

# Mitigation Standards to Reduce the Incidental Captures of Seabirds in New Zealand Commercial Fisheries

## >28 metre trawl

### 1. Introduction

To effectively reduce the risk of seabird captures, trawl vessels greater than 28 metres in overall length (>28 metre) need to use a combination of mitigation practices that best address the risks of their individual operations. As the >28 metre trawl fleet is highly diverse with respect to vessel size, gear set-up and on board equipment, the particulars of the mitigation practices employed may differ between vessels.

To ensure consistency in the mitigation practices employed by the >28 m trawl fleet, these mitigation standards document what is expected of effective mitigation practices. Mitigation standards are grouped by what the mitigation practices aim to achieve (desired outcomes).

This document also details how the mitigation standards will be implemented and how adherence to the mitigation standards will be monitored and reported.

### 2. Scope

These mitigation standards are applicable to all >28 metre trawl vessels (excluding those used to target scampi).<sup>1</sup> See Appendix 1 for a characterisation of the >28 metre trawl fleet.

### 3. Desired outcomes

1. The discharge of fish waste<sup>2</sup> from the vessel is managed so as not to attract seabirds to risk areas.
2. The risk to seabirds from trawl warps is minimised.
3. Seabird attraction towards, and access to, trawl nets is minimised. If seabirds do access nets, the risk of harmful interactions is minimised.

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<sup>1</sup> These standards also apply to trawl vessels exactly 28 metres in overall length (LOA). However, for simplicity, the term >28 metres is used throughout this document.

<sup>2</sup> Fish waste is defined as all processing offal and all dead or damaged fish that are returned to the sea (or parts thereof).

4. The risk of deck landings or impacts against the vessel is minimised.<sup>3</sup>

## 4. Mandatory mitigation measures

All trawl vessels 28 metres or greater in length are required to deploy one type of seabird scaring device during all tows in accordance with Seabird Scaring Devices Circular 2010.<sup>4</sup> Vessel operators may choose to use bird bafflers, tori lines or warp deflectors. The device must meet the specifications prescribed in the Circular and must be used on both sides of the vessel (port and starboard) to minimise seabird access to both warps.

## 5. Mitigation standards

This section details the mitigation standards necessary to achieve each desired outcome and the equipment and/or operational practices currently needed to meet each mitigation standard.

Each mitigation standard will be updated as alternate technologies or operational practices are demonstrated to be effective in achieving the desired outcomes.

*These mitigation standards do not replace or override any fisheries regulations, or legislation on workplace health and safety, maritime safety or other relevant subject.*

**Desired outcome 1: The discharge of fish waste from the vessel is managed so as not to attract seabirds to risk areas**

Mitigation standards 1.1 and 1.2 are necessary to achieve desired outcome 1.

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Mitigation standard 1.1: Fish waste is not discharged from the vessel immediately before or during shooting or hauling.<sup>5</sup>

Mitigation standard 1.2: Fish waste discharged whilst the net is being towed must be either minced or batch discharged.<sup>6</sup>

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To meet mitigation standards 1.1 and 1.2, vessel operators should:

- Develop and document a fish waste management system that describes how mitigation standards 1.1 and 1.2 will be met. A copy of this document (such as a vessel management plan or comparable document) must always stay on the vessel and be accessible to, and understood by, senior crew.<sup>7</sup>

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<sup>3</sup> A deck landing (also known as a deck strike) is a situation when a seabird lands on a vessel and is assisted from the vessel by the crew or an observer. An impact with a vessel is a situation when a seabird collides with the superstructure of the vessel.

<sup>4</sup> New Zealand. (2010). Fisheries (Commercial Fishing) Regulations 2001: Seabird Scaring Devices Circular 2010 (No. F517). New Zealand Gazette, No. 29. 11 March 2010. Retrieved from <https://www.mpi.govt.nz/dmsdocument/20321/loggedIn>

<sup>5</sup> 'Shooting' is defined as the time between the codend leaving the deck and the time when the doors are below the surface. 'Hauling' is defined as the time between the doors reaching the surface and the codend being on deck.

<sup>6</sup> Batch discharging is defined as holding all fish waste for at least 30 minutes and then discharging it in periods that last no more than five minutes each.

