

Broads Authority

25 September 2026

Agenda item number 10

Oil Spill Contingency Plan

Report by Head of Ranger Services

Purpose

To provide Members with the progress of the review of the Broads Authority Oil Spill Contingency Plan which has been prepared in line with national guidance.

Broads Plan context

C4 - Maintain and improve safety and security standards and user behaviour on the waterways

Recommended decision

To note the latest version of the Broads Authority Oil Spill Contingency Plan which has been prepared in line with national guidance.

1. Introduction

- 1.1. As the Statutory Harbour and Navigation Authority for the Broads, the Broads Authority are responsible for compliance with the Merchant Shipping (Oil Pollution Preparedness, Response and Co-operation Convention) Regulations 1998.
- 1.2. This Oil Spill Contingency Plan (OSCP) is intended to guide Broads Authority personnel and those of other responsible organisations through the processes required to manage an oil spill into waters within the navigable parts of the Norfolk and Suffolk Broads rivers system and the adjoining 'private' dykes, basins and adjacent waters.
- 1.3. The OSCP is reviewed every 5 years. The current plan is due for review before February 2027. The plan must go through a formal consultation process. The statutory consultees are included on page 7 of the Draft Plan attached to this report. The plan must have final approval from HM Coastguard Counter Pollution and Salvage Officer.
- 1.4. Members are asked to note the plan which has been prepared in line with national guidance.

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Date of report: 11 September 2026

[Broads Plan](#) strategic objectives: C4 - Maintain and improve safety and security standards and user behaviour on the waterways

Appendix 1 – Oil Spill Contingency Plan – UPDATED DRAFT

Oil Spill Contingency Plan – UPDATED DRAFT

Broads Navigation Area

August 2026

Version 5.3

Administration record

Issue	Modification	Approved
1	Formal Issue	Yes
2	Formal Issue 2006	Yes
2.1	Updated 2009	N/A
2.2	Updated 2010	N/A
3.0	Formal Issue 2011	Yes
3.1	Updated April 2015	N/A
3.2	Draft review document	17 July 2016
4.0	Formal Issue	20 November 2016
4.1	Updated December 2019	N/A
5.1	Draft review document	01 October 2021
5.2	Draft review document	21 December 2021
5.2	Formal Issue	31 st January 2022
5.3	Draft review of document	August 2026

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1. Introduction and Policy

1.1. Purpose of the Plan

This Oil Spill Contingency Plan is intended to guide Broads Authority personnel and those of other responsible organisations through the processes required to manage an oil spill into waters within the navigable parts of the Norfolk and Suffolk Broads rivers system (see Section 1.4) including Breydon Water, the lower reaches of the River Waveney and the lower reaches of the River Bure to a line across the River Yare at TG 51870781 and TG 51960786

This Oil Spill Contingency Plan does not apply to spillages occurring within waters which are under the navigational jurisdiction of the Great Yarmouth Port Authority. Spillages into those waters are dealt with under Great Yarmouth Port Authority's statutory Oil Spill Contingency Plan.

The statutory navigational jurisdiction of the Broads Authority extends to its 'Navigation Area' as defined by Norfolk and Suffolk Broads Act 1988. This includes the great majority of the main rivers and broads, but there are many side dykes, basins and some substantial areas of open water (e.g. Wroxham Broad) which are regarded as 'private water' outside the Authority's formal jurisdiction. Included in these 'private waters' are many boatyard and marina basins where boats are moored in large numbers and in which refueling and repairing operations take place and which are therefore at comparatively high risk of oil spillage. In such waters, whilst the Authority is the registration authority, the navigational byelaws do not extend to these waters. However, it is considered impractical to distinguish between these waters and the formal Navigation Area for the purposes of Oil Spill Contingency Planning. This Contingency Plan is intended to cover the formal public navigation and the adjoining 'private' dykes, basins and navigable waters.

1.2. Consultation

This Oil Spill Contingency Plan has been compiled in consultation with the following statutory bodies and authorities:

Environment Agency (EA)

Natural England (NE)

Marine Management Organisation (MMO)

Norfolk Resilience Forum

Great Yarmouth Port Company Ltd (GYPC) Peel Ports.

In addition, in view of the very high conservation value and importance of the Broads wetland ecosystem and the fact that much of the rivers system is contained within sites designated for their nature conservation importance (including designations as SSSI, SPA, SAC, Ramsar etc.) additional consultation has taken place with:

Royal Society for the Protection of Birds (RSPB)

Norfolk Wildlife Trust (NWT)

Suffolk Wildlife Trust (SWT)

National Trust (NT)

Water Management Alliance (WMA)

Essex and Suffolk Water (ESW)

East Suffolk Council

Suffolk County Council

The Broads are also an internationally important resource for boating recreation. Consultation has therefore taken place with:

British Marine Inland Association

Norfolk and Suffolk Boating Association

1.3. Habitat Regulations Assessment (HRA)

The Oil Spill Contingency Plan has been assessed in accordance with the EU Habitats Directive. The requirement to assess plans or projects is outlined in Article 6(3) and (4) of the European Communities (1992) Council Directive 92/43/EEC of the Conservation of Natural Habitats and of Wild Fauna and Flora (known as the 'Habitats Directive'), has been transposed into UK legislation by the [Conservation of Habitats and Species Regulations 2017 as amended](#). The Regulations are responsible for safeguarding designated European Sites and therefore protecting the habitats and species listed in the Annexes of the Directive.

The screening with Natural England has concluded that the Plan and respective actions contained would have no likely significant effect on the European sites within the Broads. As such, an assessment is not required.

1.4. Area of Application

This plan applies to the navigable sections of the Broads rivers and their navigable branches from their respective heads of navigation (listed below) to the boundary of the Broads Authority's jurisdiction with Great Yarmouth Port Authority:

River Bure: Horstead Lock to Bure Mouth Gt. Yarmouth.

River Ant: Dilham Staithe and Smallburgh Junction to Ant Mouth.

River Thurne: Hickling Staithe, Horsey Staithe, Waxham Bridge and West Somerton Staithe to Thurne Mouth.

River Yare: Trowse Mill to 100 metres downstream of Bure Mouth including Breydon Water.

