AUSTRALIAN COMMUNICATIONS AND MEDIA AUTHORITY

SUBMARINE CABLE (PERTH PROTECTION ZONE) DECLARATION 2007

EXPLANATORY STATEMENT

1. LEGISLATIVE BASIS

The *Submarine Cable (Perth Protection Zone) Declaration 2007* (Declaration) is made under subclause 4(1) of Schedule 3A to the *Telecommunications Act 1996* (Act).

2. OUTLINE

In 1999, the National Bandwidth Inquiry examined Australia's regulatory framework for submarine telecommunications cables and recommended:

- a stronger planning and protection regime for cables;
- explicit authority to install submarine cables; and
- increased penalties for damaging cables to create an effective deterrent to unnecessary disruption of communications.

In response, Parliament passed the *Telecommunications and Other Legislation Amendment (Protection of Submarine Cables and Other Measures) Act 2005* (Amending Act), which commenced on 20 September 2005. It inserted a new Schedule to the *Telecommunications Act 1997* (Schedule 3A), which sets out a regime for protecting submarine cables and issuing permits for the installation of all new submarine cables.

Part 2 of Schedule 3A enables the Australian Communications and Media Authority (ACMA) to declare protection zones in relation to cables of national significance. A protection zone declaration is a legislative instrument for the purposes of the *Legislative Instruments Act 2003* and is required to be registered on the Federal Register of Legislative Instruments.

The Explanatory Memorandum for the Bill to the Amending Act states that the two main purposes of a protection zone are:

- to provide a more effective deterrent to stop people who may undertake activities that have the potential to damage submarine cables of national significance; and
- to enable cable planning and location decisions to be made in a more considered way, taking into account the interests of other users of the sea and seabed—this will encourage cable owners to co-locate cables in protection zones.

On 28 September 2006, ACMA came to the view that the South East Asia, Middle East and Western Europe Cable 3 (SEA-ME-WE3 Cable), which is located off the coast of Perth, Western Australia (WA), is a cable of national significance. On 23 October 2006, ACMA published a proposal for a protection zone in relation to this cable and sought public comment on the proposal.

This proposal was modelled on ACMA's two previous proposals for protection zones over submarine cables of national significance off the coast of Sydney, New South Wales (NSW), which were published on 9 August 2006, and declared in July 2007. The Declaration differs slightly from the NSW Declarations to reflect differences in marine activities between the two states.

3. CONSULTATION

In developing this Declaration, ACMA undertook the following actions by way of consultation to promote discussion and feedback regarding the proposed Declaration:

- in accordance with clause 16 of Schedule 3A, referred the proposal to an Advisory Committee composed of representatives of key stakeholder groups (including the cable owners, commercial fishing groups, recreational fishing groups, the petroleum exploration and exploitation sector, environment and water resources representatives, the WA Government, the Port of Fremantle, SCUBA diving groups, ship owners, and telecommunications users);
- consulted with interested parties not represented on the Advisory Committee, notably the resource sector, the Australian Federal Police and WA Water Police, indigenous bodies, and other Commonwealth agencies including Attorney-General's Department, Australian Fisheries Management Authority, Australian Hydrographic Office, Australian Maritime Safety Authority, Defence Science and Technology Office, Department of Agriculture, Fisheries and Forestry, Department of Communications, Information Technology and the Arts, Department of Defence, Department of Environment and Water Resources, and Department of Industry, Science and Resources;
- in accordance with clause 17 of Schedule 3A, published a proposal for the protection zone seeking public comment with a three month public comment period;
- released a detailed discussion paper and information sheet about the protection zone proposal;
- maintained an up-to-date website containing information about the submarine cable protection regime, links to copies of the protection zone proposal, and inviting public submissions on the proposal;
- supplied a copy of the proposal to every recreational fishing club in WA, every SCUBA diving club in the greater Perth region, and numerous other interested stakeholders;
- maintained a toll-free telephone line for protection zone enquiries;
- held targeted information sessions with representatives from the commercial fishing, recreational fishing and SCUBA diving sectors; and
- met frequently with representatives from the SEA-ME-WE3 Cable to discuss specific aspects of the proposal.

There is broad support among stakeholders for ACMA to declare a protection zone in relation to the SEA-ME-WE3 Cable.

4. PURPOSE AND OPERATION

Submarine cables in Australian waters carry about 99 per cent of Australia's international voice and data traffic, and constitute a vital element of the national infrastructure. The volume of international communications through submarine cables is increasing and will continue to do so as the information economy grows and generates demand for bandwidth.

Submarine fibre optic communications cables are vulnerable to damage and breakage from various activities, including certain fishing techniques, anchoring by large vessels, dredging and dumping. Commercial trawl fishing operations damaged submarine cables off Sydney in 1991 and 1997. In July 2001, a trading ship dragged anchor off the coast of Sydney and severed two significant submarine communications cables.

Such cable breakage impedes information flow, affecting the capacity of Australians (particularly businesses) to conduct international transactions. Cable breaks disrupt the flow of international voice and data traffic for clients of the cable owners; impose costs, particularly on e-commerce; threaten reputation with overseas customers for quick and reliable service; and cause the loss of data and the loss of business. In 2002, the estimated value of submarine communications cables to the national economy was greater than A$5 billion per annum. Cable owners estimate the direct cost of repairing a cable break at between $1.2 million and $3.3 million. The cost of cable breaks and repairs, as well as the substantial flow-on costs to consumers and the public, is ultimately borne by end users.

The primary purpose of the protection zone is to provide security and reliability of a critical component of Australia's national information infrastructure by deterring actions that may damage submarine cables of national significance. According to the Explanatory Memorandum for the Bill to the Amending Act, cables of national significance would generally be high capacity cables that are important to the national economy and that link Australia to global communications systems.

5. NOTES ON SECTIONS

Section 1 – Name of Declaration

Section 1 provides that the Declaration may be cited as the *Submarine Cable (Perth Protection Zone) Declaration 2007*.

Section 2 – Commencement

Section 2 provides for the Declaration to commence on 1 February 2008. This commencement date was selected because it should provide sufficient time for marine users to be informed of and understand the Declaration.

Section 3 – Definitions

Section 3 provides definitions for certain terms used in the Declaration. Where a term used in the Declaration is used in Schedule 3A, it generally has the same meaning in the Declaration as it does in Schedule 3A.

Many of the terms are technical in nature, or are used to help explain the examples that are listed in the Declaration.

Abalone spatula means a tool with a broad, flat and flexible blade used to pry abalone from the seabed.

ACMA means the Australian Communications and Media Authority.

Act means the *Telecommunications Act 1997*.

Anchor line means a rope or chain used to suspend an anchor from a ship.

Australia has the same meaning as in clause 2 of Schedule 3A to the Act. That is, *Australia*, when used in a geographical sense, includes all of the external Territories.

Australian waters has the meaning given by clause 2 of Schedule 3A to the Act. That is, *Australian waters* means: (a) the waters of the territorial sea (within the meaning of the *Seas and Submerged Lands Act 1973*) of Australia; and (b) the waters of the exclusive economic zone of Australia; and (c) the sea above that part of the continental shelf of Australia that is beyond the limits of the exclusive economic zone.

Bar means the unit of measurement for ultrasonic pressure waves.

Benthos means sedentary animals or plants that live on the seabed.

Branching unit means any part of a submarine cable that allows the cable to branch.

Branch line means a line used to attach fishing apparatus (for example, a pot or trap) to a mainline.

Breaking strain, in relation to an object, means the force required for the object to break.

Cable carrier, in relation to a submarine cable that is within the Perth Protection Zone, means: (a) if a submarine cable is a network unit—the carrier that owns or jointly owns the cable, or is named in a nominated carrier declaration that is in force in relation to the cable; or (b) if a submarine cable is not a network unit and was installed after the commencement of Schedule 3A of the Act—a carrier that held a protection zone installation permit under Schedule 3A to install the cable in the protection zone; or (c) in any other case—the carrier that owns, or jointly owns, a network unit that is immediately connected to the cable, or is named in a nominated carrier declaration in force in relation to that network unit.

Circle type hook means a circular fishing hook where the barb of the hook faces its shaft.

Civil engineering work includes: (a) planning, design, construction, maintenance, management and demolition of a fixed structure or public works; and (b) depositing sand in a place.

Conduct has the meaning given by clause 2 of Schedule 3A to the Act. That is, *conduct* means an act, an omission to perform an act or a state of affairs.

Danforth anchor means a type of stockless anchor that has hinged flukes that dig into the ground as tension is placed on the anchor.

Defence practice area has the same meaning as in Part XI of the *Defence Force Regulations 1952*.

Defence operation or practice has the same meaning as in Part XI of the *Defence Force Regulations 1952*.

Dropline means a vertically set weighted fishing line with 4 or more hooks or 4 or more gangs of hooks that is kept vertical by a float.

Dropper weight means the weight attached to the end of a dropline.

Electro-optic devices means those electronic parts of a submarine cable that manage or re-transmit communications along a line.

Equaliser means submerged electro-optic devices that are installed at intervals along a submarine cable to boost signal transmission.

Explosive device does not include: (a) firearms of less than 20 millimetre calibre; or (b) firearms used or intended to be used for life saving or distress signalling purposes.

Grapnel means a grabbing device used, or intended to be used, to grab an item on the seabed.