<sup>7</sup> An example of a vessel management plan is available at the following website <https://deepwatergroup.org/wp-content/uploads/2018/12/VMP-DWG-Trawler-V6.0-JC-Nov-18.pdf>

- Ensure their vessels have the equipment needed to implement their fish waste management system (such as meal plants, mincers or hashers and/or batching tanks). All such equipment should be well maintained with sufficient spare parts kept on board to effect regular maintenance/repairs.
- Develop and document a fish waste contingency plan that describes what actions will be taken to meet mitigation standards 1.1 and 1.2 in the event of an equipment failure. The contingency plan should ensure that any fish waste discharge from the vessel continues to achieve desired outcome 1. Sufficient, well maintained equipment must be kept on board to allow the vessel to enact the fish waste contingency plan at short notice.
- Maintain a secondary system that prevents fish waste lost to the deck or factory floor from being lost overboard. Examples of such secondary systems include equipment to minimise the volume of fish waste lost to the factory floor/deck and the use of gratings or trap systems to reduce the volume of fish waste discharged through scuppers/sump pumps (whilst still allowing the free movement and egress of water).

#### Desired outcome 2: The risk to seabirds from trawl warps is minimised

Mitigation standards 2.1, 2.2 and 2.3 are necessary to achieve desired outcome 2.

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Mitigation standard 2.1:	Both trawl warps are protected by a visible, physical barrier that deters seabirds from approaching the warps.
Mitigation standard 2.2:	The condition of the trawl warps does not increase the risk of seabirds captures.
Mitigation standard 2.3:	<p>The vessel carries a second warp mitigation device that meets mitigation standard 2.1. This device is to be deployed if:</p> <ul style="list-style-type: none"> <li>• a seabird is captured on the trawl warp;</li> <li>• a seabird is observed impacting against the warp;</li> <li>• the fish waste management system fails; or</li> <li>• there's a higher risk of seabirds getting captured, such as when feeding near a warp.</li> </ul>

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To meet mitigation standards 2.1, 2.2 and 2.3, vessel operators should:

- Deploy a seabird scaring device during every tow. The device must meet the specifications prescribed in Seabird Scaring Devices Circular 2010 (No. F517). The chosen device must be well maintained and deployed in such a way that does not increase the risk to seabirds.<sup>8</sup> Sufficient spares must be carried on board to effect repairs when necessary.
- Ensure the warps are not overly greased; all warp splices are 'wrapped'; any sprags are removed or 'whipped'; and warp splices are not near the water's surface
- Ensure the vessel carries a second seabird scaring device on board. The second device should be deployed if the primary device fails or if any of the situations described in

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<sup>8</sup> The risk of seabirds becoming entangled in the mitigation device is increased if droppers or streamers trail excessively in the water.

mitigation standard 2.3 occur. The second device must also meet the specifications prescribed in Seabird Scaring Devices Circular 2010 (No. F517).

**Desired Outcome 3: Seabird attraction towards, and access to, trawl nets is minimised. If seabirds do access nets, the risk of harmful interactions is minimised**

Mitigation standards 3.1, 3.2, 3.3 and 3.4 are necessary to achieve desired outcome 3.

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Mitigation standard 3.1	All practicable stickers (fish caught in mesh) are removed from the net before each shot.
Mitigation standard 3.2	The amount of time fishing gear remains at, or near, the surface is minimised.
Mitigation standard 3.3	All gear maintenance/repairs (planned or otherwise) are conducted in a way which minimises the risk to seabirds.
Mitigation standard 3.4	Any seabirds caught in the net and released alive are handled in ways that maximise their chance of survival (whilst managing the risk to the crew)

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To meet mitigation standards 3.1, 3.2, 3.3 and 3.4, vessel operators should:

- Ensure the crew clear the net of all practicable stickers prior to shooting.
- Shoot and haul the trawl net as quickly as practicable.
- Inspect and maintain all fishing gear and equipment (such as winches) to reduce the risk of gear or equipment failure.
- Conduct planned gear maintenance whilst the trawl net is on board. If the trawl net must be in the water during repairs, the repairs must happen when there's a low risk of seabirds getting caught (such as at night or during periods of low seabird abundance).
- Conduct all unplanned/emergency maintenance whilst the trawl net is on board. If the trawl net is required to be in the water to effect repairs, all such maintenance should be conducted with as much of the trawl net on board as possible given the circumstances (with particular consideration given to the net mouth).
- Instruct the deck crew in safe seabird-handling procedures and protocols and ensure these procedures and protocols are adhered to.

