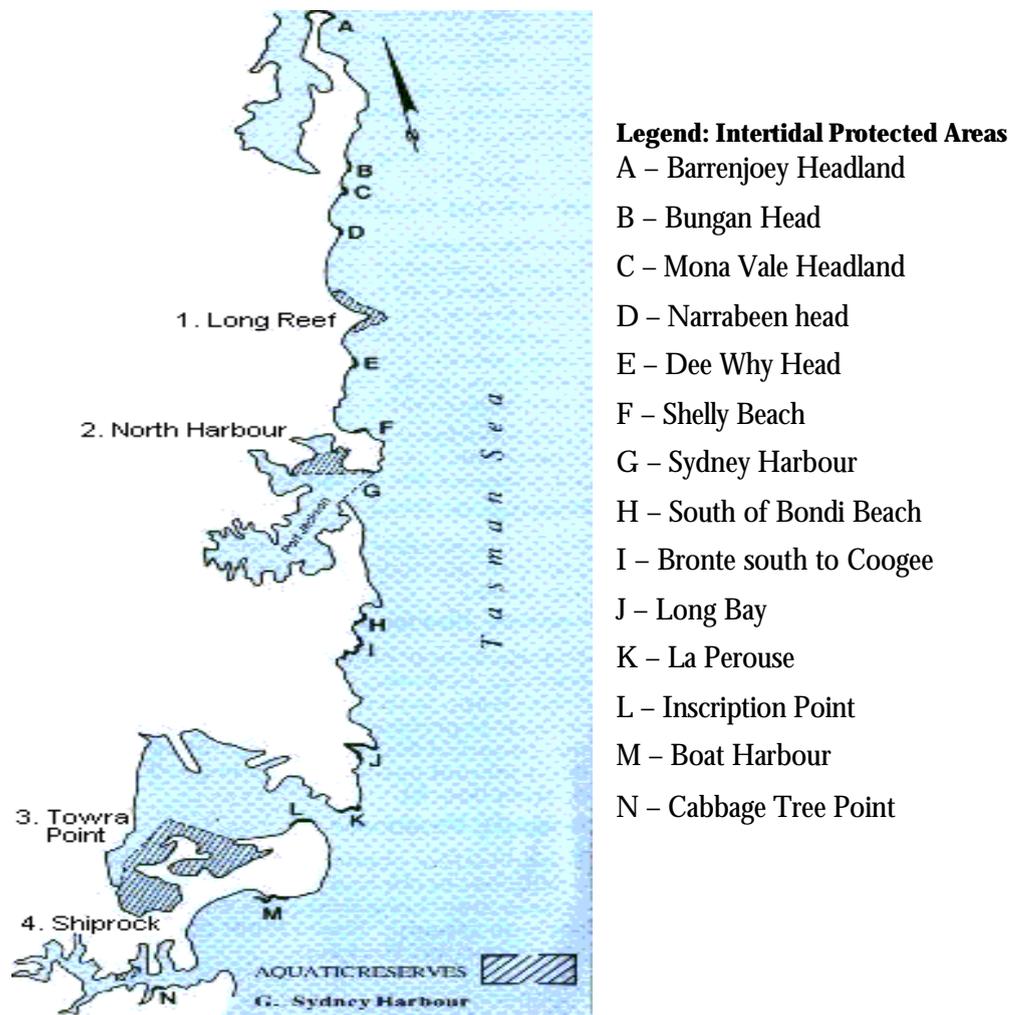
2.34 Intertidal protected areas (IPAs) have been created at 14 areas around Sydney. The whole of the foreshores of Sydney Harbour is an IPA, including the Parramatta and Lane Cove Rivers. The map on the following page illustrates IPAs and Aquatic Reserves in the Sydney region.

2.35 IPAs extend from mean high water to 10 metres seaward, beyond mean low water. NSW Fisheries discuss IPAs on their Website and state that they have been chosen to preserve and protect the intertidal animals and habitat, and to act as reservoirs to repopulate other areas.³¹ Collecting seashore animals is banned from these areas (excluding the foreshores of North Harbour, from Manly Point around to the western edge of Forty Baskets Beach). However, fishing is allowed in IPAs.

²⁹ Submission No 15, Marine and Coastal Community Network, 31 January 2001, p 2.

³⁰ Evidence of Professor Underwood, Ecological Impacts of Coastal Cities Research Centre, University of Sydney, 22 February 2001, pp 75-76.

³¹ www.fisheries.nsw.gov.au, accessed 29 March 2001.



2.36 In their submission to the Inquiry, NSW Fisheries commented on the sensitivity of intertidal areas to oil spills:

Intertidal areas are under the most direct threat due to the risk of direct oiling if the spill is washed into the habitat. The use of dispersants is not recommended in water less than 5 metres deep as the dispersed oil may come in contact with sensitive seabed habitat, eg seagrasses. In water deeper than 5 metres the dispersed oil is generally diluted and scattered enough not to cause an impact.³²

³² Submission No 18, NSW Fisheries, 21 February 2001, p 2.

2.37 In relation to the impact of an oil spill on fish, NSW fisheries stated in its submission:

Most fish will naturally avoid areas that are damaging to them and in general they will avoid a spill. Oil by its nature floats on the surface as a slick. Fish generally will not break the surface and come in direct contact with oil.

Dispersed oil in the water column may come in contact with, or be ingested by fish. It is unlikely that the levels ingested would be great enough to cause mortality, however, if eaten, the flesh may be tainted. Tainting occurs at extremely low concentrations eg petrol at 0.005ug/l, kerosene at 0.1ug/l and emulsifiable oil at >15ug/l.

There are risks to fish eggs and larvae from both oil and dispersed oil contamination, and this may have a future impact on fishery resources.³³

2.38 The use of dispersants in clean up is discussed in detail in chapter 4 below, page 39.**Tourism and recreational values**

2.39 Sydney received 8.1 million domestic and 2.3 million international visitors in 1999. This represented 30% of domestic and 96% of international visitors who visited the state.³⁴ In its submission to the Committee, the National Parks and Wildlife Service estimated that the Sydney Harbour National Park 'receives 500,000 visitors every year, including a large number of local residents that use the Park on a regular basis for swimming and walking'.³⁵ There are numerous recreational and sporting clubs whose activities are centred in and around Sydney Harbour. Recreational activities on Sydney Harbour include: scuba diving; wind surfing; competitive and recreational sailing; bushwalking (around the foreshores); recreational fishing and dragonboat racing.

2.40 Clearly, Sydney is NSW's premier tourist attraction. The Government's regional action plan, *Sharing Sydney Harbour* emphasises the tourism value of the harbour:

Approximately \$13 billion was spent by tourists in the Sydney region in 1998-99. This is estimated to equate to nearly 250 000 jobs. Market research has consistently found that the Harbour, including the Opera House, Circular Quay and Darling harbour is the core attraction for international visitors. The economic and cultural worth of these resources is undisputed.³⁶

2.41 In its submission to the Inquiry, Sydney Ports Corporation highlighted the use of the harbour by cruise ships in particular:

³³ Submission No 18, NSW Fisheries, 21 February 2001, p 2.

³⁴ Tourism New South Wales, *Tourism Trends in New South Wales – Sydney Regional Biannual Profile, Year end December 1999*, August 2000, p 10; 12.

³⁵ Submission 8, NSW National Parks and Wildlife Service, 28 February 2000, p 3.

³⁶ NSW Department of Urban Affairs and Planning, *Sharing Sydney Harbour, Regional Action Plan*, September 2000, p 34.

Passenger cruise tourism grew at a rate of 9 per cent in 1997-99, which is faster than any other sector of the tourism industry. For example, in 1998-99 Sydney attracted 82 passenger liners and in February/March 2000 alone it is anticipated that 15,400 tourists on 14 different ships will visit Sydney. This is expected to inject about \$22 million into the Australian economy. Moreover, it is calculated that for every 18 international visitors one full time job is created in NSW.³⁷

2.42 The Submission continued that:

It is also worth noting that as the only destination in Australia with two passenger cruise terminals, Sydney is now internationally recognised as the best cruise destination in the world outside Europe and the Caribbean.³⁸

2.43 The tourism value of Sydney Harbour was further explained to the Committee by Mr Franklin from Tourism New South Wales:

The Australian Bureau of Statistics released the first tourism account for Australia in October last year [2000], which found that in 1997-98 tourism consumption in Australia totalled \$58.2 billion and supported employment for 513,000 persons or 6 per cent of employment. Within New South Wales, Tourism New South Wales estimates international tourism consumption is about \$5 billion and domestic is \$14.6 billion.³⁹

2.44 The link between environmental and tourism values was expressed in a number of submissions to the Committee. Leichhardt Council stated in its submission:

The tourism values of the harbour are derived primarily from recreational use and aesthetic significance. Recreational opportunities and aesthetic qualities are tied directly to the quality of the harbour's environmental resources particularly the water quality ... preserving the harbour's environmental resources is not only important for current tourism opportunities (and therefore economic benefits) but also for conservation of biodiversity (for both its intrinsic values and human and social values).⁴⁰

2.45 The relationship between the harbour's environment and its tourism value was also stressed in the NSW Minister for Tourism's submission to the Inquiry:

Sydney Harbour is the most significant distinguishing feature of Sydney as a tourist destination. The harbour, its foreshores, islands and the two key icons of the Opera House and Harbour Bridge are recognised the world over. ... New South Wales' international visitors in particular enjoy the harbour, with 39% taking a harbour cruise, 65% visiting the Opera House and 54% visiting The Rocks.

³⁷ Submission 11, Sydney Ports Corporation & Waterways Authority, 13 March 2000, p 6.

³⁸ Submission 11, Sydney Ports Corporation & Waterways Authority, 13 March 2000, p 6.

³⁹ Mr Franklin, Tourism New South Wales, transcript of briefing session, 21 February 2001, p 3.

⁴⁰ Submission No 1, Leichhardt Council, 12 January 2000, p 2

The quality of the harbour's environment is therefore crucial to Sydney's image and appeal to visitors. The spillage into the harbour by a tanker in 1999 resulted in Tourism New South Wales' overseas public relations offices fielding a range of enquires from foreign media. There was no measure of the spill's actual impact on tourism.⁴¹

2.46 Mr Franklin attempted to quantify the effect of a diminution of environmental quality of Sydney Harbour:

Any substantial diminution of the environmental quality of the harbour will negatively impact on its perceived value as a visitor destination. Given the substantial role the harbour plays in visitor itineraries the best possible outcome of such a scenario would be a reduced length of stay in Sydney or New South Wales. The worst scenario would be the removal of Sydney or New South Wales from the Australian itinerary. Every lost night of international visitor expenditure in Sydney costs us \$91 of export income. Every lost visit costs \$1,202. To put it another way, if visits to Sydney ceased, the harbour cruise market Sydney would lose \$851 million worth of export income. That is, if people coming to Sydney only to take a harbour cruise decided not to take that harbour cruise because the value of the environment was diminished, we could possibly lose \$851 million in expenditure.

...

[A] 1 per cent downturn in international tourism arrivals at a national level would yield a loss in tourism consumption of \$128 million. A similar downturn at the State level would lead to a loss of \$50 million in export revenue. As demonstrated, quite small effects in turning off the market or reducing the length of stay can yield large economic losses.⁴²

2.47 Mr Anderson, a representative of the National Parks Association of NSW and the Nature Conservation Council, also drew a link between the oil spill and tourism opportunities, particularly in relation to scuba diving:

... the extensive smell of oil pollution apart from anything else would deter people from going anywhere near the harbour, so in that simple way people prefer not to dive where there are oil slicks and bad smells.⁴³

Economic values

2.48 Part of the unique character of Sydney Harbour is its use as a working port. That Sydney must function as a working port was affirmed by the Government in its 1999 Sydney Harbour and tributaries discussion paper:

⁴¹ Submission No 15, Hon Sandra Nori, MP, Minister for Small Business, Minister for Tourism, 31 January 2001.

⁴² Mr Franklin, Tourism New South Wales, transcript of briefing session, 21 February 2001, pp 3-4.

⁴³ Evidence of Mr Anderson, National Parks Association of NSW and the Nature Conservation Council, 22 February 2001, p 30.

- The working harbour includes a variety of land and water based activities vital to the viability of maritime industries and important to the NSW and national economies as a whole. The diversity of working harbour activities in Sydney Harbour include:
- Sydney Port Corporation facilities at Glebe Island and White Bay;
- Oil terminal facilities at Gore Cove and other maritime refuelling facilities at Ballast Point;
- Maritime paid, commercial waterfront contractors and maritime industrial services at places such as Rozelle Bay, Mort Bay, Berry's Bay and Goat Island;
- Recreational boating facilities such as marinas, boat ramps and moorings;
- Commercial tourism services provided by charter vessels and water taxis;
- Maritime support services and regulation provided by tugs, water police and the Waterways Authority;
- Naval defence facilities at Garden Island and Middle Head, and
- Public and private ferry services.

All these activities promote employment and an economic dynamism in Sydney and New South Wales. Port activities in Sydney Harbour are necessary to attract the mix of trade on which the economy and consumers rely. They also make Sydney Harbour a vibrant harbour of interest to residents and tourists.⁴⁴

2.49 In evidence before the Committee, Greg Martin, CEO of the Sydney Ports Authority spoke of the economic significance of the harbour:

[o]ur heritage started with navy ships and commercial ships. I think it would be a very sad thing to see the best natural harbour in the world, with naturally deep water and with no need for dredging, used only for ferries and 18-foot skiffs or whatever. It is a wonderful and safe harbour, and clearly it should be used for [those] commercial purposes. As we have shown, and as I think everyone has shown over a lot of years, it can work in conjunction with the recreational and ferry activities on the harbour.⁴⁵

2.50 In its submission to the Inquiry, the Sydney Ports Corporation provided details of commercial shipping in Sydney Harbour:

The shipping which passed through Sydney's ports (Sydney and Port Botany) in 1998-99 accounted for \$35 billion worth of international trade. This represents:

⁴⁴ NSW Department of Urban Affairs and Planning, *Sydney Harbour and Tributaries: Discussion Paper, Towards a Vision and Strategic Program*, October 1999, p 33.

⁴⁵ Evidence of Mr Martin, Sydney Ports Corporation, 22 February 2001, p 67.

- \$9,000 in trade for each resident of the Sydney region;
- 57 per cent of the State's international cargo trade;
- 20 per cent of Australia's total international trade.

Of the total 21.5 million tonnes of cargo handled by all Sydney's ports in 1998-99 the ports in Sydney Harbour (Glebe Island, White Bay and Darling Harbour) handled one third (about 7 million tonnes). This volume of cargo was transported by 935 vessels. ...

Oil (both crude and refined) accounted for \$728.5 million of all cargo through Botany Bay and Sydney Harbour in 1998-99. Of the total volume of oil transferred in Sydney's ports during this period, 38.5 per cent of 4.5 million tonnes were transferred at Shell's Core Bay terminal. This volume of oil entered Sydney Harbour on 122 oil tankers. ...

In the financial year ended 30 June 1999, containerised and non-containerised trade through Sydney's ports grew by 9.8 per cent...[E]ach year trade through the ports is expected to grow at double the rate of GDP growth. However a growth rate of 9.8 per cent, which is currently being experienced, means that Sydney Harbour will need to handle at least 22.6 million tonnes of non-containerised trade in 2024-25.⁴⁶

2.51 The Sydney Ports Corporation acknowledged the additional risk to the environment that the working harbour poses to Sydney Harbour:

While oil spills are unwanted, one must expect accidents to happen in a working environment, and oil spills in a working harbour are inevitable. Hence, an effective oil spill response capability is essential.⁴⁷

2.52 The Committee is mindful of the competing uses and consequent pressures on Sydney Harbour of economics, tourism and the environment and the need to take all into consideration when planning and assessing responses to oil spills and other environmental threats to Sydney Harbour.