Grid lines means the local pattern used to map the seabed with seismic survey equipment.

Installation has the same meaning as in clause 2 of Schedule 3A to the Act. That is, *installation*, in relation to a submarine cable, includes: (a) the laying of the cable on or beneath the seabed; and (b) the attachment of the cable to any other cable or thing; and (c) any activity that is ancillary or incidental to the installation of the cable.

J-hook means a fishing hook where the barb of the hook is parallel to the shaft.

Longline means a fishing line with 4 or more hooks or 4 or more gangs of hooks lying horizontally along or near the seabed.

Low water mark means the height of the lowest ebb tide.

Mainline means the principal fishing line used or intended to be used as, or as part of, a dropline, longline, setline, trotline, or multiple pots or traps.

Midwater trawl means trawl gear that is designed and rigged to work in midwater, including surface water.

Network unit has the meaning given by Division 2 of Part 2 of the Act.

Nominal location means the nominal location of the SEA-ME-WE3 Cable specified in section 7 of this Declaration.

Ocean disposal point means a point where specified material may be disposed and includes a point designated or declared by the Commonwealth or a State or Territory government to be a point where the disposal or abandonment of material is permitted (whether or not particular material is specified).

Perth Protection Zone means the protection zone that is declared by this Declaration.

Plough anchor means a type of anchor that is designed to bury itself into the ground by virtue of its plough shape. A plough anchor is sometimes referred to as a coastal quick release (CQR) anchor.

Pressure waves means controlled pulses of sound generated by seismic survey equipment.

Protection zone installation permit has the meaning given by clause 2 of Schedule 3A to the Act.

Reef pick anchor means a type of anchor characterised by having thin pliable prongs that straighten when an excessive load is applied. A reef pick anchor is sometimes referred to a reef anchor.

Repeater means a device used, or intended to be used, to enhance the signal along a submarine cable or part of a submarine cable.

Scuttle, in relation to a ship, means to deliberately sink a ship.

SEA-ME-WE3 means the South East Asia, Middle East and Western Europe submarine cable 3.

Seismic survey means any method of exploration for resources that involves the transmission of pressure waves into the seabed and the measurement of vibrations that occur because of those pressure waves.

Setline means a fishing line that has multiple snoods attached to a horizontal demersal-set mainline.

Ship has the meaning given by clause 2 of Schedule 3A to the Act. That is, *ship* means any kind of vessel used in navigation by water, however propelled or moved.

Shot means the weight attached to the end of a shotline.

Shotline means a weighted line that may be used to moor a ship.

Sliding ring anchor means an anchor that has an anchor line fitted to a ring that is designed to slide freely along the shank of the anchor.

Snood means any hook and fishing line that is connected, whether directly or indirectly and whether permanently or temporarily, to a mainline.

Spoil ground means an area where specified material may be disposed and includes an area designated or declared by the Commonwealth or a State or Territory government to be an area where the disposal or abandonment of specific material is permitted.

Submarine cable has the meaning given by clause 2 of Schedule 3A to the Act. That is, *submarine cable* means that part of a line link: (a) that it is laid on or beneath the seabed that lies beneath Australian waters; and (b) that is laid for purposes that include connecting a place in Australia with a place outside Australia (whether or not the cable is laid via another place in Australia); and includes any device attached to that part of the line link, if the device is used in or in connection with the line link. Note: Any part of a line link that is laid elsewhere than on or beneath the Australian seabed, and any device attached to such part of a line link, is not a submarine cable for the purposes of Schedule 3A.

Submerged plant items, in relation to a submarine cable that is in the Perth Protection Zone, means electronic components (for example, repeaters, passive equaliser units and branching units are all submerged plant items) of a submarine cable system that serve to manage, or intended to manage, the signal at intervals along the cable's route.

Trace means any fishing line used to attach a hook to a mainline.

Trap rope means any rope used to suspend a pot or trap from a ship.

Trip anchor means an anchor that is fitted with lugs at both ends of the shank with an anchor line or rope fitted securely to the front lug (located near the anchor prongs) and then tethered to the rear lug via a weak or 'sacrificial' link.

Trip release mechanism, in relation to an anchor, means a device or system that, when fitted to an anchor, allows the anchor to be removed backwards from the seabed.

Trotline means 2 or more droplines that are connected by horizontal midwater bars.

Western Australia means the State of Western Australia.

Section 4 – Definition of *line*

Section 4 provides that the term 'line' has its ordinary meaning when used in relation to 'fishing operations', or when used in relation to a 'fishing line', a 'shot line', or an 'anchor line'. The Act defines "line" in a different way, and is not the definition generally to be used in the Declaration.

Section 5 – Application of Declaration

Section 5 makes it clear that the Declaration does not operate, and does not purport to operate, beyond Australia's international law jurisdiction.

Section 6 – Area of the Perth Protection Zone

Section 6 sets the area of the protection zone.

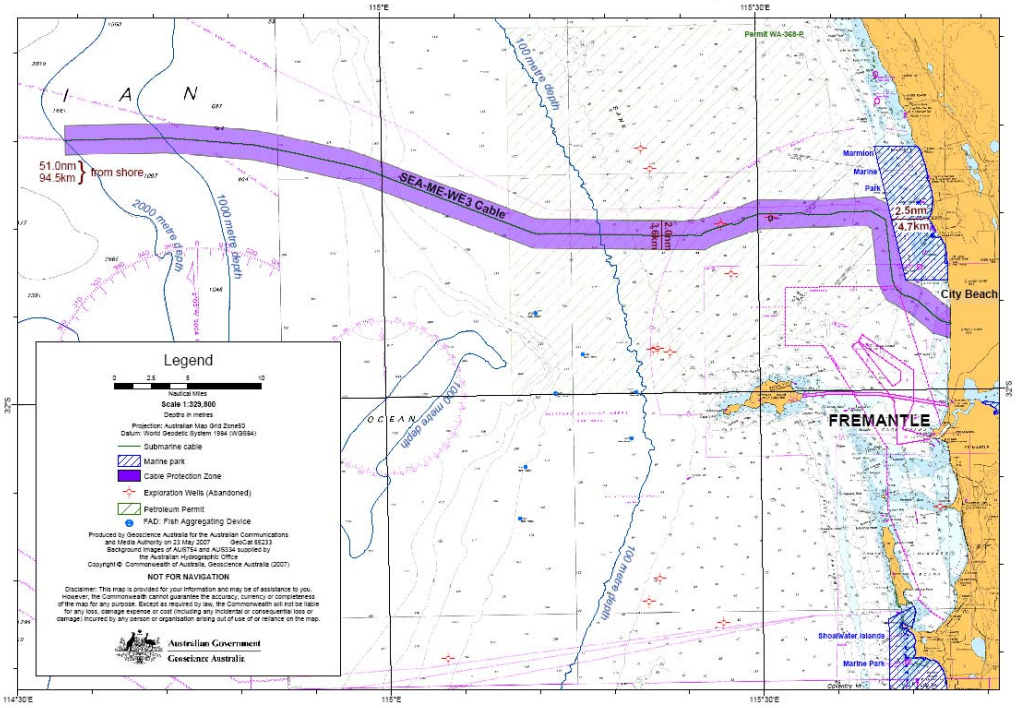
The geographic coordinates listed in section 6 provide that the protection zone consists of the area that extends no more than one nautical mile from the nominal location of the SEA-ME-WE3 Cable. The protection zone commences at the low-water mark and

finishes at a point corresponding to a water depth of 2,000 metres, approximately 95 kilometres from the low-water mark.

Clause 9 of Schedule 3A allows ACMA to determine the area of a protection zone. In the case of a single cable, a protection zone may consist of the area not more than one nautical mile (1852 metres) either side of the points on the surface of the sea above the nominal location of the cable, and includes the waters, sea and subsoil beneath that area. Here, ACMA has simplified the shape of the protection zone to assist marine users in determining whether they are in the zone. Thus, the boundary of the protection zone does not encroach closer than 1500 metres to, nor extend more than 1852 metres from, the nearest cable. In addition, the boundary of the protection zone has been modified so that the protection zone does not overlap with Marmion Marine Park.

A map depicting the Perth Protection Zone is included below.

Submarine Cable Protection Zone off Perth, WA



Section 7 – Nominal location of submarine cables in the Perth Protection Zone

A Declaration of a protection zone must specify a nominal location for the relevant cable or cables (Schedule 3A, sub-clause 8(1)). Hence, section 7 provides the nominal location of the SEA-ME-WE3 Cable.

The location must be expressed in geographic coordinates and must include the geodetic datum to which the coordinates refer (Schedule 3A sub-clause 8(2)). The reference to 'geographic coordinates' means a set of two pieces of information, specifically the measurement of longitude and the measurement of latitude of a specific point, but this information does not in itself provide the means of identifying the position of a particular point on the surface of the Earth with any accuracy. A datum, the reference surface for the latitude and longitude, must also be given, as there is more than one datum that could be used. The geodetic datum is the mathematical model of the Earth used to determine the exact position of geographic coordinates having regard to the curvature of the Earth. The Declaration provides all geographic coordinates in the World Geodetic System 1984, which is identical to the Australian Geodetic Datum 1994 as described in the Commonwealth of Australia Gazette GN35 of 6 September 1995.

The actual (that is, physical) location of a submarine cable may change over time, either because of ocean currents or movements of the seabed, repairs to the cable, or contact of the cable with marine equipment.