Desired Outcome 4: The risk of deck landings or impacts against the vessel is minimised

Mitigation standards 4.1, 4.2 and 4.3 are necessary to achieve desired outcome 4.

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Mitigation standard 4.1	Deck lighting does not unnecessarily attract or disorientate seabirds.
Mitigation standard 4.2	Seabirds are not induced to land on the deck due to the presence of fish waste.
Mitigation standard 4.3	Any seabirds that land on deck or impact with the vessel and are released alive, are handled in ways that maximise their chance of survival (whilst managing the risk to the crew).

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To meet mitigation standards 4.1, 4.2 and 4.3, vessel operators should:

- Minimise all deck lighting (including outward facing lights) that is not necessary for ship or crew safety, especially when the vessel is sheltering or anchored near seabird breeding colonies.
- Clean the deck and fish waste-handling equipment (such as fish bins) regularly, so that excess fish waste is removed.
- Instruct the deck crew in safe seabird-handling procedures and protocols and ensure these procedures and protocols are adhered to.

## 6. Implementation

The mitigation standards outlined above are implemented through Seabird Scaring Devices Circular 2010 and non-regulatory management measures (as set out in the Deepwater Trawl: Seabirds Operational Procedures).<sup>9</sup> Deepwater trawl operational procedures apply to all >28 metre trawl vessels and are agreed between deepwater quota holders, vessel operators and Fisheries New Zealand. As part of the deepwater trawl operational procedures, each vessel is required to have and follow a vessel management plan (VMP). The VMP documents what actions each vessel will take to reduce the risk it poses to seabirds.

Both deepwater trawl operational procedures and VMPs are implemented and administered by the Deepwater Group Ltd, an organisation which represents the majority of deepwater quota holders. The Deepwater Group contracts an environmental liaison officer (ELO) to oversee deepwater trawl operational procedures, VMPs and associated processes. The ELO visits most vessels annually<sup>10</sup> to train crew, and review and update VMPs. The number of vessels visited by the ELO is reported annually by Fisheries New Zealand<sup>11</sup> and will be included in the seabird annual review report.

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<sup>9</sup> Deepwater Group Ltd. *Deepwater trawl: seabirds operational procedures*. Version 6.0. Retrieved from <https://deepwatergroup.org/newsresources/op-manual/>

<sup>10</sup> The ELO prioritises visiting new vessels and those deemed 'higher risk' due to the number of reported captures or other issues.

<sup>11</sup> <https://www.mpi.govt.nz/dmsdocument/29741/loggedIn>

## 7. Verification

Vessel adherence to the mitigation standards is verified through Fisheries New Zealand observer coverage. After each trip, the observer completes a Vessel Management Plan Observer Review Form (Appendix 2). Fisheries New Zealand discuss the review form with the observer and then sends it to the ELO to follow up on any issues with the vessel operator. The outcome of any follow-up actions are reported to Fisheries New Zealand quarterly and will be included within the seabird annual review report.

Vessel operators also review their VMP each year by completing a vessel management plan internal audit form (Appendix 3). Once completed, this audit form is provided to the ELO for review.

During their trips, Fisheries New Zealand observers also inspect and measure each seabird scaring device. Observers record their findings on either the bird baffler, tori line or warp scarer details form (Appendices 4, 5 and 6).

The level of observer coverage on board the >28 metre trawl fleet is typically high with over 40% of tows observed between the 2014/15 and 2017/18 fishing years. The level of observer coverage on the >28 metre trawl fleet is annually reported by Fisheries New Zealand.

## Appendix 1: Characteristics of the >28 metre trawl fleet (June 2019)

This section describes the characteristics of two types of >28 metre trawl vessels: those that freeze fish at sea (factory-processing vessels), and those that store fish on ice (fresh fish vessels).