⁴⁶ Submission No 11, Sydney Ports Corporation and the Waterways Authority, 13 March 2000, pp 7-8.

⁴⁷ Evidence of Mr Martin, Sydney Ports Corporation, 22 February 2001, p 60.

Chapter 3 Incidence of pollution in Sydney Harbour

3.1 Sydney Ports Corporation records and retains details of all reported pollution and possible pollution in Sydney Harbour. The Corporation receives reports from numerous sources including the EPA and users of aircraft, charter vessels, commercial shipping, ferries and recreation vessels. All reports, regardless of the source, are logged and investigated, and where pollution is found, dealt with. In 1998-98 the following incidents of pollution and possible pollution, and their source, were reported to the Sydney Ports Corporation. In their submission, the Sydney Ports Corporation cautions that multiple reports of the same incident are not uncommon and these multiple reports are included in the statistics:

- 4 commercial ship sourced;
- 20 land sourced;
- 5 non-trading vessel sourced;
- 1 turbidity sourced, and
- 142 from unknown source.⁴⁸

Environmental impact of oil spills

3.2 While acknowledging the risk that the working harbour poses to the environment of Sydney Harbour, the Sydney Ports Corporation stated in relation to pollution in harbours:

History from most harbours abutting residential areas show that the majority of oil spills and pollution generally come from land-based sources and run into the harbour through drains and pipe leakages et cetera.⁴⁹

3.3 This opinion was corroborated by scientific experts who gave evidence before the Committee. Professor Underwood asserted:

The big problem is not a spill like this ... There is ongoing chronic pollution. That should not be a surprise to anyone. ... Every outboard motor putt-putting around the harbour is leaking hydrocarbon every day. The amounts coming down from roads from people throwing their sump oil down the drains is decreasing, I

⁴⁸ Submission No 11, Sydney Ports Corporation, 13 March 2000, p 9. The Submission notes that in many of the cases where the source of pollution or possible pollution is described as being from an unknown source, investigation reveals that there is no oil pollution present. The sightings which gives rise to these reports are caused by phenomena such as algae blooms, vessel wake or wind effect. In many other cases a light sheen on the water is discovered which could emanate from any source, often stormwater drains particularly after rain. It is normally not possible to remove the substance causing a light sheen and it can be dealt with using a propeller wash or fire hoses or allowing it to evaporate. Cleaning methods are discussed in Part 4 below, page 39.

⁴⁹ Evidence of Mr Martin, Sydney Ports Corporation, 22 February 2001, p 60.

understand from the optimists at the EPA, but I believe it is still ongoing and large. Every time there is a large rainfall, camion, metals, hydrocarbons and all sorts of toxins wash in off the roads. For many marine systems the chronic problem ultimately is the impact. It does not matter how well a system can respond to a catastrophe if every time they breathe they come back to a polluted area.⁵⁰

- 3.4** This point was explained in more detail in Professor Underwood's submission to the Inquiry. In it, he differentiates between short-term versus long-term disturbances, and states that oil spills are generally short-term or pulse disturbances which pose a lesser threat to ecological systems than long-term, press disturbances:

Oil spills are, in ecological terms, what are known as 'pulse disturbances', i.e they are unusually quick to start, but do not last long in relation to the life-histories of many of the animals and plants that may be affected by them. As such, there is considerable scientific evidence that ecological systems (populations of animals, assemblages of species) in marine and particularly coastal habitats are resilient to pulse disturbances. They are naturally common in these areas, due to waves, storms, periods of extremely warm or cold weather. Most of the species have life-histories that respond to rapid change, often including widespread dispersal of juveniles in the plankton. So, many marine populations are characterized by being able to respond to disturbances by rapid recolonization and recovery. Oil-spills, by and large, are just another short-term disturbance.

...

[L]ong-term, but less dramatic disturbances (known as "press" disturbances to ecologists) are not easy for animals and plants. Recovery is rarely possible – new recruits meet the same disturbing conditions – and eventually more and more members of populations and varieties of species die or otherwise disappear.

In general, therefore, oil-spills are not much of a threat to animals and plants in Sydney Harbour.⁵¹

- 3.5** This opinion was corroborated by Dr Peter Scanes from the EPA who stated in answer to a question from the Committee that, in his opinion, the long-term scientific impact of the *Laura D'Amato* spill was 'virtually nil'.⁵² The Committee notes that this is due largely to favourable weather conditions and the successful cleaning program that was implemented following the *Laura D'Amato* spill (see further Chapter 4 below).

- 3.6** In recognition of the problem of chronic pollution, and an effort to reduce this problem, the EPA has developed a protocol for boat cleaning which was explained to the Committee in evidence:

⁵⁰ Evidence of Professor Underwood, Ecological Impacts of Coastal Cities Research Centre, University of Sydney, 22 February 2001, p 83.

⁵¹ Submission No 14, Professor Underwood, Ecological Impacts of Coastal Cities – A Commonwealth Special Research Centre, 31 January 2001, p 1.

⁵² Evidence of Dr Scanes, NSW Environmental Protection Authority, 22 February 2001, p 57.

In terms of boat cleaning, the EPA has developed a protocol for advising the public on techniques and cleaning agents to be used to clean recreation craft affected by an oil spill. The techniques recommended in the protocol range from hand scrubbing of small quantities of contaminants, to the "slipping" of a boat and carrying out a comprehensive cleaning operation while collecting the contaminated water for proper disposal. The protocol recommends the use of biodegradable cleaning agents and avoiding ammonia or hydrocarbon based agents. Because the correct protocol for cleaning boats is dependent on a number of factors, such as the properties of the oil and the extent of contamination, EPA officers will use the protocol to advise on appropriate techniques on a case by case basis.⁵³

- 3.7** The Committee notes that this is an area where community involvement can be very beneficial in reducing damage consequent upon an oil spill and commends the EPA protocol to the public.
-

Recommendation 4

That the EPA continue to promote the use of its boat cleaning protocol to boat owners and boat users.

Stormwater pollution

- 3.8** The quality of waterways is directly dependent on the quality of water that runs into them. It is generally accepted by scientific experts that stormwater pollution poses the greatest threat to waterways. The EPA, in its *NSW State of the Environment Report* discusses the effect of stormwater pollution on waterways:

In urban areas, stormwater run-off typically contains litter, bacteria, pesticides, metals, sediment, oils and grease, some of which are sources of excess nutrients. The sources of these pollutants are road surfaces, small industrial and commercial premises, parks, gardens and households. Studies have shown that urban stormwater contains heavy metals, especially lead. ... Urban stormwater contaminated with sewage overflows and animal faeces has also been implicated as a significant source of bacterial contamination of beaches and recreational waterways after rain.⁵⁴

- 3.9** It has been estimated that in highly urbanised catchments, point-sourced pollution (from sewage systems or industrial discharge) may contribute approximately 25% of nitrogen and phosphorus loads in waterways. However, urban stormwater does contribute the majority of the nutrient load.⁵⁵ Furthermore, it has been estimated that stormwater contributes 95%

⁵³ Evidence of Ms Rygate, NSW Environmental Protection Authority, 22 February 2001, p 53.

⁵⁴ NSW Environmental Protection Authority, *State of the Environment 2000 Report*, p. 203.

⁵⁵ NSW Environmental Protection Authority, *State of the Environment 2000 Report*, p. 203.

of sediment loads in waterways.⁵⁶ Sewer overflows are predicted to be the source of 55% of nitrogen and phosphorous loads to the harbour and 90% of faecal coliform loads. The remainder is from stormwater runoff.⁵⁷

3.10 In recognition of the significance of urban stormwater pollution the New South Wales Government released the Waterways Package in May 1997, a key initiative of which was improved management of stormwater quality. The package required Councils to prepare stormwater management plans and by implementing two kinds of projects, innovative and remedial, that are linked to these plans. Community education is another critical component of the initiative. The State Government committed funding of up to \$60 million over three years (1997-2000) for a Stormwater Trust Fund. The objective of the Stormwater Trust is to encourage and support improved urban stormwater quality management practices to improve the condition of the state's waterways. Funding was allocated for:

- Assisting councils, and certain state government agencies either individually or in groups, to pilot innovation in stormwater management or to undertake remedial activities;
- Providing assistance to councils for the preparation of stormwater management plans; and
- A state-wide education program to be coordinated by the Environment Protection Authority.⁵⁸

3.11 Grants under the third and final stage of the Trust's grants program were announced in 2000. The NSW EPA discusses the criteria for the grants in its *State of the Environment 2000 Report*:

Grants are to be spent on appropriate combinations of:

- audits, which may assess the stormwater controls needed or monitor the performance of current technologies
- community education programs
- riparian and bushland management or regeneration, which improves the filtration capacity of the area surrounding a water body

⁵⁶ Ministry of Urban Infrastructure Management, *Waterways Advisory Panel, Report to the NSW Government on the Proposal by Sydney Water Corporation for Sewage Overflow Abatement in Sydney Harbour*, 11 August 1997, p. 116, quoted in Parliament of NSW *Report of the Select Committee on the Proposed Duplication of North Head Sewerage Tunnel*, December 1997, p. 21.

⁵⁷ Sydney Water, *Licensing Sewer Overflows – Environmental Impact Statement – Sydney Harbour and Northern Beaches Geographic area*, 1998.

⁵⁸ NSW Environmental Protection Authority, *Stormwater Trust Guidelines*, www.epa.nsw.gov.au/stormwater.htm, accessed 27 March 2001.

- constructed wetlands, which allow natural filtration of excess nutrients and sediment in stormwater
- stormwater reuse systems, which collect, treat (if necessary) and reuse run-off from the land, streets or roofs of buildings (eg for irrigation or flushing toilets)
- sediment control techniques
- gross pollutant traps, which collect litter and other types of pollutants.⁵⁹

3.12 The Committee notes that, while gross pollutant traps installed within the catchment of Sydney Harbour have stopped approximately 50 tonnes of rubbish from reaching the waterways,⁶⁰ such traps do not prevent oil from flowing into the Harbour.

Recommendation 5

That the Government undertake research into the effectiveness of modifying gross pollutant traps to pick up oil in addition to other pollutants.

3.13 The Federal Government has also allocated \$11 million over three years (1999-2002) for stormwater management to improve the health of urban waterways in major coastal cities and centres as part of an Urban Stormwater Initiative under the Living Cities Program.

3.14 It is understood by the Committee that the Stormwater Trust Fund's program is being evaluated by the Government and that, as part of that evaluation, consideration is being given to an extension of the program.

Recommendation 6

That the NSW Government publish results of the evaluation of the Stormwater Trust Fund's program.

Recommendation 7

Subject to satisfactory evaluation of projects already funded by the Stormwater Trust Fund, that the Fund's program be extended.

⁵⁹ NSW Environmental Protection Authority, *State of the Environment 2000 Report*, p. 204.

⁶⁰ Evidence of Ms Rygate, NSW Environmental Protection Authority, 22 February 2001, p 50.

Oil Spills in Sydney Harbour

3.15 There are many potential sources of oil spills and pollution in Sydney Harbour. A paper on marine fuels used in Sydney Harbour published by the Office of the Sydney Harbour Manager in February 2000⁶¹ details the types of fuels used and the distribution of fuels on the harbour. Most vessels in Sydney Harbour run on diesel fuel, with big ships running on fuel oil. Small vessels, including all boats with outboard engines and jet skis generally use some form of petrol. The process of distributing fuel to users on the harbour presents opportunity for spills. An understanding of the volume and frequency of fuelling operations in Sydney Harbour gives an indication of the potential for pollution.⁶² There are six major fuel storage sites on the harbour, the operation of which all present opportunities for pollution. These sites are as follows:

- Shell's Gore Bay terminal in Greenwich has 20 large storage tanks and a berth annually receiving up to 100 vessels each of up to 100 000 tonnes. About one third of these vessels bunker, taking on an average of 800 000 tonnes of oil each. In addition there is a second, smaller wharf used to supply Shell's local mini-tanker, the barge *Amorena*, and to bunker Waratah's 8 tugs. This smaller wharf receives about 7 medium sized vessels a year.
- Sydney Ferries' Balmain shipyard has a bunkering depot with a 500 000 litre tank which can only be filled from the water. Sydney Ferries also has two underground tanks with a capacity of 27 000 litres at Manly Wharf for refuelling jet cats. They are filled three times a week by Shell road tankers. In February 2000, Sydney ferries were using approximately 11 million litres of diesel fuel each year, making them the largest fuel user on the harbour.
- The Navy's main bunkering point is the jetty at Chowder Bay with two tanks each with a 13.3 million litre capacity. Chowder Bay is supplied directly from Mobil's coastal tanker. The Navy also has a 5 million litre tank on GI Knoll at Garden Island and a 500 000 litre tank at HMAS Waterhen.
- The Waterways Authority has three underground tanks at Rozelle – a 55 000 litre tank for diesel and two unleaded petrol (ULP) tanks (35 000 litres and 25 000 litres) supplied by Shell road tankers. The facility is used by the authority's vessels and by Sydney Ports Corporation workboats.
- The Sydney Water Police at Pyrmont have two 27 000 litre underground tanks with diesel and ULP supplied by Shell road tankers. The National Parks and Wildlife Service also refuel their three ULP vessels and diesel ferry from the Water Police bowsers.

⁶¹ Office of Sydney Harbour Manager, *Energy of Sydney Harbour: the Supply Chain for Marine Fuels*, February 2000.

⁶² The following information is taken from: Office of Sydney Harbour Manager, *Energy of Sydney Harbour: the Supply Chain for Marine Fuels*, February 2000, pp 12 to 17.

- The Australian Sea Pilots have a 10 000 litre diesel tank on their jetty at Watson's Bay, filled fortnightly by barge. They are used to refuel their three pilot vessels in Sydney Harbour.

3.16 Bunkering operations also present opportunities for oil spills. In fact, four of the 11 recorded oil spills in Sydney Harbour since 1995 have been during bunkering operations. Bunkering services on Sydney Harbour include:

- *Esar Sydney* is a 53 metre fuel oil tanker with a capacity for 1.5 million litres of marine fuel oil, 360 000 litres of marine gas oil and 36 000 litres of bulk lubricant oil. The vessel makes up to 11 trips to the harbour per month from Caltex's bunkering facility in Port Botany. Deliveries averaging 500 000 litres are made predominantly to cargo ships at Darling Harbour and White Bay.
- Shell's barge *Amorena*, with a capacity of 1 million litres, is the only barge based in Sydney Harbour. *Amorena* bunkers large vessels, including passenger liners and container ships at anchorage points and bunkering-only berths all over the harbour. *Amorena* bunkers approximately 109 million litres of marine fuel annually. The largest customer is the *Fair Princess* which bunkers 1 million litres every 10 to 12 days.
- Ability Barge Services operates a 27 000 litre and 22 000 litre fuel lighter and supplies fuel to most of the charger vessels at their berths, including Matilda Cruises, Blue Line, Bounty and Rosman Ferries as well as fishing vessels operating out of Blackwattle Bay and the Australian Customs Vessels at Neutral Bay.
- The navy operates two fuel lighters based at Garden Island which transfer fuel from Chowder Bay to naval ships and tanks. They carry about 700 million litres of diesel and 200 million litres of water per year.
- Australian Marine Fuel has a 25 000 litre barge berthed at their Ryde yard which supplies fuel to the Sydney Sea Pilots station at Watsons Bay and to water taxis at Balmain and Berrys Bay.
- Polaris Marine's AA Barge Company delivers fuel for the construction industry in a 27 000 litre barge. Based at Rozelle Bay, Devine Waterfront and Marine Contracting are currently using a 4 000 litre capacity tug to store and deliver diesel fuel.