This section ensures that the boundaries of a protection zone as specified under section 6, and therefore its area, are established with precision even if the cable is not laid precisely at the nominal location, or if the cable moves after it is laid. The protection zone boundaries are specified and fixed.

Section 8 – Prohibited activities in the Perth Protection Zone

Section 8 specifies those activities that are prohibited throughout the protection zone. Along with section 9, it forms a framework for regulating activities in the protection zone that is intended to minimise the risk of damage to cables.

The particular focus of this section is to prohibit activities that are likely to result in a physical connection between a ship or other object and the seabed that is capable of damaging a cable. This section prohibits activities that constitute a serious threat of damage to a submarine cable.

Three of the activities listed in section 8 (Item 1 in Table 4), were listed in Schedule 3A (sub-clause 10(4)) as being activities that constitute a serious threat of damage to a submarine cable, namely the use of, or towing operating or suspending from a ship:

- trawl gear that is designed to work on or near the seabed (for example a demersal trawl) (Schedule 3A, subparagraph 10 (4) (a) (i));
- a dredge (Schedule 3A, subparagraph 10 (4) (a) (iv)); or
- a structure moored to the seabed with the primary function of attracting fish for capture (for example, a fish aggregating device) (Schedule 3A, subparagraph 10 (4) (a) (viii)).

In addition, ACMA has identified other activities that also constitute a serious threat of damage to a submarine cable, namely:

- the use of, or towing operating or suspending from a ship:
    - a mid-water trawl;
    - a type of net, rope, chain or other object used in fishing operations that is capable of contacting the seabed;
    - a demersal longline (including setlines or trotlines);
    - a Danish seine;
    - a Scottish seine;
- scuttling or attempting to scuttle a ship; and
- establishing, maintaining or using a spoil ground or ocean disposal point.

These activities are prohibited under subparagraph 10 (4)(g) of Schedule 3A because they are all activities that involve a serious risk that an object will connect with the seabed in a manner that is capable of damaging the cable.

Items 1 and 3 – Demersal trawl gear

Items 1 and 3 in Table 4 prohibit the use of, towing, operating, or suspending from a ship, demersal trawl gear throughout the protection zone.

Trawling is a fishing technique whereby a vessel tows a large cone or funnel-shaped net through the water. By design, demersal trawl equipment rolls almost continuously along the seabed using steel bobbins (rollers) connected to the lower wire of the trawl net. The equipment can be extremely heavy; for example, the timber or steel boards that act to keep the net open can weigh more than 400 kilograms each. Due to its weight and the fact that it comes into direct contact with the seabed, the use of such equipment poses a serious risk of damage to submarine cables.

Trawl gear can penetrate the soft sediment of the seabed by as much as 50–60 centimetres. Therefore, demersal trawling presents the added problem of potentially shifting a layer of sediment with each fishing pass, which can expose buried cables, making them more vulnerable to damage.

The majority of cable damage around the world arises from either demersal trawling or anchoring. Significant damage has occurred to cables off the NSW coast in 1991 and again in 1997 as a direct result of trawl fishing operations.

Australian Fisheries Management Authority data indicate that some demersal trawl fishing takes place within the area of the protection zone.

Items 1 and 3 – Dredges

Items 1 and 3 in Table 4 prohibit the use of, towing, operating, or suspending from a ship, dredges throughout the protection zone.

Clause 10 of Schedule 3A lists the use of a dredge as an activity that ACMA may prohibit. The term ‘dredge’ is a broad term and includes a ‘fishing dredge’ used for harvesting molluscs and scallops as well as a dredge used to collect sand from riverbeds and seabeds. In this instance, a ‘dredge’ is referring principally to ‘fishing dredges’. The use of dredges for sand extraction is restricted under section 9 (Item 12 in Table 5).

Fishing dredges operate somewhat like a demersal trawl in that a vessel tows a rigid structure (which may be a 3–4 metre wide, 250-kilogram metal tray with a mesh bag) across the seabed to collect molluscs (typically clams and scallops). Mechanised (hydraulic) fishing dredges operate by shooting high-pressure streams of water into the seabed to dig out the molluscs, which then collect in a towed metal frame.

Dragging such rigid and heavy structures along the seabed poses a significant risk to submarine cables. In addition, like demersal trawling, dredging can remove a layer of sediment with each pass, which may expose buried cables, thereby increasing their vulnerability to damage.

Dredging occurs in quite localised areas within Australian waters. At present, ACMA is not aware of any dredging operations occurring within the protection zone. This prohibition is unlikely to have any impact upon current marine users.

Items 1 and 3 – Fish aggregating devices

Items 1 and 3 in Table 4 prohibit the use of, towing, operating, or suspending from a ship, a structure moored to the seabed with the primary function of attracting fish for capture (for example, a fish aggregating device (FAD)) throughout the protection zone.

Fish aggregating devices are structures or objects placed intentionally in the open ocean with the primary function of aggregating pelagic fish. A simple type of FAD is an anchored buoy that may have objects attached and suspended in the water such as plastic floats or foam blocks. FADs are moored semi-permanently to the seabed with anchors, stakes or weights and removed during the winter months for servicing.

As FADs are staked or anchored to the seabed, there is a serious risk that installing or removing a FAD will connect with the seabed, and thereby cause damage to a submarine cable.

At present, ACMA is not aware of the use of fish aggregating devices within the protection zone. As FADs can easily be positioned outside the protection zone without any negative implications for their operation, the prohibition on the installation of FADs within the protection zone should have no impact upon current marine users.

Items 2(a) and 3 – Mid-water trawl gear

Items 2(a) and 3 in Table 4 prohibit the use of, towing, operating, or suspending from a ship, mid-water trawl gear throughout the protection zone.

Despite its name, mid-water trawl gear comes into relatively frequent and heavy contact with the seabed. Like demersal trawling, mid-water trawls use very heavy timber or steel boards to keep the net parted. These boards can strike the seabed with considerable force

and the trawl net itself may wrap around submarine cables. This activity involves a serious risk of connection with the seabed, with such connection being capable of causing damage to submarine cables if carried out within the protection zone.

Mid-water trawling is a relatively uncommon technique in Australian waters and, to ACMA's knowledge, there are no vessels currently utilising this technique within the protection zone. This prohibition should therefore have no impact upon current marine users.

Items 2(b) and 3 – Other demersal gear

Items 2(b) and 3 in Table 4 prohibit the use of, towing, operating, or suspending from a ship, any demersal fishing gear throughout the protection zone other than when used in the course of fishing activities restricted by section 9. In other words, while pots and traps, gillnets, droplines, and demersal fishing line using J-hooks can be used within the protection zone (provided they are used in accordance with other restrictions outlined in the Declaration), fishers are not allowed to use any other type of demersal gear within the protection zone.

The purpose of this prohibition is to (i) allow certain types of demersal fishing gear to be used within the protection zone (specifically those gear types that are restricted elsewhere in the Declaration), and (ii) prevent the use of fishing gear in the future that could conceivably damage a cable within the protection zone.

This prohibition has no impact on the use of pelagic equipment that does not pose a risk to submarine cables, such as a squid jig, a purse seine, a haul net or a fishing line that does not contact the seabed. As this prohibition is designed to prevent the uptake of demersal fishing methods in the future, it should have no impact upon fishers currently utilising the protection zone.

Items 2(c) and 3 – Demersal longlines (including setlines and trotlines)

Items 2(c) and 3 in Table 4 prohibit the use of, towing, operating, or suspending from a ship, longline fishing gear throughout the protection zone.

Longlines (including trotlines and setlines) can consist of strong mainlines, sometimes with many branch lines and hundreds—or, in the case of some auto-longlines, thousands—of baited hooks. With some Commonwealth-managed auto-longlines, the mainline itself can be more than 1,000 metres long. Demersal lines are often anchored or weighted to the seabed while the line is being set before being winched to a vessel at the surface. Demersal line fishing of this sort could damage a submarine cable because the large hooks could snag or penetrate a cable and the longlines themselves could become entangled with a cable. Anchors or weights attached to lines could also damage or drag a cable.

While longlining does occur in Australian waters, to ACMA's knowledge there are no vessels currently utilising this technique within the protection zone. This prohibition should therefore have minimal impact upon marine users.

Items 2(d), 2(e) and 3 – Danish or Scottish seining

Items 2(d), 2(e) and 3 in Table 4 prohibit the use of, towing, operating, or suspending from a ship, Danish or Scottish seines within the protection zone.

A Danish or Scottish seine operates in a similar manner to a demersal trawl; in each case, the two ends of a long strand of heavy wire remain fixed to the fishing vessel, while the looping middle section of the wire drags along the seabed. The action of the wire scraping along the seabed causes a 'mud curtain' to rise up into the water column around the advancing wires. This, in turn, causes fish to swim towards a towed net. The equipment is designed specifically to drag along the seabed, and connection with the seabed in the vicinity of a cable is capable of causing damage to the cable.

ACMA understands that Danish or Scottish seining are relatively uncommon techniques in Australian waters and there are no vessels currently utilising this technique within the protection zone. This prohibition should therefore have no impact upon marine users.

The use of beach seines and purse seines (which pose little or no risk to submarine cables) are unaffected by this Declaration.

