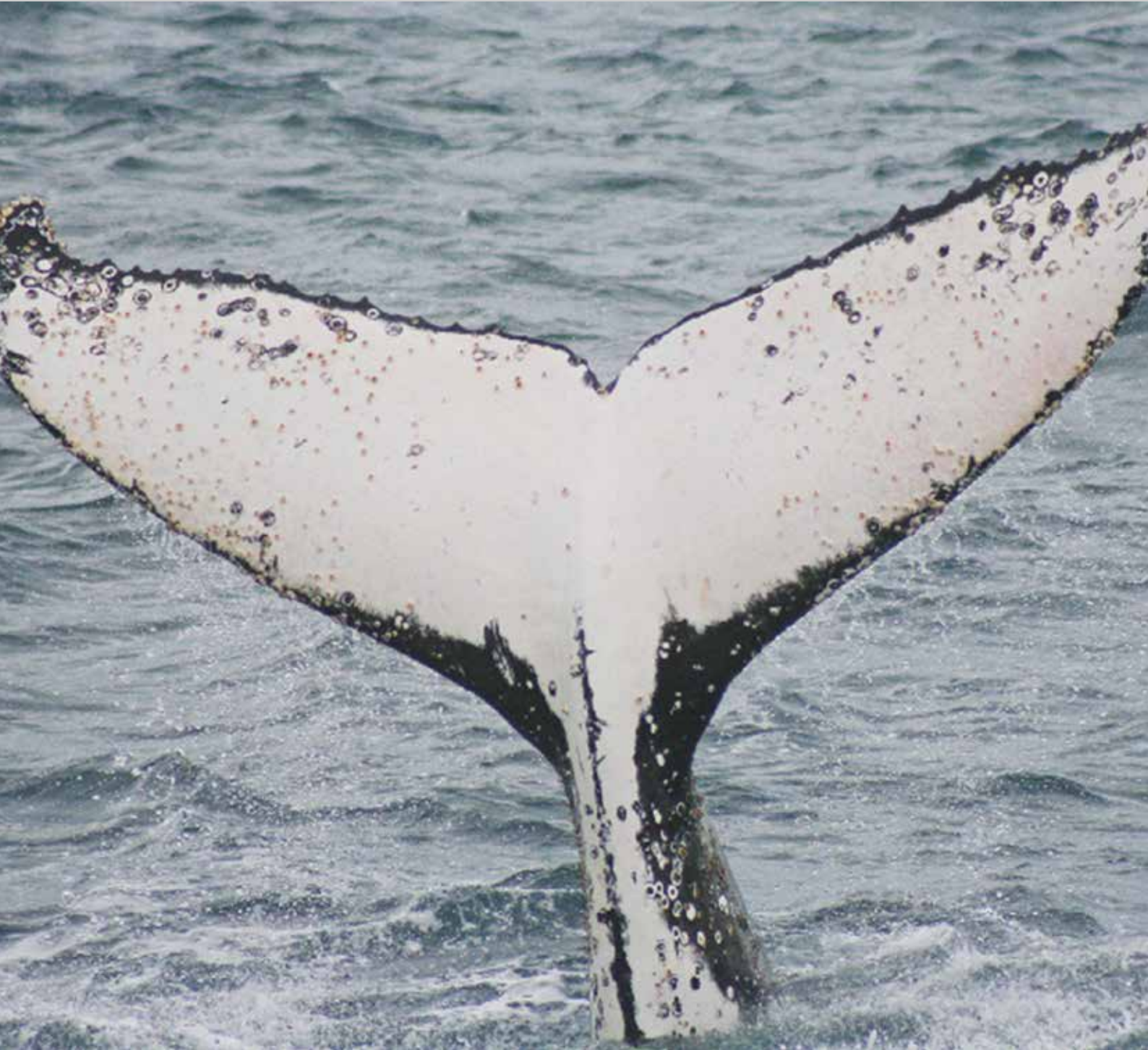


# PRESERVE WESTERNPORT

A Discussion Paper

PRESERVE  
WESTERN  
**PORT**  
ACTION GROUP





*Westernport at sunset. Photo: Lisa Schonberg*



This Discussion Paper has been prepared and published by the Preserve Western Port Action Group (PWPAG).  
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Preserve Western Port Action Group  
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# Foreword

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The Preserve Western Port Action Group (PWPAG) was formed in response to the Victorian state government proposal to build a massive international container port at the Port of Hastings. The Mission Statement of the PWPAG is:

To save Western Port today. For tomorrow. By providing information, communication and support to Phillip Island and other Western Port communities on the threat posed by the proposed expansion of the Port of Hastings.

The Port of Hastings is in Westernport, a special region of Victoria, less than two hours from Melbourne. It is a popular destination for local and international tourists alike because it offers an environmental sanctuary with abundant bird and marine life, and a range of activities including nature hikes, whale viewing, fishing and recreational boating. The daily penguin parade on Phillip Island has iconic status.

Despite this, the government wants to build a container terminal that each year will service more than 3,000 international container ships with a draft of up to 16 metres. This number of ships entering the bay around the clock would have serious adverse consequences for the everyday life of the region, its economy, its social fabric and its biodiversity.

The government has made much of the potential for the Port of Hastings to be the biggest container terminal in the country, but their proposal, while big on claims, is short on detail. There are many issues that need to be openly and transparently discussed before a final decision is made.

## Purpose of the discussion paper

In the midst of the uncertainty about what the port would mean for the region, and for Victoria generally, we aim to encourage public discussion of all the relevant issues, including the economic, environmental and social ramifications of the proposed development and the potential costs and benefits to the community.

This discussion paper is one step in that process. It makes use of existing research by community groups, scientists as well as government reports. It is not the end point, but aims to provoke discussion about issues that need to be explored and explained by the Government.

We encourage all Victorians and stakeholders to consider and seek answers to the key questions and

issues addressed in this discussion paper or elsewhere. We ask the government and its agencies to respond to the concerns raised by the community, industry and key stakeholders.

## What you can do

We hope that reading this document will help to make you better informed. It's important to understand the potential consequences of such a large scale project. We encourage you to ask the government to answer the particular questions that concern you.

Being better informed may also guide you in deciding how you will vote in the upcoming Victorian election on 29 November 2014. The parties and candidates standing at the election all have clear policies on the proposed construction of an international container port at Port of Hastings. We suggest you to examine their policies so you can make a decision that suits you and protects our future.

You may also want to:

- Like us on Facebook: <http://www.facebook.com/PreserveWesternPort>
- Visit our website: <http://www.preservewesternport.org.au>
- Sign our online petition: <http://www.communityrun.org/petitions/preserve-western-port-stop-the-development-of-port-of-hastings>
- Write to the Premier of Victoria: [denis.naphthine@parliament.vic.gov.au](mailto:denis.naphthine@parliament.vic.gov.au)
- Write to the Minister for Ports: [david.hodgett@parliament.vic.gov.au](mailto:david.hodgett@parliament.vic.gov.au)
- Talk with your friends, family industry representatives and fellow Victorians about views on the future of Westernport.

Jeff Nottle  
Chairman, PWPAG  
September 2014



*McHaffies Reef, Westernport. Photo Alia Schonberg.*

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## Abbreviations

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ACF: Australian Conservation Foundation
CIS: Comprehensive Impact Statement
EES: Environmental Effects Statement
EPA: Environment Protection Agency (Victoria)
FTE: Full time equivalent
IMP: Impact Management Plan
MTPF: Major Transport Project Facilitation Act (Victoria)
Port expansion: Port of Hastings proposed expansion
Port Authority: Port of Hastings Development Authority
PWPAG: Preserve Western Port Action Group
SERL: South East Rail Link
TEUs: 20 foot equivalent unit (shipping containers)
TRA: Tourism Research Australia
PINP: Phillip Island Nature Park
VFLP: Victorian Freight and Logistics Plan
VNPA: Victorian National Parks Association
WPPC: Westernport & Peninsula Protection Council



*Albatross over Westernport. Photo: Lisa Schonberg.*

## Executive Summary

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The Victorian government's desire to build Australia's biggest container terminal in Westernport will have profound economic, environmental and social effects. Significant factors about the construction, viability and likely outcomes need to be properly assessed before a decision is made. Are projections of a 330% growth in container trade by 2046 realistic? Should the largest container port be in Victoria? Should it be at Hastings?

The construction will involve substantial dredging in Westernport, which in turn will speed up the tides. The dredging combined with the increased tidal flows is expected to redefine the coastline around the bay, with the potential erosion of mud banks, compounding the effects of climate change. Dumping an estimated 24 million plus cubic metres of dredge spoil, potentially acid sulphate contaminated, may significantly impact seagrass and marine animals living on the sea floor and endanger the biodiversity and food chains of the region.

The proposed port is expected to operate 24 hours a day, 365 days a year. An ambitious target of over eight ships a day carrying over 24,000 containers makes scheduling complicated, particularly given that vessels often do not arrive on time. How many docks will be needed to maintain this target? The continual stream of ships up to 350 metres in length, will mean significant visual and noise pollution in addition to air pollution from the highly toxic fuel that powers them. The potential for the illegal discharge of ballast water, collisions and oil spills all pose hazards to the region. It is impossible to guarantee against such events, just one of which could have profound consequences.

Furthermore, massive new road and rail systems will be needed for transshipment from Hastings increasing congestion, pollution and noise as trains and trucks thunder from Hastings through the south-eastern

suburbs of Melbourne. The Institute of Supply Chain and Logistics estimate that if container operations moved from Melbourne to Hastings, it would almost double truck operating costs and travelling times. It would mean an additional 4,200 trucks or 140 trains every day with over 70% of Victoria's import and export freight needing to find its way across Melbourne to Hastings.

Westernport, including Phillip Island, has a thriving tourist economy. Tourists spend \$619 million annually and the industry accounts for 5,000 full time equivalent jobs with a huge potential for growth. Visitors are drawn by the experience of wilderness; recreational water activities including swimming, boating and fishing; and the biodiversity of the region.

Should Hastings morph into an industrial town, and port operations restrict the use of the bay, this economy will be at risk. Despite claims that the development will offer new jobs, the completed port will be highly mechanised. And estimates of new jobs need to be offset against the potential loss of existing tourist-related jobs, currently a third of all employment in the Shire. There are other plausible futures for the region that offer better, more cost-effective ways to create employment.

Westernport generates ecosystem services valued between \$7 billion and \$88 billion according to an Australian Conservation Foundation study based on rigorous academic research. Any diminishing of this value should the expansion proceed needs to be taken into account in the cost-benefit analysis.

International shipping companies, whose profits flow offshore, may benefit from the proposed expansion but, aside from harbour charges, what will the local economy gain? And who will pay for the relocation costs for freight forwarders and the extra

infrastructure? Most exporters and importers will face higher operating costs.

The potential damage to the unique ecology of Westernport makes a compelling case against the container port. Westernport is a complex bay system with tidal currents, vigorous weather conditions and rural and urban inputs. The seagrass, mangroves and saltmarsh of Westernport are already at risk from human activity. An expanded port of Hastings disproportionately increases these risks. The potential erosion of mud banks, invaluable breeding grounds for fish, would affect food chains. The federal *Environment Protection and Biodiversity Conservation Act* prohibits the taking of an action likely to have a significant impact on matters of national environmental significance without federal approval. Furthermore Australia is a signatory to a number of international agreements that oblige us to protect the area, including the Ramsar Convention.

Also worth noting is the avowed interest of the state government in developing an export market for brown coal, despite its appalling reputation. If the port fails to attract the predicted demand, is exporting brown coal a fall back position? The government should clearly state its position.

The social values of the bay include the visual and acoustic amenity for residents and visitors, and their ability to engage in water-based recreational pursuits. Do we want to put at risk the pristine beaches, magnificent walks, and the array of bird, flora and animal life around Westernport? The potential erosion of mud banks threatens waterline properties while the transition of Westernport to a largely industrial region is bound to affect residential property values adversely.

The declaration of the expansion proposal under the *Major Transport Project Facilitation Act* seems aimed at bypassing normal legislative and regulatory oversights. Why does the state government seek to usurp proper scrutiny? The proposal to delegate federal approval powers to the states under the 'one-stop shop' policy potentially undermines the responsibility of the federal government to ensure that Australia adheres to its international obligations. In this case, it will mean a conflict of interest for the Victorian government.

In summary, an international container port at Hastings will irrevocably change Westernport economically, environmentally and socially. The decision about whether or not to proceed must address these issues with proper independent scrutiny in an open and transparent manner.



# Preserve Westernport

The Victorian Government has announced its intention to expand the Port of Hastings from a relatively small port that services 100 medium-size ships in a year, to the largest international container terminal in the country. Currently the proposal is in the feasibility stage. This paper aims to bring to the fore critical issues that need to be included in any discussion about the construction, viability and likely outcomes of such a massive construction.

The proposed container storage, port, road and rail development make this one of the most significant, and arguably the most costly, infrastructure projects in Victoria's history. The government sees the expansion as an integral part of its long-term freight strategy arguing that it is imperative that Victoria retains its status as the freight and logistics capital of Australia. But it poses a major challenge to Westernport's existing economy and the environmental and recreational values that support it. The proposed port would also exclude other plausible futures as recently explored in scenario planning for Westernport (Smythe 2014).

It is vital that the impact of such a development on all key stakeholders is properly considered before it

is approved. Is a new major port right for Victoria? And if it is, is the Port of Hastings, in a tourist region on the other side of Melbourne from the existing infrastructure and industrial base, the best place to build it? These twin questions run through this discussion paper.

The Port of Melbourne is, according to the government, the busiest container port in Australia, with 40% of Australia's total activity. Yet despite a \$1.6 billion dollar expansion already underway, it is projected to reach capacity by 2025. The expansion of the Port of Hastings aims to create a container terminal within the next 10–15 years that will provide for the berthing, loading and unloading, of up to 3,000 international container ships per year, which will carry a total of 9 million containers. These include Post Panamax Plus ships that weigh up to 60,000 tonnes and carry up to 8,000 containers each. There are plans to handle even larger vessels that are capable of carrying 18,000 TEUs and have a draft of 16 metres.

On a number of occasions, the Victorian Premier Dennis Napthine has stated that he sees the Port of Hastings as another Shanghai. Why would he want to shanghai Westernport?

*The Port of Shanghai. Photo: Alex Needham*



## National Strategy

Appealing though it might be to promote Victoria as the 'freight and logistics capital of Australia', the state government needs to demonstrate where this fits into a national plan. Australia needs an integrated and coordinated national strategy for international and domestic trade. The complexity of this task makes it essential that prior to developments of this nature, federal, state and local governments work with business, air, sea, road and rail transport operators, environmental groups and other interested parties. Together they should consider Australia's current and likely future international container trading profile; its existing natural deep-water ports; and the current air, road and rail infrastructure. This is not the place for parochial boasts about being the biggest; it's about working together to determine what will be most effective for the nation.