3.17 The Committee explored the fact that a large proportion of oil spills occurred during bunkering operations. Captain Filor stated in evidence before the Committee that

Most oil spills seem to occur from bunkering ships ...⁶³

⁶³ Evidence of Captain Filor, Australian Maritime Safety Authority, 22 February 2001, p 44.

3.18 In response to a question from the Chair asking, if most spills originated from bunkering operations, why are booms not put around ships during bunkering, Mr Martin stated

Bunkering is a fairly difficult operation. For one thing, it is normally for a short duration. Also, it is probably labour intensive to put out a boom for an operation that might take only two or three hours. Further, the volume of spillage from bunkering is normally fairly small. I guess the view is in most ports of the world that it is not considered economically viable to put in a boom for bunkering. I am not saying it cannot be done, but it is not considered economically viable to do it for the many ships that bunker, the small amount of time they are bunkering for, and the slow rates they are pumping at. It is one of those commercial things that it has not become custom and practice.⁶⁴

3.19 Mr Smith confirmed this is the case, stating in evidence that Shell's bunkering vessel, the *Amorena* is not boomed during bunkering operations.⁶⁵ Mr Hobday continued and explained a new checklist introduced by Sydney Ports Corporation in an attempt to reduce the occurrence of oil spills during bunkering:

In March last year [2000] we introduced a new checklist for our bunkering operations. The main reason for a spill in bunkering is that the two sides are not communicating the pressure and flow rates, with a resultant overtopping of tanks. You are filling too fast, the crew is not ready to shut down, and the oil goes over the top of the vent and over the side. So we have incorporated in the checklist, which is an IMO document, that the pressure and flow rates be communicated at the start of the operation so that the ship has the opportunity to say, "I am putting it into tanks that have 100-tonnes capacity, and I want to take out at 20, 30, 40 or 50 tonnes an hour," rather than the bunker barge opening the valve and delivering it at the normal maximum pressure and pumping rate. That is an initiative to try to address the bunker spills that we were having. In fact, we have not had a bunker spill since that time.⁶⁶

Recommendation 8

That the Sydney Ports Corporation give consideration to the deployment of booms during major bunkering operations in Sydney Harbour.

3.20 There are also a number of fuel outlets based at marinas, generally offering 24-hour self service bowsers to the general public. There are nine outlets selling diesel, five super, four ULP and one premium ULP scattered around the harbour, at sites including Clontarf, Rushcutter's Bay, Kirribilli, Rose Bay, Mosman, Neutral Bay and Balgowlah.

⁶⁴ Evidence of Mr Martin, Waterways Authority, 22 February 2001, pp 68-69.

⁶⁵ Evidence of Mr Smith, Shell Refining Australia, 22 February 2001, p 4.

⁶⁶ Evidence of Mr Hobday, Sydney Ports Corporation, 22 February 2001, p 69.

3.21 Since Sydney Port Corporation was established in 1995 there have been 11 recorded pollution incidents in Sydney Harbour involving commercial vessels and oil. Sydney Ports Corporation has estimated the quantity of each of these spills:

- 4 spills had a sheen of less than 100m²;
- 1 spill had a sheen of between 100 and 1,000m²;
- 1 spill was less than 10 litres;
- 1 spill was between 10 and 100 litres, and
- 4 spills were greater than 100 litres.⁶⁷

3.22 Of the 11 spills, two occurred during transfer operations (for example between ship and terminal), four occurred during bunkering operations, two were caused by the failure of an hydraulic line on the vessel and three were from unknown sources.⁶⁸ In its submission to the Inquiry the Sydney Ports Corporation summarises the occurrence of oils spills in the following manner:

From the evidence it is apparent that the incidence of oil spills associated with commercial vessels is very low, particularly when compared to all incidents of reported pollution in Sydney Harbour. The incidence spills from commercial vessels compared to all reported pollution is 1.7 per cent. In this context the incidence of spills close to and greater than 100 litres is even lower at 0.6 per cent.⁶⁹

3.23 The Sydney Ports Corporation provided the Committee with details of the five largest oil spills in Sydney Harbour since 1995. These are as follows:

Ship Sourced Spills

The *Fua Kavenga*: On 4 September 1995 there was a spill of coconut oil into the water at White Bay. This occurred during a ship to road transfer operation when the vessel's flexible hose through which the coconut oil was being pumped, burst. During the subsequent Marine Pollution Act proceedings which were commenced by SPC, the Court found that the ship, *Fua Kavenga* and its crew had failed to close the vessel's scupper through which the product had escaped. The ship's master was fined \$10,000.00 and the owner \$20,000.00.

The *Kareliya*: On 24 July 1996 there was a spill of fuel oil from the *Kareliya*. The spill occurred during bunkering. SPC's investigations led it to conclude that a faulty level pressure gauge on the tank being filled was a likely contributor to the incident. The gauge was being monitored by a crew member of the *Kareliya*. In the excess of 250 litres of oil was recovered from the absorbent material used by SPC

⁶⁷ Submission 11, Sydney Ports Corporation & Waterways Authority, 13 March 2000, p 11.

⁶⁸ Submission 11, Sydney Ports Corporation & Waterways Authority, 13 March 2000, p 11.

⁶⁹ Submission 11, Sydney Ports Corporation & Waterways Authority, 13 March 2000, p 12.

to clean-up the spill. SPC brought proceedings under the Marine Pollution Act 1987 (NSW) against the owner of the vessel, its master and its chief engineer (who was in charge of the bunkering and maintaining the associated equipment). The defendants did not appear and, in their absence, the owner was convicted and fined \$50,000.00 and the master was convicted and fined \$10,000.00.

Laura D'Amato, Gore Bay: Following a spill of an estimated 294,000 litres of light crude oil on 3 August 1999, the owner, the master and the chief officer have been summonsed under section 27 of the Marine Pollution Act 1987 (NSW) and have pleaded guilty. The hearing, which will determine the penalty to be incurred by the defendants, was heard on 2-3 March 2000 in the Land and Environment Court. The evidence in these proceedings, filed and served by SPC, remains substantially unchallenged by defendants. However, at the time of writing submission, the court had not made any findings of fact nor other determination and, accordingly, the proceedings have not been concluded.⁷⁰ A summary of key facts, established by SPC's evidence, dealing with the cause of the spill and its size are set out in attachment to this schedule.

Land Sourced Spills

Woolloomooloo Bay: On 25 February 1998, during construction at Finger Wharf at Woolloomooloo Bay, a sub-contractor of the occupier caused the system of pipes underneath the wharf to become dislodged, break in several places and fall into the water. The pipes, which were connected to disused oil storage tanks, were charged with a heavy fuel oil which entered the waters of Woolloomooloo Bay. SPC responded to the report of this spill, contained it to a two hectare area and mounted an around-the-clock clean-up operation. As no vessel or transfer operation was involved in the spill, the matter was referred to the Environmental Protection Authority (EPA) who have brought proceedings against a number of parties under the Clean Water Act 1970 (NSW) and the Environmental Offences and Penalties Act 1989 (NSW). These proceedings have been heard but not yet determined by the Land and Environment Court. The estimated size of the spill was between 30 and 90 cubic metres.

Careening Cove, North Sydney: In March 1998 diesel oil was observed flowing from a drain in Careening Cove. SPC boomed and cleaned up the area. North Sydney Council and the EPA investigated the matter and discovered the source of the oil to be a leaking disused oil storage tank beneath a building in Mount Street, North Sydney. The building management company was not aware of the existence of the tank when they took over management of the building. The EPA brought proceedings against the management under the Clean Waters Act and the Environmental Offences and Penalties Act. The court determined that the management company would have been aware of the existence of the storage tank. The management company was fined \$15,000.00 the size of the oil spill was found to be approximately 250 litres.⁷¹

⁷⁰ Note that since the Sydney Ports Corporation prepared its Submission, the Land and Environment Court has delivered its judgment. See further Chapter 4, page 39.

⁷¹ Submission 11, Sydney Ports Corporation & Waterways Authority, 13 March 2000, schedule 3.

The *Laura D'Amato* oil spill

3.24 The most recent and largest oil spill to occur in Sydney Harbour occurred on 3 August 1999 when the Italian oil tanker *Laura D'Amato* was discharging its cargo of light crude oil at the Shell oil terminal in Gore Bay. An estimated total of 294 000 litres was spilt. Sydney Ports Corporation estimated that 40% of the spilt oil would have evaporated into the atmosphere (thereby causing the pungent smell) within the first 24 hours after the spill and that 8% to 10% of the spilt oil would have dissolved into the water column. 40% to 42% was recovered and the balance (8% to 12%) would remain on rocks, in sediment and sand.⁷² A map illustrating the extent of the spill is appended at Appendix 4.

Official investigations into the *Laura D'Amato* oil spill

3.25 The *Laura D'Amato* oil spill was the subject of a number of official reports. These include reports by: 1) the State Marine Oil Pollution Response Committee; 2) the Inspector of Marine Accidents, Australian Transport Safety Bureau and 3) the Australian Maritime Safety Authority. **The executive summaries and recommendations of these reports are appended at Appendices number 5 to 7.**

3.26 With respect to the Inquiry conducted by Mr Taylor on behalf of the State Marine Oil Pollution Response Committee, the CEO of the Sydney Ports Corporation, Gregory Martin informed the Committee:

[A]s a consequence of the *Laura D'Amato* incident, an Inquiry conducted by Matthew Taylor produced four recommendations to improve the operations of ship-to-shore transfers at Gore Bay. ... Matthew Taylor's first recommendation was that a full physical check of the ship's sea chest valves by a terminal representative in addition to the ship's officer must take place before pumping occurs. This is also in addition to the normal ship-to-shore checklist that the Sydney Ports Corporation verifies has been undertaken by both parties. So, in effect, the two people, the terminal officer goes down below with the ship's officer and checks that the sea chest valves are closed. That has changed and has happened since the *Laura D'Amato* spill. The other three recommendations have all been implemented now. They are a containment boom around the vessel discharging oil at Gore Bay, which I think you talked about yesterday. Gas detection equipment has been installed at the Gore Bay wharf, and additional lighting has been installed at Gore Bay wharf.⁷³

3.27 Shell reiterated the additional safety precautions now in place following the investigations into the *Laura D'Amato* oil spill. In response to a question from the Committee concerning the more stringent safety measures now in place at Shell's terminal, Mr Smith, Shell's refinery manager stated in evidence before the Committee:

Firstly, with regard to intercepting the hazard there is and always has been a ship-shore check sheet, which is the formal communication between the ship and the

⁷² Submission 11, Sydney Ports Corporation & Waterways Authority, 13 March 2000, schedule 3, p 3.

⁷³ Evidence of Mr Martin, Sydney Ports Corporation, 22 February 2001, pp 60-61.

shore before any discharge operation takes place. That is a document that is used internationally and certainly around Australia. The process up until this incident was that a representative from the ship and a representative from the shore would go down the check sheets and sign that each had done their respective tasks and would sign under the witness of Sydney Ports Corporation and the discharge would begin. We now require that the terminal representative physically sight that the cautions that the ship needs to make before the transfer takes place. We do not simply rely on the information provided to us by the ship; we require our people to actually walk the ship. That would be the first thing.

...

The second recommendation that was part of the Shell report was that we investigate booming of all ships. We have since instigated that practice. It is carried out for us by Sydney Ports Corporation. They have been contracted to deploy the boom and it happens each time we bring in a ship.⁷⁴

3.28 Furthermore, Mr Smith described in evidence before the Committee other additional measures put in place by Shell to prevent future oil spills in Sydney Harbour:

To prevent and to mitigate, we have installed gas detection equipment along the foreshore at the terminal, such that if there is any spill we can detect it quicker than we did on this occasion. We have installed underwater lighting around the berth so that if there is oil on the water you can actually physically see it. This was an incident that occurred at night, and it was hard to detect quickly, so we now have underwater lighting around the ship so that the wharf watch, which is an employee who observes all discharges of ship, is able to respond more quickly.

We have prior to the incident always practised and trained in our emergency response capability and nautical response capability, and we have re-emphasised the importance of that.⁷⁵

3.29 In relation to the recommendations of the Australian Maritime Safety Authority, Mr Taylor told the Committee in evidence:

At the end of the report they made 18 major recommendations, virtually all of which, but not quite all of which, would be implemented.

It is fair to say that they are the sort of managerial things that you would expect: tweak this up a bit, or you should have done this a little differently, and so on. But the most important of those recommendations related to the way in which the national plan and the state emergency plan are indicated together with some recommendations to make it work better. But at the end of the day, in my opinion none of those 18 recommendations were of such overriding importance that they should be seen to have detracted from the way the spill was conducted. The report that makes those recommendations says in a number of places,

⁷⁴ Evidence of Mr Smith, Shell Refining Australia, 22 February 2001, pp 3-4.

⁷⁵ Evidence of Mr Smith, Shell Refining Australia, 22 February 2001, p 5.

notwithstanding what was just said about what should have been done, the spill was handled effectively and in accordance with more than normal standards.⁷⁶

Committee's Conclusion

- 3.30** The Committee concludes that the *Laura D'Amato* incident has been the subject of 3 separate, independent and detailed investigations, the findings of which are on the public record (and appended to this Report).
- 3.31** The Committee is satisfied that the reasons for the spill and the way in which relevant authorities responded have been thoroughly investigated.
- 3.32** The Committee is heartened by evidence about the implementation of recommendations from these investigations.

Recommendation 9

That Sydney Ports Corporation/Waterways Authority in their 2000/2001 annual reports to Parliament include a list of each of the recommendations made in the investigation reports by 1) the State Marine Oil Pollution Response Committee; 2) the Inspector of Marine Accidents, Australian Transport Safety Bureau and 3) the Australian Maritime Safety Authority concerning the *Laura D'Amato* oil spill and details of the specific steps taken to implement these recommendations or detailed reasons for any decision not to implement any recommendation.

Prosecution for oil spills by Sydney Ports Corporation

- 3.33** Following a recommendation in the State Marine Oil Pollution Response Committee's report, the Sydney Ports Corporation successfully prosecuted those responsible for the spill in the Land and Environment Court of NSW under section 27 of the *Marine Pollution Act 1989* (NSW). The owner of the vessel, who pleaded guilty, was fined \$510,000. The charge against the Ship's Master, who also pleaded guilty, was proved against him, but dismissed under section 556A of the *Crimes Act 1900*. Responsibility for the offence was placed directly with the Chief Officer, who also pleaded guilty. He received a fine of \$110,000. Justice Talbot, in delivering his judgment, noted the importance of the penalty reflecting an element of general as well as personal deterrence against re-occurrence. However, he also noted that, although serious, the offence was not to be regarded as the worst kind. Furthermore, costs and expenses exceeding \$4.5 million associated with the clean-up were met by the defendants' insurers and they agreed to pay the prosecutor's (Sydney Ports

⁷⁶ Evidence of Mr Taylor, Waterways Authority and State Marine Oil Pollution Response Committee, 22 February 2001, p 64.

Corporation) legal costs and disbursements in excess of \$400,000.⁷⁷ In summary, Judge Talbot stated:

The ultimate damage from the spill was not as great as it could have been under more unfavourable conditions. There has been no financial cost to the citizens of New South Wales. The company has repented and learnt a lesson from the occurrence and taken steps to ensure it does not happen again.⁷⁸

3.34 Relevant passages from the judgment are appended to this report in Appendix 8.

3.35 The decision of the Sydney Ports Corporation to prosecute the ship's owner rather than Shell was raised in the submission to the Inquiry by Friends of the Earth – Sydney:

There is a failure to undertake a thorough legal investigation and prosecution of Shell as terminal owner and charterer of the *Laura D'Amato* ...⁷⁹

3.36 In evidence before the Committee, questions were asked about Sydney Ports Corporation's decision not to prosecute Shell for the oil spill as well as the shipowner. In response Mr Martin stated:

There was some ambiguity about the rules that they [Shell] were interpreting, but basically they are saying that that was a ship officer's responsibility, not a shore-based officer's responsibility. From all the advice we got, there was nothing we could prosecute Shell for.⁸⁰

3.37 This statement reinforced the assertion made by Mr Taylor in regards to a question why the report of the State Marine Oil Pollution Response Committee, of which he was the Chair, did not recommend prosecution of Shell:

Chair: Going back to your report, why did you not in your report recommend the prosecution of Shell?