Item 3 – The towing, operating or suspending from a ship any item used in an activity mentioned in items 1 or 2 in Table 4

As discussed above, Items 1 and 2 in Table 4 prohibit the *use of* demersal trawl gear, dredges, fish aggregating devices, mid-water trawl gear, other demersal gear that is not otherwise restricted, demersal longlines, Danish seines or Scottish seines. Item 3 in Table 4 prohibits the *towing, operating or suspending from a ship* demersal trawl gear, dredges, fish aggregating devices, mid-water trawl gear, other demersal gear that is not otherwise restricted, demersal longlines, Danish seines or Scottish seines.

Item 4 – Scuttling of ships

Item 4 in Table 4 prohibits the intentional scuttling of ships within the protection zone.

Occasionally, vessels are intentionally scuttled and allowed to settle on the seabed. For example, the military may sometimes scuttle confiscated or outdated vessels. State governments have sunk obsolete vessels to provide an artificial reef to attract fishers and SCUBA divers. A ship scuttled within a protection zone inevitably contacts the seabed, and is capable of causing damage to a submarine cable.

ACMA understands that the scuttling of ships is a rare activity. Given that there are many areas off the West Coast that would be suitable sites for ship scuttling, this prohibition should have no impact upon marine users.

Item 5 – Spoil grounds and ocean disposal points

Item 5 in Table 4 prohibits the dumping of materials onto the seabed at designated spoil grounds or at other ocean disposal points.

Dumping in general is prohibited under the *Environment Protection (Sea Dumping) Act 1981*. However, State or Australian Government authorities can designate a defined area or 'spoil ground' where specified materials (for example, dredge waste) may be dumped legally onto the seabed. Likewise, governments may define a specific place or 'ocean disposal point' for the legal disposal of specified materials, such as explosive ordnance. The material inevitably settles on the seabed.

The establishment of a spoil ground or an ocean disposal point within the protection zone could result in damage to the submarine cable and could reduce the ability of cable owners to carry out maintenance and repair activities to the cable. It would also reduce the potential for additional cables to be co-located within the protection zone.

Item 5 does not prohibit the placement of sand for beach renourishment or foreshore protection projects. These activities are regarded as 'civil engineering work', which is restricted under in section 9 (Item 13 in Table 5).

Item 5 prohibits the disposal of explosive ordnance or explosive devices within the protection zone.

To ACMA's knowledge, there are no spoil grounds or ocean disposal points currently within the protection zone. This prohibition should therefore have no impact upon current marine users.

Section 9 – Restricted activities in the Perth Protection Zone

Section 9 specifies restrictions on activities in the protection zone. The particular focus of this section is on activities that involve techniques and the use of equipment in the water that are less likely than those specified in section 8 to result in physical contact between a ship or other object and the seabed but that, if they occur, could still damage a cable. Table 5 lists 17 activities that are restricted within the protection zone and provides details of the restrictions that apply to each activity.

Items 1 and 6 – The use of a demersal gillnet

Items 1 and 6 in Table 5 restrict the use of, towing, operating, or suspending from a ship, a demersal gillnet to within 500 metres from the low-water mark.

Demersal gillnets are nets that are lowered to the seabed and held upright, typically by a series of floats along the top line of the net. The gillnet is held on the seabed either by weights or anchors, or in some cases by using a footrope (lower line of the net) that has a lead core. In the latter case the lead-cored rope is sufficient to keep the gillnet on the seabed. In some cases, the net may be up to 6 kilometres in length. The net is set and left *in situ* before being winched to a vessel to retrieve the catch.

Within 500 metres from the low-water mark, submarine cables are heavily armoured, housed in metal conduit and buried several metres below the seabed. Because there is no real possibility of a demersal gillnet causing damage to a cable within 500 metres of the low-water mark, this Declaration does not restrict the use of demersal gillnets within 500 metres of the low-water mark.

Demersal gillnetting could damage a cable if the external weights or anchors used to sink the net were to snag on a cable. For the purposes of the Declaration, lead-cored rope is not an external weight. The net itself could cause damage to a cable if it were to snag on an *unarmoured* section of cable. Therefore, demersal gillnetting can be carried out in waters less than 100 metres deep (where the cable is either single- or double-armoured) provided anchors or external weights are not used to lower the gillnet or to keep the gillnet on the seabed during the fishing operation. Weights or anchors that do not come into contact with the gillnet can be used to moor the vessel within the protection zone provided the weights or anchors are used in accordance with relevant restrictions (see Item 16 in Table 5: the use of a shotline, and Item 17 in Table 5: the use of an anchor).

In addition, the gillnetting equipment cannot contain any line with a breaking strain that exceeds 2.7 tonne. Commercially available 'silver dan' rope with a diameter of 11 millimetres has a breaking strain that does not exceed 2.7 tonne.

Further, when retrieving the demersal gillnet, the fishing operator must not drag the net along the seabed, as this would clearly increase the likelihood of the net interacting with the submarine cable. In other words, the fishing operator must steam the vessel towards the net as the net is retrieved from the seabed (rather than the less common practice whereby the operator winches the net along the seabed towards the stationary vessel).

Demersal gillnetting occurs on a commercial basis within the protection zone. To ACMA's knowledge, all legal demersal gillnetting activity within the protection zone currently conforms to the restrictions specified in Items 1 and 6 in Table 5. Therefore, this restriction is unlikely to have a significant impact on current gillnetting operations.

A beach safety meshing net is a demersal gillnet that is used to protect swimmers from sharks. These nets are installed typically within 500 metres of the low-water mark. Therefore, this restriction should have no impact upon the use of beach safety meshing nets in the protection zone.

Items 2 and 6 – The use of a pot or trap

Items 2 and 6 in Table 5 restrict the use of, towing, operating, or suspending from a ship, a pot (or pots) or a trap (or traps).

There are many types of pots and traps used for fishing operations in Australian waters. Pots or traps can consist of plastic, wire or string mesh or wooden battening around some form of rigid frame. Alternatively, pots or traps can consist of simple plastic tubing attached to a line (for instance, as used in some octopus fishing operations). In the case of fish or lobster traps, a single pot or trap is fixed to a single trap rope. In contrast, in the developmental octopus and crab fisheries, multiple pots or traps are attached to a single mainline via branch lines (also referred to as chafer ropes or droppers). Weights placed inside the pots or traps ensure the pots or traps remain upright as they sink to the bottom. A rope connects the pot or trap to a marker buoy at the surface. The pot or trap remains *in situ* on the seabed and is retrieved after a few hours or days. The pot or trap does not penetrate the seabed, but can conceivably snag a cable lying on top of the seabed, which could result in the cable being moved or damaged as the pot or trap is retrieved.

Within 500 metres from the low-water mark, submarine cables are heavily armoured, housed in metal conduit and buried several metres below the seabed. Because there is no real possibility of a pot or trap causing damage to a cable within 500 metres of the low-water mark, this Declaration does not restrict the use of pots or traps within 500 metres of the low-water mark .

Items 2 and 6 require that if a fisher is using a single pot or trap in the protection zone, the pot or trap must be attached to a single trap rope, and the pot or trap must have a rectangular base less than 2 metres in length and 2 metres in width (or have a circular base less than 2 metres in diameter). Restricting the allowable size of the pots or traps within the protection zone will ensure that pots or traps large enough to damage a cable will not be used within the zone. Further, the trap rope must not be composed of wire and must have a breaking strain that does not exceed 2.7 tonne. Current commercially available 'silver dan' rope with a diameter of 11 millimetres has a breaking strain that does not exceed 2.7 tonne.

Items 2 and 6 require that if a fisher is using multiple pots or traps attached to a single trap rope in the protection zone, then each individual pot or trap must not exceed 15 kilograms in weight when dry. Restricting the allowable weight of the pots or traps within the protection zone will ensure that pots or traps heavy enough to damage a cable will not be used within the zone. Further, the trap rope must not be composed of wire and must have a breaking strain that does not exceed 2.7 tonne. Current commercially available 'silver dan' rope with a diameter of 11 millimetres has a breaking strain that does not exceed 2.7 tonne. In addition, each individual pot or trap must be fitted to the mainline using line that has a breaking strain of less than 500 kilograms. This will ensure that if a pot or trap snags on a cable, the branch line will break when the pot or trap is retrieved without damage to the cable.

This restriction enables current potting and trapping activities of low risk to cables to continue, whilst ensuring that any new potting and trapping techniques with the potential to damage cables are not employed within the protection zone in the future.

Trapping and potting is common practice within Australian waters and occurs on both a commercial and recreational basis within the protection zone. To ACMA's knowledge, all legal potting and trapping activity within the protection zone currently conforms to the restrictions specified in Items 2 and 6 in Table 5. Therefore, this restriction is unlikely to have a significant impact on current potting or trapping operations.

Items 3 and 6 – The use of a demersal dropline

Items 3 and 6 in Table 5 restrict the use of, towing, operating, or suspending from a ship, a demersal dropline, so that beyond 500 metres from the low-water mark, fishers can use commercial demersal droplines provided that (i) only circle-type hooks (rather than J-hooks) are used, (ii) the breaking strain of the dropline does not exceed 2.7 tonne, (iii) the dropline does not use wire in the mainline, or in any of the snoods or traces, (iv) the breaking strain of each branch line (used to attach each hook to the mainline) does not exceed 500 kilograms, and (v) the weight used to sink the dropline does not exceed 15 kilograms.