The Commonwealth Government has addressed this need, releasing the National Ports Strategy in December 2010, for consideration by the Council of Australian Governments (COAG). That strategy, developed by Infrastructure Australia and the National Transport Commission, set out to achieve a nationally co-ordinated approach to the future planning and development of Australia's port and freight infrastructure. To ensure plans can be executed, the National Ports Strategy identifies the first action should be 'an improved environmental management regime'.

Curiously, we have not found any reference to National Ports Strategy in any Victorian state government statement relating to the Port of Hastings or to their freight strategy generally. But the question as to whether Victoria is the best place for a major new port is a serious one, especially given that so much of its manufacturing export base has been dismantled (motor car manufacturing, textiles, footwear and clothing) and its geography. Perhaps Victoria is not in the right place for Australia's biggest port.

Instead of rhetoric from the state government we need a robust demand analysis, proving that there is a demand from container shipping companies for a port on the southern tip of the Australian mainland when a huge proportion of our trade is with Asia. They may prefer Brisbane, say, or even Darwin or Perth. In addition, as ships visit each Australian capital city port the shallowest port determines the maximum size of the vessel visiting. There is simply no point to having one port able to manage the largest vessels.

It is possible that without proper analysis, Victoria may spend multi-billions of dollars to create a 'supply solution' to a 'demand problem' that does not exist. What happens if we spend the money and not turn out to be the freight and logistics capital after all, or if the projected demand simply does not occur?

Indeed, the state of Victoria may have already 'missed the boat'. In 2012–2013, container traffic through the Port of Melbourne decreased by 2% on the previous year, while increasing by 5% through the Port of Sydney in the same period (Probert 2014). In August 2014

new figures showed that Melbourne had lost further ground to Sydney. In fact while Sydney's share of global container trade has grown since 2011, Melbourne's has shrunk. One analyst suggests that by 2016 Sydney may have overtaken Melbourne as Australia's major port (Carey 2014). Further competition comes from the Port of Brisbane where an expansion of the container facilities is already well advanced.

If the expansion were to occur, transshipment into and out of the port also needs to be addressed. The Victorian Freight and Logistics Plan (VFLP) predicts the freight task in Victoria will triple in 40 years, with a 330% growth in container trade between 2012 and 2046, from 2.6 million TEUs (20 foot equivalent units) to 11.2 million TEUs. Are these realistic projections?

In fact there appears to be a discrepancy between the projected growth in container numbers and the projected population growth. From figures readily available, it's clear that we would need to increase our consumption per capita from an approx. 0.4 containers per annum in 2014, to approx. 1.4 containers per capita per annum mid century to achieve the numbers of containers moving through the state that the project relies on to be economically viable. And that's allowing for population growth (Jenny Warfe August 2014).

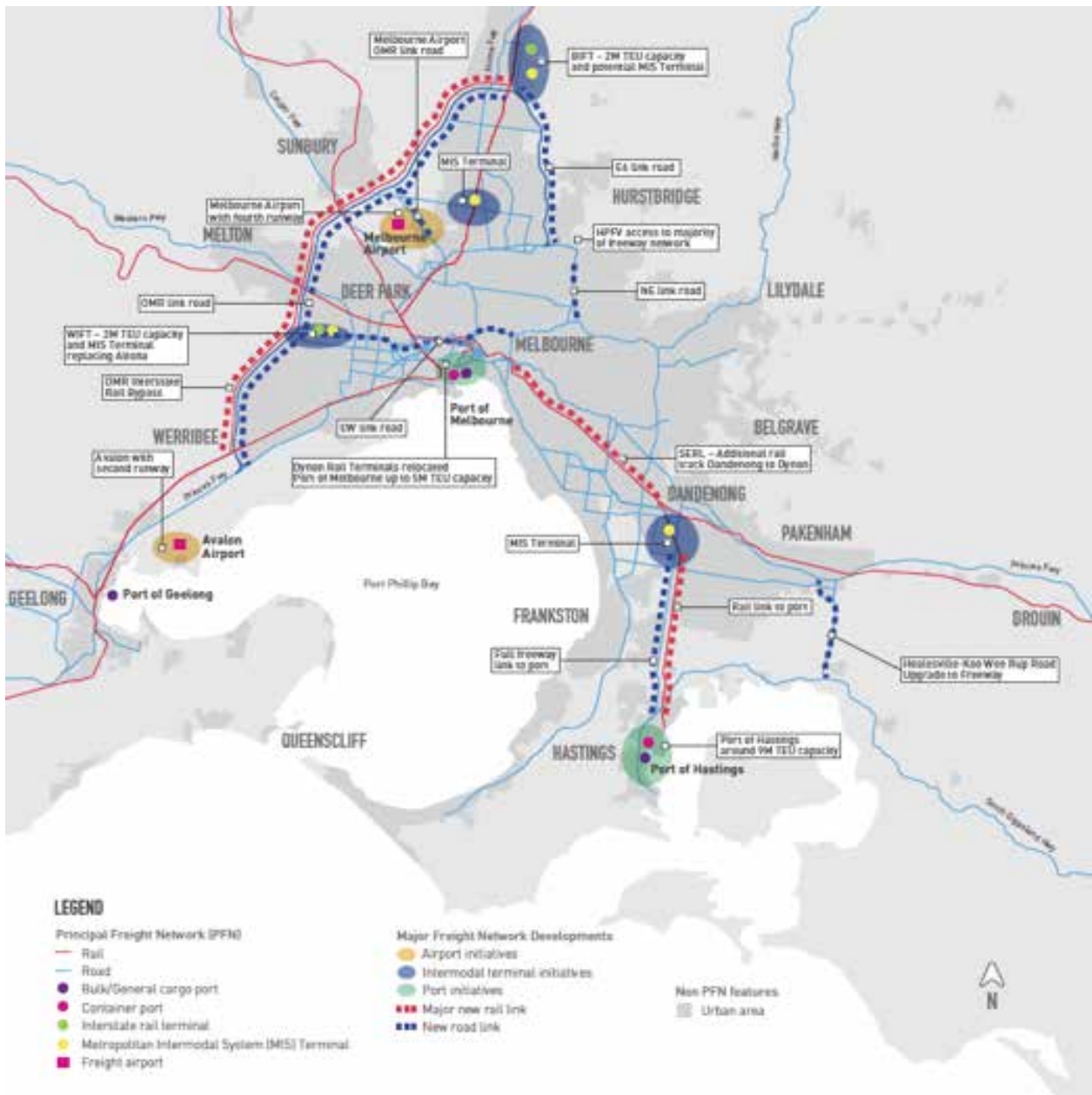
By 2046, most of Victoria's freight will still be moved by road since the majority of freight movements, particularly in urban areas cannot be readily serviced by rail. This means that daily trips in metropolitan Melbourne are forecast to increase from 300,000 to 650,000 (*Victoria the Freight State* 2013).

The current road network is already congested. Unless there are major capacity and efficiency improvements, it will not be able to handle the predicted tripling of freight tonnage efficiently and effectively. The VFLP puts forward that a North–East link might be considered to connect the upgraded M80, once completed, to the Eastern Freeway. This will directly link the industrial areas of south-east Melbourne, the Port of Hastings and Gippsland to the Hume Freeway in the north.

In addition to road extensions, one of the VFLP priorities is to develop a South East Rail Link (SERL), to provide a dedicated freight line from Dandenong to Dynon. It claims the SERL 'has the potential to resolve the looming capacity constraints in the Dandenong rail corridor for both passenger and freight services'. The VFLP envisages that broad gauge and standard gauge rail would service the expanded port, as well as a significantly upgraded Westernport Freeway.

The proposed SERL would need to be constructed to cross the Yarra River and travel via Flinders Street Station and Southern Cross Station to reach the Tottenham rail yards. These freight trains would need to travel from Dandenong to Caulfield and then through historic railway stations such as Malvern, Armadale, Toorak and South Yarra.

Interestingly the Cranbourne–Pakenham Rail Corridor Project aims to meet the demand for rail services to 2030. The project contains details of proposed rebuilt



BIFT – Beveridge Interstate Freight Terminal OMR – Outer Metropolitan Ring  
 SERL – South East Rail Link WIFT – Western Interstate Freight Terminal

VFLP – Long-term metropolitan freight network vision (SOURCE: Victoria the Freight State 2013)

stations at Murrumbeena, Carnegie and Clayton which will include the removal of level crossings at the stations. However, the project designs show only the two existing trains lines. There is no new dedicated freight line.

A major omission from the VFLP is the need to improve public transport. Imagine the gains to road freight efficiency and private motor transport if an efficient, interconnected and cost-competitive public transport system removed 100,000 private vehicles from the road daily.

Clearly all these proposed projects will impact on the amenity of our state. Despite a motherhood statement that the plan’s vision is ‘to ensure that Victoria remains

the most productive and liveable state in Australia’, the VFLP contains only a fleeting reference to balancing freight efficiency with urban amenity. Nowhere does it outline even in broad terms how it proposes to achieve this balance, making it apparent that urban amenity is not a priority. Instead it introduces a ‘reverse amenity’ principle – noting that sensitive land uses (which it does not define) will not be allowed to encroach on the efficient operation of Victoria’s four main ports.

The VFLP shows that the proposed port expansion and its accompanying infrastructure will impact a wide area. A major development such as this should not be predicated on economic ideologies or heroic principles. It’s not about getting the jump on Brisbane for example. The size of the project means that the

case needs to be closely examined in its complexity. We must avoid short-term, short-sighted, politically expedient decisions that may turn out to be wrong. This would be an expensive mistake and impose on exporters, importers and the community.

If the case is made that Victoria needs a port with the capacity that is proposed, the second question to ask is if the Port of Hastings is the best place for it.

## Westernport

The Port of Hastings is located within Westernport, which is part of a UNESCO Biosphere Reserve. The whole of Westernport is protected under the Convention on Wetlands of International Importance, called the Ramsar Convention (1971). Westernport contains three Marine National Parks supporting the maintenance of its biodiversity. Further detail about the unique environment and ecology of Westernport is provided later in this document. Here we'll simply note that Westernport provides a rare opportunity to experience a sense of wilderness less than two hours from Melbourne. The area is also recognised as Victoria's water sports playground – for swimming, boating, education, tourism and fishing for locals and the broader public. It is Victoria's premier tourism facility. Plausible alternatives and futures to develop and enjoy Westernport without losing its character were explored in recent scenario planning (Smythe 2014).

### Location, location, location

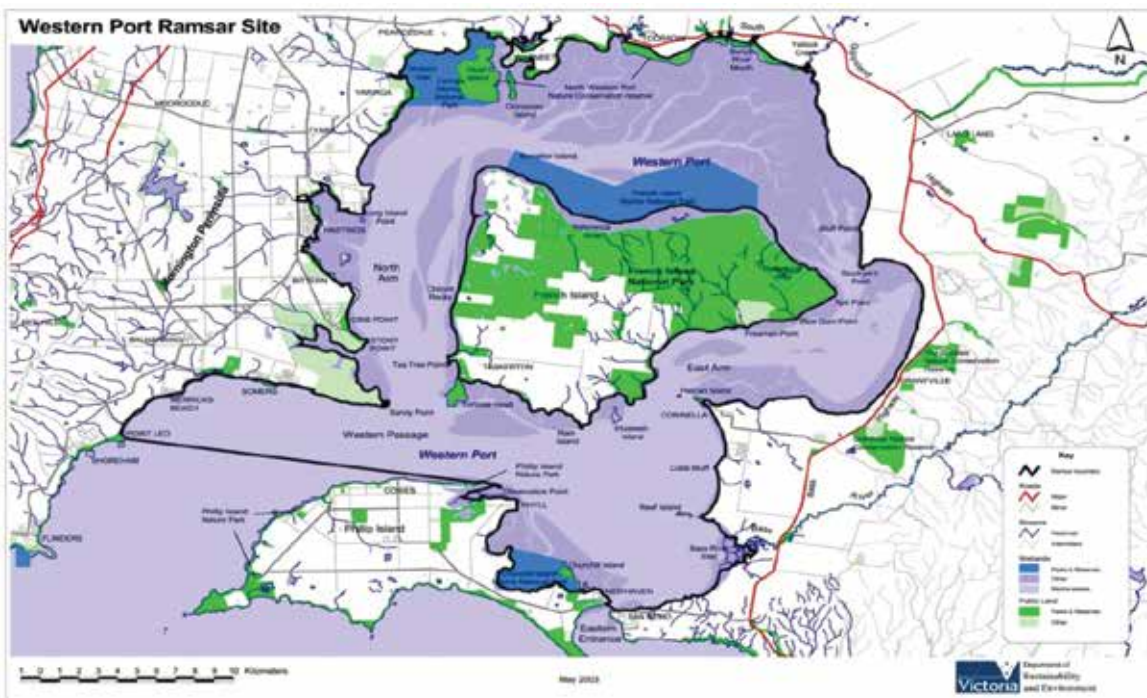
Over 3,500 ha of coastal land is currently zoned for port-related uses. But Westernport is in the wrong

place to take advantage of the existing infrastructure for the transshipment of freight. Of all containers imported into the Port of Melbourne, 87% are delivered across the suburbs of Melbourne. Of those taken by road, 65% of total containers travel less than 22 kilometres and 90% travel less than 50 kilometres to their initial destination (Naphthine 2011). If exporters and importers have to transport their goods hundreds of extra kilometres across the major metropolitan area to and from Hastings, they would wear extra costs and lose productivity. In the longer term those extra costs will be passed on, in part or full, to consumers.

In a Technical Report dated 26 August 2014, the Institute for Supply Chain and Logistics estimate that if all container operations were to move from Melbourne to Hastings (circa 2014), there would be almost a doubling of truck operating costs, to the order of \$246 million per annum and a doubling of truck travelling times. There would also be a 113% increase of emissions, and air quality degradation would occur.

Last year the *Age* reported that the project has been privately criticised by business figures concerned about the lack of standard-gauge rail link and the fact that most of Melbourne's freight and logistics is already based in the west (Gordon 2013). Mr Paul Little, the former Managing Director of Toll Holdings, went on record to say the expansion proposal was deeply flawed and 'would not deliver the best option for Victoria'. 'The high cost of building a standard-gauge rail link to Hastings and the construction of suitable freeway access would be excessive and difficult, if not impossible, to justify', he said. 'It is also reasonable to assume eastern-suburbs road traffic congestion would very quickly become a major problem for all commuters' (Gordon 2013).

*Westernport is part of a UNESCO Biosphere Reserve protected by the Ramsar Convention*





Port of Hastings lane zoned for port-related uses shown in blue. (SOURCE: Victoria the Freight State 2013)

Natalie Hutchins, the State Opposition spokeswoman on Ports, Freight and Logistics, sees similar problems: ‘Residents of Melbourne’s South East are concerned about the prospect of freight trains running frequently through their suburbs and thousands of additional trucks on local roads if the Port of Hastings is delivered’ (Hutchins 2014). She has argued that: ‘The Government should be delivering plans for an integrated freight system to boost productivity by harnessing the [western suburbs’] access to airports, ports, freight and logistics centres, rail terminals, Victoria’s regional centres, and interstate transport corridors’ (Hutchins 2013).