Mr Taylor: Well, they [Shell] did not cause the spill.

Chair: Do you not think they had a responsibility to check that the seachest valves were actually closed?

Mr Taylor: In their interpretation of what the guideline manual says, they did carry out the procedure. This is part of the problem. The guidance manual is anomalous. I pointed that out in my report. In one place it says that they should be inspected physically, and in another place it says, 'Well, maybe it is okay if you

⁷⁷ *Filipowski v Fratelli D'Amato S.r.l and Ors* [2000] NSWLEC 50 at 99; 107-112.

⁷⁸ *Filipowski v Fratelli D'Amato S.r.l and Ors* [2000] NSWLEC 50 at 126.

⁷⁹ Submission No 9, Friends of the Earth – Sydney, 28 February 2000, pp 5-6.

⁸⁰ Evidence of Mr Martin, Sydney Ports Corporation, 22 February 2001, p 65.

must tick the boxes and compare notes.' That is apparently the interpretation that is commonplace, not only in Australia but in other parts of the world.⁸¹

3.38 Mr Martin pointed out to the Committee that in response to a recommendation of the State Marine Oil Pollution Response Committee's report a higher standard is being followed in Sydney Harbour where both the ship and the shore officers go down and check valves, and that International guidelines are possibly being redrafted along those lines.⁸²

3.39 In response to these questions, the Secretary and General Counsel to Sydney Ports Corporation, Ms Filipowski, explained the basis for Sydney Ports Corporation's prosecution:

The Marine Pollution Act sets out the basis on which people should be charged. Basically, it is those who caused or contributed to the spill. It is a fairly high standard. There is some debate about whether it is strict or absolute liability, but it is a criminal standard of proof, basically proof beyond reasonable doubt. We did not have the evidence to proceed against Shell because there was nothing to show that Shell had caused or contributed to the spill. On the other hand, the evidence was clear as against the shipowner, the master and the chief mate, and they were the people that we prosecuted.⁸³

3.40 In response to questions by the members of the Committee, Ms Filipowski undertook to provide the Committee with further information regarding prosecutions of Caltex and Shell for marine pollution. The information provided to the Committee states:

... oil companies or subsidiaries of the oil companies have been successfully prosecuted by Sydney Ports Corporation or the MSB Sydney Ports Authority before it.

In the ten years from 1 January 2000 to 31 December 2000 there were four such prosecutions. These may be summarised briefly as follows:

1. Caltex Refining Co Pty Ltd was prosecuted and fined \$20,000 for a pipeline spill of approximately 500 litres at Kurnell in March 1990.
2. Caltex was prosecuted again and fined a further \$20,000 for another pipeline spill of up to 500 litres at Kurnell in July 1991.
3. A vessel owned by a Caltex subsidiary caused a spill of 5 to 10 litres at Kurnell in February 1994 and the Owner (Caltex Tanker Company (Australia) Pty Ltd) and master were charged and the Owner was fined \$40,000. (The Master was discharged pursuant to section 556A of the Crimes Act 1900).
4. A vessel owned by Shell Tankers (U.K.) Ltd discharged up to 30 litres of unleaded petrol into the waters of Botany Bay in August 1999 and the Owner

⁸¹ Evidence of Mr Taylor, Waterways Authority and Chairman of the State Marine Oil Pollution Response Committee, 22 February 2001, p 62.

⁸² Evidence of Mr Martin, Sydney Ports Corporation, 22 February 2001, p 70.

⁸³ Evidence of Ms Filipowski, Sydney Ports Corporation, 22 February 2001, p 70.

and Master of the vessel were prosecuted and fined \$38,000 and \$7,000 respectively.

In relation to oil spills resulting from tanker operations, Sydney Port's investigation and prosecution authority does not (by virtue of the Marine Pollution Act) go beyond the first isolating valve on land of any apparatus used in or in connection with a transfer. Spills from the landward side of the first isolating valve are matters for the NSW Environmental Protection Authority.

...

The Marine Pollution Act prosecution [in relation to the *Laura D'Amato* spill] was brought under Part 4 of the Act because the spill related to a transfer operation. Under this part, where a spill occurs in relation to a discharge from an apparatus on a ship, the legislation provides that the person or persons responsible are the Owner or Master of the ship or the Owner or Person in charge of the apparatus. Proceedings were brought against the Owner of the *Laura D'Amato*, the Master and the Chief Officer who was both responsible for the sea chest valves and the discharge operation.

3.41 The Committee questioned witnesses about the suggested involvement of the ship's pumpman in causing the spill. The Report of the State Marine Oil Pollution Response Committee investigation proposed a number of possible scenarios with regard to the cause of the spill, and two it considered the 'most plausible'. One scenario was

that the disaffected Pumpman, Damjanic, removed the lashing and the seal, jammed the valves hard open and replaced the lashing and the seal before arrival in Singapore.⁸⁴

3.42 The other scenario was that somewhere between Zhanjiang and Jebel Dhanna the sea valves were opened for operational reasons and the crew member with the responsibility for closing them forgot to do so. The investigation concluded that it

has been unable to determine which of these scenarios is the more likely.⁸⁵

3.43 When asked whether or not there was any evidence that the pumpman acted through malice, Ms Filipowski answered

No, we have no direct evidence. There were suggestions made that he was unhappy and he may have done it, but we do not know whether he did or did not do it.⁸⁶

⁸⁴ State Marine Oil Pollution Response Committee, Investigation into an Oil Spill from the tanker *LAURA D'AMATO* at Gore Bay, Sydney on Tuesday August 3 1999, p 13.

⁸⁵ State Marine Oil Pollution Response Committee, Investigation into an Oil Spill from the tanker *LAURA D'AMATO* at Gore Bay, Sydney on Tuesday August 3 1999, p 13.

⁸⁶ Evidence of Ms Filipowski, Sydney Ports Corporation, 22 February 2001, p 62.

- 3.44** When asked whether anyone had attempted to interviewed the pumpman in Croatia, or whether any attempt had been made to find out whether or not he did in fact act out of malice, Ms Filipowski answered

Not so far as I am aware.⁸⁷

Committee's Conclusion

- 3.45** The Committee notes the successful prosecution and size of the fine and costs awarded against the owner and chief officer of the *Laura D'Amato*.
- 3.46** The Committee notes the evidence of Sydney Ports Corporation regarding the reasons for prosecuting the ship's owner.

⁸⁷ Evidence of Ms Filipowski, Sydney Ports Corporation, 22 February 2001, p 62.

Chapter 4 Oil spills response and clean-up

4.1 By worldwide standards, the *Laura D'Amato* oil spill was relatively minor. Some memorable tanker oil spills occurring close to the coast include:

- **Jessica oil spill, San Cristobal Island, Galapagos Islands, Ecuador – January 2001.** The tanker ran aground 800m offshore, spilling 605, 664 litres of oil. In this spill, the tides and currents favoured the clean-up operation insofar as they took the spilt oil west and north away into deeper waters, thus protecting the island's coastline.
- **Sea Empress oil spill, Milford Haven, South-West Wales – February 1996.** Approximately 72,000 tonnes of crude oil were released into the seas around the coast of South-West Wales causing more than 100km of coastline to become seriously polluted.
- **North Cape oil spill, South Kingston, Rhode Island – January 1996.** 828,000 gallons of #2 heating oil spilled after the tug towing the *North Cape* barge caught fire during a severe winter storm.
- **Exxon Valdez oil spill, Prince William Sound, Alaska – March 1989.** This is the largest spill in the United States to date in which an oil tanker ran aground causing nearly 37,000 tonnes of crude oil to spill.

4.2 The clean-up team in Sydney was fortunate to have reports and research into clean-up operations from previous oil spills, particularly with respect to the clean-up following the *Exxon Valdez* spill where, over ten years after the spill occurred, many fish and wildlife species injured by the spill have not fully recovered:

Of particular concern is locations where oil remains on the surface or just beneath the surface of beaches. While cleaning and natural degradation removed much of the oil from the intertidal zone, visually identifiable surface or subsurface oil persists at many locations, particularly in sheltered locations that do not receive much winter storm action.⁸⁸

4.3 In particular, the *Laura D'Amato* clean-up was very careful in its choice of clean-up methods, learning from the *Exxon* experience, where the clean-up caused more damage than the oil itself. See further Chapter 4.3 below, page 45.

⁸⁸

www.oilspill.stata.ak.us/beaches/beaches.htm, accessed 4 April 2001.

The *Laura D'Amato* clean-up operation

4.4 Soon after the *Laura D'Amato* spill was detected, pumping was stopped, various agencies were contacted and response plans activated. Under the State Oil Contingency Plan, Sydney Ports Corporation launched a massive clean up response which involved over 500 people from over 30 different government and private sector organisations and interstate agencies. A list of the agencies involved in the clean up, including the number of personnel from each agency, is appended at Appendix 9. In addition, a significant number of people telephoned to volunteer their help. However, none were required or utilised.

4.5 Mr Taylor added to the record an excerpt from an international magazine called *Clean Seas* praising the response to the *Laura D'Amato* oil spill:

While no-one is openly cocky, the management of the *Laura D'Amato* spill is being quietly judged in industry circles as copy book professionalism. Eight years of equipping, training and exercising under NAT plan delivered a clock work response. The oil, maritime and insurance sectors reacted with integrity and what could have been measured as a disaster at many levels has been something of a triumph.⁸⁹

4.6 The Committee was concerned about the time frame within which some agencies were contacted by Sydney Ports Corporation to request their involvement in the clean-up. This was particularly so with respect to the NSW Fire Brigade:

Hon J H Jobling: Can I inquire then, in that period you received a huge number of triple-0 calls. When did Sydney Ports, I understand one of the lead authorities dealing with this sort of thing, make contact with you, or do they?

Mr Hamilton: We have no record of a phone call from the Marine Ports to us. Shell actually reported it to the marine tower, which is their standard procedure.

...

The process is that Marine Ports would notify us by direct line. Obviously with the magnitude of the spill and activating their resources they did not do that.

...

The Hon. J. H. JOBLING: It seems to me there is potentially a glaring flaw in the system if you find out by default, as you did in this case, rather than being called in early. Would it not have been reasonable in the event that you have an oil spill of potentially unknown magnitude which may or may not have a flammability problem that you would want the Fire Brigade to know fairly soon and, in that event, you may want to bring up men or equipment to the site? Would that not be a reasonable premise?

⁸⁹ Evidence of Mr Taylor, Waterways Authority and State Marine Oil Spill Recovery Committee, 22 February 2001, p 61.

Mr SHEEDY: It is, but in a current sense there have been a lot of contingency plans since that night. Certain matters that you refer to, in the view of the Fire Brigade, have been to a large extent redressed. That is the notification process. I think it is fair to say, and I point out again, any plan cannot regulate what Mr and Mrs Citizen do, and that is they ring the Fire Brigade.⁹⁰

4.7 A similar concern was raised by Ms Seaton, MP, NSW Shadow Minister for the Environment in her submission to the Inquiry:

When the spill occurred it was unclear which government agencies undertook which tasks, not just for the immediate clean-up, but for longer term monitoring for environmental and health effects after the event.⁹¹

4.8 The Submission received by Lane Cove Council also raised concerns about levels of communication:

Levels of communication and reporting in the wake of the oil spill from the *Laura D'Amato* at Gore Cove were very poor. The results of investigations into the extent and impact of the spill, as well as plans for containment and clean-up work were not reported to Council at any time.⁹²

4.9 Representatives of the NSW Fire Brigades stated in evidence before the Committee that their standard operating guidelines have been modified in response to the *Laura D'Amato* oil spill:

We [the Fire brigade] have standard operating guidelines, as every fire department around the world does. We certainly review those. They were essentially land based. Now they reflect more in relation to water environments.⁹³

Community involvement

4.10 Community involvement was raised in a submission to the Inquiry by the Vaucluse Progress Association, a community group with members living in Sydney Harbourside districts in the Woollahra Municipality:

We [the Association] think[s] there is a positive role for major foreshore landowners and waterside residents to play in co-operative arrangements to prevent damage after an incident has occurred, as well as in the arrangements which seek to prevent such incidents from occurring in the first place.⁹⁴

4.11 Michael Rolfe, President of the Association gave evidence before the Committee. He spoke of the benefits of community involvement and a:

⁹⁰ Evidence of Mr Sheedy and Mr Hamilton, NSW Fire Brigade, 22 February 2001, p 38.

⁹¹ Submission No 7, Ms Seaton, Shadow Minister for the Environment, 25 February 2000, p 1.

⁹² Submission No 20, Lane Cove Council, 2 March 2001, p 1.

⁹³ Evidence of Mr Sheedy, NSW Fire Brigade, 22 February 2001, p 40.

⁹⁴ Submission 3, Vaucluse Progress Association, 5 February 2000, p. 4.

community information program to tell people how the community can help; if, in fact, there is an oil spill and it is coming your way, what you, as an individual, can do. Obviously, the more people we can get to deal with the situation and the quicker we can deal with it, the less impact oil spills will have on Sydney Harbour.⁹⁵

4.12 The Committee acknowledges the concerns felt in the community with regard to communication from those responsible for the clean-up operation.

Media representation of the *Laura D'Amato* oil spill

4.13 The *Laura D'Amato* oil spill generated considerable community concern. This was evidenced by the more than 600 '000' calls received by the Fire Brigade on the evening of the spill.⁹⁶ Media reports concentrated on the significant spread of the oil, the smell of hydrocarbons and dangers to little penguins and cormorants. Headlines from the time of the spill included:

- 'Oil fumes choke Sydney', L Kennedy, *The Sydney Morning Herald*, 4 August, 1999;
- 'History of errors on our waterways', C Miranda, *The Daily Telegraph*, 4 August 1999;
- 'Oil and water may not mix but a little goes a long way', J Woodford, *The Sydney Morning Herald*, 5 August 1999;
- 'Crude oil spill a timely wake up call', I Kiernan, *The Sydney Morning Herald*, 5 August 1999;
- 'Wildlife like sitting ducks in slick', S Brook, *The Australian*, 5 August 1999;
- 'All-out assault on oil-clogged harbour', R Wainwright, *The Sydney Morning Herald*, 6 August 1999;
- 'Ships of shame a recurring scandal', R Wainwright, *The Sydney Morning Herald*, 6 August 1999, and
- 'Best harbour, worst port in world', *The Sun Herald*, editorial 8 August 1999.

4.14 The EPA stated in relation to media coverage that

⁹⁵ Evidence of Mr Rolfe, Vacluse Progress Association, 22 February 2001, p 15.

⁹⁶ Evidence of Mr Sheedy, NSW Fire Brigade, 22 February 2001, p 37. The majority of calls came from an area bounded in the north by Chatswood and by Redfern in the south. The smell of the oil on the water led people to believe that there was a gas leak, however, the calls also located the smell from on the water of the harbour. In about half an hour, the Fire Brigade had discovered the spill was at Gore Bay.