Under this Declaration, a demersal dropline is a vertically-set weighted fishing line with four or more hooks or four or more gangs of hooks and kept upright by a float(s). Under WA Fisheries' regulations on line fishing in open waters off WA (*Fish Resources Management Regulations 1985*, Part 4A, Division 2 regulation 64E), recreational fishers are not allowed to attach four or more hooks or four or more gangs of hooks to their fishing line. Therefore, the restrictions specified within Items 3 and 6 in Table 5 apply only to commercial droplining operations.

Recreational fishers with three or fewer hooks (or gangs of hooks) attached to their line sometimes refer colloquially to this line as a 'dropline' or a 'paternoster rig'. Again, this activity does not fall under the definition of 'droplining' according to the Declaration. If fishers are using J-hooks on their line, then their activity is restricted under Items 4 and 6 in Table 5.

Within 500 metres from the low-water mark, submarine cables are heavily armoured, housed in metal conduit and buried several metres below the seabed. Because there is no real possibility of a dropline causing damage to a cable within 500 metres of the low-water mark, this Declaration does not restrict the use of droplines within 500 metres of the low-water mark.

A typical commercial dropline has up to 30 hooks attached to it via 'snoods', 'traces' or 'branch lines'. Under this Declaration, dropline fishers are required to use circle-type hooks, which (unlike the typical J-type hooks used by most recreational fishers) curve to such an extent that the sharp point of the hook actually faces towards the shank of the hook. Consequently, unlike a J-hook, a circle-type hook is physically unable to pierce a submarine cable.

The maximum allowable breaking strain of the dropline is restricted to 2.7 tonne. Current commercially available 'silver dan' rope with a diameter of 11 millimetres has a breaking strain that does not exceed 2.7 tonne.

The use of wire in the mainline or in attachments to the mainline (called snoods, traces, droppers or branch lines), is prohibited to ensure that wire, which could potentially abrade cable armouring, cannot be used within the protection zone. Current droplining operations within the protection zone rarely use wire.

This restriction enables current droplining activities of low risk to cables to continue, whilst ensuring that any new droplining techniques with the potential to damage cables are not employed within the protection zone in the future.

Commercial droplining occurs within the protection zone. ACMA understands that most droplining activity within the protection zone currently conforms to the restrictions specified in Items 3 and 6 in Table 5. Some fishers may currently use J-hooks on their droplines. These fishers would need to use circle-type hooks in order to comply with the Declaration.

Items 4 and 6 – the use of a demersal fishing line containing J-hooks

Items 4 and 6 in Table 5 restrict the use of, towing, operating, or suspending from a ship, a demersal fishing line containing J-hooks so that beyond 500 metres from the low-water

mark fishers can only use a demersal fishing line containing one or more J-hooks if the breaking strain of the fishing line does not exceed 50 kilograms.

These Items apply to any line fishing using J-hooks where the line has the capacity to come into contact with the seabed. These items do not apply to pelagic or mid-water line fishing operations, nor do the items apply to fishing operations using only circle-type hooks.

Cable armouring can be pierced by the barb of a J-hook if the hook is pulled into the cable with considerable force. Therefore, limiting the breaking strain of the line to 50 kilograms when fishing with a J-hook will ensure that if a hook were to contact a cable, the line would break before the hook could pierce the cable armouring.

Within 500 metres from the low-water mark, submarine cables are heavily armoured, housed in metal conduit and buried several metres below the seabed. Because there is no real possibility of a J-hook causing damage to a cable within 500 metres of the low-water mark, this Declaration does not restrict the use of demersal fishing line containing J-hooks within 500 metres of the low-water mark.

Within the Declaration, the maximum allowable breaking strain for a fishing line with a J-hook is 50 kilograms, whereas the allowable breaking strain for dropline fishing is considerably higher (850 kilograms). The reason for this difference derives from the nature of the hook used in the respective activities. As discussed above, J-hooks have the potential to pierce cable armouring if the hook is pulled with force into the cable. Therefore, the breaking strain of the line carrying the J-hooks needs to be restricted to lighter lines (i.e. to lines with a breaking strain of less than 50 kilograms). In contrast, dropline fishers use circle-type hooks, which cannot physically pierce cable armouring. The risk droplining poses to cables is the possibility that the mainline will wrap around the cable. Limiting the breaking strain of the mainline to 850 kilograms ensures that if a fisher attempts to retrieve a snagged dropline, the dropline will break long before the cable will be moved or damaged.

Fishers wishing to target demersal fish beyond 500 metres from the low-water mark using J-hooks on a line with a breaking strain greater than 50 kilograms will not be able to carry out these activities within the protection zone. To ACMA's knowledge, the vast majority of fishers using demersal fishing line containing J-hooks use fishing line with a breaking strain that does not exceed 50 kilograms. Thus, the restrictions should have little impact on the vast majority of fishers targeting demersal species.

Items 5 and 6 – The use of a grapnel

Items 5 and 6 in Table 5 restrict the use of, towing, operating, or suspending from a ship, a grapnel so that beyond 500 metres from the low-water mark grapnels can only be used by persons engaged in the following activities:

(a) exploring for or exploiting resources (other than marine species); or

(b) installing, maintaining or removing an electricity cable, an oil or gas pipeline and any like cables or pipelines and any associated equipment; or

(c) constructing or removing a navigational aid; or

(d) constructing or removing an installation for the use of ships; or

(e) conducting civil engineering work; or

(f) conducting research that involves contact with the seabed.

These activities are restricted elsewhere in the Declaration and must occur in a manner that is not likely to damage or impede the efficient operation, maintenance, or repair of a submarine cable. Consultation between the persons intending to use a grapnel and the cable carriers will play a key role in ensuring that any grappling is conducted in a cable-safe way.

A grapnel is any grabbing device suspended from a ship with the purpose of snagging and retrieving an object from the seabed. This activity clearly represents a risk of snagging a submarine cable. For the purposes of the Declaration, a grapnel does not include a 'reef anchor' or a 'reef pick', which are commonly used by SCUBA divers and fishers and sometimes colloquially referred to as 'grapnels' or 'grapnel anchors'. Reef picks or reef anchors have relatively flexible prongs that bend readily if the anchor snags on a demersal object. These objects are restricted under Item 17 in Table 5.

Cable operators use grapnels to locate and retrieve their cables during installation, maintenance or repair operations. Although cable maintenance or repair is not included in the list of activities in which grapnels can be used, clause 40 of Schedule 3A provides that it is not an offence for the carrier who owns or operates the cable, or a person acting on behalf of such a carrier, to engage in a prohibited or restricted activity for the purpose of installing, maintaining or repairing a submarine cable for which the carrier is responsible. Thus, cable operators can lawfully use grapnels to install, maintain or repair their own cable.

Within 500 metres from the low-water mark, submarine cables are heavily armoured, housed in metal conduit and buried several metres below the seabed. Because there is no real possibility of a grapnel causing damage to a cable within 500 metres of the low-water mark, this Declaration does not restrict the use of grapnels within 500 metres of the low-water mark.

This restriction will impact upon marine users wishing to use a grapnel that are not legitimately conducting the activities listed in this Item.

Item 6 – The towing, operating or suspending from a ship of an object mentioned in items 1 to 5 in Table 5.

As discussed above, Items 1 to 5 in Table 5 restrict the *use of* a net anchored to the seabed, a pot or trap, a demersal dropline, demersal fishing line containing J-hooks, or grapnels, respectively. Item 6 in Table 5 prohibits the *towing, operating or suspending from a ship* a net anchored to the seabed, a pot or trap, a demersal dropline, demersal fishing line containing J-hooks, or grapnels.

Item 7 – Installing an electricity cable, an oil or gas pipeline, any like cables or pipelines, and any associated equipment

Item 7 in Table 5 restricts the installation of an electricity cable, an oil or gas pipeline, any like cables or pipelines, and any associated equipment such that the activity must not occur unless:

(a) consultation has taken place between the entity responsible for the installation activity and each cable carrier within the protection zone (specifically the entity responsible for the installation activity must provide 21 days' notice of the planned activities, details of the location of the planned activities and the expected date of commencement and duration of the planned activities); and

(b) the entity responsible for the installation activity has complied with any reasonable written request from a cable carrier for information about the planned activities and has considered and responded to any reasonable representations made to it by a cable carrier in regards to cable protection; and

(c) the new cable or pipeline is installed in a way that crosses the protection zone following the shortest practicable route; and

(d) the activity occurs in a manner that does not damage or impede the efficient operation, maintenance, or repair of a submarine cable; and

(e) the new cable, pipeline or equipment does not approach or cross the existing submarine cable within 500 metres of the existing cable's submerged plant items (such as a repeater, a branching unit or an equaliser).

The installation of an electricity cable, an oil or gas pipeline, any like cables or pipelines, and any associated equipment obviously involves significant contact with the seabed in a manner that could damage a submarine cable.

Any person responsible for installing a cable or pipeline within the protection zone must consult with the owners of any operational submarine communications cables within the protection zone about the activity to be undertaken at least 21 days prior to commencing the planned activity. After receiving details of the activities proposed to be undertaken within the protection zone, a cable carrier can, within a reasonable time frame, notify the entity wishing to undertake the installation activity if they feel that the planned activity could potentially damage or impede the efficient operation, maintenance, or repair of a submarine cable. The entity must take into account this information before installing a cable or pipeline, noting that clause 36 of Schedule 3A provides that it is an offence to engage in conduct that results in damage to a submarine cable that is within a protection zone.