River Wensum: New Mills Yard to Trowse Eye. River Chet: Loddon Basin to Chet Mouth.

River Waveney: Geldeston Lock to Turntide Jetty, Oulton Dyke and Oulton Broad.

The above waters comprise approximately 130 miles of tidal rivers and Broads.

1.5. Responsible Authority

The Broads Authority is pursuant to Norfolk and Suffolk Broads Act 1988 the Statutory Harbour and Navigation Authority for the waters to which this plan applies and is the authority responsible for compliance with the Merchant Shipping (Oil Pollution Preparedness, Response and Co-operation Convention) Regulations 1998.

1.6. Identification of the Roles and Responsibilities

Within the UK there is an adopted structure and procedure for response to marine oil spills, which clearly defines the roles and responsibilities of industry, UK Government (including environmental agencies) and local maritime authorities. Each statutory body has a designated area of jurisdiction within zones extending from the High Water mark to 200 nm or the UK Territorial Limit.

The competent national authority designated to oversee all matters pertaining to the OPRC convention under the Merchant Shipping Act 1995 and the Merchant Shipping and Maritime Security Act 1997 is the Maritime and Coastguard Agency (MCA).

1.6.1. Statutory Jurisdiction

Jurisdiction							
Authority	HWS	LW	1nm	3nm	6nm	12nm	200nm
Port s	All operations within Port limits						
Local A ¹		out of Port limits					
MC A							
	Oil spill response, monitoring, advice						
MCA (HMCG)							
	Search and Rescue						
NE/JNCC ²							
	Conservation of the natural heritage						
MMO ³							
	Marine environment and fisheries protection						
EA ⁴							
	Water quality						
HMR&C							
	Import duty						

Local Authority¹	Has a duty of care (under the CCA, 2004) to prepare and implement an oil spill contingency plan for response to oil spillage on the coastline from HWS to LWS including out of port limits.
NE / JNCC²	Natural England requires to be notified up to 12nm. JNCC's remit extends from 12nm to
MMO³	Approves dispersants and their use in shallow water and advise on their use in deeper waters – e.g. at least 1 nm beyond the 20 meter contours.
EA⁴	Requires to be notified on water quality issues up to 3nm.

1.7. Document Control and Plan Revision

This plan is a controlled document, with numbered copies.

The distribution of numbered copies is as shown at Appendix I. All document holders are assigned a specific numbered copy.

Any changes in the situation, changes to the plan or other updates will be issued as amendments to all holders of the plan within three months of such change.

The plan will be reviewed annually or in light of lessons learned from exercises and incidents. The plan will be revalidated every five years, which will be accomplished in

co-operation with statutory consultees.

1.8. Cooperative working with Environment Agency

There is a potential overlap of responsibility for dealing with oil spilled into inland rivers and waterways between the harbour or navigation authority and the Environment Agency. The Broads Authority co-operates with and works closely with the Environment Agency in the event of any reported pollution incident. Based on past experience in such circumstances the Broads Authority and Environment Agency have evolved a joint understanding as to which organisation will be principally responsible for:

- Investigating reported oil spills.
- Putting in hand containment and clean-up operations.
- Enforcing oil pollution legislation by prosecution.

The Broads Authority accepts principal responsibility if the source of the spillage is 'marine' in nature including:

- Pollution/spillage coming from a vessel under way.
- Pollution from a vessel by discharge of oily bilge or other oily discharge whether moored or underway.
- Pollution/spillage from a vessel sinking, damaged or on fire.
- Spillage from a vessel during refueling operations.

The Environment Agency will be principally responsible for dealing with incidents emanating from an 'on-shore' source including:

- Pollution/spillage from vehicles, plant or machinery on land.
- Pollution/spillage from boats on land (e.g. in boatyards)
- Pollution/spillage from on-shore oil storage tanks/oil storage facilities.

1.9. Joint responses with Norfolk Fire & Rescue Services (NFRS)

Norfolk Fire and Rescue Service (NFRS) forms part of the wider joint response arrangements for pollution incidents affecting the Broads. Where a spill involves unknown or potentially hazardous substances, NFRS may be able to assist with initial hazard assessment and identification of chemicals involved, supporting safe working decisions by responders. NFRS response vehicles may also carry equipment that can assist with immediate containment actions, including fast tanks and drain blockers, which may be used to help prevent pollutants entering drains, surface water systems or watercourses while the source is made safe and further response arrangements are put in place.

NFRS may also be able to deploy additional pollution response equipment if Broads Authority

resources are exhausted or are insufficient for the scale of the incident. This support is includes deployment of equipment on behalf of the Environment Agency, subject to incident requirements and availability.

1.10. Description of the Broads Navigation and Navigational Activity

The Norfolk and Suffolk Broads system comprises six principal rivers: Bure, Ant, Thurne, Yare, Chet and Waveney. These are all tidal rivers, which drain to the sea through the Port of Great Yarmouth. There are no barriers, locks or other structures to prevent inward surges from the sea or to retain or control fluvial waters. (There is a sea lock at Mutford Lock, Oulton Broad, but this is a branch of the River Waveney. The main river discharges to sea unimpeded through Breydon Water and Great Yarmouth harbour).

The total length of navigable tidal rivers is approximately 130 miles (200 km). The tidal regime is semi-diurnal, although rainfall, wind and barometric conditions exert strong influence so that at times the tidal pattern can be heavily disguised or distorted. The fluvial regime is mainly ebb-dominated: the ebb stream runs in most places an hour or more, longer than the flood and usually more strongly. Time of high and low water is later the further up river, so that for example HW at Reedham is 2½ hours after Gt. Yarmouth, Acle about 3½ hours after, Norwich and Wroxham 4½ hours after and Coltishall and Stalham 5 hours after.

Tidal range is greatest at and near Great Yarmouth with Spring Tide range approximately 2.20 metres. The tidal range decreases further up river. At Norwich the extreme spring range is approximately 1.50 metres. In the northern part of the system (Rivers Bure, Ant, Thurne) tidal ranges are smaller, a matter of a few inches and frequently distorted or masked by rainfall and meteorological conditions. Tidal streams likewise are strongest in the lower reaches: streams of up to 4 knots are common in the lower reaches of the River Yare and the narrow stretches of the River Bure in Gt. Yarmouth. In the middle reaches (above Reedham on the Yare, St. Olaves on the Waveney and Acle on the Bure) streams seldom exceed 2 knots.