There was a lot of scaremongering type of media reporting of the *Laura D'Amato* oil spill⁹⁷

- 4.15** Professor Underwood concurred with this assessment, stating that there was 'media manipulation' of the oil spill, and that

the public is not well served by being told frightening stories about something. It causes a reaction which is, in fact, not productive. It puts more pressure on the people who are trying under difficult circumstances to make decisions. It causes more Inquiry into what is happening when what is happening is probably as good as we are going to get.⁹⁸

- 4.16** In fact, Professor Underwood went so far as to state:

One very disturbing outcome of the *Laura D'Amato* spill was the amount of misinformation and unchallenged opinion-offering in the media. In the face of public anxiety, political risk and inevitable difficulties and complexities of managerial responses, it is pathetic to see how much space and time were given to confusing and counter-productive nonsense.

Statements that the oil would destroy most/all life in the Harbour were published without challenge. Not only were such statements ultimately demonstrated to be wrong, they were always in defiance of known facts. Statements by many journalists, most environmental groups and some professionals – including scientists – were quite incorrect, were known to be incorrect at the time and have subsequently been demonstrated to be incorrect.⁹⁹

- 4.17** In their submission to the Inquiry, Friends of the Earth also commented on the role of the media in the *Laura D'Amato* incident, albeit from a different standpoint:

One of the most cynical outcomes of the oil spill was the predictable media focus (orchestrated by the authorities) of fairy penguins and cormorants put on display while being cleaned, warmed and generally rehabilitated. This involved 'cute' footage on the nightly news and large format photographs at the front of daily newspapers of penguins or cormorants at Taronga Zoo being cleaned and kept warm.¹⁰⁰

- 4.18** One of the lessons learned from the *Laura D'Amato* incident saw the State Emergency Management Committee ratify a public information supporting plan. Ms Rygate from the EPA stated in evidence before the Committee that the effect of this plan should be that

⁹⁷ Evidence of Ms Rygate, NSW Environmental Protection Authority, 22 February 2001, p 53.

⁹⁸ Evidence of Professor Underwood, Ecological Impacts of Coastal Cities Research Centre, University of Sydney, 22 February 2001, p 82.

⁹⁹ Submission No 14, Professor Underwood, Ecological Impacts of Coastal Cities – A Commonwealth Special Research Centre, 31 January 2001, p 4.

¹⁰⁰ Submission No 9, Tom McLoughlin, Friends of the Earth – Sydney, 28 February 2000, p. 10.

in future arrangements to get information out to the community about the real situation should work a little better.¹⁰¹

4.19 The Committee endorses the use of the public information supporting plan, and trusts that it has the desired effect, namely that the media will respond more responsibly to future environmental disasters.

Oil Spill Response Contingency Planning

4.20 There are various levels of contingency planning that apply to New South Wales:

- ***National Plan to Combat Pollution of the Sea by Oil:*** The national oil spill contingency plan came into operation in October 1973. It represents the combined efforts of the Commonwealth, State and Territory governments and the oil industry to provide a solution to any threat posed to the coastal environment by oil spills from ships. The Plan provides combined government and industry arrangements designed to allow a rapid and co-operative response to an oil spill occurring within the area defined by the Plan. The Plan is complemented by government and industry plans prepared at a Commonwealth, State/Territory, regional and local level. It includes the provision of equipment and training programs and is funded by the Australian Maritime Safety Authority (ASMA).
- ***NSW State Marine Oil Spill Response Contingency Plan:*** This plan is a sub-plan of the NSW State Disaster Plan. It details the oil spill response arrangements for NSW. Sydney Ports Corporation explained the scope of the NSW plan in its submission to the Inquiry. It:
 - provides an effective system for reporting, assessing and responding to a marine oil pollution incident or potential incident;
 - ensures that the New South Wales Government's resources are integrated with the National Plan and effectively mobilised in the event of a major spill in or near New South Wales State waters;
 - institutes procedures to minimise the impact of an oil spill on the natural and socio-economic environment of the area; and
 - clearly defines the division of responsibilities between Government agencies.

4.21 In addition, there are various International agreements to which Australia is a signatory, including:

- Convention relating to Intervention on the High Seas in Cases of Oil Pollution Casualties 1992.

¹⁰¹ Evidence of Ms Rygate, NSW Environmental Protection Authority, 22 February 2001, p 54.

- International Convention on Civil Liability for Oil Pollution Damage 1992.
- International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage 1992.
- International Convention for the Prevention of Pollution from Ships 1973/98 (MARPOL 73/78).
- International Convention on Oil Pollution Preparedness, Response and Co-operation 1990 (OPRC 90).

4.22 Sydney Ports Corporation explained where that organisation fits into the response capability scheme in evidence before the Committee:

it is important at this point to explain briefly that Sydney Ports does not operate in a vacuum. ... There is a national plan, which is an administrative arrangement that started in 1973 between the Commonwealth and the States. It is administered by AMSA to provide a stockpile of equipment for urgent transportation to spill sites around the country, with expert operators from all over Australia prepared to travel at short notice to these spill sites. New South Wales supports this plan and has established the New South Wales Marine Oil Spill Contingency Plan for responses to oil and chemical spills. As stated earlier, Matthew Taylor is the chairman of the State Committee. Under this plan, various ports in New South Wales are assigned areas of responsibility along the coast, with Sydney Ports being responsible for the area from Catherine Hill Bay to Garie Beach.¹⁰²

4.23 In evidence before the Committee Captain Filor, Inspector of Marine Accidents with the AMSA, informed the Committee that, on the Commonwealth level, representations were being made to the International Maritime Organisation to alter the MARPOL convention to address problems inherent in ship design which were a contributing factor to the *Laura D'Amato* spill:

On the Commonwealth front, we have gone to the International Maritime Organisation. They are in the process of reviewing the MARPOL convention—that is, the prevention of oil pollution from ships. The MARPOL convention in fact deals mostly with segregating ballast and possible pollution through ballast water and the cargo system. We have pointed out to them that this particular construction of pipeline system, which is not that uncommon, does seem to go against the principles of MARPOL. I do not know quite how far that will get, but it is being discussed and looked at in the International Maritime Organisation.¹⁰³

Scientific evaluation of clean-up

4.24 In their opening statement in evidence before the Committee, the EPA stated:

¹⁰² Evidence of Mr Martin, Sydney Ports Corporation, 22 February 2001, p 61.

¹⁰³ Evidence of Captain Filor, Australian Transport Safety Authority, 22 February 2001, p 44.

The response operation to the spill was an overall success. Ninety per cent of the recoverable oil was collected for recycling (when 20% is usually considered good by world standards). The success of the operation was due, in part, to the type of oil involved and advantageous environmental conditions. Weather and tidal conditions assisted in keeping the spill contained and the oil was a type that could be cleaned off the shore comparatively easily. The location of the spill in Sydney Harbour, near Sydney Ports Corporation's operations, was also advantageous.¹⁰⁴

4.25 The clean-up of the *Laura D'Amato* oil spill has been compared favourably with the clean up following the *Exxon Valdez* oil spill in Alaska. Professor Underwood stated in his submission to the Inquiry:

it is extremely clear that attempts to clean up can cause more environmental damage than done by the oil itself. So, after the *Exxon Valdez*, sites that were oiled and cleaned showed little recovery after 3 – 5 years after the spill. Sites left alone recovered rapidly.¹⁰⁵

4.26 Professor Underwood outlined the problems that can be caused by clean-up operations:

It is not just detergents and dispersants that cause problems during clean-up. Simply disturbing the areas can have very deleterious effects. This is particularly true in soft sediment habitats (beaches, mudflats, mangroves). Trampling by people and machinery and other disturbances ensures that:

- sediment is turned over bringing many more animals into contact with oil;
- physical disturbance to sediments kills many animals;
- oil and residues are buried under sediment, below the layers in which animals and bacteria can decompose them. As a result, they continue to leach into the upper layers and become a longer-term contamination and have longer-term impacts than would otherwise be the case.

In general, therefore, despite people's desires to 'do something' and needs to solve problems of visibility, aesthetics and so forth for tourism or recreation, extreme caution is needed in any habitat before unleashing cleaning operations. This is not in doubt scientifically – although local environment groups and some components of the media refuse to believe it. Such ill-informed components of society can make irrational demands on managers, decision-makers and politicians – sometimes to the potential detriment of our natural systems.¹⁰⁶

4.27 Professor Underwood was generally satisfied with the clean-up undertaken in response to the *Laura D'Amato* spill:

¹⁰⁴ Evidence of Ms Rygate, NSW Environmental Protection Authority, 22 February 2001, p 52.

¹⁰⁵ Submission No 14, Professor Underwood, Ecological Impacts of Coastal Cities – A Commonwealth Special Research Centre, 31 January 2001, p 2.

¹⁰⁶ Submission No 14, Professor Underwood, Ecological Impacts of Coastal Cities – A Commonwealth Special Research Centre, 31 January 2001, p 2.

In the case of the *Laura D'Amato* spill, it is obvious from inspection and the only scientifically sound investigations available, that these issues were well-understood by EPA and much of the clean-up was done sensibly and well.¹⁰⁷

4.28 When asked by the Committee whether he was satisfied that the *Laura D'Amato* clean-up was done sensibly and well, Dr Peter Scanes from the EPA agreed with Professor Underwood's views and stated:

The *Exxon Valdez* example did not occur in this harbour because the methods of cleaning were far less severe and so the biological communities in those areas cleaned were virtually indistinguishable from areas which were not cleaned in our case so that the cleaning did not cause any environmental damage. I should qualify that by saying except in areas predefined as areas which were used by humans and cleaned to a much greater standard in order to protect public safety rather than to protect ecological communities and that decision was clearly made afore, which were restricted to a very small percentage of the shore.¹⁰⁸

4.29 Dr Scanes continued:

During the spill response, all efforts were made to keep people and machinery off habitats. Virtually all of the oil recovery was from water, the exception was the beach in Balls Head Bay. Shell primarily led that recovery. For that recovery, walkways were put in place and lots of precautions were taken so that over the areas where people moved there was very little possibility that oil was going to be trampled into the sediment. Against that, it was an area of beach that was cleaned quite vigorously. There is some indication that it may have removed some of the sand and that is one of the lessons to be learned from this oil spill.¹⁰⁹

4.30 In contrast to Professor Underwood's assertion, the EPA maintained that they did not modify their approach to clean up as a result of public pressure. Rather:

The approach we took to the clean-up was based on the very best scientific knowledge we had and the most responsible response we could come up with.¹¹⁰

4.31 and

There was certainly widespread general pressure to clean up the oil spill. I would not say that we were under intense pressure at any particular time from any particular individual. We were well aware that the oil needed to be cleaned up and the strategy of Sydney Ports, in close consultation with the environment advisers, was to keep as much as possible of it off the shore and to clean it up on the water where it could be recycled. We avoided using absorbent materials because they

¹⁰⁷ Submission No 14, Professor Underwood, Ecological Impacts of Coastal Cities – A Commonwealth Special Research Centre, 31 January 2001, p 2.

¹⁰⁸ Evidence of Dr Scanes, NSW Environmental Protection Authority, 22 February 2001, p 55.

¹⁰⁹ Evidence of Dr Scanes, NSW Environmental Protection Authority, 22 February 2001, p 55.

¹¹⁰ Evidence of Ms Rygate, NSW Environmental Protection Authority, 22 February 2001, p 56.

represent items which then have to be disposed of in land fill and that is a poor solution, so we stayed with skimming and collecting it directly off the water.¹¹¹

4.32 During the clean-up, the EPA undertook trials of possible ways of cleaning foreshores, to determine possible implications of cleaning shores in various ways. The results are reproduced in part below:

¹¹¹ Evidence of Dr Scanes, NSW Environmental Protection Authority, 22 February 2001, p 54.

Foreshore Cleaning

Methods and Priorities

On Wed 11/8/99 trials of the effects and effectiveness of various water washing strategies were done on the western sea wall of Berrys Island Reserve. The techniques trialed were:

1. Fire hose, shower head, high volume, low pressure
2. Fire hose, jet stream, high volume, medium pressure
3. Water blaster, low volume, high pressure, head close and oblique
4. Water blaster, low volume, high pressure, head close and direct
5. Water blaster, low volume, high pressure, head 500mm off and direct.

Observations:

1. About 80% of oil removed, only thin (0.2) mm smear rubs off on skin. Most animals undisturbed. Staining still evident.
2. About 80% of oil removed, only thin (0.2) mm smear rubs off on skin. Some animals disturbed. Staining still evident.
3. About 95% of oil removed, only very thin (0.05) mm smear rubs off on skin. Most animals disturbed. Staining still evident.
4. About 99% of oil removed, no smear rubs off on skin. Most animals removed. Staining not evident, mostly reduced to new stone.
5. About 90% of oil removed, only thin (0.1) mm smear rubs off on skin. Most animals disturbed. Staining still evident.

Based on these observations the following recommendations are made:

Most areas on the seawalls and natural rocks be considered for habitat value ... and excessive oil be removed by Method 1 above or by wiping with absorbent material for small patches. Areas near beach access paths with high potential for recreational amenity use should be carefully inspected and, as well as being treated by method 1, selected areas should be treated by Method 3 if necessary to protect people from oil contamination. Acceptability of cleaned areas will be determined in conjunction with North Sydney Council.

Oil washed off rocks should be contained and collected.¹¹²

¹¹² Peter Scanes, *Foreshore Cleaning Methods and Priorities*, document tendered in evidence, 22 February 2001.

Committee's Conclusion

- 4.33** In determining cleaning methods to be used in future oil spills, the best scientific evidence must be taken into consideration. The Committee commends the clean-up effort in response to the *Laura D'Amato* oil spill, particularly the decision to not use dispersants in the clean-up effort, thus avoiding many of the problems experienced in Alaska as a result of the *Exxon Valdez* clean-up.

Chapter 5 Environmental regulation of Sydney Harbour

5.1 Sydney Ports Corporation was established on 1 July 1995 following the dissolution of the Maritime Services Board. Sydney Ports Corporation has responsibility for the commercial port operations in Port Botany and Sydney Harbour. Mr Martin from Sydney Ports Corporation explained the role of Sydney Ports Corporation in evidence before the Committee:

Sydney Ports' objectives are to establish, manage and operate port facilities and certain services within the boundaries of its two ports and to exercise the port safety functions in accordance with its port safety operating licence [PSOL].

Sydney Ports Corporation has just had its PSOL renewed by the Governor of New South Wales for five years until 31 December 2005. Part of the PSOL includes emergency response to port-related emergencies in the Sydney Harbour and Botany Bay and to a four-kilometre radius outside the heads of each port, and oil and chemical spills in response to emergencies elsewhere in the State of New South Wales and from Catherine Hill Bay in the north to Garie Beach in the south under the New South Wales Marine Oil Spill Contingency Plan.¹¹³

5.2 In their Submission, Sydney Ports Corporation noted in regard to the PSOL

The PSOL is regulated by the Department of Transport. Compliance with the PSOL is independently audited every six months and reported to the Minister for Transport.¹¹⁴

5.3 In response to the Committee's term of reference regarding the appropriateness of Sydney Ports Corporation being the key environmental regulator for Sydney Harbour, Mr Martin pointed out in evidence before the Committee:

Sydney Ports Corporation is not an environmental regulator. Policy decisions with respect to the Marine Pollution Act [MPA] for ship-related spills are the domain of the Minister for Transport on advice from the Department of Transport and/or Waterways – not Sydney Ports Corporation.

Policy decisions with respect to land-based spills are the responsibility of the EPA, pursuant to the Protection of the Environment and Operations Act [POEO]. There is a clear distinction there.¹¹⁵

5.4 Despite this distinction being drawn by Sydney Ports Corporation, the Corporation stated in its submission to the Inquiry:

¹¹³ Evidence of Mr Martin, Sydney Ports Corporation, 22 February 2001, p 59.

¹¹⁴ Submission No 11, Sydney Ports Corporation, 13 March 2001, p 4.