Because of its location, an expanded Port of Hastings would require massive new road and rail systems, as outlined above. The cost of providing a world standard cargo transport network would dwarf the estimated \$12 billion price tag for the port expansion and upgrading the road to Dandenong. It would also impact on a much wider region, including metropolitan Melbourne. Yet to date there has been little focus on this by the Port of Hastings Development Authority (Port Authority), the state and federal governments, or the opposition parties. We shall discuss this further below. For now we remain focused on Westernport itself.

### Expanding the port

Despite several state government claims to the contrary, the Port of Hastings is not a natural deep water port; it has natural deep water only to Stony Point. Unlike the deep, cold ports of the northern hemisphere, Westernport is warm and shallow – so shallow that, at low tide, 42% of the bay is exposed mudflats, covered in a green carpet of seagrass and exposed sandbars. The surface area of Westernport at high tide is less than half of that of Port Phillip Bay and over 80% has a depth of less than 5 metres. The naturally deep shipping channel is 16 nautical miles

long, with 13.6 km<sup>2</sup> additional anchorage 21 metres deep north of Phillip Island (as shown on official marine charts of Westernport).

This shallowness forced the dredging of the bay to Long Island in the 1970s in order to deepen the channels for the development of the existing port. Historical mapping of seagrass has shown that up to 70% of the original seagrass cover was lost as a result of this dredging (Joint Environment and Community Group Statement 2010). The dredged depths have since been maintained.

Another characteristic of Westernport is that it is significantly more tidal than Port Phillip Bay. The deep wide entrance on the western side of the bay allows large volumes of water to enter Westernport. It has spring tides of three metres, twice a day. Swells from the deep water of Bass Strait’s incoming south-westerly tides dissipate on Middle Bank to the west of French Island, and Tortoise Head on the western extremity of French Island. The eastern entrance between Newhaven and San Remo has a tidal stream of 6–8 knots (11–15 kph). These tidal movements define the current Westernport ecosystem, beaches and land mass.

Should the expansion proceed, the Institute of Supply Chain and Logistics estimates the need to remove approximately 6 million cubic metres of spoil in the approach channels and a further 18 million cubic

Port waters of the Port of Hastings

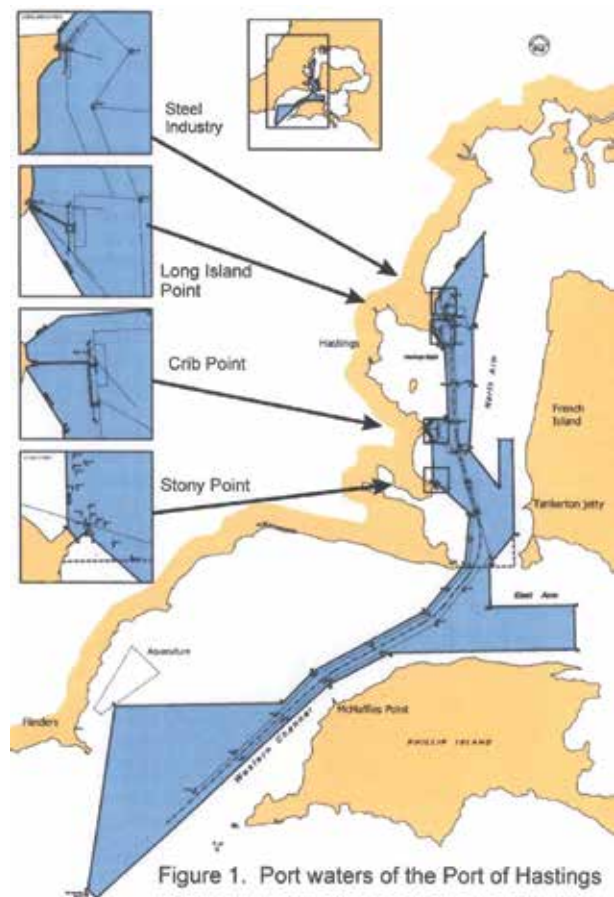


Figure 1. Port waters of the Port of Hastings



ABOVE: Cowes Mud Banks. (SOURCE: Bass Coast Shire Council)

BELOW: The fragile north shore of Phillip Island at Rhyll. (SOURCE: Bass Coast Shire Council)



metres to establish a berthing pocket adjacent to the proposed 5 km long wharf. This is a total of about 24 million cubic metres on top of the dredging of the anchorage area located just off the north shore of Phillip Island.

This scale of dredging would remove large volumes of sea floor and with it the natural obstacles that currently calm tides. It is estimated that container ships up to 350 metres long would require a turning basin 700 metres in diameter, dredged to a depth of 16–18 metres. This would increase the already fast tidal flows, particularly in the turning basin, since water will always move faster if there are no obstacles in the way to restrict it. A larger volume of water in the bay and faster tides threaten the erosion of the mud banks and the fragile coastline.

In fact the significant dredging combined with the increased tidal flows is expected to redefine the land mass and coastline of much of the north of Phillip Island and other areas located around the Westernport coastline. Areas in the north of the bay could also be significantly impacted. The effect would be intensified because it is proposed the berthing facilities at Hasting will be extended 500 metres from the existing Hastings shoreline; as stated, the wharfage is estimated to be up to 5 km long. The remaining distance to the mud banks on the west coast of French Island is only about 3 km.

Greg Hunt, Member for Flinders and the Federal Minister for the Environment and Climate Change told Neil Mitchell that two separate studies of Port Phillip Bay had concluded that the dredging of the Port Phillip Channel had contributed to beach erosion in the bay (Neil Mitchell 29 November 2013). It is a well-known fact that any structures protruding into the water can cause obstructions to natural tidal flows and often leads to erosion in nearby beachscapes. The building of the San Remo–Phillip Island Bridge in the late 1960s has led to massive erosion of the San Remo back beach. Who knows what effects the expansion of the port a further 500 metres into Westernport, compounded by massive dredging would cause the surrounding beachscapes and across the bay? Once the port was operational, the wake and wash of the ships and tugs would exacerbate the problem increasing turbidity and coastal erosion.

There are also the potential costs to waterline property owners around Westernport from the extensive dredging and the likely consequent erosion of the mud banks throughout Westernport. This would particularly affect Middle Bank, due to its proximity to the turning basin. An increase in the severity of tides and the erosion of the foreshores may directly threaten waterline properties with inundation by sea water. Along with the increased potential for storm surges caused by climate change, waterline property owners could face a massive depreciation of property values along with a substantial increase in the cost of insurance. In the extreme, property owners may find that insurance is cost prohibitive, or unobtainable.

Finally, the spoil, estimated in excess of 24 million cubic metres, will need to be dumped either on land

(over at least 100 ha) or at sea. The Port Authority has not indicated where it intends to dump the spoil and has not released any detail on their expectations of contaminants they may find in it. Much of the dredge soil is potentially acid sulphate contaminated, however, which could result in the killing of fish and plants and adversely affect the food chains of Westernport.

Obviously there are many significant issues here. The tidal impacts both from dredging and the ships' wash and their economic and environmental costs need to be known. The impact needs to be measured as part of the business case for the expanded port. In January 2013, Dr Napthine, then Minister for Ports, announced that Cardno had been awarded the tender for a report on Hydrodynamic modelling. It was one of five tenders announced at the time, all of them due to be completed by the end of 2013 (Media Release 2013). Where are the reports? What did they say?

### The working port and the Phillip Island north shore

The expanded port would handle 3,000 ships per year which means an average of slightly more than eight ships entering and leaving Westernport every day. Given there is one passage into Westernport and hence one passage out this effectively means 6,000 ship movements per year (16 ship movements per day, 365 days per year).

For any day that eight ships are not docked, unloaded and transited in and out of Westernport, this annual target is made more difficult. To achieve the average, it seems realistic that a significant number of ships would be anchored in Westernport, outside the Port of Hastings – perhaps 2, perhaps 4 vessels at all times, since empty docks would severely impact on the efficiency of the proposed port.

The scheduling is made more complicated because, in practice, arrival times are highly uncertain: only half the vessels arrive on time. This uncertainty causes great challenges to berth planning, since when a vessel arrives it produces high peak loads for other terminal activities. This is especially true for large terminals, when many vessels visit at the same time (Bruggeling, M., Verbraeck, Alexander & Honig, H.J. 2011).

But, at up to 350 metres long each, how many could be anchored in the main anchorage of Cowes' northern beaches? One, two, maybe more at the extreme? Where would the rest be anchored? And how easily could they pass each other in the shipping channels?

The expanded port is also designed to have the capacity to unload 9 million containers a year. This means 24,657 containers every day (or one every 3.5 seconds). If four docks operated around the clock that translates to an average hourly rate of 257 containers per dock. With six docks the hourly rate would be 171 containers per dock. Even this lower rate seems to be a Herculean task given that the hourly average for the Port of Melbourne in 2013 was 48 containers per dock. And, unless all ships left port empty, more time would be needed to load containers for export.

This analysis suggests that 6–8 docks would be required. With six docks, a reasonable estimate of the minimum turnaround time – from anchorage to dock, unloading and back to the point of anchorage – would average over 19 hours per ship. The business case needs to show how this target of turning around an average of more than eight ships every day of the year can be maintained.

## **Ships**

### *Visual and noise pollution*

As already noted, on average, each day more than eight ships stacked 12 levels high with containers would enter Westernport. The ships would each be up to 350 metres long – twice as long as the MCG – and 50 metres above the water, or three to four times the height of the San Remo–Phillip Island Bridge. Up to three of these monstrous ships would be stationed in berths just off Cowes northern beaches, in the Port Authority’s designated ‘Anchorage’.

The ships would block the views to Crib Point, Hastings and French Island. At night they would be lit up like Christmas trees, and intrusive for residents and visitors in Cowes as well as for marine and bird life. In addition to this visual pollution, the sound and vibration of on-board generators and audible horns, day and at night, would create noise pollution, degrading the acoustic amenity of Cowes. Residents along the shoreline can already feel the vibrations from the smaller cargo ships that occasionally anchor off Cowes.

### *Fuel pollution*

In 2009, an article in the *Daily Mail* noted that sixteen of the world’s largest container ships pump out as much sulphur as all the world’s cars combined (Peace 2009).

This, it told us, is because large ships typically burn ‘bunker fuel’ – ‘the cheapest, filthiest, high-sulphur fuel: the thick residue left behind in refineries after the

lighter liquids have been taken. The stuff that nobody is allowed to use on land’. The fuel leaves behind a trail of potentially lethal chemicals such as sulphur and smoke that have been linked to breathing problems, inflammation, cancer and heart disease.

In 2009 the International Maritime Organisation (IMO) allowed ships to burn fuel containing up to 4.5% sulphur, which is 4,500 times the sulphur content allowable in diesel in the Australia, though it has since dropped to 3.5% and is scheduled to drop to 0.5% by 2025, perhaps earlier. Currently international shipping is exempt from the Kyoto protocol, allowing the ships to belch carbon dioxide, a major problem for climate change (Peace 2009).

The smell and toxicity of this heavy fuel, spread by the strong on-shore easterly and north-easterly winds, so prevalent at Cowes, would have an adverse effect on the air quality in the area. Asthmatics and those with lung problems (especially the frail and elderly) would be particularly vulnerable to such noxious fumes.

We are not aware of the Port Authority undertaking or planning to undertake any studies into the effect of this pollution as part of their planning process. This issue needs to be explained by the government.

Further, the government can apply to have Australian Coastal waters designated as an Emission Control Area. It should advise if it intends to make this application.

### *Ballast water and toxins*

Ballast water is pumped into a ship’s tanks to improve its stability for safe operations. Ballast water is taken up when cargo is unloaded and discharged when cargo is loaded, or when ships need extra stability in response to bad weather. As ballast water is taken up, ships pick up the plants and animals that live in the water. When ballast water is discharged, often many miles away, these plants and animals frequently become marine pests. Typically, an empty cargo ship will carry 4,000 tonnes of water. Invasive species of marine

*Ever Radiant container ship. An average of more than eight container ships would enter Westernport every day.*





animals and plants and diseases travelling around in that water can create enormous problems. Perhaps reflecting the respective size of their shipping activity, currently, Port Phillip Bay has over 400 exotics, whilst Westernport is thought to have less than 50. (Currie & Crookes 1997; Cohen, McArthur & Parry 2001).

The Port Authority boasts that the Port of Hastings has led Australia in ballast water management. In the 1990s the Authority informally requested that ships originating from high-risk domestic ports exchange their ballast water at sea, prior to entering the port. In response to the initial success of their approach, the Hastings National Demonstration Project was undertaken in 2001–2002 in partnership with the Environment Protection Authority (EPA). The purpose was to trial the integrated management of both domestic and international ballast water at the one port to assess its suitability for national implementation. Shipping and port industries adopted the management system shortly afterward. Today ships visiting Westernport are required to meet the ballast water requirements of the *Victorian Environment Protection Ships' Ballast Water Regulations 2006* and the EPA's *Waste Management Policy (Ships' Ballast Water)*, July 2004.

The risk of problems from the illegal discharge of ballast water increases significantly if large numbers of internationally-registered ships carrying water loaded into in overseas ports enter Westernport. Just one illegal discharge of ballast water could have a devastating effect on Westernport. Who will guarantee that this will never occur?

Ships have other dangers too. In addition to carrying marine life in ballast water, numerous hitchhikers are inevitable in the cargo itself, whether seeds, spiders' eggs or little insects hidden amongst the cargo. The greater volume of cargo, the larger number and increased size of the ships, the bigger the potential problem becomes. Yet another threat comes from the toxic coatings that are used on container ships to prevent fouling, which may contaminate the RAMSAR-listed waters of Westernport.

### Accidents happen

There are 1,000 serious ship incidents around the world each year. An article in *New Scientist* (23 November 2013) about the grounding of the 50,000 tonne cruise ship *Costa Concordia* on the island of Giglio Italy in 2012 proves interesting reading. The staged recovery operation of the 285-metre-long ship, including the removal of 2,380 tonnes of fuel, in an environmentally sensitive marine park, was estimated to cost more than \$1.5 billion. In relation to container ships of 350 metres or more, the author observed:

Should any of these ships run aground the resulting chaos could ... create an environmental disaster that could bankrupt ship owners and the insurance industry alike, and ... conventional salvage would be all but impossible.

Some mega-container ships can carry 20,000 tonnes of fuel.

The removal of cargo containers is one of the most difficult parts of salvage operations. Take for example the container ship *Napoli* which ran aground in Lyme Bay on the UK South coast in 2007, with 2,300 containers on board. It took three-and-a-half months to salvage those containers. When the container ship *Rema* ran aground in 2011 on the coast of New Zealand, only 1,007 of the 3,351 containers on board were salvaged (*New Scientist* 23 November 2013).

### Collisions

The dangers of fog of Westernport are addressed in this article:

Fog ... again

On May 12 fog enveloped Westernport.

This event was a repeat of the fog on February 2 and March 4, and represents one of the problems and dangers posed by any possible expansion of the Port of Hastings.