The rivers connect a number of larger open water bodies or shallow lakes – the “broads”. In some cases (e.g. Barton Broad) the main river flows through the broad, but most broads are connected to the main river by a side dyke. 12 broads are connected to the rivers system and open for navigation. A number of others are connected but are not open for navigation and some broads are not connected to the rivers system at all.

River and channel widths vary from around 70 metres in the widest reaches of the River Yare down to about 15 metres in the narrowest parts of the River Chet and some navigable dykes. Some private dykes and basin entrances are narrower.

The banks and channel edges of the rivers and broads also vary widely. In the lower reaches the rivers flow mainly between man-made flood embankments, the marshes beyond being lower than the rivers with marsh water levels being maintained by pumping into the rivers.

The area between the flood embankment and the river edge is known as the rond. Rond widths vary. In the lower reaches, where salt-water inundation is more common the ronds are of a salt-marsh nature, frequently with an exposed muddy foreshore at low water, and subject to ongoing erosion. Where, through prolonged tidal scour, wave action and exposure to boat wash the rond has been eroded, often on the outside of river bends, so far that the flood embankment is threatened, commonly steel sheet piling has historically been installed to contain the river and protect the flood embankment.

Further up river reduced tidal range and less frequent saltwater inundation makes for traditional Norfolk reed ronds, often with 'reedswamp' fronting them. These ronds and their fringing reed are of particularly high conservation and landscape importance. In many areas, however, historical erosion and declining water quality has resulted in loss of emergent reedswamp and undermining of the rond edge which has prompted 'hard' engineering treatments of the channel edge, including steel sheet piling, timber sheet piling, alder pole piling and various experimental bank treatments including fascine mattresses, gabions and geo-textile applications.

Further upriver again, in the upper reaches of the navigable system, incursion of scrub and trees into the historically open reed marsh landscape has led to the river banks being heavily treed, with overhanging vegetation, exposed tree roots, heavy erosion between trees and much fallen vegetation. In villages and settlements, river edging is mainly of timber or steel sheet piling.

Broads Authority Management and Presence around the Broads System

The Broads Authority is the statutory harbour and navigation authority and is also a special statutory authority with powers very similar to those of a national park authority. Because the Broads area developed very early as a major holiday destination, particularly for self-drive boating holidays and continues to be busy and heavily used for this purpose, as well as private recreational boating, the Authority has traditionally maintained a high level of patrolling presence of both river and shore-based staff.

The Authority's team of twelve full time Rangers, five seasonal Rangers and an Assistant Ranger together with voluntary Rangers operate eight patrol launches based at Wroxham, Irstead, Ludham (2 launches), Burgh Castle, Burgh St. Peter, Hardley and Thorpe St. Andrew. The Rangers patrol the Broads seven days weekly during summer season according to defined attendance/service levels. Winter season patrolling is also carried out on a less frequent basis. The patrol launches are equipped with on-board supplies of oil sorbent pads, sorbent booms, disposal bags and personal protective equipment, so as to be able to immediately commence containment and removal of minor spillages.

The Authority also operates a maintenance team who undertake general river maintenance projects. The works teams operate from well-equipped workboats similarly provided with sorbent booms, pads, disposal bags and personal protective equipment. The Authority also maintains one trailer-borne Rigid Inflatable Boat for rapid/emergency response and a shallow draught and highly maneuverable weed cutter/litter collection barge, which is

suitable for application and recovery of containment booms and sorbent booms, sheets etc. or deployment of skimming equipment.

Broads Control and Communications

The Authority's vessels when patrolling or engaged in river works, and the Authority's field staff maintain permanent contact with the Broads Control base at the Dockyard, Thorpe. Broads Control has a dedicated private VHF channel (Channel 33) for contact with Authority staff/vessels. All field staff/Rangers also carry mobile phones. The Broads Control number is also widely distributed to private and hire boats and local businesses.

In combination, any sighting of spilled oil can be quickly and easily reported to the Authority and will be investigated, either by boat or by land/vehicle, as appropriate. Any reported spillage during working hours would receive attendance or investigation usually within one hour. Outside of working hours (evenings and overnight, when risk of oil spillage is comparatively low) the Authority operates a standby system. The Coastguard and Environment Agency have the contact number for the standby manager for emergency call-out at these times.

The Authority maintains stocks of oil sorbent pads, sorbent booms, inflatable containment boom, disposal equipment, personal protective equipment and associated damage control gear at its Dockyard base in Thorpe as well as response kits on all the patrol vessels. (for full details see Section 10, Resources Directory).

Boating Activity

The Broads system is very heavily used by recreational craft, including large numbers of self-drive hire craft which include motor cruisers up to 14m length. Each year the Broads Authority registers approximately 11,000 recreational vessels. Annual boat registrations for 2025 were:

Vessel type	Number of boat registrations
Hire Motor Craft	995
Private Motor Craft	7,419
Hire Sailing Craft	73
Private Sailing Craft	722
Hire Rowing Craft	376
Private Rowing Craft	1,516
Hire Houseboats	27
Private Houseboats	68

There are also approximately 6 MCA Certificated Passenger Vessels of length up to approximately 25 meters operating mainly from Wroxham, Horning and Oulton Broad.

Additionally, there are various dredging pontoons, mud wherries, and workboats used for maintenance of the system operated by the Broads Authority from their dockyard at Thorpe. There are a handful of workboats operated by local piling and maintenance contractors.

2. Risk Assessment – Spillage from Vessels

2.1. Risk Assessment: Spillage from Vessels

Spillage from vessels may take place in the following principal circumstances:

2.2. Spillage While Refueling

There are over 24 locations around the Broads where vessels can refuel (all diesel) by hose from an onshore storage tank via a conventional dispenser pump. These are located in boatyards and marinas principally in the main boating centers. Established boatyard refueling facilities are listed in Appendix 5.

In all such locations delivery is via a conventional vehicle forecourt type hose and nozzle with automatic backpressure shut-off.