¹¹⁵ Evidence of Mr Martin, Sydney Ports Corporation, 22 February 2001, p 61.

Importantly, in the Sydney region, the operational and technical expertise in dealing with marine oil pollution incidents resides with the SPC. If the responsibility for enforcing the MPA in Sydney Harbour was delegated to an organisation which did not manage commercial shipping on a day to day basis, this would be likely to reduce, rather than enhance, the New South Wales Government's ability to protect Sydney Harbour's marine environment.

It should be noted that the enforcement of the MPA by SPC is consistent with international practices, where (with the exception of the United States), MARPOL legislation is devolved to government port authorities or operators such as SPC or local marine authorities.¹¹⁶

5.5 The general opinion in submissions received and evidence heard by the Committee agreed that Sydney Ports Corporation was the appropriate regulatory body. However, the Committee did receive some submissions criticising Sydney Ports Corporation's dual role as port operator and environmental regulator. The Total Environment Centre's submission claimed:

The risks arising in an arrangement where operator and regulator roles are combined in a single agency are twofold. It may be that the agency will tend to position itself too much at "arms length" from port users (to avoid "regulator capture" or even accusations thereof) and in the process neglect the detailed oversight necessary to ensure safe working. Or it may be that it does involve itself in detailed oversight and then it is faced with certain dilemmas – commercial pressures for expedient decisions, and a share of the moral, if not legal, responsibility for accidents that may occur and in respect of which it is required to prosecute.

...

It is our view that the Corporation's role should be limited to managing the implementation of the requirements of the legislation – in essence, establishing and maintaining a system for safe working of the port. Other regulatory roles – verifying correct implementation and prosecuting of otherwise dealing with breaches of legislation – would in our judgment be better placed with the Environmental Protection Authority. We consider the split in responsibilities would better serve both the environmental objectives of the marine pollution legislation and the commercial interests of the Corporation. It would likely also serve to increase public trust in the administration of the legislation.¹¹⁷

5.6 And the submission by Ocean Watch asserted:

It is not considered appropriate that the port operator is also the key environmental regulator due to the potential conflict of interest that could arise during a spill situation. It is vital, if any form of credibility is to be retained by the government in these instances, that all operations relating to any such incident is

¹¹⁶ Submission No 11, Sydney Ports Corporation, 13 March 2001, pp 24-25.

¹¹⁷ Submission No 12, Total Environment Centre Inc, 27 March 2001, p 6.

seen to be totally transparent and that parties are held accountable for their actions.¹¹⁸

- 5.7** As part of Sydney Ports Corporation's safety measures, periodic physical audits during all transfers are conducted to ensure that key environmental and safety systems (for example inert gas systems and manifold connections) are operating effectively:

In the 1998/1999 financial year there were 4,420 such audits of bulk liquid transfers including bunkering operations. As there were 1,246 transfers, this means that each transfer operation was audited by SPC, on average, 3.5 times.¹¹⁹

Committee's conclusion

- 5.8** The Committee is satisfied that the Sydney Ports Corporation is the appropriate regulatory body.

¹¹⁸ Submission No 21, Ocean Watch, 13 March 2001, p 2.

¹¹⁹ Submission No 13, Sydney Ports Corporation, 13 March 2000, p 19.

Appendix 1

List of Submissions

List of Submissions

Number	Name (Organisation)	Number	Name (Organisation)
1	Handley, Sophie (Leichhardt Council)	12	Angel, Jeff (Total Environment Centre Inc)
2	Leithhead, Barry (Barry S Leithhead & Assocs Pty Ltd)	13	Smith, Gary (Shell Refining (Australia))
3	Rolfe, Michael (Vaucluse Progress Association)	14	Underwood, Antony (University of Sydney)
4	Anonymous	15	Bohm, Craig (The Marine & Coastal Community Network)
5	Rolfe, Michael (Sydney Harbour and Foreshores Committee)	16	Barr, David (Member for Manly)
6	Barr, David (Member for Manly)	17	Cox, Andrew (National Parks Association of NSW)
7	Seaton, Peta (Shadow Minister for Environment)	18	Dunn, Steve (NSW Fisheries)
8	Gilligan, Brian (NSW National Parks and Wildlife Service)	19	Nori, Sandra (Minister for Small Business and Tourism)
9	McLoughlin, Tom (Friends of the Earth - Sydney)	20	Haines, Tony (Lane Cover Council)
10	Corbyn, Lisa (NSW Environment Protection Authority)	21	Soul, Christine (Ocean Watch Australia Pty Ltd)
11	Scully, Carl (Minister for Transport)		

Appendix 2

List of Witnesses

List of Witnesses

Mr Gary Smith	Refinery Manager, Shell Refining (Australia) 22 February 2001
Mr Michael Rolfe	Secretary, Sydney Harbour and Foreshores Committee President, Vaucluse Progress Association 22 February 2001
Mr Tom McLoughlin	Natural Areas Policy Officer, Friends of the Earth – Sydney 22 February 2001
Mr Tim Anderson	National parks and Wildlife Association of New South Wales 22 February 2001
Mr Craig Bohm	New South Wales Co-ordinator, Marine & Coastal Community Network 22 February 2001
Mr James Hamilton	Manager, Operational Readings, New South Wales Fire Brigades 22 February 2001
Mr Glenn Sheedy	Manager, State Operations, New South Wales Fire Brigades 22 February 2001
Captain William Filor	Deputy Director, Surface Safety, Australian Transport Safety Authority 22 February 2001
Ms Donna Rygate	New South Wales Environment Protection Authority 22 February 2001
Dr Peter Scanes	Marine Scientist, New South Wales Environment Protection Authority 22 February 2001
Mr Matthew Taylor	Chief Executive Officer, Waterways Authority Chairman, State Marine Oil Spill Pollution Response Committee 22 February 2001

Mr Greg Martin	Chief Executive Officer, Sydney Ports Corporation 22 February 2001
Ms Barbara Filipowski	Secretary and General Council, Sydney Ports Corporation 22 February 2001
Mr Shane Hobday	General Manager, Ports Services, Sydney Ports Corporation 22 February 2001
Prof Tony Underwood	Professor, Marine Ecology Laboratories, University of Sydney 22 February 2001

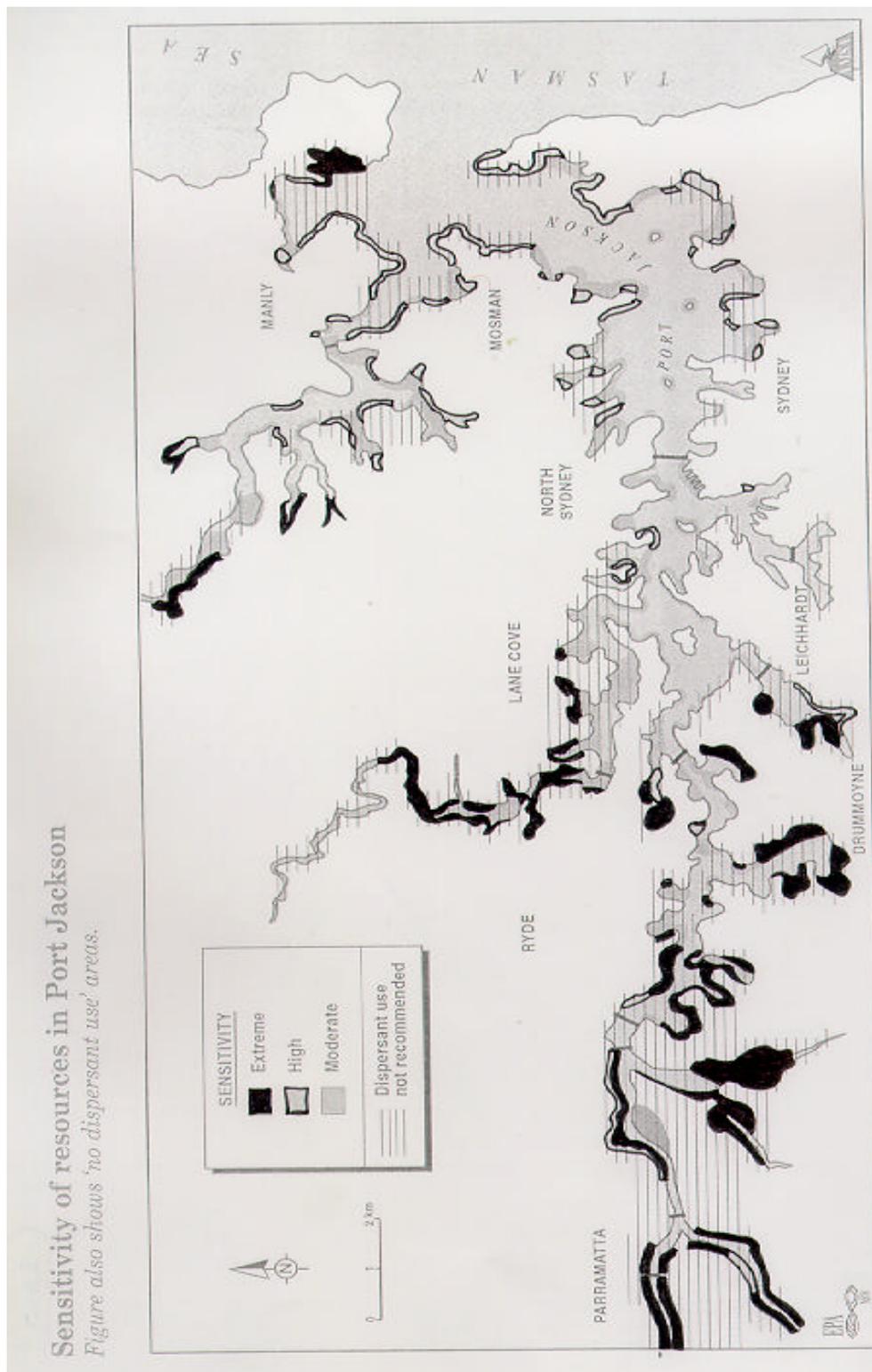
Appendix 3

Map of Sydney Harbour showing environmentally sensitive areas

Source:

Environmental Protection Authority, *Coastal Resource Atlas for Oil Spills in Port Jackson*, July 1994.

Map of Sydney Harbour showing environmentally sensitive areas



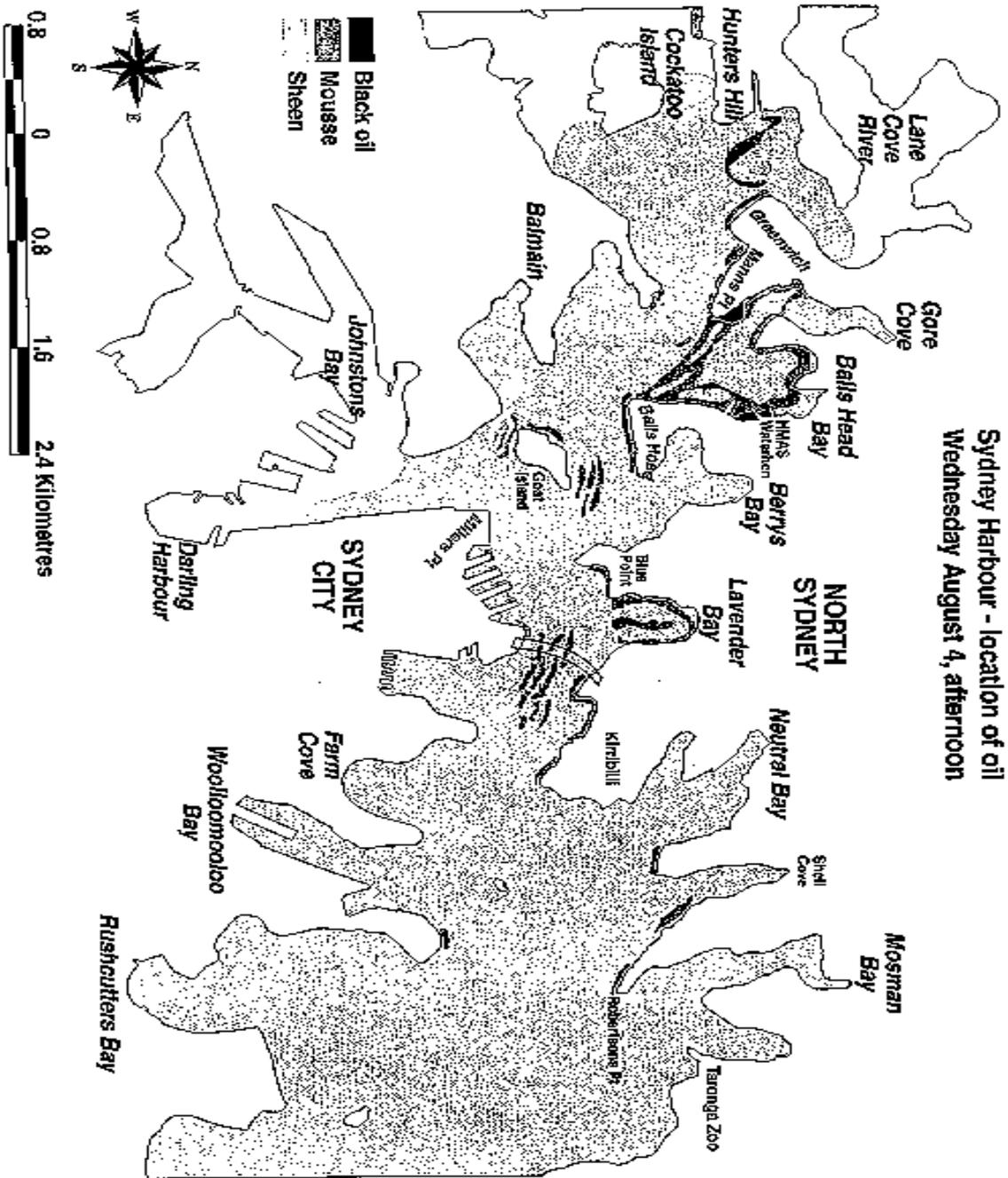
Appendix 4

Map illustrating extent of *Laura D'Amato* oil spill, 3 August 1999

Source:

Australian Maritime Safety Authority, *The Response to the Laura D'Amato Oil Spill – Report of the Incident Analysis Team*, April 2000, p 3.

Map illustrating extent of oil spill from the *Laura D'Amato*, 3 August 1999.



Appendix 5

State Marine Oil Pollution Response
Committee, Investigation into an Oil
Spill from the tanker *Laura D'Amato*
at Gore Bay, Sydney, on Tuesday 3
August 1999

Executive Summary and
Recommendations

State Marine Oil Pollution Response Committee, Investigation into an Oil Spill from the tanker *LAURA D'AMATO* at Gore Bay, Sydney, on Tuesday 3 August 1999 – executive summary and recommendations

During the evening of August 3 1999, while the fully laden tanker *LAURA D'AMATO* was discharging its cargo of light crude oil to the Shell Oil terminal in Gore Bay, it was found that part of its cargo was flowing into the water near the stern of the ship. Pumping was stopped and the terminal deployed containment boom around the vessel. The Sydney Ports Corporation's response team was alerted and proceeded to the area to deploy additional containment booms across the Bay. Although it was dark at the time, it soon became apparent that a significant quantity of oil had escaped into the harbour.

The Minister for Transport was informed of the spill and he instructed the Chairman of the State Marine Oil Pollution Response Committee to carry out an investigation into the circumstances surrounding the incident.

Details of the Ship

The *LAURA D'AMATO* is a motor tanker of 55,000 gross registered tonnes owned by Fratelli D'Amato of Naples, Italy. The Master and other senior officers at the time were Italian, while some of the junior officers and crew were from the Philippines.