That danger is an oil spill as a result of a collision in Westernport.

That threat has been documented for some time now and in particular in the Shapiro report of the mid 1970s.

At section 4.1.3 of that report, under the category of 'The likely incidence of oil spills in Westernport Bay' it is stated on page 217 'One additional feature of oil spills which should be borne in mind is the incidence of fogs in Westernport Bay with the accompanying danger of collisions. While fog is not a marked feature of the climate, some years have been marked by numerous fogs occurring in late Autumn and early Winter; late Winter is normally too windy or stormy for fogs.'

Now, four decades since the Shapiro report, the recent incidence of Autumn fog and mist tell of the folly of port expansion (Schinkel 2014b).

The potential for one of these massive, difficult-to-manoeuvre ships, loaded with many thousands of containers, being grounded in the confines of Westernport, after inadvertently straying from its shipping channel, is frightening.

### *Oil spills – virtually impossible to stop*

The Port Authority and the state government may claim that the chances of an oil spill from a container ship running aground, or colliding with another vessel, and holing are remote. But big ships are difficult to manoeuvre and slow down. It must be remembered, too, that the container ships would not be bunkered in dock, but at sea via floating barges. There is the possibility that an oil line linking the barge and the ship would inadvertently detach and spill heavy fuel oil into the sea. There is real risk, too, of oil being spilled as it is delivered to the port.

In March 2014 the Victorian National Parks Association (VNPA) commissioned detailed modelling, under a number of scenarios, of the probable impacts of an oil spill after the proposed expansion of the port on specific areas around Phillip Island and French Island (Kirkman 2014). That modelling shows that even a moderate oil spill would hit the most high-

value conservation areas around Westernport within six hours and that its spread would be virtually impossible to stop. It further showed the probable significant adverse effects on particular areas of intertidal mudflats, seagrass meadows, saltmarsh and mangroves, and on particular bird species (VNPA 2014b).

The Port Authority needs to begin a coastal plant monitoring programme to examine the short and longer-term impacts of an oil spill event, and the likelihood of its ability to offset the loss of habitat with restoration somewhere else. As the VNPA model has shown, the tidal flows in Westernport mean that even a small oil spill would be rapidly disseminated across the bay. Some examples of major oil spills and their consequences are given in Table 1.

The Port Authority needs to explain how it can prevent and respond to this huge potential disaster.

## Transshipment

As noted, the location of the expanded port would mean constructing massive new road and rail systems. The Westernport Highway corridor would have to be rebuilt to accommodate both rail and road transport.

Let's do the maths. On the figures, an estimated 24,657 containers per day will be transhipped from the expanded port. If 20% of the outgoing containers went by rail (based on current figures which are not expected to change), trains would carry 5,000 containers per day. Containers cannot be double stacked into (and out of) Melbourne because of the low bridges and signal heights. This means that for a

train to carry 245 containers it would need to be 1.5 kilometres long. Trains of this length would travel seven days a week, 365 days a year on a dedicated freight line from Hastings to Dandenong. From Dandenong they would continue on the proposed new dedicated SERL to the city, past the back fences of many eastern and inner suburb homes.

The Institute of Supply Chain and Logistics estimates that 140 freight trains or 4,200 trucks would be moving daily across Melbourne's road and rail network between Hastings and the industrial west and north. (Parsons & Duyn 2014).

Without a second river crossing, the port expansion would significantly worsen congestion in the city. Since two thirds of Victoria's current exports come from the north and west of the state, and standard rail lines service the western part of the city, as well as the growing number of freight and logistics companies, transshipment of exports to the Port of Hastings would involve much longer travel times. The increased number of trucks using the already congested Westgate Bridge would likely cause traffic mayhem. (Gordon 2012).

In September 2012, the *Age* revealed that it had become privy to the information that the state government had been advised by the State Department of Transport to consider the alternative port site at Bay West, as 'the Hastings expansion could face environmental and logistical problems' (Gordon 2012). It is interesting that, 18 months later, the Department appears to be advising the current government that developing the Bay West site appears untenable, apparently, because it would require even more extensive dredging than Westernport.

Table 1: Major oil spills and their consequences

YEAR	PLACE	EVENT	RESULT
2000	Hebe Reef, Northern Tasmania	Grounding of the Iron Baron: 350 tonnes of Bunker C fuel oil spilled.	Death of 10-20,000 little penguins.
1989	Prince William Sound, Alaska	Exxon Valdez struck Bligh Reef: 42,000m <sup>3</sup> of crude oil spilled.	Massive alteration to the natural character of native marine flora.
1992	Port Pirie, South Australia	Era oil spill	Defoliation of an area of mangroves.
1978	Brittany coast	Amoco Cadiz oil spill: 220,000 tonnes of crude oil	384 km of coastline polluted. \$29 million shellfish lost; \$184-295 million loss of economic good and services.
1967	Cornwall coast	Torrey Canyon oil spill	Adverse flora effects over 10 years.
2007	Lagos, Nigeria	Petrochemical leak and	Fairly rapid recovery of damaged flora.
2003	Imago-Ura Cove, Japan	Heavy oil spill	2-3 year recovery for damaged flora and fauna.



*An extra 10,000 B-Double trucks would be added to already congested roads*

Perhaps the Department is right on both counts and neither site is suitable. As we said at the start of this paper, we need to ask whether a port of this size is right for Victoria, rather than simply argue about whether it should be at Bay West or the Port of Hastings.

## Economic Issues

### Tourism

Tourism is the foundation of Phillip Island's economy; in fact Phillip Island/Bass Coast is the second most tourism dependent economy in the country (Cameron 2014). An estimated 3.1 million day visitors and tourists visit Phillip Island every year (Business in Bass Coast 2014). For the year ended June 2014, the Penguin Parade, a hugely popular tourist destination for both local and overseas visitors, saw a 9.5% increase in numbers on the previous year. Domestic overnight visitor numbers increased from 691,000 to 839,000 in 2014, an increase of 21.4%. The biggest rise came with domestic visitors travelling to the island for holiday and leisure which rose 33.5%. (*South Gippsland Sentinel Times* 19 August 2014).

Tourism Research Australia (TRA) conducts Visitor Profile and Satisfaction surveys in key tourist destinations around Australia. Its survey on Phillip Island established that 'a range of nature-based experiences and attractions', attracts both local and international visitors to Phillip Island. It found that 75% of tourists to Phillip Island were domestic visitors and the remaining 25% were from overseas (Tourism Research Australia 2012b).

The potential for an increase in international tourism is immense. China and India, two of Australia's major tourist cohorts, are both undergoing a rapid, major shift in socio-economic status as millions of people shift into the middle class, increasing their discretionary income and their propensity to travel abroad. Australia is an appealing destination for both groups. In a report commissioned by Tourism Australia, Chinese respondents chose world-class beauty and natural environment as their top consideration when picking a holiday destination (Tourism Australia 2014a). For Indian respondents, the same choice was equal first with safety and security (Tourism Australia 2014b). And both cohorts ranked Australia second (or first if they'd

been here) from a list of 50 international destinations as a place they associated with world-class beauty and natural environment.

TRA has predicted that the dollar value of Chinese tourism to Australia will increase from \$3.2 billion in 2010 to between \$7.4 and \$9.0 billion in 2020 in nominal dollars while the nominal dollar value of Indian tourism will increase from \$0.9 billion in 2010 to between \$1.5 and \$2.3 billion in 2020 (Tourism Research Australia 2011 & Tourism Research Australia 2012a).

In a report on *Victoria's Regional Tourism Strategy 2013–2016*, Premier Napthine and the Minister for Tourism and Major Projects, Ms Asher both stress the importance of tourism to regional Victoria (Tourism Victoria 2013). They describe tourism as 'an important economic driver for regional Victoria, contributing \$10.9 billion to the economy and generating 109,000 jobs in 2011–2012 (including both direct and indirect impacts)'.

Gippsland tourism contributed \$1.05 billion to the Gippsland economy and employed 10,700 people in 2011–2012. The report identifies the major opportunity for tourism development for Gippsland is 'to continue to focus on supporting nature-based infrastructure and product development'. Has the state government taken into account the damage that the port expansion could do to the nature-based tourism dollar? The adverse impact on tourism must be included in the business case and the cost–benefit analysis of the Port of Hastings and the government needs to clearly state that it will be included.

The same report notes the contribution of Phillip Island to that regional spend is \$619 million per year and that tourism provides 5,000 full time equivalent jobs in Bass Coast Shire, a third of all the employment in the Shire (State Government of Victoria 2013).

Westernport has a unique marine environment, with over 1,300 species of marine animals living in its environs, including weedy sea dragons and pot-bellied sea horses. Wildlife cruises – to see seals, dolphins and whales – are a significant tourism activity. Appendix 2 details sightings of whales and dolphins since 2010. Because the tourism of the region is so dependent on the natural environment, anything that undermines these attractions will have a significant economic impact.

Tourists visit Phillip Island to explore habitats, landscapes, seas and heritage areas. The attractions of wading and shoreline birds, penguins, swans, ducks, pelicans, fur seals, orcas, whales, dolphins, koalas and wallabies along with Phillip Island's famous sandy beaches from Silverleaves almost to Grossard Point and its magnificent surf beaches on the southern coast, are a major tourist drawcard.

The increase in visual and noise pollution and the erosion of beaches could have major adverse effects on the industry, including boating and yachting and recreational fishing. The results of oil spills on fish, bird and animal and marine populations could also cause a major downturn in tourist revenue. If the proposed expansion of the Port of Hastings resulted in a degradation of the natural environment, Victoria would risk a major loss of both international and domestic tourism revenue and this could have implications for Australian tourism more generally.

For just one business on Phillip Island, the Phillip Island Nature Park (PINP) the effects of environmental degradation could be catastrophic. In the year ended June 2014, it received 575,000 visitors to the penguin parade, over 200,000 to the Koala Park, and over 130,000 to Churchill Island, each of which generate significant (but different levels of) tourist income. Without a viable penguin colony, the island would attract fewer visitors and the other components of its revenue stream would diminish. PINP estimated that another 350,000 visitors a year visited the free facilities at the Nobbies. More than half of those visitors were from overseas. PINP has estimated that its attractions on Phillip Island, though multiplier effects, generate over \$125 million of the Victorian Gross State Product (Phillip Island Nature Parks 2011).

Visitors from East Asia make up to 31% of the total annual PINP visitor numbers, of which 38% (that is 12% of the total) are from China. PINP is the largest single employer on Phillip Island (230 staff, 142 FTEs). Through multiplier effects, it supports 1,630 FTEs in Bass Coast Shire and contributes \$64 million to the Shire economy. Currently, only 4% of outward-bound Chinese tourists visit Oceania; there is huge potential upside in attracting a greater share of Chinese tourists

*Seals, along with whales and dolphins, attract tourists to the wildlife cruises in Westernport. The seal below was pictured at Seal Rocks, Phillip Island. Photo Lisa Schonberg.*



to Australia, who might be attracted by Phillip Island (Jackson 2013). Conversely, there is a huge potential downside if the port expansion were to damage the fragile ecosystem of Phillip Island irreparably and destroy its tourist industry.

### Jobs, Jobs, Jobs

On a number of occasions, Mike Lean the CEO of the Port Authority has said that the port expansion will promote employment. This is an appealing prospect, particularly in Hastings, where youth unemployment is high. Without doubt, during the construction phase there would be a growth in job opportunities, just as there was during the building of Victoria's desalination plant at Wonthaggi. But it needs to be asked how much this would benefit the local community. Are local firms likely to win those contracts, and do local workers have the skills required for those jobs?

It's also worth remembering that construction projects of this nature proceed in stages and that different companies bid for different components of the work. Each component lasts for a limited period of time; when one stage is completed the job finishes. When the next stage begins, other workers are employed, again for a limited period.

Once the port is operational, the extent of ongoing employment is even harder to pin down. The international container port would be highly mechanised. Automatic gantries and driverless forklifts would mean minimal on-land employment. Jobs might well be filled by staff transferring from overseas or from the Port of Melbourne which the state government is likely to de-man in the lead up to its long term plan to privatise it. There is a very real prospect that, as port business shifted to the Port of Hastings, greater mechanisation in both ports would result in a net decrease in port employment.

The Port of Hastings need to clearly state the number of increased or decreased jobs that are expected from the operation of the proposed port.

The state government's document *Victoria the Freight State* claims the implementation of its strategy would create 20,000 jobs by 2046. But this figure is impossibly vague. There is no information on how it is calculated: does this relate to FTE jobs, or is it simply a raw number of new jobs? It does not specify whether this figure is a net increase in jobs or just the total number of new jobs. Does it take into account the potential job losses in the tourism industry around Westernport? It does not say what industries these jobs are in, how many might be related to the Port of Hastings development or where those jobs will be by municipal area.

If the municipalities around Westernport Bay are to support the expansion of the Port of Hastings as proposed, and risk losing existing tourism-driven jobs – as is likely – surely they would want to know how many additional long-term jobs are likely to be created in their districts and what kinds of jobs they were? Is this just a plan for employment growth predominantly

based on truck driving opportunities in Victoria? What presumptions should we make about the working hours when the VFLP assumes the need for the freight industry to move to a 24/7/365 operation to handle the huge planned increase in volumes?

Were all these facts known, the credibility of this claim of 20,000 new jobs would still be open to question. It is commonplace for industry and the government to make exaggerated claims about job opportunities, in order to promote otherwise unacceptable proposals by their supposed economic benefits. Consultants may be commissioned to write reports that look at the potential for vast numbers of jobs to be created. However once the development is complete, the jobs may never eventuate. See Table 2 for some examples.

But let's just suppose for a minute that the figure of 20,000 jobs is a realistic estimate and that all of them are around Westernport. With a price tag of \$12 billion for the expansion, that translates to a prohibitive \$600,000 per job. And what is the per job figure when the costs of the additional works are included, including rail and road works and the rolling stock?

In summary, then, we need to question how many real jobs are on offer, and ask who is likely to get them.

*Table 2: Exaggerated job claims*

Example 1. The Minerals Council claims that 200,000 people are working in coal mining. But, the Australian Bureau of Statistics says coal mining employed only 56,900 people in full- and part-time work, as of February 2014. The most people employed in coal mining since 1984 was 60,300. Clearly the Minerals Council grossly exaggerated the actual figures to further their own case.

<http://www.crikey.com.au/2014/04/16/minerals-council-raked-over-the-coals-for-troubled-pr-campaign/>

Example 2. Rio Tinto and their consultants have overstated claims about jobs and economic benefits in their proposed Warkworth project Bulga, NSW. They told decision makers that the mine, which would employ 1,300 people, would somehow create 45,000 jobs. But the Supreme Court rejected their argument as based on a questionable analysis.

<http://www.tai.org.au/content/mr-warkworth-decision-another-blow-dodgy-economic-modelling>

<http://www.caselaw.nsw.gov.au/action/pjudg?jgmid=164038>

Example 3. The Australian Petroleum Production and Exploration Association said that the industry had created 'more than 100,000 jobs' last year. But, the Australia Institute said Australian Bureau of Statistics figures showed only 9,372 additional jobs were created in the oil and gas industry last year.