Most owners of larger inboard powered boats will refuel from boatyard or marina pumps. The prices charged for fuel can however be very high and a minority of owners, particularly those at un-serviced and low-cost moorings of which there are many round the system, may bring fuel in cans. There is a significant risk of spillage by fueling from cans. However, the difficulty of handling fuel in cans means that the maximum size is 25 litres, and in the worst case of a full open can being lost overboard that is the most that is likely to be lost. Even these small amounts of diesel can spread an oily iridescent sheen over a large area of water. If held into a corner or confined area by wind or stream or containment, diesel may pool in a slick, which may be possible to remove by use of sorbents or skimming equipment.

There will be immediate local damage and soiling to river edge vegetation etc., and possibly oiling to waterfowl if they are for any reason trapped in dense oil, but it will not cause severe lasting damage to the eco-system or habitats. In many cases refueling by can will be for small engines which use very modest amounts of fuel and where the containers used may very likely be 5 or 10 litre cans.

Some sailing yachts and a minority of small motor cruisers have inboard petrol engines. There are very few locations where boats may take petrol from onshore delivery pumps. The majority of such refueling will be by cans. However, restrictions on storage and transporting of petrol and on the size of container which can be filled at petrol service stations means that most such refueling will also be from 5 litre or 10 litre cans. The risks of pollution by spillage are correspondingly reduced. More significant is the risk of fire or explosion whilst filling petrol tanks from cans.

A possible area of concern is the frequent refueling from cans of dayboat hire operations, where intensive use of a number of boats from a single base location may lead to repeated very small spillages which may combine in dykes or still waters to make a discernible slick.

Experience over the past decade has indicated that spillages from refueling have very seldom if ever approached the worst case 25 litre volume. Individual spillages are frequent but they are almost always much smaller: seldom more than 0.5 litre.

In previous years, a particular cause of spillage has been mistaken filling of the fuel tank with a freshwater hose, leading to fuel being displaced and overflowing into the river. This is usually the result of inexperience on the part of boat hirers, despite the fact that hire craft fillers are clearly marked. The oil spilled comes out diluted with large quantities of water, so that it tends to spread widely in a thin iridescent sheen. Improvements in labelling and information given during the handover seem to have helped reduce these instances more recently.

2.3. Spillages Resulting from Fire, Explosion or Navigational Incident

Sinking or flooding of boats within the Broads occurs from time to time. On average about five to six sinkings happen each year. This is usually as a result of vessels not being secured properly to the bank, with vessels becoming 'hung-up' then sinking. On occasion the sinking may be the result of an inexperienced helmsmen colliding with riverbanks or, very occasionally, because of failure of watertight integrity of the hull. Experience has shown in these circumstances that there will be initial light pollution from oily bilge water and contents of engine drip trays, followed sometimes by a slow discharge of oil from the fuel tank vent pipe if that is submerged. Such spillage is usually easily dealt with by sorbent booms and sheets, and vessels are ordinarily recovered promptly and before significant amounts of oil have entered the river.

The majority of hire craft have diesel fuel tanks of between 120 litres and 240 litres capacity. The Broads, especially the rivers Yare and lower Waveney, are however also used by significant numbers of larger modern seagoing motor yachts, based mainly at Brundall and Oulton Broad. The largest of these may have two diesel tanks each of around 900 litres capacity. Such tanks are always of steel construction and are not integral to the hulls of the vessels, so that risk of breaching of tanks, including in the event of collision is very small.

Oil spillage may also take place as a consequence of fire or explosion. Historical records in the Broads indicate a consistent pattern wherein annually two or three vessels are the subject of major fires, which result in their becoming a total loss. Experience has shown that boat fires, even particularly violent fires, give rise only to moderate local pollution, wherein a small amount of oil pollution is mixed with charred material and debris, and which can be managed by containment booming around the affected vessel and the use of absorbent booms and sheets, together with manual removal of debris. Very seldom is there a large-scale escape of fuel oil from the vessel's tanks, although if the burned vessel sinks there may be slow leakage via vent pipes etc., and the condition of the wreck may be such that recovery or removal may be delayed.

2.4. Spillages from the Port of Great Yarmouth

The most significant spillage of oil into the navigable Broads system in the past decade has been from a bunkering incident in the Great Yarmouth Port area with oil entering the Broads system on an incoming tide. This risk from bunkering is covered in the Peel Ports Port of East Anglia OPRC Oil Spill Contingency Plan, along with vessel collision in the River Port which could also impact on the Broads area as follows:

- Bunkering Failure in River Port - Hose rupture, coupling failure, tank overflow or communication breakdown during ship-to-shore bunkering results in marine gas oil entering the water
 - Product and spill volume - Marine Gas Oil (MGO)- 500 litres–3 tonnes
 - Impact - Localised MGO pollution with visible sheen, contamination of river, environmental impact, potential migration toward connected waterways, Impact to business reputation
 - Prevention measures - Specialised bunker contractors, Bunker checklist & approval process. Communications. Operations cease in poor weather conditions. Spill response equipment close to hand. Code of practice.
 - Response strategies - Tier 1 recovery using the Port's stockpile; containment booming, sorbents, monitor and evaluate. Mobilise Tier 2 contractor if deemed appropriate.
- Vessel collides with another vessel or grounds within the River Port due to restricted manoeuvring space, tidal influence, mechanical failure or navigational error.
 - Product and Spill volume - Marine Gas Oil (MGO) - 10–80 tonnes MGO
 - Impact - Moderate pollution risk within confined river channel, with potential contamination, banks, moorings, commercial berths, potential migration toward connected waterways. Major environmental impact, disruption to navigation. Business reputation, Toxic odour impacting residents.
 - Prevention measures - Compulsory Pilotage >40m, MSMS, Publication of Bathymetric survey data vessel manoeuvrability. Soft seabed. Availability of tugs. Guidelines in place. Aids to navigation
 - Response strategies - Tier 1 recovery using the Port's stockpile - Immediate escalation to Tier 2 or 3; boom deployment for containment; recovery by nominated Tier 2 contractor

Both of these risks have been assessed as 'acceptable' by Peel Ports with the mitigation measures in place. The amount of oil entering the Broads system from such a spill would depend on the tide and other weather influences as well as measures already taken by the Port to control and spill.