### Factory-processing vessels

New Zealand currently has 28 factory-processing trawlers. This number has stayed relatively constant since 2015. Together these vessels conduct around 20,000 tows each year. Each vessel typically conducts trips between three and six weeks in length.

All factory-processing vessels process fish on board, however the amount of processing varies between vessels (some head and gut the fish, while others fillet it) and target species (for example, squid are often packed whole).

Three distinct fleets of factory-processing trawlers are active in New Zealand:

#### *BATM vessels<sup>12</sup>*

- Seven BATM-class vessels operate in New Zealand.
- All BATMs are large (105 metres long) sister ships that use only mid-water gear (this gear can be used to fish close to, or on, the seabed).
- All BATMs have meal plants and target similar species such as jack mackerel (predominantly off the West Coast), hoki (during winter), squid and southern blue whiting.

#### *Foreign-owned vessels<sup>13</sup>*

- Five foreign-owned vessels (FOV) operate in New Zealand.
- All FOVs are between 50 and 60 metres long and mostly fish using bottom trawls in southern waters targeting squid and other middle-depth species.
- No FOVs operate meal plants; all mince their fish waste prior to discharge.

#### *Other vessels*

- The remaining 16 vessels are neither BATM vessels nor FOVs. They are typically between 55 and 65 metres long and use various fishing gear (this includes mid-water and bottom gear, twin trawls and Modular Harvesting System gear).<sup>14</sup>
- These vessels mostly target hoki, squid and orange roughy. Many vessels undertake a higher degree of processing on board than BATM or FOV vessels with ten vessels producing fillets and associated products.
- Eleven vessels operate meal plants with five vessels using mincers or batching tanks.

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<sup>12</sup> BATM is an initialism that refers to a specific class of factory trawler.

<sup>13</sup> All foreign owned vessels (FOVs) excluding BATMs.

<sup>14</sup> For more information on the Modular Harvesting System, refer to Plant & Food Research's website. <https://www.plantandfood.co.nz/growingfutures/case-studies/selective-wildfish-harvesting>

## Fresh fish vessels

New Zealand currently has nine fresh-fish trawlers greater than 28 metres in length. Fresh-fish trawlers collectively conduct around 5,000 tows each year.

Fresh fish vessels typically target deepwater species around the North Island, South Island and in international waters, middle-depth species (mainly hoki) in Cook Strait and the West Coast or inshore species, mainly around the North Island.

No fresh fish vessel operates meal plants or mincers. Most of their catch is retained whole (green) for processing on shore. Therefore fresh fish vessels produce less fish waste than factory-processing vessels. However, most vessels will conduct a limited amount of processing (such as gutting) for some key bycatch species (such as school shark or ling). Any fish waste produced is discharged at sea.



## Appendix 2: Vessel management plan observer review form

**Deepwater Trawl VMP & MMOP – Observer Review Form**

Trip Number	Vessel Name	Observer	Trip start date	Trip end date
□ □ □ □ □			□ □ / □ □ / □ □	□ □ / □ □ / □ □
Target species	FMA's fished			

Record Yes (Y), No (N), Unknown (U) or Not Applicable (N/A) in the box provided. If you answer N or U to any questions, or Y for items 3, 4 or 19, then please make detailed comments on the reverse.

Item 1. Were copies of the DWG vessel specific *Vessel Management Plan (VMP)* and *Marine Mammal Operating Procedures (MMOP)* carried on board and made available upon request?

Item 2. Were the senior crew familiar with and have access to the above documents?

Item 3. Were any seabird, marine mammal or protected shark '*trigger-points*' activated during the trip?  
(if Y record details of the triggers and the action taken by the vessel)

Item 4. Did a gear or equipment failure event occur that increased the risk of seabird or marine mammal captures? (if Y detail the event and the action taken by the vessel)

Item 5. Were there any changes in crew behaviour, fishing activity or gear used following '*trigger point*' events or during high risk periods?

**Seabird Mitigation Devices**

Item 6. Record what mitigation devices were carried by the vessel and when they were utilised  
(if a second mitigation device was deployed, detail the reason why in the comments)

	Carried on board	Deployed during all tows	Deployed during some tows	Not deployed
Bird Baffler	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tori line	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (describe on reverse)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Item 7. Was a second seabird mitigation device deployed when required (e.g. high risk periods) by the VMP?