Example 4. Terminal 4 Project (NSW) - The economic assessment by proponents challenged by TAI as based on flawed economic modelling.

<http://www.theherald.com.au/story/2012332/opinion-another-way-to-look-at-the-impact-of-coal/?cs=308>

How many sufficiently trained workers are there in Hastings and surrounding areas to be employed on the construction project? In our view, the most likely jobs on offer to the local community are in relation to the earth-clearing needed during the construction phase. What ongoing jobs will there be?

The biggest question though is, at what cost would these jobs come? We can estimate, calculate, miscalculate and exaggerate job numbers and economic benefits. But even if the numbers sound good, if the prospect of increased job opportunities is the sole reason, or even the main reason to approve of the port expansion, should we not look first at alternative ideas and plausible scenarios for Westernport that might offer jobs less damaging to our district, than those that proceed from creating an industrial wasteland? Do these jobs, however many there are, justify destroying the bay, both land and water, and risking our future?

### Putting a value on the environment

'Ecosystem services' are the tangible goods and intangible services that provide benefits to humans. These benefits provided by ecosystems are typically classified as provisioning, regulating, habitat or cultural and amenity services. The idea of ecosystem services acknowledges that humans can obtain both market and non-market benefits from ecological processes. Ecological services and the capital stocks that produce them are critical to the earth's life-support system. They contribute to human welfare, both directly and indirectly, and therefore represent part of the total economic value of the planet.

The Westernport and Peninsula Protection Council (WPPC) commissioned a study by New Economics Advisory Service of the Australian Conservation Foundation (ACF). WPPC asked them to establish an annual value and a discounted present value of the ecosystem services provided by Westernport Bay.

There has been a considerable body of rigorous, international, academic research work undertaken to place a value on the issue of 'ecosystem services' provided by marine and coastal environments. The ACF based its study on a similar study conducted in 2006 by Costanza et al., which reviewed the global body of literature on ecosystem services and calculated estimates for ecosystem service benefits using annual values per acre.

The ACF study estimated that Westernport Bay generates ecosystem services valued at between \$205 million and \$2.6 billion per year. Discounting those annual flows by 3% in perpetuity, using the same approach as the Costanza study, it determined a present value of Westernport Bay of between \$7 billion and \$88 billion (ACF 2013).

The cost-benefit analysis of the proposed expansion of the Port of Hastings must include the extent to which the value of the ecosystem is likely to be compromised – in other words, the cost penalty of the expansion paid in the diminishing of this value needs to be

identified and included in the business case. Given that many of the dis-benefits are difficult to quantify and the claimed benefits are often speculative, the proponents of the expansion need to demonstrate that on balance the claimed economic benefits, matched against the measurable economic dis-benefits would be overwhelmingly positive.

Better still, the proposed expansion option should be matched against a no-expansion option that includes a serious exploration of economic development and plausible future scenarios that does not compromise the fragile ecosystem of Westernport.

### Marine-related retail economy

The provisioning of yachts, fishing vessels and other recreational craft with both hardware and consumables, as well as men, women and children who fish from jetties, beaches and rocks, makes a large financial contribution to the local economies around Westernport. Enthusiasts spend money on bait, fuel, fishing tackle, drinks (hotels), food (supermarkets and restaurants) and accommodation, and on hardware for their boats. The local councils, and foreshore committees, derive revenue from boat launching fees.

Five years ago a study of boating users and marine industries around Port Phillip Bay and Westernport valued its contribution to the Victorian economy at \$995 million (Ernst and Young 2009). If we split this between the two regions it would mean that nearly \$500 million derives from these activities around Westernport.

An expanded port poses a significant threat to this economy. The positioning of massive container ships in the anchorage opposite Cowes' northern beaches, and the never-ending transit of those vessels along the shipping channels, would inevitably lead the Port Authority to impose 'exclusion zones' on where watercraft could venture around Phillip Island and French Island. On their website they note:

All users of Westernport are reminded that it is a requirement to comply with 'Harbour Masters Directions'. Failing to comply would result in significant penalties under the Navigation Act and Marine Safety Act.

Further, the *Transport Legislation Amendment (Port of Hastings Development Authority) Bill 2011*, allows 'the Minister, on the recommendation of the Port of Hastings Development Authority, to declare any part of the port of Hastings land a restricted access area' (Department of Library Services 2011, p.11).

It's important that the likely extent of these exclusion zones is discussed. It is not too far a stretch to imagine that 'Port of Hastings land' could be interpreted to include any areas of Westernport seen as necessary for safe operations of the port, including anchorage areas, the turning basin and shipping channels. The size and number of ships expected to use the expanded port means that the issue of exclusion zones would assume a vastly increased order of magnitude.

The Port Authority should advise all potentially affected

parties of any planned extensions. How would the operations of boat ramps be affected? Hastings is the main boat ramp in Westernport. There are also boat ramps at Blind Bight, Corinella, Coronet Bay, Cowes, Flinders, Grantville, Lang Lang, Newhaven, Rhyll, Stony Point, Tooradin and Warneet. Similarly, what would the effect be on the nine marinas, yacht clubs and boat clubs around Westernport – at Westernport Marina, and Yaringa Boat Harbour; Flinders, Newhaven, Somers, Westernport, Hastings and Warneet yacht clubs; and Port Leo Boat Club? Yachtsmen and women would probably find their racing zones severely restricted, particularly in the proposed shipping anchorage area; and other recreational boats would be similarly restricted. For recreational fishermen the threat of restricted fishing areas might be compounded by a significantly reduced catch, partly because of the destruction of the vital fish breeding habitat of the mud banks. Will catching snapper, King George whiting, flathead, gummy sharks, mulloway, ocean trout and calamari become a rare event?

Since its fifth edition in 2011, the *Western Port Recreational Boating Guide* has included the Port of Hastings Limits on its map. The fact that previous editions were not so marked, suggests it is intended for restricting recreational boating access. Why else include it?

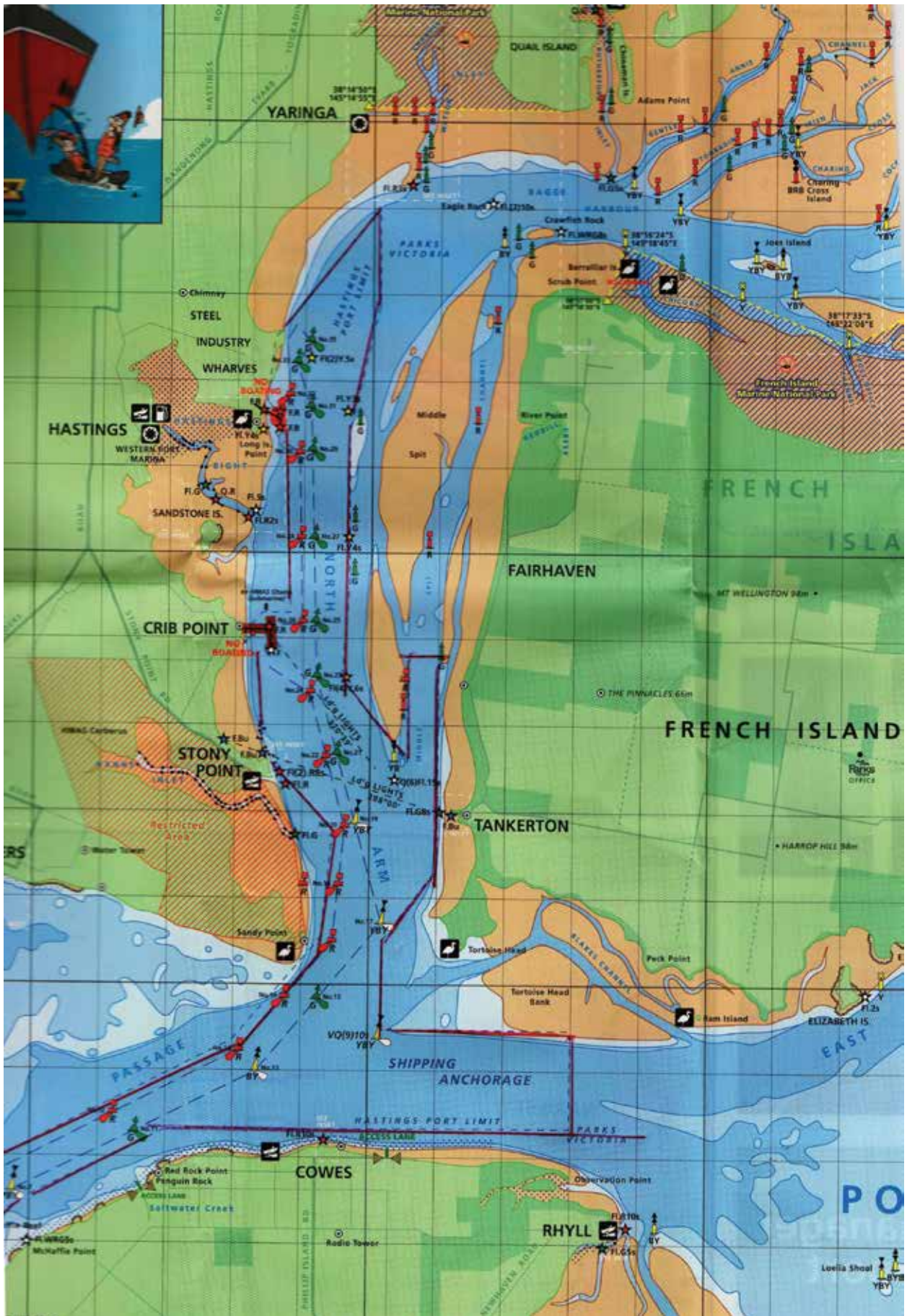
However, if implemented, these limits would exclude 40–50% of the safe, high tide navigable waters of Westernport from recreational boating and fishing and would throw intolerable pressure on the area. It would mean congested fishing grounds, and also congestion at the boat ramps used to access them.

The new ramp at Cowes, for example, will be next to unusable since the port limit is no more than 100 metres offshore. It is difficult not to envisage the same fate for Stony Point and Hastings on the western side of the Bay given they are directly inshore from the shipping channel. Hastings is the main boat ramp in Westernport. If this happens, anglers would be forced to Rhyll, Newhaven and Corinella in the east and Warneet and Tooradin in the north. Yet Tooradin is almost unnavigable at low tide, certainly for novice boat owners.

The imposition of widened exclusion zones, increased turbidity in the water from the ships' wake and wash along with potentially depleted fish stocks, would inevitably lead to an economic decline – less participants and less spending in those components of local economies. Indeed the recreational fishing and boating-related industries in Westernport may collapse. It is possible that even long-term users of the bay would decide that 'it is all too hard', and sell their boat.

The multiplier effect for onshore businesses associated with those hobbies – particularly restaurants, retail shopping and holiday accommodation – could be massive.

These impacts also need to be identified and included in the business case and the cost–benefit analysis.



The Western Port Recreational Boating Guide has included the Port of Hastings Limits on its map since its fifth edition in 2011.

## Economic benefits

The beneficiaries of the proposed expansion seem to be few. Shipping companies would achieve greater profitability through the economies of scale. Yet the company taxation from those profits will most likely flow into the low-tax-haven, poorly-regulated countries where the minimally-crewed ships are registered, under flags of convenience, particularly in Panama, the Bahamas, Liberia and the Marshall Islands. Onshore spending by the poorly-paid crews of those ships would be negligible, given that most earnings are repatriated to their home countries, particularly China and the Philippines. Harbour charges aside, what would be the financial benefits to the local economy?

Road transport operators would clearly benefit from increased freight revenues from the greater volumes of containers that would need to be transported away (the majority empty) from, and to the port. But who will pay for the translation costs to transfer operations from the Port of Melbourne to the Port of Hastings? And for the extra infrastructure that will be needed for them to operate?

## Environmental Issues

We have already shown that environmental damage in the Westernport area will have a direct economic impact because of the importance of tourism to the region's economy. But even without that economic impact, the potential damage to the unique ecosystem of Westernport in itself makes a compelling case against the proposed expansion. Westernport is listed on the National Estate and contains three marine national parks to support its biodiversity. Australia is a

signatory to a number of international agreements that oblige us to protect the area.

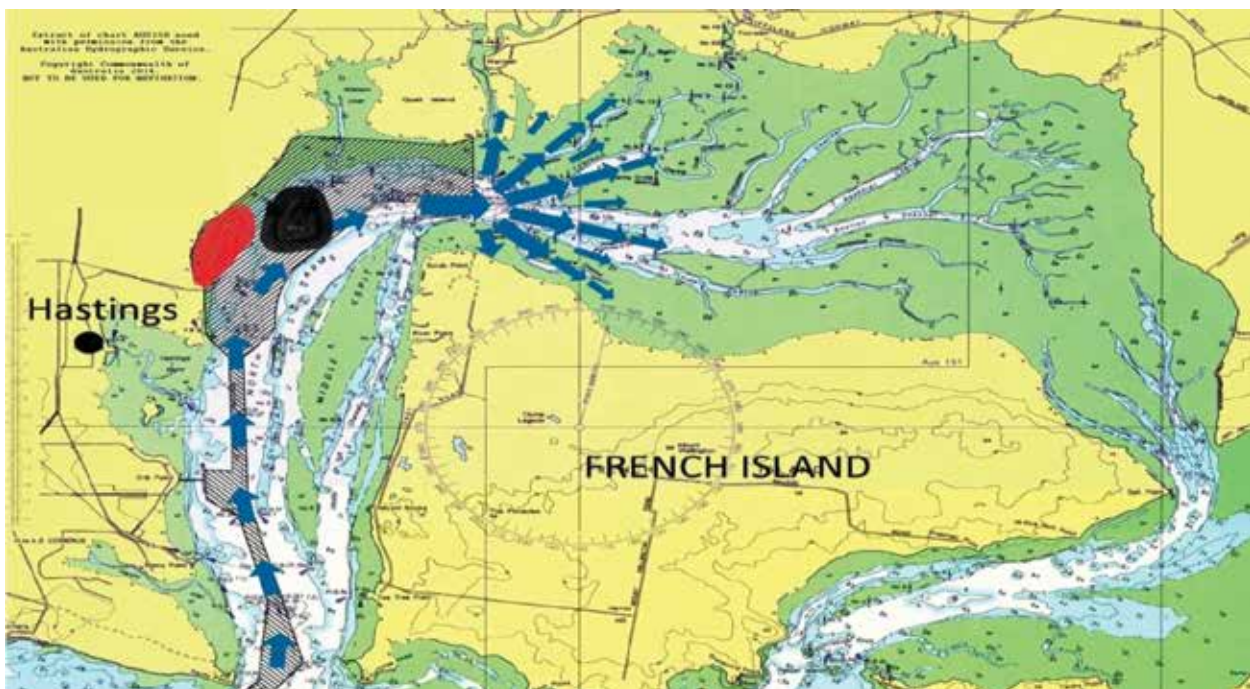
In the 1970s, the Victorian government commissioned the *Westernport Bay Environmental study 1973–1974* directed by Professor Maurice Shapiro and assisted by a team of 200 researchers. The study presented a comprehensive basic understanding of the bay's major features, establishing the complexity and the high ecological values of the ecosystem. It modelled the hydrodynamics of the tidal flows and other circulation patterns showing how it would rapidly distribute pollutants to all parts of the bay. The *Shapiro Report* argued:

Industrial development can have far-reaching environmental effects, and also necessitates urban and port growth which, in turn, affects the environment. Areas of particular significance have been recognised at Westernport and, from a nature conservation point of view, options for industrial development may have to be limited so that these are not adversely affected. Environmental quality standards to protect these areas may be such that certain industries should not establish in the area.