2.5. Spillage from significant land-based sources

The Broads Authority does not have statutory power to regulate onshore oil storage facilities, but the Environment Agency does have such powers. All non-domestic non-waste (and non-agricultural) oil tanks above 200 liters are required to have secondary containment to contain any spill, including valves, filler pipes etc. The Environment Agency is responsible for enforcing these regulations.

A specific risk for land-based pollution was raised by Greater Anglia in relation to the Crown Point Rail Depot. The depot, which holds diesel, engine oil and waste oil on site, is next to the river Wensum, with several drains leading from the site into the river. Following a desktop exercise by Greater Anglia involving their response to a spill on site, this risk was assessed as part of the Authority's Tier 2 exercise. An additional booming point has been added at Whitingham to address this risk. There are stringent measures already in place at the depot to contain any spilled oil, including bunds and spill kits. The amount entering the watercourse would be small and in exceptional circumstances, such as flood conditions.

2.6. Summary of Risk Assessment

Very small spillages of less than 1.00 liters of oil or oil in water are frequent. Where these are isolated, wind or tidal streams usually disperse the oil such that containment or removal is not practicable. Prevention by education, good housekeeping and appropriate regulations is more relevant.

There is a comparatively high risk of spillage of up to about 25 litres of oil associated with refueling from cans.

There is a very much smaller risk of spillage of up to about 2,000 litres of oil in the event of a serious navigational incident to a large private motor yacht. Although historically no such large spillage has occurred, it remains a possibility and an adequate response procedure is required.

The risk of larger amounts of Marine Gas Oil entering the Broads system from the Port of Great Yarmouth has been assessed by Peel Ports to be 'extremely unlikely' with the existing control measures in place.

2.7. Tiered Response Strategy

The MCA Oil Spill Contingency Plan Guidelines require that the internationally recognised three-tier oil spill classification system form the basis of the response strategy.

Tier One:

Small operational spills that can be dealt with immediately utilising local resources. A Tier One spill is not likely to require resources held outside the area or mobilisation of external incident response arrangements (except for purposes of notification).

Tier Two:

Medium sized spills, which will be handled by Broads Authority personnel and nominated oil

spill response contractor or other external assistance and resources as detailed in this plan. The Authority has in place contracted Tier Two response cover with Ambipar Response Ltd.

Tier Three:

Larger spills or serious failure of containment which will require full involvement of other authorities and possible mobilisation of national stockpiles and resources. It is considered extremely unlikely that spillage from pleasure vessels or boatyards in the Broads could ever approach a Tier Three incident.

For the purpose of this OSCP the oil spill tiers are defined as:

Tier One: Up to 200 litres diesel/marine gas oil.

Tier Two: Up to 10,000 litres diesel/marine gas oil.

Tier Three: In excess of 10,000 litres diesel/marine gas oil.

2.8. Minor Spillages/De Minimis Provision

There will be a certain de minimis level of spillage, referring to the frequent very minor spillages which occur around the system, which cannot practicably prompt the mobilisation of this Oil Spill Contingency Plan. Given the ability of a small volume of oil to spread a visible iridescent sheen over a very large area of water it is always very difficult to judge the quantity of oil or oily water which has entered the river, dyke or basin. Also, the location and circumstances of the spillage greatly affect the visibility of the spill, the practicability of containment and removal, the likely speed of natural dispersion and biodegradation and the potential environmental consequences. However, it is concluded that any spill estimated to be of less than 5.00 litres of oil should be regarded as being too small to justify mobilization of this Oil Spill Contingency Plan.

For the avoidance of doubt: a spill of 5.00 litres or less may well be visible and capable of containment and removal. In those circumstances the practice is, and will continue to be, that Broads Authority staff (especially Rangers and Operations Maintenance Teams) will notify the spillage in accordance with this plan but will proceed promptly to deal with it, using the sorbent booms and pads carried on Authority vessels and back-up supplies (including containment boom) kept at the Authority's Dockyard.

2.7. Summary of hazards, risks and controls

Hazards and confounding factors	Main risks	Controls	Comments
Oil or fuel entering tidal rivers and broads	Pollution spread by tide, current and wind; contamination of water, banks, ronds and sensitive habitats.	Early reporting, containment at source where safe, use of booms and absorbents, and coordination with	The tidal nature of the Broads means oil can move quickly and may be difficult to recover once dispersed.

		statutory partners.	
Spills from vessels	Bilge discharge, refuelling incidents, vessel damage, sinking or fire leading to oil release.	Broads Authority response arrangements, investigation, containment and clean-up, with escalation where required.	Marine-source incidents are treated as a principal responsibility for the Authority within its navigation area.
Incident in Great Yarmouth port area, including bunkering incident or holed vessel	As above but likely on a larger scale.	Notification required from Peel Ports, tested in exercises.	Impacts will be tide and weather dependent. Joint response required from Port and Authority if oil enters Broads area.
On-shore pollution sources	Run-off or discharge from vehicles, plant, boatyards, storage tanks or oil facilities entering watercourses.	Environment Agency lead role where appropriate, joint working, drain protection and source control.	Land-based spills may still affect the navigation area and require close cooperation between responders.
Strong tidal streams and variable water levels	Rapid movement of pollutant, difficult boom deployment, changing access and recovery conditions.	Use local tidal knowledge, select suitable containment locations, and adapt deployment to water level and flow.	Lower reaches can experience stronger streams, while rainfall and weather may distort normal tidal patterns.
Narrow dykes, basins and private waters	Restricted access, concentrated pollution, high boat density and increased risk during refuelling or repair activity.	Include adjoining navigable waters in planning, prioritise access routes and use small-scale containment or absorbent equipment.	Although formal jurisdiction may vary, the plan treats these areas as relevant for practical contingency planning.
Sensitive banks, ronds, reedbeds and wetlands	Damage to habitats, difficult clean-up, disturbance to protected sites and long-term contamination.	Minimise intrusive clean-up, seek environmental advice, prioritise protection of sensitive locations and avoid unnecessary bank disturbance.	Reed ronds, broads and wetland margins are environmentally important and may be more vulnerable than hard-edged banks.