ACMA's website contains contact details of all cable carriers within the protection zone, which will enable those planning to install an electricity cable, an oil or gas pipeline, any like cables or pipelines, and any associated equipment to contact the cable carriers to initiate the consultation required in the Declaration.

When carrying out repairs to a submarine communications cable, the cable repairers must grapple for the cable using a grapnel suspended from a ship. The chance of inadvertently snagging a nearby pipeline or cable is minimised if the new infrastructure is installed at a

90° angle across the existing cable. In addition, the presence of other infrastructure, such as electricity cables or pipelines, within the protection zone reduces the opportunity to co-locate additional cables within the zone. Therefore, the Declaration requires the installation of new pipelines and electricity cables such that the infrastructure is installed as close as reasonably possible to a 90° angle across the entire protection zone (thereby minimising the path of the cable or pipeline across the protection zone).

Submarine cable systems contain submerged plant items (such as repeaters, equalisers and branching units). The Declaration requires that electricity cables and pipelines not be installed within 500 metres of these sensitive electro-optical units. Submerged plant items are located at infrequent intervals along a cable route (sometimes as far as 50 kilometres apart). The location of these plant items need to be determined through consultation with the relevant cable carriers.

Because the installation of cables and pipelines is a relatively rare activity, and because submerged plant items are rare within the protection zone, this restriction should have negligible impact upon marine users.

Item 8 – Maintaining or removing an electricity cable, an oil or gas pipeline, any like cables or pipelines, and any associated equipment

Item 8 in Table 5 restricts the maintenance or removal of an electricity cable, an oil or gas pipeline, any like cables or pipelines, and any associated equipment such that the activity must not occur unless:

(a) consultation has taken place between the entity responsible for the maintenance or removal activity and each cable carrier within the protection zone (specifically the entity responsible for the maintenance or removal activity must provide 21 days' notice of the planned activities, details of the location of the planned activities and the expected date of commencement and duration of the planned activities); and

(b) the entity responsible for the maintenance or removal activity has complied with any reasonable written request from a cable carrier for information about the planned activities and has considered and responded to any reasonable representations made to it by a cable carrier in regards to cable protection; and

(c) the activity occurs in a manner that does not damage or impede the efficient operation, maintenance, or repair of a submarine cable.

In this case, maintaining an electricity cable, oil or gas pipeline, any like cable or pipeline, or any associated equipment in the protection zone includes any activity relating to the maintenance of the cable where that activity involves likely contact with the seabed (for example, repairing a section of the cable or pipeline).

Any person responsible for maintaining or removing a cable or pipeline within the protection zone must consult with the owners of any operational submarine communications cables within the protection zone about the activity to be undertaken at least 21 days prior to commencing the planned activity. After receiving details of the activities proposed to be undertaken within the protection zone, a cable carrier can, within a reasonable time frame, notify the entity wishing to undertake the maintenance or

removal activity if they feel that the planned activity could potentially damage or impede the efficient operation, maintenance, or repair of a submarine cable. The entity must take into account this information before maintaining or removing a cable or pipeline, noting that clause 36 of Schedule 3A provides that it is an offence to engage in conduct that results in damage to a submarine cable that is within a protection zone.

ACMA's website contains contact details of all cable carriers within the protection zone, which will enable those planning to maintain or remove an electricity cable, an oil or gas pipeline, any like cables or pipelines, and any associated equipment to contact the cable carriers to initiate the consultation required in the Declaration.

Because the installation of cables and pipelines is a relatively rare activity, this restriction on maintenance or removal of cables and pipelines should have negligible impact upon marine users.

Item 9 – Constructing or removing an installation for the use of ships

Item 9 in Table 5 restricts the construction or removal of an installation for the use of ships such that the activity must not occur unless:

(a) consultation has taken place between the entity responsible for the construction or removal activity and each cable carrier within the protection zone (specifically the entity responsible for the construction or removal activity must provide 21 days' notice of the planned activities, details of the location of the planned activities and the expected date of commencement and duration of the planned activities); and

(b) the entity responsible for the construction or removal activity has complied with any reasonable written request from a cable carrier for information about the planned activities and has considered and responded to any reasonable representations made to it by a cable carrier in regards to cable protection; and

(c) the activity occurs in a manner that does not damage or impede the efficient operation, maintenance, or repair of a submarine cable.

For the purpose of the Declaration, "an installation for the use of ships" includes permanent structures such as a wharf, jetty, boat ramp or slipway, as opposed to non-permanent navigational aids, such as a marker buoy or a pylon identifying the location of a marine hazard. Constructing or removing an installation of this nature obviously involves significant contact with the seabed in a manner that could damage a submarine cable.

Any person responsible for constructing or removing an installation for the use of ships within the protection zone must consult with the owners of any operational submarine communications cables within the protection zone about the activity to be undertaken at least 21 days prior to commencing the planned activity. After receiving details of the activities proposed to be undertaken within the protection zone, a cable carrier can, within a reasonable time frame, notify the entity wishing to undertake the construction or removal activity if they feel that the planned activity could potentially damage or impede the efficient operation, maintenance, or repair of a submarine cable. The entity must take into account this information before constructing or removing an installation for the use

of ships, noting that clause 36 of Schedule 3A provides that it is an offence to engage in conduct that results in damage to a submarine cable that is within a protection zone.

ACMA's website contains contact details of all cable carriers within the protection zone, which will enable those planning to construct or remove an installation for the use of ships to contact the cable carriers to initiate the consultation required in the Declaration.

Because the construction or removal of installations for ships is a relatively rare activity, ACMA believes this restriction will have negligible impact upon marine users.

Item 10 – Constructing navigational aids

Item 10 in Table 5 restricts the construction of a navigational aid such that the activity must not occur unless:

(a) consultation has taken place between the entity responsible for the construction activity and each cable carrier within the protection zone (specifically the entity responsible for the construction activity must provide 21 days' notice of the planned activities, details of the location of the planned activities and the expected date of commencement and duration of the planned activities); and

(b) the entity responsible for the construction activity has complied with any reasonable written request from a cable carrier for information about the planned activities and has considered and responded to any reasonable representations made to it by a cable carrier in regards to cable protection; and

(c) the activity occurs in a manner that does not damage or impede the efficient operation, maintenance, or repair of a submarine cable.

For the purpose of the Declaration, a "navigational aid" includes non-permanent structures, such as a marker buoy, which are typically fixed to the seabed with heavy weights, stakes or anchors, or a pylon identifying the location of a marine hazard. 'Constructing' a navigational aid includes the process of fixing the navigational aid to the seabed. Therefore, constructing a navigational aid involves contact with the seabed in a manner that could damage a submarine cable.

Any person responsible for constructing a navigational aid within the protection zone must consult with the owners of any operational submarine communications cables within the protection zone about the activity to be undertaken at least 21 days prior to commencing the planned activity. After receiving details of the activities proposed to be undertaken within the protection zone, a cable carrier can, within a reasonable time frame, notify the entity wishing to undertake the construction activity if they feel that the planned activity could potentially damage or impede the efficient operation, maintenance, or repair of a submarine cable. The entity must take into account this information before constructing a navigational aid, noting that clause 36 of Schedule 3A provides that it is an offence to engage in conduct that results in damage to a submarine cable that is within a protection zone.

ACMA's website contains contact details of all cable carriers within the protection zone, which will enable those planning to construct a navigational aid to contact the cable carriers to initiate the consultation required in the Declaration.

Because the construction of navigational aids is a relatively rare activity, ACMA believes this restriction will have negligible impact upon marine users.

Item 11 – Harvesting the benthos

Item 11 in Table 5 restricts the harvesting of benthos such that people can not collect benthos beyond 500 metres from the low-water mark unless they do so by hand or using hand held devices, such as an abalone spatula.

The benthos refers to the sessile animals and plants that live on the sea floor, such as oysters, abalone and seagrass. The benthos does not include motile animals such as lobsters or crabs. Harvesting of the benthos includes activities such as pearl, abalone, mussel and oyster collection. The harvesting of the benthos, by definition, requires contact with the seabed, which could damage an exposed submarine cable if the activity were conducted using heavy or mechanised equipment.

Within 500 metres from the low-water mark, submarine cables are heavily armoured, housed in metal conduit and buried several metres below the seabed. Because there is no real possibility of benthos harvesting causing damage to a cable within 500 metres of the low-water mark, this Declaration does not restrict benthos harvesting within 500 metres of the low-water mark.

Collection of the benthos using hand-held equipment (such as a simple abalone spatula) poses no risk to a cable. Thus, beyond 500 metres from the low-water mark, benthos can be harvested by hand collection methods only.

While current techniques of benthos harvesting are benign, it is necessary to restrict this activity to ensure that harvesting using heavy or mechanised equipment (which is capable of damaging a cable) does not occur in the protection zone in the future. Because harvesting of the benthos by methods other than hand collection does not occur beyond 500 metres from the low-water mark, this restriction should have negligible impact upon marine users.