**Fish Waste Management**

Item 8. What major fish waste control systems were implemented over the course of the trip?  
(indicate as many systems as appropriate)

Meal plant  Mincing\*  Batching\*\*  Holding\*\*\*  Other  None

Item 9. Were there any periods of continuous offal and/or fish waste discharge during the tow?  
(apart from minced offal discharge)

Item 10. Was all fish waste (including offal and whole fish) held on board during shooting and hauling?

Item 11. Were all 'stickers' removed from the net prior to shooting?

Item 12. Was a grating or trap system used to prevent fish or offal accidentally lost to the factory floor or deck from being discharged overboard via scuppers or sump-pumps (whilst still allowing the free movement of water)

**General Procedures**

Item 13. Were all plastics and netting retained on board?

Item 14. Was shooting fishing gear near congregations of marine mammals avoided?

Item 15. Was the amount of time the net spent on the surface minimised?

Item 16. Were any turns conducted with the doors fully submerged and a headline depth of less than 50 m?

Item 17. Were all seabird, marine mammal or protected shark captures recorded by the vessel?

Item 18. Were all seabirds, marine mammals or protected sharks released alive handled with due care?

Item 19. Was a Dolphin Dissuasive Device deployed on every JMA7 night tow? (JMA7 only)

Item 20. Was gear shot between 02:30 and 04:30 (NZST) when targeting JMA North of 40.30°S? (JMA7 only)

Item 21. Were net restrictors fitted into the centre net of a triple-net configuration when required? (i.e. at times of high risk or once a '*trigger point*' was reached) (SCI only)

### Appendix 3: Vessel management plan internal audit form

Name of Vessel		Auditor's Name	Review Date	Conforms?
				Yes / No
Item	Location / Subject		OK	
Non-Fish Protected Species Catch Return	Bridge	Completed and being furnished to MPI as required	<input type="checkbox"/>	
Trigger points (report within 24hrs)	Bridge	Was a trigger point reached? If so, did the captain report this to shore management and or DWG? Did shore management contact DWG?	<input type="checkbox"/>	
Bridge Log	Bridge	Is the Bridge Log being used for recording any mitigation equipment failure, multiple captures etc.?	<input type="checkbox"/>	
MPI Observer Audit/Review	MPI	MPI Vessel Management Plan Review audit form(s) received from DWG & feedback given to crew.	<input type="checkbox"/>	
Mitigation Methods	Procedure	Check recorded equipment matches equipment being used and on board, check all mitigation gear is being maintained to the correct specification.	<input type="checkbox"/>	
	Personnel	Check contingency plans are properly recorded.	<input type="checkbox"/>	
Offal Control Methods	Procedure	Check recorded equipment matches equipment being used on board, check VMP procedures are followed.	<input type="checkbox"/>	
	Personnel	Check contingency plans are properly recorded.	<input type="checkbox"/>	
Corrective Actions taken	Previous Review Form	Check that previous corrective actions have been carried out.	<input type="checkbox"/>	
On-board Management	Bridge	Are officers and crew monitoring changing conditions and making changes to mitigation devices when risk to seabirds increases?	<input type="checkbox"/>	
Training	Personnel	Check crew in key positions are well aware of the VMP and its procedures and are maintaining equipment and on board management systems to meet the VMP OP requirements.	<input type="checkbox"/>	
Safety Hazard Management	Bridge	Have hazards associated with the equipment or procedures to adhere to the VMP been assessed/ identified and crew advised.	<input type="checkbox"/>	
<b>Changes advised or details of non-conformance (comments). Contact DWG for advice:</b>				
Auditor's Signature			Date Results Advised	
Return Form to Deepwater Group Ltd:		DWG	VMP Internal Audit Form	
		Email	admin@deepwatergroup.org	
		Call	John 021 305 825 / Richard 021 457 123	

# Appendix 4: Bird baffle details form

## Bird Baffle Details Form (Version 1 - Sept 2007)

### 1. Trip Information

Trip Number	Observer(s)

### 2. Measurement Summary

Equipment Code	Date measured	Reason for measuring	Type of record (full or partial)
B			