3. Environmental and Economic Impacts

3.1. Nature Conservation Designations

The Broads area is of extremely high international importance for nature conservation and hosts a very wide range of habitats and species many of which are protected under European law. This is reflected in the large number of designated nature conservation sites, which either form part of (such as Barton, Hickling Broads and Heigham Sound) or are adjacent or close to the navigable waterways (such as Martham, Cockshoot Broads as well as the fen, reedbed and grazing marsh).

In consultation with Natural England it has been concluded that the sites principally at risk in the event of an oil spill are those which are waterways or fen or reedbed in direct connection to the waterways and are 'undefended', that is not protected from inundation by flood embankments. 'Defended' sites, being those protected by flood embankments, would only generally be at risk if a serious oil spill coincided with a severe storm surge which involved widespread overtopping or breaching of the flood embankments, which would be an extremely unlikely event. However, there are several river water intakes that supply freshwater to designated wetlands, such as the Stracey intake on the Bure and South Fen intake on the Ant for example. Should these intakes be supplying water to these wetlands at the time of an oil spill these 'defended sites' would also be at risk of environmental degradation.

Natural England has identified the following designated sites as being potentially at risk from an oil spillage within the Broads Navigation system:

SSSIs:

Broad Fen, Dilham

Ant Broads and Marshes

Upper Thurne Broads and Marshes Bure Broads and Marshes

Burgh Common and Muckfleet Marshes Trinity Broads

Cantley Marshes

Yare Broads and Marshes Hardley Flood

Stanley and Alder Carrs

Sprat's Water and Marshes, Carlton Colville SSSI

Halvergate Marshes SSSI (directly the ronds only, indirectly the whole SSSI through the IDB intake))

All of the above SSSIs are components of the following European Sites:

The Broads SAC

Broadland SPA

Broadland Ramsar

Part of Breydon Water is also designated as a Local Nature Reserve by Great Yarmouth Borough Council:

Breydon Water SSSI

Breydon Water Ramsar

Breydon Water SPA

Maps and Citations for all of the above designated sites are at Appendix 4.

3.2. General Strategy

On every occasion when an oil spill affects or is likely to affect a designated conservation site or nature reserve Natural England and the organisation/land manager responsible for management of the site or reserve will be contacted and kept fully informed of the extent of the spill, of the consequences as they become apparent and of progress and proposed methods for dealing with the spill.

3.3. Environment Group

In the event of a more serious spill of Tier Two volume (over approximately 200 litres of oil spilled), whether or not the spill is directly threatening any designated conservation site, reserve or equivalent conservation interest to a SSSI 'sites of high conservation value', an immediate step would be to establish an Environment Group, the purpose of which would be to guide the Broads Authority and its appointed Tier Two response contractors through the process of oil recovery and clean-up with minimum immediate or prospective harm to the natural environment, wildlife and ecology.

The Environment Group would consist of officers of the Broads Authority (BA are SEG members but not core members so will be called upon when required), East of England Environment Group, Environment Agency, Public Health, and non-governmental conservation organisations whose property or interest might be threatened. The East of England Environment Group have already produced a Marine Pollution Contingency Plan which covers the area from Gibraltar Point to Kessingland. This included MMO, Environment Agency, Natural England, the Norfolk Wildlife Trust, Norfolk County Council, Royal Society for the Protection of Birds, Health Protection Agency, and the Maritime Coastguard Agency. This is a group ready set up in case of a spill.

3.4. Principal Strategy for Response, Containment and Clean-up

The area of operation of this plan is extremely large, with a very wide range of natural conditions and circumstances which may be encountered. It is not possible in this plan to

describe in detail the intended response and actions to be taken in particular scenarios or circumstances. However, it is possible to set down certain principles that should govern the actions taken in response to spills which might affect areas of high conservation value and designated areas.

- a) The aim will be to contain and limit the spread of oil with priority on preventing oil or its effects spreading into areas of high conservation value/designated areas.
- b) Booming and containment sites will, so far as is practicable, be chosen to give effect to this priority (see Appendix 6).
- c) Particular attention will be given to preventing oil from reaching locations where river water is abstracted for maintaining appropriate water levels in marsh dykes, or other conservation management purposes. If it is not possible to keep oil away from water abstraction pumps etc., steps will be promptly taken to ensure that abstraction is suspended while the threat of oil pollution remains. Priority will also be given to excluding oil from dykes which run into designated areas, nature reserves or other areas of conservation significance, especially where no water control structure exists. (examples being dykes connecting to the Reedham Marshes are of How Hill, Hoveton Great Broad to the main river, dykes draining into the north side of Ranworth and Malthouse Broads, the Dykes system around White Slea on Hickling and many other similar locations).
- d) The aim will be to remove as much as is possible of the oil from the environment by use of skimming equipment and absorbents. Use of chemical treatments or dispersants will not be appropriate.
- e) Removal of spilled oil will be undertaken by means which cause minimum damage to the natural environment. In particular, damage to ronds, reedbeds and reed fringes will be avoided. Access for oil recovery will be limited to locations which will minimise damage to the environment and to habitats. Emphasis will be placed on recovery of oil by vessels.
- f) Where removal of spilled oil would cause damage to the natural environment it may be preferable to allow it to degrade naturally. The Authority's response in such circumstances will be undertaken in consultation with the Environment Agency and relevant conservation organisations, having regard also to the effects of spilled oil and removal/clean-up operations on amenity, recreation and navigation.

The conduct and management of the clean-up and oil removal operation and the storage and disposal of oil removed will be undertaken in accordance with best practice and the terms of licences, conditions and directions issued by the Environment Agency.

4. Response in the Event of Oil Spill

4.1. Responsibility and Incident Control Arrangements

The response team will be led by the Navigation Officer or in their absence by the Head of Safety Management or Head of Operations and may involve the Operations team managers and Senior Rangers.

A Marine Response Centre will be established at the Broads Authority's Dockyard Office, Griffin Lane, Thorpe St Andrew, Norwich. For spills in the Great Yarmouth area a local base may be established at Great Yarmouth Yacht Station (summer only) or with Peel Ports as a joint control room (when appropriate).

The Navigation Officer (Head of Ranger Services), or in their absence the Head of Safety Management or Head of Operations, will act as Incident Controller/On Scene Commander.