Item 12 – Exploring for or exploiting resources (other than marine species)

Item 12 in Table 5 restricts the exploration for or exploitation of resources (other than marine species) such that the activity must not occur unless:

(a) consultation has taken place between the entity responsible for the exploration or exploitation activity and each cable carrier within the protection zone (specifically the entity responsible for the exploration or exploitation activity must provide 21 days' notice of the planned activities, details of the location of the planned activities and the expected date of commencement and duration of the planned activities); and

(b) the entity responsible for the exploration or exploitation activity has complied with any reasonable written request from a cable carrier for information about the planned activities and has considered and responded to any reasonable representations made to it by a cable carrier in regards to cable protection; and

(c) the exploration or exploitation activity occurs in a manner that does not damage or impede the efficient operation, maintenance, or repair of a submarine cable; and

(d) seismic survey activities are adjusted so that pressure waves in excess of 2.0 bar or more do not arrive at the seabed in the location of any of the cable's submerged plant items (such as a repeater, branching unit or equaliser); and

(e) any exploitation activities do not involve physical contact with the seabed.

This item covers the exploration for or exploitation of resources of all kinds other than living marine species (such as fish and shellfish), and may include exploring for and exploiting petroleum (for example, oil and gas) and minerals (including sand and offshore coal) in the sea and on or under the seabed.

Exploring for non-living marine resources, such as oil and gas, often utilises non-invasive seismic sounding conducted at the water surface. This activity involves discharging an airgun that sends a seismic energy pulse into the seabed and subsoil to obtain sub-bottom profile data. Some exploration activity involves physical contact with the seabed, such as test drilling or the use of explosives to disturb the seabed.

Exploitation activities include mining activities (such as sand and offshore coal mining) and the use of mining techniques, including activities preparatory or ancillary to mining.

Any person responsible for the exploration for or exploitation of resources (other than marine species) within the protection zone must consult with the owners of any operational submarine communications cables within the protection zone about the activity to be undertaken at least 21 days prior to commencing the planned activity. After receiving details of the activities proposed to be undertaken within the protection zone, a cable carrier can, within a reasonable time frame, notify the entity wishing to undertake the exploration or exploitation activity if they feel that the planned activity could potentially damage or impede the efficient operation, maintenance, or repair of a submarine cable. The entity must take into account this information before exploring for or exploiting resources (other than marine species), noting that clause 36 of Schedule 3A provides that it is an offence to engage in conduct that results in damage to a submarine cable that is within a protection zone.

ACMA's website contains contact details of all cable carriers within the protection zone, which will enable those planning to explore for or exploit resources (other than marine species) to contact the cable carriers to initiate the consultation required in the Declaration.

An active submarine cable system includes electro-optic devices (such as repeaters, branching units and passive equaliser units) that are required to manage the signal at intervals along its route. Such plant items are uncommon features along a length of submarine cable, often some 50–75 kilometres apart. These cable components are particularly sensitive to disturbance. Therefore, seismic survey activities must be adjusted so that pressure waves in excess of 2.0 bar or more do not arrive at the seabed in the location of any of the cable's plant items.

In some instances, the exploration or exploitation of resources from the seabed or subsoil could conceivably cause some level of seabed subsidence, which in onshore mining

operations can usually be prevented by subsidence management techniques. Within the proposed protection zone, subsidence could pose a threat of damage to a submarine cable by causing the cable to bend beyond its tolerance. A submarine cable that straddled a subsided portion of seabed would as a result be more vulnerable to damage and snagging by other marine activities. Subsidence could also impede cable repair and maintenance operations. Therefore, exploration or exploitation activity can only occur within the protection zone if the activity does not damage or impede the efficient operation, maintenance, or repair of a submarine cable. Thus, any exploration or exploitation activity within the protection zone must occur in a way that does not affect the integrity of the seabed supporting the cable infrastructure.

The exploitation of non-living resources can only occur within the protection zone if there is no physical contact with the seabed within the protection zone itself. This means that resources lying in the subsoil within the protection zone can only be accessed by entering the seabed from outside the protection zone and tapping laterally into the resource.

Exploitation of an oil or gas reservoir often involves laying a metal plate on the seabed, which is used as a template through which to drill towards the reservoir. This drilling process obviously involves significant physical contact with the seabed, and could damage a submarine cable if it were conducted on or near the cable. In some circumstances, drilling can be conducted from a deviated well (that is, from an angle) into an oil or gas reservoir. Therefore, drilling platforms installed just outside of a protection zone could potentially exploit resources located within the subsoil within the protection zone by drilling laterally into the reserves.

ACMA understands that offshore coal deposits are potentially located below the seabed within the protection zone. Exploiting offshore coal deposits within the protection zone can only occur by initiating the excavation from outside the protection zone and tunnelling laterally towards the coal seam.

The exploitation of resources such as oil, gas or coal can take 20 years or more before the reserves are exhausted. Because of this, the plant items used in drilling and extraction operations will need to remain on the seabed for the duration of the extraction process. Establishing such infrastructure within the protection zone would therefore reduce the potential for additional cables to be co-located within the protection zone.

Sand mining or dredging is a major cause of submarine cable damage worldwide. Typically, sand mining is conducted by vacuuming sand and water slurry from the seabed into a floating dredge. The conduit used to siphon the sand from the seabed contacts the seabed continuously as it takes up the slurry into the dredge, which represents a significant threat to a submarine cable. The floating dredges used in sand mining operations (and the barges or vessels that transport the extracted resources) are usually anchored or fixed to the seabed and therefore pose a further threat to a submarine cable. Because the exploitation of sand (i.e., dredging) involves physical contact with the seabed within the protection zone, this restriction effectively prohibits offshore sand mining or dredging within the protection zone.

It should be noted that Schedule 3A (Division 3) provides a process that enables the protection zone area or the prohibitions or restrictions within the protection zone to be

varied or revoked. This process enables other marine users to apply to ACMA to vary a protection zone declaration to take account of their interests, where necessary. Thus, if a person wished to exploit resources within the proposed protection zone, they would be able to apply for a protection zone variation, which might facilitate simpler access to the underlying resources.

Restrictions covering the installation of pipelines within a protection zone, which may be required for the transportation of extracted gas and oil, are contained in Item 7 in Table 5.

Because submerged plant items are rare components of submarine cable systems (for instance, often located at more than 50-kilometre intervals), the restriction on seismic activity should have minimal impact on exploration activities in the protection zone.

To ACMA's knowledge, the exploitation of non-living resources within the protection zone does not occur at present. Hence, restrictions on the exploitation of non-living resources should have negligible impact upon marine users.

Item 13 – Removing a navigational aid or conducting civil engineering work

Item 13 in Table 5 restricts (i) the removal of a navigational aid and (ii) the conducting of civil engineering work such that neither activity can occur unless:

(a) consultation has taken place between the entity responsible for the construction or civil engineering activity and each cable carrier within the protection zone (specifically the entity responsible for the construction or civil engineering activity must provide 21 days' notice of the planned activities, details of the location of the planned activities and the expected date of commencement and duration of the planned activities); and

(b) the entity responsible for the removal activity or civil engineering work has complied with any reasonable written request from a cable carrier for information about the planned activities and has considered and responded to any reasonable representations made to it by a cable carrier in regards to cable protection; and

(c) the construction or civil engineering activity occurs in a manner that does not damage or impede the efficient operation, maintenance, or repair of a submarine cable.

For the purpose of the Declaration, a 'navigational aid' includes non-permanent structures (such as a marker buoy or a pylon identifying the location of a marine hazard), which are typically fixed to the seabed with heavy weights, stakes or anchors. Therefore, removing a navigational aid involves contact with the seabed in a manner that could damage a submarine cable.

Civil engineering work includes the planning, design, construction, maintenance, management and demolition of a fixed structure or public works. Civil engineering work also includes the depositing of sand for beach renourishment or foreshore protection purposes. These activities involve significant contact with the seabed and could damage a cable if the activity were conducted too close to the cable. For this reason, consultation with the appropriate cable carriers is necessary to ensure the activity does not place any submarine cable at risk.

Any person responsible for removing a navigational aid or conducting civil engineering work within the protection zone must consult with the owners of any operational submarine communications cables within the protection zone about the activity to be undertaken at least 21 days prior to commencing the planned activity. After receiving details of the activities proposed to be undertaken within the protection zone, a cable carrier can, within a reasonable time frame, notify the entity wishing to undertake the activity if they feel that the planned activity could potentially damage or impede the efficient operation, maintenance, or repair of a submarine cable. The entity must take into account this information before removing a navigational aid or conducting civil engineering work, noting that clause 36 of Schedule 3A provides that it is an offence to engage in conduct that results in damage to a submarine cable that is within a protection zone.

ACMA's website contains contact details of all cable carriers within the protection zone, which will enable those planning to remove a navigational aid or conduct civil engineering work to contact the cable carriers to initiate the consultation required in the Declaration.

Because removing a navigational aid or conducting civil engineering work are, to ACMA's knowledge, both rare activities, this restriction should have negligible impact upon marine users.

Item 14 – Conducting research that involves contact with the seabed

Item 14 in Table 5 restricts conducting research that involves contact with the seabed beyond 500 metres from the low-water mark such that the activity must not occur unless:

(a) consultation has taken place between the entity responsible for the research activity and each cable carrier within the protection zone (specifically the entity responsible for the research activity must provide 21 days' notice of the planned activities, details of the location of the planned activities and the expected date of commencement and duration of the planned activities); and

(b) the entity responsible for the research activity has complied with any reasonable written request from a cable carrier for information about the planned activities and has considered and responded to any reasonable representations made to it by a cable carrier in regards to cable protection; and

(c) the research activity occurs in a manner that does not damage or impede the efficient operation, maintenance, or repair of a submarine cable.