The *Report* observed 'This, is what options are all about. If we have more of something, we may need to have less of something else, we must weigh up all the issues of which we have knowledge, and make our decisions in full awareness of their consequences' (Ministry for Conservation Victoria 1975, p. 3).

The *Shapiro Report* was a landmark work, but it is now nearly forty years old. In October 2010 (and more recently) Greg Hunt said that it was time to commission a new Shapiro-style report. Back then he promised that were the coalition elected he would 'push with every fibre to see that we can have this long-term vision for

*Potential tidal effects: With the firehose effect of faster tides, the incoming tide will hit Tooradin. Red area = land reclaimed for container wharf Black area = area dredged for swinging basin.*





Westernport'. He also criticised the state government saying it had 'failed utterly in its duty ... to update and set forth a true, deep and powerful environmental management plan which places the port development in the context of the environmental needs of an entire bay ecosystem and community' (Hunt 2010).

A month later, in November 2010, a coalition of 16 environment and community groups issued a joint statement calling for a halt to expansion plans for the Port of Hastings until an independent scientific review of the ecological values of Westernport (Joint Environment and Community Group Statement 2010). They said the review should assess how the proposed development would impact on the ecological values and tourism industry of the Westernport area. The Preserve Westernport Action Group believes that stance is fundamental to assessments of whether the planned expansion of the port should proceed; to date that review has not been conducted.

We have noted how the proposed expansion is likely to increase the volume and speed of the tidal flows in the bay. A consequence of this is that the incoming tide may impact on the extensive mangroves at Tooradin and the surrounding shoreline and the town. This area is already marked as increasingly flood prone due to the probable rise in sea levels from climate change. The increased volume of water flowing through a channel of greater depth and width would likely act as a fire hose on the mud banks between the mainland and French Island. Conversely, the Silverleaves foreshore would arguably be directly in the firing line of the outgoing tide; and the mud banks would no longer protect it. But the mud banks not only protect the shoreline, they are also invaluable breeding grounds for fish. Their destruction will affect the food chains of fairy penguins, fur seals, dolphins, whales, orcas, the wading and shoreline birds.

### Federal environmental assessment of impacts on matters of national significance

The Federal *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) operates to protect matters of national environmental significance, such as threatened species or wetlands protected under the Ramsar Convention. The EPBC Act prohibits the taking of an action that is likely to have a significant impact on matters of national environmental significance (known as a controlled action) without approval to undertake the action from the federal Minister for the Environment.

It is clear that the proposed expansion of the Port of Hastings is likely to have impacts on matters of environmental significance, particularly in relation to listed threatened species and Ramsar-listed wetlands. This means under current law, the Port Authority must refer the proposed port expansion to the federal Department of Environment for approval.

Yet the current federal government has announced it will implement bilateral agreements with all the states delegating its approval powers as part of its policy of

having a 'one-stop shop' for environmental approvals. This may have profound consequences.

Certainly, Environmental Justice Australia has serious concerns that the Victorian process is completely inadequate for the proper assessment of the impacts on matters of national environmental significance including impacts on threatened species and Ramsar wetlands.

We are concerned that if an approval bilateral agreement is signed between the state and federal governments, the Victorian Minister for Planning will be responsible for almost all of the approvals for the Port of Hastings expansion.

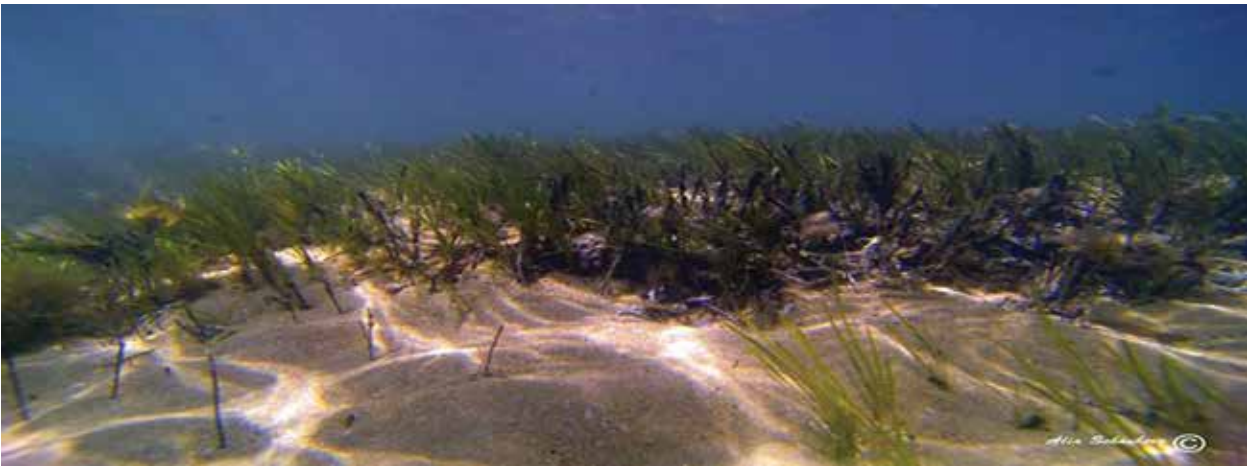
We believe this process vests too much discretion in a single decision maker. We note that the Victorian state government is the proponent of the project. If the federal minister delegates his approval powers, the Victorian state government will be both the proponent and ultimate decision maker for the port expansion. The state will have a conflict of interest in assessing the port expansion and there will be fewer effective checks and balances in the process. (Environmental Justice Australia 2014).

### Flora

Westernport is an enormous wetland containing 270 km<sup>2</sup> of intertidal mudflats and wetlands (57% of which is seagrass beds) – seven times larger than the City of Melbourne municipality – and extensive seagrass meadows, mangroves and saltmarshes. The area is recognised worldwide for these seagrass beds and contains Victoria's most extensive tracts of mangrove and saltmarsh habitat, unique channel habitats, sandy beaches and rocky platforms. These offer food and shelter for 1,350 species of animals, birds, insects, fish and marine invertebrates, including significant sponges.

Tidal seagrass meadows, mangrove and saltmarsh vegetation rank with tropical rainforests in supplying environmental services and contributing a buffer to the effects of climate change. They provide important nurseries for fish, crab life and many crustacean and mollusc species, and a foraging, breeding and roosting habitat for many shorebird and wader species. Yet human disturbance is a continual threat to these habitats. The impact from runoff, excessive nutrient addition (particularly nitrogen and phosphorous, with the potential for algal blooms) and changed hydrology reinforce the potential effects of climate change and natural disturbance, putting Westernport in a vulnerable position.

If the proposed expansion of the Port of Hastings proceeds, the threats increase disproportionately. Dredging, the dumping of dredge spoil, the consequent increased tidal flows and the need for land clearing during the development stage along with the increased potential for oil spills, the probability of significant (illegal) bilge discharges, potential for ship groundings or collisions and vessel-generated waves once the port was operational all pose significant risks.



Seagrass in Westernport. Photo Alia Schonberg.

**Seagrass**

In 2011, Melbourne Water measured 150 km<sup>2</sup> of seagrass in Westernport. Apart from their nursery role for fish and prawns, seagrass, found in inter-tidal and sub-tidal zones in Westernport, stabilises the sediment, is a collection site for organic detritus eaten by detritivores and a nutrient sink for inorganic nitrogen and phosphorus (Kirkman 2014).

The fauna in seagrass includes juvenile fish and prawns of commercial and recreational use. Living on its leaves are snails, hydroids, anemones and bivalves. Swans eat some forms of seagrass. King George whiting, garfish, calamari and rock flathead rely on seagrass in different ways – living in it, eating it or eating what lives in the seagrass.

The enlarged footprint of an expanded port, and the dredging needed to create it, would be of particular concern to the ongoing health of seagrass beds. Increased turbidity in the water would reduce the light to seagrass beds and encourage the growth of phytoplankton blooms and excessive growth of epiphytes. If the turbidity is concentrated enough, or algae starve seagrass of light, the fauna may be smothered and asphyxiated.

50 metre beam trawl in Westernport seagrass



**Mangroves**

There are 18 km<sup>2</sup> of mangroves in Westernport. Mangroves have a wide tolerance to salinity, intertidal position and temperature and are able to occupy rocky and sandy sheltered embayments and offshore lagoons (Kirkman 2014). Their specialised root structures allow gas exchange functions for root respiration in waterlogged soils (Kirkman 2014).

Mangroves respond to and assist with sedimentation processes. The pneumatophores, the mangrove’s root system, trap and retain sediment and, while facilitating sediment deposition, protect shorelines from erosion by wave action.

Mangroves are only found in a few locations in Victoria, including Barwon Heads, Port Phillip Bay and Wilson’s Promontory, where they are protected from the high-energy waves of Bass Strait. The largest populations are growing along the shores of Westernport, with the main concentrations at Rhyll Inlet, the north, east, north-west and south-west coasts of French Island, the northern coast from Watsons Inlet to Tooradin, continuing to the Lang Lang coast. A significant mangrove stand is at Hastings itself, continuing almost interrupted down to Sandy Point.

50 metre beam trawl in the mangroves and saltmarsh of Westernport





*Mature mangroves at Tooradin*

Mangroves are vulnerable to the anticipated sea level rises caused by climate change. Their adaptive response would be to migrate landwards to ameliorate the effects. But human development can prevent mangroves from this migration, meaning they would suffer from 'coastal squeeze'. Further mangroves are extremely susceptible to damage from oil spills, which can smother, foul, asphyxiate, poison and cause the absorption of toxic substances.

Victoria's Environment Protection Agency (EPA) has already listed Westernport's mangroves as 'ecologically stressed and extremely sensitive to disturbance and other impacts' (EPA 1996).

### Saltmarsh

There are 10 km<sup>2</sup> or 1,000 ha of saltmarsh in Westernport. Saltmarsh generally occurs between mangroves and more land-based vegetation and is another nursery area for fish. A number of the larger saltmarshes in Westernport can be found at Yaringa, and around French Island and Churchill Island Marine National Parks. There is also a significant area of saltmarsh at the Bass River estuary. Most of the saltmarsh in the area, though, has been lost due to clearing for past agricultural and industrial development around the northern and western shores of the bay. The remaining saltbush is susceptible to acidification, meaning that any acid sulphate soils released by dredging would pose a threat.

*Mangrove, saltmarsh and mangrove seedlings in Westernport*



### Aquatic birds

The extensive intertidal mudflats, seagrass meadows and mangroves support large numbers of migratory seabirds – refugees from the Arctic and sub-Arctic winter – and waterfowl, including Silver Gulls, Pacific Gulls and White Ibis.

As a result, Westernport is an internationally significant site for aquatic birds right on Melbourne's doorstep. The bay is home to over 70% of Victoria's bird species and is protected by the international Ramsar Convention. Australia, as a Ramsar signatory, is obliged to preserve the ecological character of Westernport. At the federal level, Australia is also signatory to a series of bilateral Migratory Bird Agreements and has encouraged multilateral cooperation for migratory bird conservation, as discussed later in this paper.

In addition to its international obligations, the federal EPBC Act protects 32 bird species found in Westernport including the Eastern Curlew, Red-necked Stint, Pied Oystercatcher, the critically endangered Orange-bellied Parrot, the Fairy Tern and the Double-banded Plover.

This abundance of life makes it essential to maintain the integrity of the ecological system and habitats such as the intertidal mudflats and wetlands. For instance, the high tide roost sites allow shorebirds to access foraging resources. Any loss of, or damage to, these sites would have a negative impact on the number of migratory shorebirds in Westernport.

Similarly, land reclamation and dredging are likely to kill off seagrass and reduce the overall productivity of seagrass beds, which in turn would significantly impact on waterfowl. Vessel-generated waves may erode Middle Spit and important shorebird foraging and roosting sites along the western shoreline of French Island and Long Island Point. Eastern Curlews, Red-necked stints and Pied Oystercatchers would lose breeding habitat.

Appendix 2 identifies 49 birds at risk should the proposed expansion proceed. These birds are taken from the 'Advisory list of Threatened Vertebrate Fauna in Victoria 2013' (Department of Sustainability and Environment 2013), and found in Westernport. Some are also protected under the EPBC Act (Department of Environment 1999).