Broads Authority Rangers will be involved as clean-up operators.

4.2. Environment Group

In the event of a more serious spill of Tier Two proportions (more than 200 litres of oil spilled) an Environment Group would be formed (see Section 3.3)

4.3. Dispersant Use

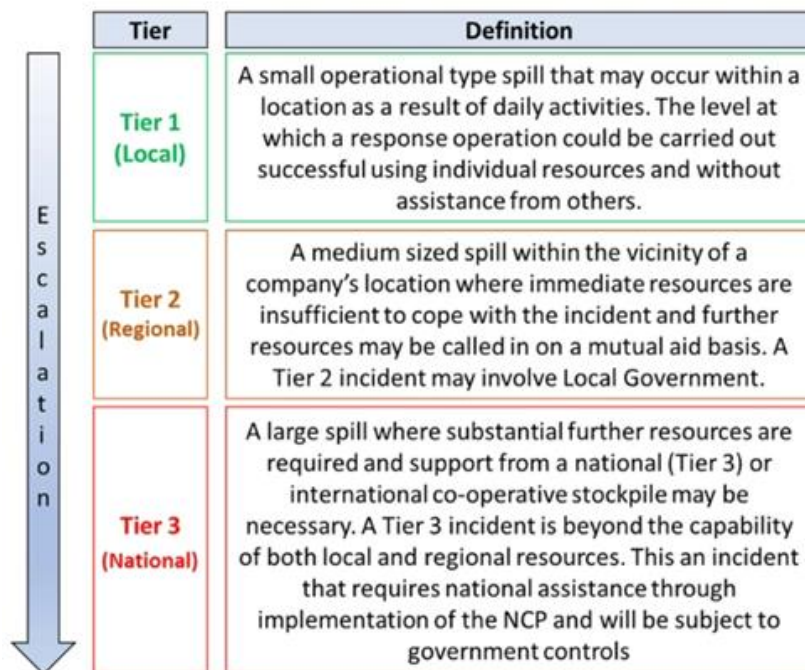
After due consultation dispersant would be used within the area covered by this plan only in circumstances when its use would be essential to avoid genuine risk to human health or safety. It would not be the Broads Authority's policy to allow the use of dispersant unless a genuine risk requiring its use could be established. Approval from MMO would be sought before applying dispersants unless urgent application were needed to avoid risk to public health or safety.

Under the terms of the Marine and Coastal Act 2009 and the Marine Licensing (Exempted Activities) Order 2011, it is a legal requirement that oil treatment products may only be used in English or Welsh waters if they have been formally approved for this purpose by MMO, in addition, specific permission from MMO must be obtained before any such products are used in shallow waters – these are defined as any area of the sea which is less than 20 meters deep, or within one nautical mile of such an area. This includes any use in tidal estuaries and rivers such as the Broads system.

4.4. Interface with other Contingency/Emergency Plans

This plan will be used in conjunction with Peel Ports, Port of East Anglia OSCP, Great Yarmouth Borough Council's OSCP, Environment Agency's Incident Plan, Norfolk Resilience Forum Coastal Pollution Plan, Suffolk Resilience Forum (SRF) Marine Plan and the East of England Environment Group which has been set up and would offer advice on a Tier 2 or 3 incident.

4.4.1 Oil Spill Tiered response



Tier	Definition
Tier 1 (Local)	A small operational type spill that may occur within a location as a result of daily activities. The level at which a response operation could be carried out successfully using individual resources and without assistance from others.
Tier 2 (Regional)	A medium sized spill within the vicinity of a company's location where immediate resources are insufficient to cope with the incident and further resources may be called in on a mutual aid basis. A Tier 2 incident may involve Local Government.
Tier 3 (National)	A large spill where substantial further resources are required and support from a national (Tier 3) or international co-operative stockpile may be necessary. A Tier 3 incident is beyond the capability of both local and regional resources. This is an incident that requires national assistance through implementation of the NCP and will be subject to government controls

4.5. Internal Alerting and Call-out Procedures

An initial spill report will come, in the first instance, to the Broads Authority Office. There is a possibility that reports could come from members of the public or boatyard staff, Environment Agency, Norfolk County Council offices, Suffolk County Council; East Suffolk Council or the Police. The information received must be passed immediately to the Head of Rangers Services, or in their absence, to the Head of Safety Management or Head of Operations. Police and HM Coastguard are provided with an out-of-hour phone number for the standby manager who can call the above staff. The lead officer will do their best to confirm the incident details and determine the level of clean-up operation necessary and the requirements as to whether to activate the Broads Authority Response Team. All calls and decisions made must be recorded, and an Oil Spill report form raised.

4.6. Communications and Reporting

Reporting of Oil Pollution

It is essential that all spills are reported by whatever means as quickly as possible.

- Responsibility for reporting of oil pollution rests with the Master in all cases involving a vessel and with the berth operator in the case of a berth or quayside incident. In cases involving a vessel alongside both parties are equally responsible.
- Any person either ashore or afloat, seeing oil pollution on the water within the Broad Authority's jurisdiction or liable to pose a threat to it, should report it whether or not the source is known.
- The Navigation Officer is responsible for ensuring statutory notifications are made.

Communications

Initially reports will be passed by telephone both landline and mobile (consideration should be given when using mobiles for security reasons). Broads Authority maintains VHF sets which would be issued to supervisors once a clean-up strategy had been established.

In the event of a clean-up operation a shift system will be instituted to ensure the office is manned on a 24-hour basis.

Records

It is essential that all events occurring during an incident are logged and recorded (sheet shown in Appendix 3). This will provide assistance if liability, compensation or reimbursement issues arise as a result of the incident. To achieve this, all key personnel must keep logs. Entries in the log should detail as a minimum, events, actions taken, communications with outside agencies, decisions made and points relevant to the operations.

These logs should be forwarded to the Navigation Officer once the incident has ended to form part of the final incident report and provide the basis for a 'wash-up' meeting.