The vessel was under a charter to Shell Company of Australia (Shell Oil). It loaded its cargo of about 91,000 tonnes of crude oil at the port of Jebel Dhanna in the United Arab Emirates on 5 July for discharge at the Shell Oil terminal in Gore Bay and thence for pumping to its Clyde refinery. The voyage to Sydney was apparently uneventful and the vessel berthed at the Gore Bay terminal soon after midday on 3 August.

The Discharge Operation

The vessel's pipeline was connected to the terminal's receiving mechanism in accordance with normal procedures and pumping from the ship to the terminal commenced. The ship then changed to another of the ship's pumps which meant that certain cargo valves had to be opened and others closed.

Subsequently a strong smell of crude oil was detected. The terminal's pipelines were checked and the ship was queried. Then oil was noticed in the water and the pumps were stopped.

All cargo valves in the pumproom were checked and closed where necessary. The sea valves were checked and found to be open. They were immediately closed but the time was not recorded and therefore it has been impossible to determine how long it took from the time pumping ceased until the time the sea valves were shut. However, from a comparison of the amount of cargo finally received by Shell Oil and the amount originally carried in the ship on arrival Shell has estimated that a total of 250 tonnes was lost.

Response to the Spill

Soon after the oil was detected, Shell Oil contacted various agencies including the Sydney Ports Corporation and began a series of safety checks in the immediate vicinity of the vessel and terminal. The deployment of containment booms around the vessel was also commenced during this period by Shell and Sydney Ports Corporation.

Under the State Oil Spill Contingency Plan, the Sydney Ports Corporation launched a massive clean-up response assisted by eleven other NSW Government agencies. Additional expert personnel from nearly twenty private sector organisations and interstate government agencies also participated in the response. The response was initiated and conducted under the overall command of the Chairman of the State Marine Oil Pollution Response Committee and included a variety of equipment and clean up techniques. The National Oil Spill Response Plan was also activated after consultation with the Australian Maritime Safety Authority.

A separate report into the details of the response and the cleanup operation will be compiled at a later stage in consultation with the Australian Maritime Safety Authority.

The Investigation

The Minister appointed the Chairman of the State Marine Oil Pollution Response Committee to carry out a detailed investigation into the circumstances surrounding the incident. The terms of reference for the investigation were:

- to determine the cause of the incident;
- to examine all safety procedures relevant to the unloading of oil cargoes at the Gore Cove terminal;
- to make recommendations to the Minister regarding measures which should be implemented in order to prevent a recurrence; and
- to examine and make recommendations on any other relevant matter.

The investigation visited the *LAURA D'AMATO* initially between 11.25pm on Tuesday 3 August and 1.00am on Wednesday 4 August and again on Thursday 5 August, Saturday 7 August and Sunday 8 August. Over this period the Master and several members of the crew and a number of Shell Oil personnel were interviewed, the ship was examined, a range of relevant evidence was collected and expert opinion obtained.

The cause of the Spill

The ship caused the spill. This occurred because two large valves, normally used for ballasting operations and known as sea valves (or sea chest valves), were open when they should have been closed. During the course of the normal cargo discharge operation on 3 August, the pipeline containing these two valves was charged with oil. Because the valves were open this resulted in the loss of oil into the water.

The investigation has been unable to clearly determine why the two offending valves were open. It is also not clear when the two valves were opened or who was responsible for opening them. However, the investigation finds that one of the ship's officers was directly responsible for ensuring that the valves were closed before arriving in Sydney and failed in his duties to do so.

Prior to the ship departing, Sydney Ports Corporation secured a bank guarantee of \$8M from the ship's insurer to cover the costs of the cleanup and maximum fines applicable under the Marine Pollution Act 1987.

Legal Proceedings

Recommendation: It is recommended that the Minister instruct Sydney Ports Corporation to commence legal proceedings under the Marine Pollution Act 1987.

Existing Safety Measures Relating to Oil Tanker Operations in Sydney Harbour

There are a number of existing measures to safeguard tanker operations in Sydney Harbour. These are:

- the prohibition on the movement of tankers at night to maximise navigational safety;
- the prohibition on other ship movements whenever a tanker is underway in the Harbour to ensure collisions cannot occur;
- the requirement to have up to four tugs in attendance during berthing and unberthing operations for safety reasons, depending on the size of the ship;
- requirements for pilotage of such ships to be conducted by pilots who have attained the highest level of skill;
- a ship/shore safety checklist incorporating procedures recommended in the International Safety Guide for Oil Tankers and Terminals. The checklist is designed to ensure the safe ship to shore transfer of oil cargo and requires a number of actions to be completed before transfer begins; and
- the installation by Shell Oil of containment bunds around the base of its tanks to capture any leakage of oil before the oil can escape into the surrounding land and water environment.

All of these measures apply to oil tankers to the degree appropriate in Botany Bay with the exception of night departures from Kurnell Wharf which are permitted because there is less risk to navigational safety in the Bay compared to Sydney Harbour.

Recommendation: It is recommended that these existing measures continue to operate in Sydney Harbour and Botany Bay.

Proposed Additional Safety Measures Relating to Oil Tanker Operations In Sydney Harbour

The investigation has consulted with a number of relevant experts to identify a range of additional measures which could be implemented immediately to assist in preventing a recurrence of this type of incident at Gore Bay. A package of measures which will assist safety at the Gore Bay facility are recommended below. These measures would surpass world's best practice recommended in the International Safety Guide for Oil Tankers and Terminals which is currently applied in Sydney Harbour and Botany Bay.

Recommendation: *It is recommended that:*

- ***in addition to the ship/shore checklist there should be a full physical check of the sea valves by a representative of the terminal together with one of the ship's officers to ensure that the sea valves are closed before the commencement of cargo operations;***
- ***the terminal should deploy containment boom around every tanker at the terminal in such a manner that would assist to contain an escape of oil from a ship's sea valve or from the ship to shore connection;***
- ***the terminal should install gas detection equipment at the wharf to detect the presence of hydrocarbons in gaseous form and set off audible and visual alarms; and***
- ***the terminal should provide additional or improved lighting on the wharf to enable the chances of observing oil on the water at night be increased.***

Application of Proposed Additional Safety Measures to Botany Bay and other Bulk Liquid Facilities

Recommendation: It is recommended that further work be carried out to assess the need for, and possibility of, applying the proposed additional safety measures relating to oil tankers discussed above to facilities in Botany Bay as well as at other bulk liquid facilities.

Appendix 6

Inspector of Marine Accidents,
Australian Transport Safety Bureau,
Navigation Act 1912; Navigation
(Marine Casualty) Regulations
investigation into the release of oil
from the Italian flag tanker *Laura
D'Amato* at Gore Bay, Sydney
Harbour on 3 August 1999

Summary and Conclusions

Inspector of Marine Accidents, Australian Transport Safety Bureau, Navigation Act 1912; Navigation (Marine Casualty) Regulations investigation into the release of oil from the Italian flag tanker *Laura D'Amato* at Gore Bay, Sydney Harbour on 3 August 1999 – summary and conclusions

Summary

The Italian flag tanker *Laura D'Amato* berthed at the Shell Terminal Gore Bay Sydney, at 1224 on 3 August 1999, with about 90,957 tonnes of Murban Crude Oil. The loading arms were connected to the sup, the tank ullages measured and the quantity of oil on board checked. The mate and the Shell shore officer conferred and signed the 'Ship/Shore Safety' checklist. The checklist was also counter signed by a Sydney Ports inspector.

At 1412, the ship commenced discharging using no. 2 cargo pump. Initially, the water bottoms were removed at a slow rate of pumping. At 1430, all the cargo tanks were opened to lower their levels and the discharge rate was increased to 1000m³/h. At 1650, some tanks were shut, the rate was further increased to 1500 m³/h, and the suction valves for the two slop tanks (six wings port and starboard) opened.

By about 1815, the mate decided the level of the slop tanks was falling too slowly. To draw more directly from these two tanks and to increase the rate of discharge, the mate decided to open no. 3 cargo line to no. 2 pump by opening two 'crossover' valves on the main sea line in the pumproom. At about 1820, he ordered the cadet to open the two valves.

At 1825, the Shell wharf watchkeeper was returning from a routine check of the loading arms and moorings, when he suddenly smelled a strong odour of hydrogen sulphide. He immediately contacted the shore officer reporting the smell and asking whether the ship was venting its tanks for any reason. It was established that this was not the case.

The wharf watchkeeper went back to the shore manifold but detected no sign of a leak. The smell of hydrocarbon sulphide was still strong and, as he checked the water between the ship and the shore, he detected a slick of oil, which he traced to the ship's port side. He reported to the shore officer, who immediately ordered the ship to stop pumping.

The ship's pumps were stopped at 1836. The Shell emergency plan was implemented immediately.

The mate, who had already ordered the cadet to close the two valves that he had just opened, then ordered the 3rd mate to stop the cargo pump. He went ashore to see if he could locate the source of the oil spill. The wharf watchkeeper showed him the position on the port side, of the vessel, where oil was seen to be welling to the surface of the water. The mate and the pumpman then went to the pumproom and checked all the valves. They found the two sea-chest valves on the sea suction line were fully open.

When the two men attempted to close the sea-chest valves, they found the large, manual, butterfly valves 'back-seated' open. To close the valves, both men had to use a large wheel key to break the seat. In closing the valves, any security seals placed between the two adjacent valve handles were broken.

At this point, the flow of Murban crude oil from the *Laura D'Amato* into Gore Bay ceased.

Conclusions

These conclusions identify the different factors contributing to the incident and should not be read as apportioning blame or liability to any particular organisation or individual.

The factors which lead to the escape of crude oil cargo from the *Laura D'Amato* into Sydney Harbour include but are not limited to:

1. The sea-chest valves on the sea suction line adjacent to the port sea chest in the vessel's cargo pumproom were open.
2. The use of the sea suction line as a cargo pump suction crossover line led to cargo filling the line and escaping through the sea-chest valves overboard.
3. The ship's cargo system did not provide for a separate designated cargo pump suction crossover line or some means of isolating the cargo system from direct connection to the sea chest.
4. The presence, at various times, of seal placed between the sea-chest valves lead to a false assumption on the part of the ship's staff that the se-chest valves must therefore be shut.
5. The false assumption contributed to the fact that the ship's staff did not properly check the sea-chest valves, as required by the ISM Code procedure, the ISGOTT Guide and normal tanker operations, before loading in Jebel Dhanna and discharging in Sydney.
6. There was no remote monitoring, on the cargo control console, of the positioning of the two sea-chest valves.
7. The vessel's Safety Management System did not adequately detail the pressure test procedures to be carried out on the sea-chest valves each time that were to be checked for tightness.
8. The independent cargo surveyor in Jebel Dhanna did not recognise that the sea-chest valves were, in fact, open.
9. The Ship/Shore Checklist procedures, in Jebel Dhanna and Sydney, did not physically check and identify that the sea-chest valves were in a closed position.
10. The probability is that the sea-chest valves were opened some time after leaving Zhanjiang and before arriving at Jebel Dhanna. There was no operational reason for opening these valves.

Appendix 7

Australian Maritime Safety Authority,
*The Response to the Laura D'Amato Oil
Spill – Report of the Incident Analysis
Team, April 2000*

Executive Summary and
recommendations

Australian Maritime Safety Authority, *The Response to the Laura D'Amato Oil Spill – Report of the Incident Analysis Team, April 2000 – executive summary and recommendations*

Executive Summary

On 3 August 1999 the *Laura D'Amato*, a 96,121 DWT Italian registered oil tanker, was berthed alongside at the Shell Gore Bay terminal in Sydney discharging its cargo of Murbin Light Crude Oil. Between 1826 and 1850 hours an estimated 250 to 300 tonnes of cargo was pumped into Sydney Harbour from the ship through an open sea valve system. These sea valves are normally closed. This was the largest ship sourced oil spill in Sydney Harbour.

The prevailing conditions of a southerly wind and flood tide confined the majority of the oil to Gore Cove and Balls Head Bay, thus restricting the movement of the oil throughout the Harbour.

Rapid reaction by the Sydney Ports Corporation duty operational crew and the Shell Gore Bay terminal staff had the vessel surrounded by boom by 1910 thereby minimising the spread of oil.

By 1930 hours the Sydney Ports Corporation oil spill response Incident Control Centre at Moores Warehouse, Millers Point was operational, with the Incident Commander in position and the overall Incident Controller mobilised soon after.

The master of the *Laura D'Amato* reported that the spill was 14 cubic metres in size. However, estimates late in the evening by the Shell Gore Bay terminal staff showed that the spill could have been between 80 and 300 cubic metres. It was on this basis that Shell mobilised its own staff and contractors, including additional response equipment and personnel from the industry's central stockpile at the Geelong based Australian Marine Oil Spill Centre. The range of spill size was not formally communicated to the Incident Commander at the time.

During the night it became clear from observations of the extensive oil movement in the harbour that a significantly larger quantity than 14 cubic metres of oil had been spilt, confirming a higher spill size, possibly within the range estimated by Shell. It was then that the Incident Commander mobilised National Plan resources directly from other NSW ports and interstate from Brisbane, Melbourne and Canberra through the Australian Maritime Safety Authority.

Oil recovery operations using 5 Marco oil spill recovery vessels, a boat mounted brush skimmer, a number of disk and weir skimmers together with a variety of boom types and shore fishing equipment was used on a daily basis up to 14 August 1999. Spot cleaning on foreshores continued until 20 August 1999.

Overall, a very high proportion of the spilt oil was recovered. Of the 250-300 tonnes spilt, an estimated 120-150 tonnes of oil was lost through evaporation and of the remaining oil 90 per cent was recovered.

Not surprisingly the location and size of the spill in one of the world's most well known harbours created massive media interest both locally and internationally.

The Incident Analysis Team found that the response was effective and well executed. The end result of 'a clean harbour' with no reported signs of environmental damage is a clear testament to the success of the response operation and how it was managed.

Nevertheless there are lessons that can be learned from this incident and areas where improvements can be made. These have been identified in order for an improved National Plan response to any future incident, particularly one that may be of a considerably larger size.

Some 18 recommendations have been made, mostly of an operational nature. It needs to be recognised that the issues giving rise to the recommendations did not materially affect the overall outcome of the incident. However, they could do so in a more complex or larger spill with more environmentally sensitive issues to be dealt with.

There are three main areas arising out of this incident that are worthy of further consideration by the National Plan Advisory Committee.

Firstly, we need to hasten the implementation of the National Plan Oil Spill Response Incident Control System and to issue guidelines on the structure to be used in ICCs during the remainder of the implementation phase. Such guidelines shall make it clear that a common National approach to this matter is necessary so that those providing a response role will be familiar with the response structure anywhere in Australia.

Secondly, the need to adopt a policy which clearly spells out that spill sizes should be estimated using all appropriate techniques and the estimated figures should be used as a 'worst case scenario' in planning the response.

Thirdly, the importance of having unified management of an incident with a singly Incident Control Centre. In this case, the split responsibilities between the Incident Control Centre at Moores Warehouse and the Shell Operational Centre at Gore Bay Terminal caused unnecessary confusion and uncertainty about use of resources, what operational requirements had been completed and what remained to be undertaken.