### Penguins

When Phillip Island Nature Parks was a finalist in 2013 Premier's Sustainability Awards, a media release succinctly captured the fragile nature of the fairy penguin population on Phillip Island:

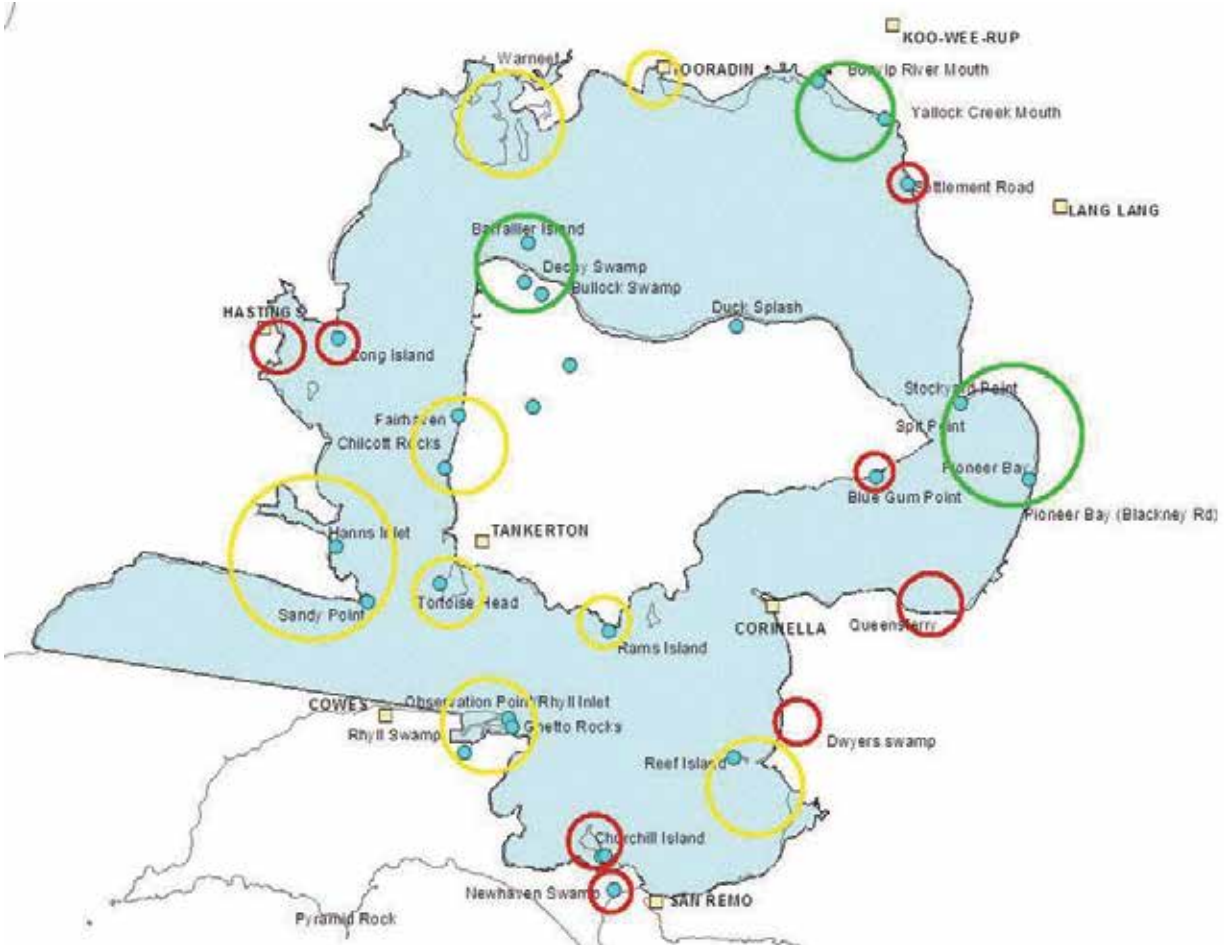
The Summerland Peninsula is home to Phillip Island's last remaining penguin colony. There were once 10. (Phillip Island Nature Parks 2013)

Although fairy penguins feed predominantly in Bass Strait rather than in Westernport, the extensive dredging should the port expansion proceed is likely to damage the food chain, causing a reduction in the numbers of fish in Bass Strait that venture into Westernport to spawn and feed. If that happens,



LEFT: Map showing available habitat for aquatic birds for roosting, foraging or breeding. Red shows roosting sites, yellow primary foraging habitat and brown secondary foraging habitat. (SOURCE: Cited in Lau 2014)

BELOW: Distribution of high tide roost sites in Westernport and their relative 'importance, based upon rankings of total abundance and number of species. Green circles show the three highest-ranked sites, red circles the eight lowest-ranked sites, and the yellow circles are sites intermediate in importance. Blue shading indicates the Ramsar site. (SOURCE: Cited in Lau 2014)





*Fairy Penguins. Photo: Getty Images.*

penguins may be unable to feed themselves or their young adequately.

And then imagine the effects of even a minor oil spill. Whether they were coated with oil or ingested it, penguins would die.

Phillip Island Nature Parks are currently preparing research on the likely impacts on Penguins. These reports need to be made public when available.

### Summary

To sum up, Westernport is a complex bay system with tidal currents, vigorous weather conditions and input from rural and urban areas all impacting on environmental habitats. The proposed expansion of the port and the threats to the remaining flora around Westernport would arguably put the bay on the brink. Seagrass meadows, mangroves and saltmarsh are almost impossible to restore once they have been disturbed. Their loss or depletion would have flow-on effects for the life that depends on them.

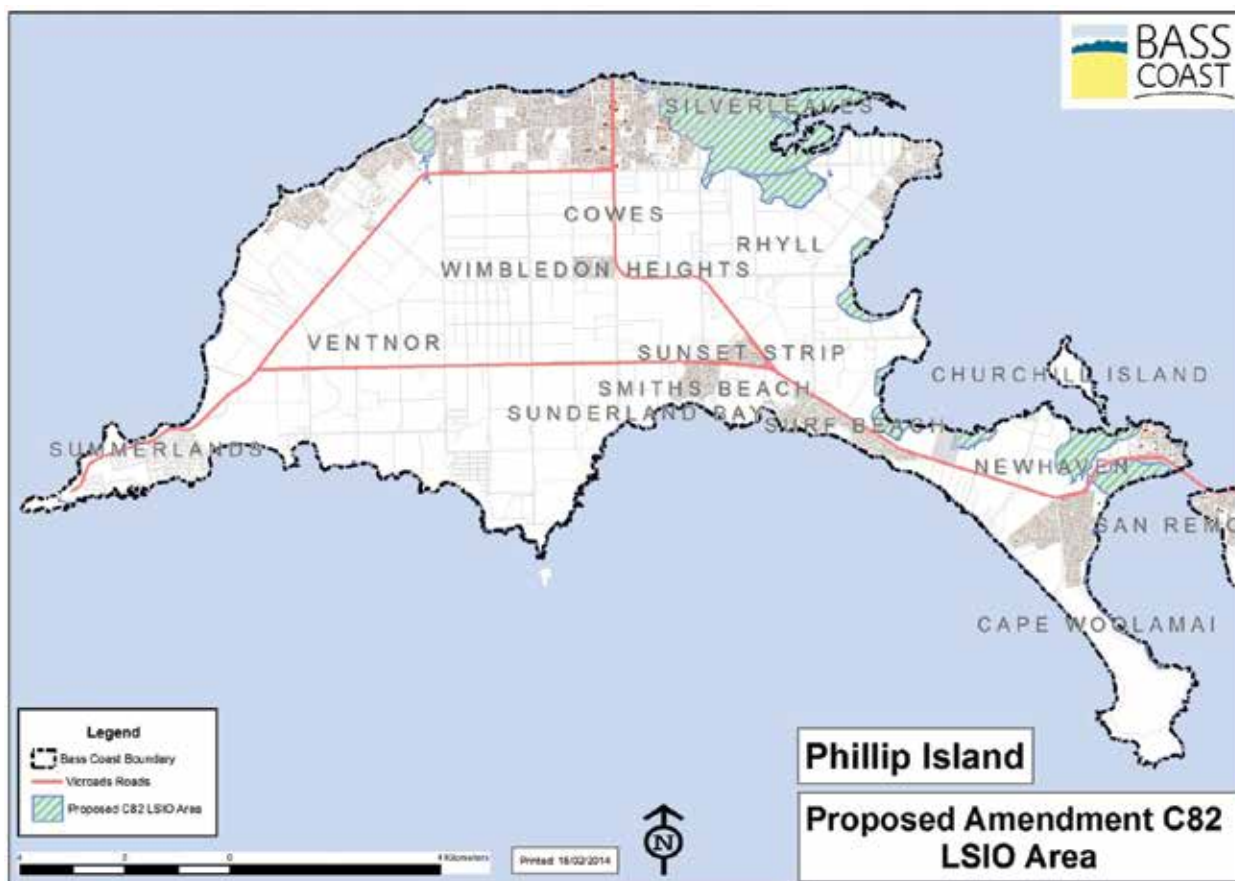
A recent report by Birdlife Australia for the VNPA shows that even a single, relatively small oil spill in Westernport Bay would put critically important shorebirds foraging and roosting habitats (Lau 2014). Seabirds such as cormorants and grebes foraging in the waters of Lower North Arm would be at high risk of oiling, and death, from even small spills at either Long Island Point Jetty or McHaffie's reef. Those

birds affected could also include ducks and swans, pelicans and Hooded Plovers. An oil spill could coat Cowes beautiful northern beaches and irreversibly damage the unique bird and rich marine life, including Australia's world famous fairy penguin colony.

Even if the container ships using the port are double-hulled, minimising the risks of a significant oil spill through collision or grounding, a small spill from on-shore activities or an inadvertent discharge on-sea could have disastrous results.

In August 1996, Mr Delma Blasco, then Secretary of the Ramsar Convention, asked the Australian Nature Conservation Agency to list the areas around Westernport Bay as threatened areas, in response to proposals by Shell and Mobil to build an oil terminal at Crib Point, inside the bay. At the time he agreed with conservationists that an oil spill would be difficult to contain inside the shallow confined waters of the bay. Mr Blasco suggested that an application be made to Ramsar by the federal government, to register the bay on the Convention's 'Montreaux listing' of threatened sites (Age 5 August 1996). Sadly, the application was never made.

Perhaps it is time to petition the federal government and its Minister for the Environment again. We believe that they need to examine this issue and proceed on the application as soon as possible. Certainly it needs to be done prior to any initiatives to hand the



Bass Coast Shire Draft 'Land subject to Inundation Overlay' (LSIO)

regulatory powers to the state. See below for further discussion on relevant Legislative and Regulatory Issues.

### Climate change

Recently, Bass Coast Shire Council was required by the state government to begin planning for a sea rise of no less than 0.8 metres by 2100. The Council announced a Land Subject to Inundation Overlay (LSIO) over 1,000 properties on Phillip Island (Amendment C82). The LSIO planning control was enacted as a precautionary measure, in response to the prediction that sea levels around Phillip Island are projected to rise by between 30 and 80 centimetres in the period up to the year 2100, and the potential for tidal surges.

The data used in the LSIO assessment from the Bass Coast Shire Draft:

- is based on a 'Bath-Tub' model with inundation from storm tides;
- does not include wave run-up or erosion of the foreshore; and
- excludes the dredging impacts of the proposed Port of Hastings expansion.

In order to introduce an effective LSIO the Port of Hastings must provide modelling of the tidal impacts on the coast of Westernport. We believe this modelling must be presented to the Planning Panel during the proposed hearings in October 2014.

We know already that sea-level rises associated with climate change will amplify existing threats to foraging and roosting sites. Mangroves and saltmarshes are particularly vulnerable to rising sea levels. Over the last 40 years, the populations of most groups of aquatic birds have already declined and the total aquatic bird population has declined significantly (Lau 2014).

A recent publication by the Victorian Climate Change Adaptation Program (a Victorian government initiative) said:

During this century, the Victorian coastline can expect greater inundation and erosion from sea level rise and increased frequency and intensity of storm events. The marine environment will also be impacted by increased sea temperatures, changing sea currents and acidification of the ocean.

Sea level rise associated with increased storm events will result in damaging waves, wind and flooding, erosion and damage to infrastructure and coastal and marine ecosystems.

A storm surge is elevated sea level caused by a low pressure system and intense winds. A storm surge will have maximum impact when combined with a high or king tide. Storm surges are likely to occur more frequently due to changed wind patterns, rainfall and sea surface temperatures. Consequently, erosion and inundation, already a feature of some parts of Victoria's coast, may worsen with climate change (Victorian Climate Change Adaptation Program 2013).

Climate change already poses significant threats to Westernport. The proposed expansion would compound these challenges for the region.

**The issue of coal products**

From a completely different perspective, the state government’s avowed interest in developing an export market for brown coal and its derivatives would make an expanded Port of Hastings very appealing. Victoria has a significant proportion of the world’s brown coal and the government makes much of the opportunities this offers. The government is seeking interest from companies prepared to invest in new drying, gasification and liquefaction techniques that offer the potential to use brown coal as a feedstock for a variety of exportable commodities including diesel, fertilisers and methanol.

Of course brown coal has an appalling reputation as a significant polluter and contributor to climate change, so much so that the government has taken to calling it ‘lignite’. Despite claims that it is typically low in ash, sulphur, heavy metals and nitrogen, as well as being relatively easy to mine from thick seams close to the surface, because its moisture content ranges from 48–70%, brown coal has a very low energy value per tonne mined compared to black coal. On the state government’s own estimates, only 3% of Victoria’s 430 billion tonnes is ‘potentially economic’ and unallocated, though this is still 13 billion tonnes.

When the VFLP mentions upgrading the Koo Wee Rup Bypass to a freeway, therefore, it suggests the unpalatable prospect of B-Doubles carrying coal products from the Latrobe Valley through Koo Wee Rup to Tooradin along the South Gippsland Highway and then the Baxter–Tooradin Road to Hastings (*Victoria the Freight State* 2013). To make matters worse, there appear to be no plans for upgrading that section of the South Gippsland Highway or the Baxter–Tooradin Road. Mike Lean, the Port Authority CEO, claims that there is no intention of exporting brown coal or its value-

added products through the Port of Hastings (Cowes Yacht Club 2014). But if the supply-driven expansion fails to attract the predicted demand from container shipping companies, brown coal exports might well be a predictable replacement.

If coal is a fall back position for a potentially failed project the government should clearly state its position.

**Social Issues**

Throughout this paper we have documented serious ‘quality of living issues’ that should not be underrated. The health and recreational values of the environment of the bay not only drives the significant tourism economy of the region, but supports the local population. It is possible that the expansion will destroy this existing economy and that what it offers in return will not have the same value.

We have previously mentioned the significant social costs of the port expansion. The value of visual and acoustic amenity for residents, holiday-home owners and visitors around Westernport and the ability to engage in water-based recreational pursuits, are social benefits that should not be undervalued. The threat to homes and the ability to insure them are other costs. Even away from the waterline, the translation of Westernport from a near pristine environment to a largely industrial region is bound to adversely affect residential property values. We should not undervalue or compromise the significant benefits of pristine beaches; magnificent, unspoiled inland and coastal walks; the fresh sea air; and the multifaceted array of bird, flora and animal life around Westernport. We have a mandatory duty of care under the Ramsar Convention to that bird, flora and animal life and their habitats. Those facilities are the major factor in the tourism income and jobs generated on Phillip Island. Do we want to put all that at risk? The massive increase in road and rail traffic, and the pollution,

*Fiscalsense: Concept Kate Whittaker, Illustration Jeni Jobe Design*



including noise pollution, and traffic congestion that would accompany it, would have an impact all the way from the Port of Hastings through to metropolitan Melbourne.

## Legislative and Regulatory Issues

### Major Transport Projects Facilitation Act

Under normal circumstances, a major project such as this proposed port expansion would be subject to a number of state government legislative and regulatory oversights, including the *Coastal Management Act* and the *Planning and Environment Act*. The state government would be responsible for producing an Environmental Effects Statement (EES) which would be subject to the approval of federal EPBC Act.

In May 2014 the state government declared the expansion proposal as a Major Transport Project under the *Major Transport Project Facilitation Act* (MTPF Act). Some of the provisions of the Act enable:

- compulsory acquisition of land from private and public landowners;
- compulsory acquisition of native title land;
- surrender of local council land to the project; and
- restricted access areas to restrict the public.

The declaration gives extraordinary powers to the Planning Minister in what appears to be an attempt to usurp proper scrutiny. It virtually overrides the consideration of the expansion under any other Act, including Environmental Protection; Planning and Environment; National Parks; Coastal Management; Flora and Fauna Guarantee; and Water Resources.

The government of the day used the same approach to force through the *Albert Park Management Act* that gave birth to a racetrack in Albert Park. There are two ways in which the process can proceed under this declaration – a Comprehensive Impact Statement (CIS); or an Impact Management Plan (IMP). Under the first approach, there will be opportunities for public consultation. Under the second approach, there will be no opportunity for public consultation.