Research that contacts the seabed beyond 500 metres from the low-water mark can take many forms—some of which could pose a risk to submarine cables (for example, taking 'core' or 'grab' samples of the seabed). Therefore, it is necessary to restrict the activity to ensure that only cable-safe methods are employed near the submarine cables.

Within 500 metres from the low-water mark, submarine cables are heavily armoured, housed in metal conduit and buried several metres below the seabed. Because the risk of research activity damage to a cable within 500 metres of the low-water mark is

negligible, this Declaration does not restrict research activity within 500 metres of the low-water mark.

Any person responsible for conducting research that involves contact with the seabed beyond 500 metres from the low-water mark within the protection zone must consult with the owners of any operational submarine communications cables within the protection zone about the research activity to be undertaken at least 21 days prior to commencing the planned activity. After receiving details of the activities proposed to be undertaken within the protection zone, a cable carrier can, within a reasonable time frame, notify the entity wishing to undertake the research activity if they feel that the planned activity could potentially damage or impede the efficient operation, maintenance, or repair of a submarine cable. The entity must take into account this information before conducting research that involves contact with the seabed beyond 500 metres from the low-water mark, noting that clause 36 of Schedule 3A provides that it is an offence to engage in conduct that results in damage to a submarine cable that is within a protection zone.

ACMA's website contains contact details of all cable carriers within the protection zone, which will enable those planning to conduct research that involves contact with the seabed beyond 500 metres from the low-water mark to contact the cable carriers to initiate the consultation required in the Declaration.

Because conducting research that contacts the seabed beyond 500 metres from the low-water mark is likely to be a rare activity, this restriction should have negligible impact upon marine users.

Item 15 – The use of an explosive or explosive device

Item 15 in Table 5 restricts the use of explosives or explosive devices such that the activity must not occur unless:

(a) it is conducted in the course of exploring for or exploiting resources (other than marine species) or conducting civil engineering work, or in the course of constructing or removing a navigational aid or an installation for the use of ships. In each of these instances, the use of explosives or explosive devices can only occur provided the activity does not damage or impede the efficient operation, maintenance, or repair of a submarine cable (that is, it must occur in accordance with the other restrictions set out in the Declaration); or

(b) it is conducted by or with the Australian Defence Force within a specified defence Firing Practice Area.

For the purpose of the Declaration, firearms of less than 20 millimetre calibre or firearms used or intended to be used for life saving or distress signalling purposes (such as line-throwing guns or the "Very" type of firearm) are not regarded as 'explosive devices' and can still be used within the protection zone.

The use of explosives or explosive devices on or near a submarine cable could obviously damage the cable. Nonetheless, there could be a legitimate need to use explosive devices within the protection zone, including in the course of civil engineering work or mineral or petroleum exploration and exploitation, or in the construction of an installation for ships

(such as a jetty) or a navigational aid. Explosives and explosive devices can be used in these instances provided they are used in accordance with all other relevant restrictions – for instance, they can only be used in a manner that does not damage or impede the efficient operation, maintenance, or repair of a submarine cable.

In addition, the Australian Defence Force may have a legitimate need to use explosives or explosive devices, consistent with Defence Force Regulations, within a declared Firing Practice Area located within the protection zone. Defence has stated its intention to include in its operational procedures the means and procedures by which it will take action to protect the submarine cables in the declared practice areas.

Clause 45 of Schedule 3A to the *Telecommunications Act 1997* gives a statutory right to civil damages. It is in addition to the criminal penalties provided under Division 4 of Part 2 of Schedule 3A. A person has a right to seek loss or damages for damage to a submarine cable in a protection zone notwithstanding anything that may be contained in this declaration and irrespective of the outcome of any criminal prosecution for conduct resulting in damage to a submarine cable.

Item 16 – Lowering, raising or suspending a shotline from a ship

Item 16 in Table 5 restricts the use of a shotline such that the activity must not occur beyond 500 metres from the low-water mark unless:

(a) the ship is operating in waters less than 100 meters deep; and

(b) the shot does not weigh more than 20 kilograms; and

(c) the shotline has a maximum breaking strain that does not exceed 2.7 tonne.

Shotlining is the practice of using a ‘shot’ (usually a simple lead weight or a metal bucket filled with concrete) suspended from a ship so that the shot settles on the seabed, thereby mooring the vessel.

Within 500 metres from the low-water mark, submarine cables are heavily armoured, housed in metal conduit and buried several metres below the seabed. Because there is no real possibility of shotlining causing damage to a cable within 500 metres of the low-water mark, this Declaration does not restrict shotlining within 500 metres of the low-water mark.

Shotlining is not allowed in the protection zone beyond 100 metres water depth because in these greater depths the cable is less likely to be sufficiently armoured for the activity to occur safely.

A shot weighing less than 20 kilograms dropped directly onto a single- or double-armoured submarine cable is unlikely to cause damage to the cable. Therefore, shotlining can be carried out in waters less than 100 metres deep (where the cables are either single- or double-armoured) provided the shot weighs less than 20 kilograms.

Further, the shotline must not be composed of wire and must have a breaking strain that does not exceed 2.7 tonne. Current commercially available ‘silver dan’ rope with a diameter of 11 millimetres has a breaking strain that does not exceed 2.7 tonne.

Because shotlining beyond 500 metres from the low-water mark using a shot that exceeds 20 kilograms and/or suspended on a line with a breaking strain in excess of 2.7 tonne is likely to be a relatively rare activity, this restriction should have little impact upon marine users.

Item 17 - Lowering, raising or suspending an anchor from a ship

Item 17 in Table 5 restricts the use of an anchor such that an anchor must not be lowered, raised or suspended from a vessel in any waters beyond 500 metres from the low-water mark unless:

(a) the ship is operating in waters less than 100 meters deep; and

(b) the ship's anchor is fitted with a trip release mechanism (for example, a 'sliding ring' or 'trip' mechanism); and

(c) the anchor line has a maximum breaking strain that does not exceed 1090 kilograms; and

(d) the ship is using:

    a. a danforth anchor or SARC anchor that weighs less than 15 kilograms; or

    b. a plough anchor or reef pick anchor that weighs less than 25 kilograms.

Within 500 metres from the low-water mark, submarine cables are heavily armoured, housed in metal conduit and buried several metres below the seabed. Because there is no real possibility of anchoring causing damage to a cable within 500 metres of the low-water mark, this Declaration does not restrict anchoring within 500 metres of the low-water mark.

Beyond 500 metres from the low-water mark, a marine user could potentially damage a cable if their anchor snagged the cable as it was being winched to the surface, especially if the anchor was fixed to a very strong line. Therefore, anchors used within the protection zone beyond 500 metres from the low-water mark must be fastened to an anchor line with a breaking strain of less than 1090 kilograms. An anchor line composed of commercially available 12-millimetre 'silver rope' is unlikely to have a breaking strain that exceeds 1090 kilograms and is, therefore, likely to be permitted within the protection zone.

To reduce further the risk of an anchor snagging a cable, the anchor must utilise a trip-release mechanism (such as a 'trip anchor' or 'sliding ring anchor') that is specifically designed to minimise the likelihood that the anchor will snag on a seabed irregularity.

A trip anchor is an anchor fitted with lugs at both ends of the shank, where the anchor line is fitted securely to the front lug (located near the anchor prongs) and then tethered to the rear lug via a 'sacrificial' link. If the anchor snags on the seabed or a cable, pressure applied to the anchor line causes the sacrificial link to break. This enables the anchor to be retrieved to the surface via the line attached to the front lug such that the anchor shaft trails *behind* the anchor prongs as the anchor passes through the water column.

A sliding ring anchor is an anchor where the anchor line is fitted to a ring that is designed to slide freely along the shank of the anchor. If the anchor snags on a seabed irregularity or a cable, the marine user can alter the direction of force applied to the anchor, causing

the ring to slide along the anchor shaft so that the anchor line pulls at the anchor from a point near the anchor prongs. As above, this enables the anchor to be retrieved to the surface such that the anchor shaft trails *behind* the anchor prongs as the anchor passes through the water column.

Beyond 500 metres from the low-water mark, a marine user could also potentially damage a cable if they lowered a heavy anchor directly onto the cable. The use of a heavy, inflexible anchor, such as an admiralty anchor, is not permitted within the protection zone.

In waters less than 100 metres deep (where the cables are either single- or double-armoured), a danforth anchor or SARC anchor that weighs more than 15 kilograms cannot be used within the protection zone. Likewise, in waters less than 100 metres deep, a plough anchor or a reef pick anchor that weighs more than 25 kilograms cannot be used within the protection zone. The rationale for allowing the use of slightly heavier plough or reef pick anchors compared to danforth or SARC anchors stems from the fact that the plough anchors and reef pick anchors are relatively flexible and pliable anchors, which means they are less likely to damage a cable if they are dropped directly onto a submarine cable. No anchors of any description, including admiralty anchors, can be used in waters more than 100 metres deep.

Many marine users will already comply with the restrictions on anchoring within the protection zone. However, it is likely that some marine users will need to adopt slightly different anchoring gear in order to comply with this restriction.