Recommendations

1. The full implementation of the National Plan Oil Spill Response Incident Control System, including training should be speeded up. The National Plan Advisory Committee should issue guidelines on the response structure to be used during the remaining period of implementation. (p 11)
2. Spill sizes should be estimated using all appropriate techniques and the estimated figures should be immediately communicated to all parties. When spill size estimates are found to be larger than first advised, the company involved should provide the revised figure to the State Marine Pollution Controller and Incident Controller without delay. (p 11)

3. Incident Control Centres should have the National Plan Oil Spill Response Incident Control System organisational structure permanently displayed on a whiteboard or similar, so that individuals' names at the four functional heads level, can be added quickly in the early stages of the incident. (p 11)
4. The work areas in the Incident Control Centre be allocated to the four functional units, Planning, Operations, Logistics and Finance/Administration should be planned according to the operational needs but should be located close to each other to enable personnel to communicate easily with each other. (p 14 & p 28)
5. Management of an oil spill response should be undertaken from a single Incident Control Centre, separate response organisations should not be set up for areas under oil industry jurisdiction. If a forward base is required when an incident is remote from the Incident Control Centre, there should be strong communication links between the forward base and the Incident Control Centre. (p 14 & p 31)
6. When supporting State/NT pollution incident, AMSA is organising interstate personnel and equipment, and an affected oil company is mobilising AMOSC directly, there should be early and close contact between AMSA and AMOSC to ensure that appropriate decisions are being made on the amount and type of resources required (p 14). Likewise there should be early and close contact between the oil company and the State Marine Pollution Controller for the same reasons. (p 11)
7. The National Plan Advisory Committee should research designing a national computerised oil spill management system to handle all written operational and administrative communications, track equipment and personnel resources etc. In the meantime a simple Incident Control Centre Operations and Procedural manual should be developed. (p 14)
8. The National Plan Advisory Committee should review National Plan hand-held radio communication equipment to take advantage of the Sydney Ports Corporation's initiatives and review the use of special head sets for use in helicopters and possibly when alongside noisy machinery such as Marco Oil Spill Recovery Vessels. (p 18)
9. The National Plan Advisory Committee as well as State/NT agencies should have policies in place to ensure that during a major pollution response operation their employees obtain adequate rest. (p 25)
10. The National Plan Advisory Committee should, in light of the introduction of the Incident Control System, review and emphasise the role of industry and other advisers in the Incident Control Centre. (p 31)
11. The National Plan Advisory Committee should further develop guidelines on foreshore cleaning techniques for different shoreline types in tropical and subtropical areas of Australia ie for NSW and all other States and the Northern Territory. Additional training in shoreline cleaning techniques should also be provided. (p 23)
12. The National Plan Advisory Committee should take into account the value of utilising an Internet Website to promulgate incident information to the public, community and environmental groups. (p 31)

13. State/NT procedures used during a spill response for environmental monitoring and undertaking sampling programs of the areas affected by the oil spill should be reviewed to provide the most appropriate scientific advice in future incidents. (p 23)
14. State/NT National Plan Committees should obtain Environmental Protection Agency approval for techniques and cleaning agents to be used to clean oiled recreation craft while afloat. (p 23)
15. State/NT and industry supervisors should ensure booming or other response operations close to the source of a spill that there is no risk to personnel of explosion or inhalation of toxic fumes. (p 25)
16. State/NT National Plan Committees should review arrangements at Incident Control Centres to ensure (p 28):
 - i. Computer arrangements permit networking and provision of analogue dial out facilities for visitor laptops and access to printers by visitor laptops
 - ii. Contingency plans in place to quickly acquire additional telephones, fax machines, photocopiers and other office equipment required in the Incident Control Centre
 - iii. Provision of adequate personnel to operate the Incident Control Centre
17. The NSW National Plan Executive Committee should undertake a review of the NSW Marine Oil Spill Contingency Plan to:
 - i. Clarify the role of NSW National Parks and Wildlife Service in an oil spill response and to improve the interaction between the respective roles of the Environmental Protection Agency and NSW National Parks and Wildlife Service (p 20)
 - ii. Clarify the role of the Environment and Scientific Coordinator with a view to locating this position in the Environment Unit so as to provide improved communication between the Planning and Operations Sections (p 23)
 - iii. Ensure appropriate guidelines on the shoreline cleanup strategies are available for future spills in conjunction with the NPAC Recommendation 11.
 - iv. Determine the role of the NSW Fire Brigade in oil pollution response (p 31)
 - v. Recognise the National Plan Oil Spill Response Incident Control System (p 33)
 - vi. Ensure full integration of the various port and terminal plans with the State Plan (p 33)
 - vii. Include a wildlife rescue and rehabilitation plan (p 33)
18. Sydney Ports Corporation personnel should undergo further training in boom deployment and monitoring. The training should highlight the need to check boom deployment and anchoring mechanisms to ensure optimal use of booms including shoreline sealing, particularly after changes in tide and/or wind direction, and the correct procedure for getting inside the boomed area. (p 18)

Appendix 8

*Filipowski v Fratelli D'Amato S.r.l and
Ors [2000] NSWLEC 50*

Extracts from judgment

Filipowski v Fratelli D'Amato S.r.l and Ors [2000] NSWLEC 50 – extracts from judgment

...

38. The *Laura D'Amato* is an Italian Flag tanker owned by Fratelli D'Amato and is managed by Shipping Management S.A.A of Monte Carlo, which is part of the V Ships Group.

...

47. There is no dispute that the oil which polluted Sydney Harbour on 3 August 1999 escaped through the sea chest valves on the port side of the ship.

...

52. The expert conclusion is that while the sea chest valves were visibly secured, the strong possibility is that the two valves were left open and that the ship's staff and inspectors had not checked the valve position indicators either at Jebel Dhanna or before arriving at Gore Bay.

53. The ship's Captain, Bruno Furlan, originally entertained a suspicion that the valves had been left open as an act of sabotage on the part of an employee whose employment was terminated in Singapore. He believed that the pressure gauge had been tampered with. However, there is no proof that any person interfered with the pressure valves and the seals or that there was an act of sabotage on the part of any person. The real explanation of how the sea chest valves were fixed in the open position remains a mystery.

...

57. As a consequence of the spill in Sydney Harbour, V Ships issued a circular to the Masters of all ships under its management to ensure that the incident is not repeated.

58. It is instructive to set out the probable causes of the Sydney incident from the V Ship's circular as follows:-

2) Probable causes of Incident

a) Primary cause of the Incident

Pollution occurred because the sea chest valves were in the open position instead being closed.

b) Other Causes

The official investigation held by the Port authorities and by the Group Safety & Quality Director does not reveal who left the sea chest valves in the open position in spite of both valves being sealed and thought to be closed.

The comments below are, in the writer's opinion, sufficient to identify the causes of the incident:

Adherence to Company Safety Procedures and Instructions.

The Chief Officer and the Pumpman were not strictly adhering to the Company instructions relative to all the checks to be undertaken before commencing the discharge operations.

Company Form OP 58 requires that before commencing discharge/loading operations the "Sea valves must be examined and correctly set, lashed and sealed".

Although he was ordered to check the sea valves, the same was done superficially by the Pumpman. He was satisfied that the valves were sealed, but he made no physical check to ensure that the valves were in a closed position.

Chief Officer had not himself carefully investigated if the sea chest valves were closed.

Company instructions to check the tightness of the sea chest valves according to Oil Pollution Prevention Manual were not completely adhered to.

The Chief Officer, instead of carrying out the pressure test of the sea chests, was only checking if the manometer between the two sea chests was indicating a zero pressure (this can signify that seawater is not entering the line of the sea chests). In fact the test made was showing a zero pressure, but after the incident, with effecting a proper test it was found that the manometer was not working.

3) Conclusion

The above mentioned unfortunate incident may not have occurred had it not been for the lax attitude of the Chief Officer, and the Pumpman who did not adhere completely to Chief Officer's orders.

59. All tankers' Masters are reminded by the circular that, inter alia, pressure tests of the sea chest valves must be undertaken each time before the vessel carries out discharge or loading operations and tests logged. Furthermore, examination of the sea chest valves must also include a physical check to ensure that valves are positively closed, despite being lashed and sealed.

...

83. Overall, it can be said that the environmental consequences of the incident were not significant in terms of the potential for widespread, short term and long term damage to the harbour waters and its foreshores. Congenial weather conditions averted what could have been a major catastrophe on the land.

84. It must also be said that the prompt reaction by all those agencies who responded to the report of the spill played a significant role in confining and reducing the environmental consequences. The early deployment of booms around the scene effectively contained the majority of the product to the Gore Bay/Balls Head Bay area.

85. The high flashpoint of the crude oil released presented a significant catastrophic threat to the area of the spillage in the event that any source of fire, static electricity (mobile phones), spark or heat, including ferries/motorboats/vehicle exhausts had been present. Due to the magnitude of the released gas volume in a short space of time, the threat of explosion and the potential for disaster were extremely high, particularly as there were residential and commercial properties comprising real and significant heat sources and flame possibilities, situated very close to the spill area.
86. The potential for serious harm to the environment as a consequence of an oil spill is a real one. The prospect of a catastrophic effect is not to be discounted. The range of penalty indicates this. The significance of Sydney Harbour, in terms of visual and recreational amenity only serves to enliven an awareness of the importance of avoiding an oil spill during cargo handling operations.
87. The extent of actual harm caused is not to be measured solely by reference to the death or injury of living species. The spread of oil over such a large surface area of the harbour waters is inherently offensive. It remained over a number of days. There are long term consequences which are yet to be finally assessed.
88. Notwithstanding the relatively short duration of the impact of a pungent odour, it nevertheless was detected over a very wide area of the Sydney Metropolitan area and was sufficient to give rise to a multitude of complaints. The fact that no direct medical consequences for the health of individual persons have been reported is no more than fortuitous.

The seriousness of the offence

89. Part 4 of the Marine Pollution Act 1987, pursuant to s 26, applies to a discharge of oil into state waters from a ship, in or in connection with a transfer operation.
90. If a discharge occurs, s 27(1) provides that each appropriate person in relation to the discharge, and any other person whose act caused the discharge, are each guilty of an offence punishable, upon conviction, by a fine not exceeding:-
 - (a) if the offender is a natural person - 2000 penalty units (\$220,000); or
 - (b) if the offender is a body corporate - 10000 penalty units (\$1.1 million).
91. Section 25 includes in the meaning of "appropriate person" the owner or the Master of the ship in relation to a discharge from a ship.
92. The offence created by s 27(1) is founded upon the occurrence of an event, namely, a discharge of oil. When that occurs, the Master and the owner of the ship are thereupon each guilty of an offence. In the case of the other person whose act caused the discharge, it is necessary to prove how the discharge occurred, whereupon that person is guilty of an offence against the section.
93. The Chief Officer, Crescenzo Rosato, is charged as a person whose act caused the discharge on the basis that his failure to carry out a proper and adequate test of the sea chest valves before engaging the sea crossover line allowed the oil to be discharged.
94. By creating an offence of strict liability and imposing substantial penalties in respect thereof, the parliament has declared that it regards the offence to be a serious one.

95. The impact of the discharge of the oil into the water and the release of fumes was readily foreseeable and simple methods of prevention were available.
96. The offences were not unforeseen, although they might be regarded as unintended.
97. The failure to detect the fact that the sea valves were open is understandable to the extent that the wheel was found to be jammed in the open position and did not readily respond to manual pressure. Furthermore, the continuing presence of the seals and lashing between the wheels suggested the valves were closed. The evidence established, however, that these superficial tests were not sufficient. The failure to carry out further procedures is not excusable for any reason. Although the failure to adopt proper procedure was negligent, the Court is not prepared to adopt the submission by Mr Tobias QC that it amounted to gross negligence.
98. The Court accepts that the incident was uncharacteristic of the defendants in that none of them have been shown to have a propensity for acting without due regard to their responsibilities except to the extent of failure to follow the appropriate procedures in this case.
99. Accordingly, although serious, the offences are not to be regarded as the worst kind.
- ...
121. The Court is satisfied that at all relevant times the Captain, Chief Officer and other crew members were severally responsible for the management and functions of the *Laura D'Amato* in its many facets. They were employed by the company for that purpose. It was the responsibility of the Captain to oversee the total operation.
122. The Chief Officer, however, had direct and immediate responsibility for the management of cargo handling, including the operational decisions relating to the use of the various lines and valves within the ship.
123. The system broke down when procedures that fell within the ambit of the Chief Officer were not followed. The Court is satisfied that the Chief Officer was performing a function he was employed and authorised by the agent of the owner to carry out. The failure to perform that function in a proper manner is therefore attributable to the owner as the ultimate employer (Tiger Nominees Pty Ltd and Anor v State Pollution Control Commission (1992) 75 LGRA 71).
124. This is not a case where the multiplicity of offenders as between the owner and its employees is accidental and quite unrelated to the merits of the case. The Court is not obliged to treat the imposition of penalty as though there is only one offender. Regard must be had to the comparative gravity of the conduct of the co-offenders and to their respective antecedents.
125. It is not suggested that the culpability of the owner arises as a consequence of any lack of care in the choice of its employees. However, the penalty must reflect an element of general deterrence as well as a personal deterrence against re-occurrence.
126. The ultimate damage from the spill was not as great as it could have been under more unfavourable conditions. There has been no financial cost to the citizens of New South Wales. The company has repented and learnt a lesson from the occurrence and taken steps to ensure it does not happen again.

127. It is appropriate in the circumstances, after taking into account all mitigating factors, including those provided by s 439 and s 442B of the Crimes Act 1900, that a penalty of \$510,000 be imposed on Fratelli D'Amato.

...

139. Having regard to the whole of the circumstances surrounding the event and its cause and after taking into account the respective duties of the Master of the ship and the Chief Officer or Mate, I am satisfied that it would not be appropriate to convict the Master, Captain Furlan. I find the offence of strict liability proved against him but propose to dismiss the charge under s 556A of the Crimes Act 1900.

The Chief Officer

140. The Court has not been assisted with a statement of the previous record of Crescenzo Rosato, either to his detriment or otherwise.

141. Although the Court has not heard direct evidence from the Chief Officer himself, he made the following statement to interviewing officers in a recorded interview:-

It was a bad accident. I am really sorry. I would give anything to go back before it happened - unluckily, it is impossible. I am sorry for all the trouble it has caused the terminal, all the people around here, the residents.

142. He frankly acknowledged in his interview with investigating officers that although he reports directly to the Captain on a day to day basis and the Captain is in overall charge of the ship, the latter has no practical role in pumping and transfer operations. The evidence of Captain Furlan confirms that the responsibility for opening and closing the valves during unloading of cargo rests with the Chief Mate or Chief Officer.

143. The evidence places direct responsibility for the offence with him and he has acknowledged his error not only by the plea of guilty, but also in the record of interview.

144. I determine that an appropriate penalty in his case is \$110,000.

Appendix 9

Organisations and number of personnel involved in the *Laura D'Amato* clean up

Source:

Australian Maritime Safety Authority, *The Response to the Laura D'Amato oil spill - report of the Incident Analysis Team, April 2000*, p. 15.

Organisations and number of personnel involved in the *Laura D'Amato* cleanup

NSW Organisations	No	Interstate Organisations	No
Sydney Ports Corporation – lead agency	94	Brisbane Port Authority	1
NSW Environmental Protection Authority	11	Marine Board of Victoria	1
Sydney Waterways Authority	28	Queensland Department of Transport	3
NSW Fire Brigade	47	Private Sector Corporations	No
NSW Department of Transport	4	Shell Refining (Aust) P/L	156
State Emergency Service	18	Salvation Army	20
NSW Water Police	14	Axiom Industries	6
Newcastle Ports Corporation	8	Caltex Refineries NSW	7
Port Kembla Ports Corporation	1	Collex	20
University of Sydney	1	FS Cranes	1
Commonwealth Organisations	No	Grays Diving Services	7
Australian Maritime Safety Authority	9	Moss Australia	1
Australian Marine Oil Spill Centre	2	Oil Check	1
National Parks and Wildlife Service	34	Stannards	23
International Organisations	No	Sydney Helicopters	2
New Zealand Maritime Safety Authority	1	Gardiner Perrott	2
International Tanker Owners Pollution Federation	2	Total	526

Appendix 10

Minutes of Meetings