It is logical to ask why the government feels it necessary to enact a declaration that overrides consideration under so many acts designed to protect the environment. It suggests the government believes existing laws may prevent a course of action to which it has already committed itself, prior to a robust business case and a comprehensive EES.

In a similar vein, the Auditor-General has recently found that signature state government projects worth billions of dollars have been approved for funding without having received approval of their business cases (Willingham 2014).

Certainly, the massive development of the Port of Hastings as envisaged by the current state government,

fails when measured against existing environmental constraints. The high probability of a significant increase in foreshore erosion around Westernport and the threat to the flora and fauna of the region would clearly be obstacles. The development does not seem to pay even lip service to the precautionary principle outlined in the existing regulations.

### Federal constraints

As noted, before the project can go ahead, the state government's EES will be subject to federal approval under the EPBC Act. However, the current federal government is proposing to hand this power over to individual states and territories, through the *Environment Protection and Biodiversity Conservation Amendment (Bilateral Agreement Implementation) Bill 2014*. This, they say, will 'streamline regulation', creating 'a one-stop shop' approach to get rid of 'green tape'.

We believe this move is a serious and ill-conceived mistake. Even proponents of states' rights have their doubts. As Peter Martin, arguing against the idea, put it in the *Age*: 'state governments are elected to pursue state rather than national interests. That's why we have them' (Martin 2014).

The Australian Network of the Environment Defender's Offices, which has audited biodiversity and planning laws around the country, found that no state or territory laws meet federal environmental standards. And since their audit, they say, many states and territories have lowered their environmental law standards.

Rather than devolve, the commonwealth should retain its power to be the final arbiter and work to lift the standards in each state and territory to best practice. Only the federal government has the mandate and willingness to consider national needs when approving projects that could adversely affect the environment. The states and territories have no motivation to put the national interest before their own parochial interest.

If the Commonwealth were effectively removed from the field of environmental protection, even on matters of national or international significance, it could threaten biodiversity protection across Australia. It would:

- put at risk matters of national environmental significance;
- be inconsistent with Australia's international obligations; and
- create a significant risk of the Commonwealth being exposed to legal liability.

### International constraints

Australia has a number of international obligations that affect the proposed expansion of the Port of Hastings, notably the Ramsar convention, and the bilateral migratory bird agreements with China, Japan and Korea.



## The Ramsar Convention

The Convention on Wetlands of International Importance, called the Ramsar Convention, is an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. It is the only global environmental treaty that deals with a particular ecosystem. The treaty was adopted in the Iranian city of Ramsar in 1971 and the Convention's member countries cover all geographic regions of the planet.

The Convention uses a broad definition of wetlands covered in its mission, including lakes and rivers, swamps and marshes, wet grasslands and peatlands, oases, estuaries, deltas and tidal flats, near-shore marine areas, mangroves and coral reefs, and human-made sites such as fish ponds, rice paddies, reservoirs, and salt pans.

The Ramsar mission is 'the conservation and wise use of all wetlands through local and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world'. The Wise Use concept at the centre of the Ramsar philosophy has at its heart the conservation and sustainable use of wetlands and their resources, for the benefit of humankind.

Under article 3.2 of the Ramsar Convention the Ramsar Secretariat must be advised if development plans threaten a Ramsar site. Who is the responsible authority charged with that requirement to provide that advice?

## Bilateral agreements

The first two bilateral agreements relating to the conservation of migratory birds were formed with the Government of Japan in 1974 (JAMBA), and the People's Republic of China in 1986 (CAMBA).

These agreements list terrestrial, water and shorebird species which migrate between Australia and the respective countries. In both cases the majority of listed species are shorebirds.

Both agreements require the parties to protect migratory birds by:

- limiting the circumstances under which migratory birds are taken or traded;
- protecting and conserving important habitats;
- exchanging information; and
- building cooperative relationships.

The JAMBA agreement also includes provisions for cooperation on the conservation of threatened birds. Australian government and non-government representatives meet every two years with Japanese and Chinese counterparts to review progress in implementing the agreements and to explore new initiatives to conserve migratory birds.

In April 2002, Australia and the Republic of Korea agreed to develop a bilateral migratory bird agreement,

ROKAMBA, similar to the JAMBA and CAMBA which was signed in Canberra on 6 December 2006. The agreement formalised the relationship between Australia and the Republic of Korea in respect to migratory bird conservation and provides a basis for collaboration on the protection of migratory shorebirds and their habitat.

## Multilateral cooperation

While JAMBA, CAMBA and ROKAMBA provide an important mechanism for pursuing conservation outcomes for migratory birds, the bilateral nature of these agreements limits their scope and ability to influence conservation across the flyway. Australia has therefore also encouraged multilateral cooperation for migratory bird conservation through the Partnership for the East Asian–Australasian Flyway.

All migratory bird species listed in the annexes to those bilateral agreements are protected in Australia as matters of national environmental significance under the Commonwealth EPBC Act (Department of Environment 1999).

## Conclusion

Transport is important to all economies, but it is important that the costs and benefits of such a major infrastructure project are clearly articulated. We should look for a 'win-win' situation. As it stands, the beneficiaries of the potential wealth and prosperity flowing from the planned expansion are unknown while the losers include importers, exporters and the public. Clearly the environment would also lose.

If the expansion proceeds, Hastings would lose its character as a tourist and retirement destination and become an industrial town and plausible alternatives will be lost. Businesses that thrive in its current environment would be replaced by those more suited to an industrial town. The potential for growth in tourism activities would be lost. The amenity of Westernport would be profoundly affected.

The business case including the cost–benefit analysis must take into account the economic, environmental and social costs. Who pays for the extensive transport networks that will need to be built? Who bears the costs of the additional pollution and increased traffic congestion and the increased potential for accidents caused by putting so many more trucks on the road? Will extra freight trucks and trains thundering through Melbourne's suburbs to and from the western suburbs risk destroying the amenity of the city? What will happen to the delicate ecosystem of internationally significant wetlands? Will the social, environmental and financial costs vastly outweigh the benefits? Is this just another example of the capitalism at all costs mantra 'privatise the gains and socialise the costs and losses'? That logic belongs to the history books.

The business case and the EES must be available for public scrutiny. Ideally they should be subject to an independent assessment, in order to ensure that all

the relevant factors are given due weight. These should include cogent analyses of:

- the existence of a robust demand for the proposed expansion, a demand predicted to outstrip population growth significantly;
- to whom the financial benefits are predicted to flow;
- the direct costs associated with the proposed expansion, including the port, road and rail, bridge and grade separation costs;
- the likely employment growth including the types, locations and nature of these jobs and the presumptions about work hours, matched against possible areas where employment may decline;
- the likely impact on the tourist industry around the bay, including the impact on its projected future development;
- the potential to compromise public amenity, including visual and noise pollution;
- the risk that increased tidal flows in the bay pose to fragile beachscapes and the erosion of public and private property;
- the cost of the damage to identified ecosystem services;
- the potential for widened exclusion zones and the effects this will have on the local economies around Westernport, including the marine economy;
- the likely impacts of dredging and dumping of dredge spoil on roosting, foraging and nursery sites for aquatic and shoreline birds, and on other marine life, with particular emphasis on the potential to damage the marine food chain;
- a robust risk management plan to address the likelihood of oil spills and amelioration measures proposed to address any oil spills;
- the logistics of loading and unloading more than eight ships and 24,000 containers a day, 7 days a week, 365 days a year and the number of docks and anchorage that would be needed to do this efficiently;
- the logistics of transporting these containers away from Hastings Port, by road and rail; and
- a convincing explanation of why the Victorian government designated the expansion as a Major Transport Project; why is it wishing to avoid scrutiny under all the Acts that it has excluded?

Until these analyses are done, the government cannot make the case that the benefits of expansion clearly outweigh the costs. This is a major development that will irrevocably change Westernport economically, environmentally and socially. It is not the only option

for the region, but if it goes ahead, it may well preclude other ones. The decision about whether or not to proceed must address these issues with proper independent scrutiny.

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Note: Unless stated otherwise, all website links were accessed on 12 September 2014.



*The Orange-bellied parrot is at risk of extinction in the wild in the near term.  
Photo: JJ Harrison.*

## APPENDIX 1: Threatened birds in Westernport

The table on the next page contains data extracted from a report prepared and published by the Victorian Department of Sustainability and Environment (DSE) titled 'Advisory list of Threatened Vertebrate Fauna in Victoria 2013' (Department of Sustainability and Environment 2013).

It presents a summary of the birds found in Westernport that are categorised by DSE as Critically Endangered, Endangered, Vulnerable and Near Threatened, and also shows whether they have been listed under the Commonwealth Environment Protection and Biodiversity Conservation Act and the Victorian Flora and Fauna Guarantee Act.

There are 49 birds found in Westernport which, according to DSE's categorisation, could be at risk from the proposed expansion of the Port of Hastings.

### KEY

#### Critically Endangered (CR)

A taxon is Critically Endangered when the best available evidence indicates that it meets any of the criteria A to E for Critically Endangered (IUCN Standards and Petitions Subcommittee 2010), and it is therefore considered to be facing an extremely high risk of extinction in the wild.

#### Endangered (EN)

A taxon is Endangered when the best available evidence indicates that it meets any of the criteria A to E for Endangered (IUCN Standards and Petitions Subcommittee 2010), and it is therefore considered to be facing a very high risk of extinction in the wild.

#### Vulnerable (VU)

A taxon is Vulnerable when the best available evidence indicates that it meets any of the criteria A to E for Vulnerable (IUCN Standards and Petitions Subcommittee 2010), and it is therefore considered to be facing a high risk of extinction in the wild.

#### Near Threatened (NT)

A taxon is Near Threatened when it has been evaluated against the criteria but does not qualify for Critically Endangered, Endangered or Vulnerable now, but is close to qualifying for, or is likely to qualify for, a threatened category in the near future.

## Threatened Birds in Westernport

		DSE	Federal EPBC Act	Flora & Fauna Guarantee Act
<b>Critically Endangered (CR)</b>				
Greater Sand Plover	<i>Charadrius leschenaulti</i>	CR	NO	NO
Grey-tailed Tattler	<i>Heteroscelus brevipes</i>	CR	NO	YES
Orange-bellied Parrot	<i>Neophema chrysogaster</i>	CR	CR	YES
<b>Endangered (EN)</b>				
Blue-billed Duck	<i>Oxyura australis</i>	EN	NO	YES
Bush Stone-curlew	<i>Burhinus grallarius</i>	EN	NO	YES
Curlew Sandpiper	<i>Calidris ferruginea</i>	EN	NO	NO
Fairy Tern	<i>Sterna nereis nereis</i>	EN	VU	YES
Freckled Duck	<i>Stictonetta naevosa</i>	EN	NO	YES
Grey Knot	<i>Calidris tenuirostris</i>	EN	NO	YES
Grey Plover	<i>Pluvialis squatarola</i>	EN	NO	NO
Gull-billed Tern	<i>Sterna nilotica macrotarsa</i>	EN	NO	YES
Little Egret	<i>Egretta garzetta nigripes</i>	EN	NO	YES
Red Knot	<i>Calidris canutus</i>	EN	NO	NO
Terek Sandpiper	<i>Xenus cinereus</i>	EN	NO	YES
Wandering Albatross	<i>Diomedea exulans</i>	EN	VU	YES
<b>Vulnerable (VU)</b>				
Australasian Shoveler	<i>Anas rhynchos</i>	VU	NO	NO
Black-browed Albatross	<i>Diomedea melanophris melanophris</i>	VU	NO	YES
Black-tailed Godwit	<i>Limosa limosa</i>	VU	NO	NO
Common Greenshank	<i>Tringa nebularia</i>	VU	NO	NO
Eastern Curlew	<i>Numenius madagascariensis</i>	VU	NO	NO
Eastern Great Egret	<i>Ardea modesta</i>	VU	NO	YES
Grey Goshawk	<i>Accipiter novaehollandiae</i>	VU	NO	YES
Hard head	<i>Arythya australis</i>	VU	NO	NO
Hooded Plover	<i>Thinornis rubricollis rubricollis</i>	VU	NO	YES
Lewen's Rail	<i>Rallus pectoralis pectoralis</i>	VU	NO	YES
Musk Duck	<i>Biziura lobata</i>	VU	NO	NO
Pacific Golden Plover	<i>Pluvialis fulva</i>	VU	NO	NO
Ruddy Turnstone	<i>Arenaria interpres</i>	VU	NO	NO
Southern Giant-Petrel	<i>Macronectes giganteus</i>	VU	EN	YES
Whimbrell	<i>Numenius phaeopus</i>	VU	NO	NO
White-bellied Sea-Eagle	<i>Haliaeetus leucogaster</i>	VU	NO	YES
White-faced Storm-Petrel	<i>Pelagodroma marina</i>	VU	NO	NO
Wood Sand Piper	<i>Tringa glareola</i>	VU	NO	NO
Yellow-nosed Albatross	<i>Diomedea chlororhynchus</i>	VU	VU	YES
<b>Near Threatened (NT)</b>				
Black-faced Cormorant	<i>Phalacrocorax fuscescens</i>	NT	NO	NO
Caspian Tern	<i>Sterna caspia</i>	NT	NO	YES
Common Diving-Petrel	<i>Pelecanoides urinatrix</i>	NT	NO	NO
Glossy Ibis	<i>Plegadis falcinellus</i>	NT	NO	NO
Latham's Snipe	<i>Gallinago hardwickii</i>	NT	NO	NO
Magpie Goose	<i>Anseranas semipalmata</i>	NT	NO	YES
Pacific Gull	<i>Larus pacificus pacificus</i>	NT	NO	NO
Pectoral Sandpiper	<i>Calidris melanotos</i>	NT	NO	NO
Pied Cormorant	<i>Phalacrocorax varius</i>	NT	NO	NO
Royal Spoonbill	<i>Platelea regia</i>	NT	NO	NO
Sanderling	<i>Calidris alba</i>	NT	NO	NO
Sooty Oystercatcher	<i>Haematopus fuliginosus</i>	NT	NO	NO
Spotted Harrier	<i>Circus assimilis</i>	NT	NO	NO
Whiskered Tern	<i>Chlidonias hybridus javanicus</i>	NT	NO	NO
White-fronted Tern	<i>Sterna striata</i>	NT	NO	NO



A young Southern Right Whale off Phillip Island. Photo Lisa Schonberg.



Humpback Whale pictured off Cowes. Photo Lisa Schonberg.

## APPENDIX 2: whales and dolphins in Westernport

The table below shows the sightings of dolphins and several varieties of whales in Westernport between 2010 and 2013; and whale sightings to September 2014.

Year	Humpback Whales	Southern Right Whales	Unidentified Whales	Killer Whales	Pilot Whales	Dolphins	Total
2010	35	7	26	0	0	55	123
2011	20	8	24	1	1	0	54
2012	28	15	12	0	0	3	58
2013	28	10	20	0	0	5	63
2014	32	3	22	0	0		57
Total	143	43	104	1	1	63	298

Below and below right: Dolphins in Westernport. Photos Lisa Schonberg.







*Photo Lisa Schonberg.*