### 3. Measure and record details for each of the 4 possible booms.

Attachment Location	Method A/C/E
Angle from Dead Astern (degrees)	E
Distance to Innermost Dropper (m)	
Distance to Outermost Dropper (m)	
Number of Droppers and Webbing Type (R,F,N)	
Maximum Dropper Spacing (m)	
Dropper line length (m)	
Dropper object length (m)	
Distance between sea surface and bottom of dropper object (m)	E
Dropper material types (list all)	
Dropper material colours (list all)	

#### 1. PORT, SIDE

Present <input type="checkbox"/>	Absent <input type="checkbox"/>
Distance from stern	
Number	Type

#### 2. PORT, AFT

Present <input type="checkbox"/>	Absent <input type="checkbox"/>
Distance from side	
Number	Type

#### 3. STARBOARD, SIDE

Present <input type="checkbox"/>	Absent <input type="checkbox"/>
Distance from stern	
Number	Type

#### 4. STARBOARD, AFT

Present <input type="checkbox"/>	Absent <input type="checkbox"/>
Distance from side	
Number	Type


### 4. Additional Comments

This form is number  for this trip. Is this form the last page?  Yes  No

# Appendix 5: Tori line details form

## Tori line details form

(v3 August 2018)



**Fisheries New Zealand**

Tini a Tangaroa Page \_\_\_ of \_\_\_

Trip number	Observer code	Vessel name	Date measured (dd/mm/yy)
			/     /

If multiple tori lines were used, complete a separate form for each tori line. Give each tori line a gear code starting with "T1".

Tori line gear code	Reason for measuring*	Type of record*
T		based on T

**Tori mainline**

Line length	Line diameter	Aerial extent	Recovery rope (Y/N)
m	mm	m	

**Attachment point\*\*** Tension release (Y/N) | |

Height above water	Distance (laterally) from centre of the stern	Distance from stern to attachment point	Adjustable (Y/N)
m	m to port (P) or starboard (S)	m	

**Dual attachment point (if applicable)** Tension release (Y/N) | |

Height above water (m)	Distance (laterally) from centre of the stern
	m to port (P) or starboard (S)

Distance from join (if present) to	Streamers between second attachment point and join (Y/N)
Stern           m Attachment point           m	

**Long streamers** Y/N | | Material\* | | | |

Max dist between long streamers	Paired or single	Number of long streamers/pairs	Max length	Min length	Diameter	Colour code*
m	(P/S)		m	m	mm	

Distance to first long streamer that reaches water	Long streamers cover aerial extent (Y/N)	Number of long streamers that touch water
m		

**Light streamers** Y/N | | Material\* | | | |

Distance between light streamers	Paired or single	Number of light streamers/pairs	Max length	Min length	Diameter	Colour code*
m	(P/S)		m	m	mm	

**Towed object** (used to induce drag)

Towed object Y/N	Towed object code*	Size of towed object*

\* Refer to instructions on reverse.

**Comments**

# Appendix 6: Warp scarer details form

## Warp Scarer Details Form (Version 1 - Sept 2007)

1. Write the trip number

2. Describe one warp scarer in each column and assign it a unique code. If a warp scarer is changed during the trip, record it in a new column.

Warp scarer equipment code	W	W	W	W
Observer(s)	.	.	.	.
Date Measured (dd/mm/yy)	/	/	/	/
Reason for measuring				
Type of record (full or partial)	Full	Partial based on	Partial based on	Partial based on
Attachment Location (Port / Starboard/Central)				
Main line diameter (mm)	mm	mm	mm	mm
Towed object and weight (kg)	Object	Object	Object	Object
Type and number of connectors	Type	Type	Type	Type
Number of branched streamers and maximum gap (m)	Number	Number	Number	Number
Number of branches per streamer	Max Gap	Max Gap	Max Gap	Max Gap
Streamer length (m)	Min	Min	Min	Min
Streamer diameter (mm)	Max	Max	Max	Max
Extent (m) of scarer and maximum gap (mm) of main line visible material	Min mm	Min mm	Min mm	Min mm
Length of main line visible material (mm)	Max	Max	Max	Max
Colours (list all)				
Materials (list all)				
Comments:				

3. This form is page number  for this trip. Is this form the last page for this trip? Yes  No