4.7. Notification Matrix

Organisations to contact once notified of incident:

Role/Organisation	Action	Contact Details and Additional Information	Tier Level
HM Coastguard /MCA	Phone Email	Humber MRCC POLREP Email: zone10@hmcg.gov.uk	1-3
Environment Agency	Phone Email	0800 80 70 60 ics@environment-agency.gov.uk	1-3
Marine Management Organisation	Email	Email: dispersants@marinemanagement.org.uk	1-3
Natural England	Email	Email: marineincidents@naturalengland.org.uk	1-3

Organisations to contact as required:

Role/Organisation	Action	Contact Details and Additional Information	Tier Level
Eastern IFCA	Phone Email	01553 775321 mail@eastern-ifca.gov.uk	1-3
Ambipar	Phone	Emergency Line 0120 265355	1-3
County and District Councils	Phone Email	As per contact page	1-3
Peel Ports Great Yarmouth	Phone	24 Emergency Tel: 01493 335511 Email: gyharbouroffice@peelports.com	

4.8. Liaison Procedures with Other Agencies

Rapid passing of information to other affected agencies is essential for effective response.

Below are agencies concerned and their roles:

Department for Transport, MCA / CG

Co-ordinate maritime search & rescue

Primary contact in event of spill

Classification, categorisation & monitoring

UK Government response

Authority to co-ordinate response in accordance with the NCP

Responsible for mobilising government equipment for offshore & onshore clean up

Activate the Environment Group, establish MRCC if required

Environment Agency

Responsible for water quality in river & estuarine areas up to 3nm offshore

Waste disposal including oiled clean up materials regulations

Regulations for waste disposal, including contaminated clean up material

Natural England

Nature conservation including designated sites and features

Environmental appropriateness of proposed response actions

Monitoring environmental effectiveness of response actions

Marine Management Organisation

Responsible for the protection of the UK fisheries interests and marine environment

Authority for the approval and use of oil dispersants within English waters

Local Authorities

Coordinate local response for oil spill clean-up operations

HM Customs and Excise

Water Guard Department responsible for claiming Petroleum Revenue Tax from landed recovered oil

UK Petroleum Industry Association

Consultation & Technical information services

4.9. Partner Notification and Liaison

Partner	Notify / liaise when	Route	Purpose
Environment Agency (EA)	On-shore source Pollution entering watercourses	Agreed pollution reporting route Plan appendices /	Confirm lead role Coordinate response

	EA advice needed	contacts	Seek regulatory advice
Natural England (NE)	Designated habitats at risk Protected species affected SSSI / SPA / SAC / Ramsar sites	Environmental liaison route Usually via BA / EA coordination	Ecological advice Clean-up constraints Avoid further damage
MCA / HM Coastguard	Marine pollution report needed Vessel incident Escalation beyond local response	CG77 process Coastguard reporting route	Statutory notification Support escalation Maintain incident record
Great Yarmouth Port Company / Port Authority	Pollution within or near port waters Boundary / interface incident	Agreed port liaison contacts Plan notification routes	Confirm jurisdiction Coordinate containment Share vessel / tide information
Norfolk Fire and Rescue Service (NFRS)	Fire, rescue or explosion risk Unknown chemicals Drain blockers, fast tanks or extra kit needed	999 for emergencies Confirm control-room route for kit requests	Responder safety Chemical identification Deploy containment kit
Norfolk Resilience Forum / resilience partners	Major or multi-agency incident Public safety issue Wider community impact	Local resilience routes Emergency planning contacts	Multi-agency coordination Public information Welfare / infrastructure support
Local authorities, conservation bodies and land / water managers	Access or landowner input needed Habitat sensitivity Waste or public facility issue	Distribution list Local contacts Incident management structure	Secure access Coordinate site protection Support recovery

4.10. Operational Response

The operational response in the event of an oil spill incident will depend on a large number of factors:

- i. The seriousness of the spill: Tier One, Two or Three.
- ii. Location of the spill.
- iii. Wind, tide and natural conditions.
- iv. Whether there is risk to life or health of persons.
- v. Whether there is risk of pollution to nature conservation sites, nature reserves or important habitats.

- vi. The level of risk to creatures (especially birds/waterfowl and fish).
- vii. Whether there is risk of serious landscape damage or damage to property.
- viii. Whether there is risk to convenience or amenity of persons (including navigational convenience or amenity).
- ix. The type, extent and thickness of spilled oil.
- x. Whether containment and removal are possible.
- xi. Whether access is possible for oil recovery (from land or boat).
- xii. Practicality of temporary storage and onward licensed disposal.
- xiii. Whether wind or tide has caused or will cause the spillage to disperse or spread widely.
- xiv. Whether attempted containment/recovery will cause further environmental damage
- xv. Whether and how quickly the spilled oil will disperse or biodegrade through action of wind, tide, oxidisation or, as appropriate, agitation.
- xvi. Particular weather or environmental conditions e.g. ice cover, very strong winds, extremes of heat or cold, surge conditions or very high fluvial flows etc.

With such a large range of potential factors and having regard to the very wide range of conditions and circumstances to be encountered throughout the Broads system it is not possible to prescribe in this plan a detailed operational response for every particular hypothetical spillage incident in any particular location.

It is possible however to plan for such events and to set out a range of operational response actions and the principles according to which they would be applied:

Oil Dispersants

It is not the Authority's policy to use oil dispersants.

Containment Booming

Where it is possible to contain spilled oil with prospect of being able to recover a significant part of the spillage the Authority will endeavour to do so.

Whether it is practicable or worthwhile to contain spilled oil depends on many factors including tidal streams and weather conditions, tidal rise and fall, the width of the waterway, accessibility and working space for assembling and deployment of booms and for recovery of oil, availability of relatively still water areas for deflection, containment and removal of oil, ability to secure and seal containment booms to banks, availability of space for temporary holding/storage tanks and effects on other persons including delays or closures to navigation.

Oil booming may be worthwhile in locations where recovery cannot practicably be achieved; to prevent or deflect oil from entering nature conservation designated areas, nature reserves, water abstraction points etc.

In very many instances, especially where relatively small amounts of oil have been spilled into the main river, tidal streams may have dispersed oil by the time the spill is investigated so that containment is no longer practicable and the oil may be lying so thinly on the water over so large an area that recovery using absorbents is not practicable or worthwhile. This widely dispersed but thin skim of oil usually manifests itself as the typical multi-coloured iridescent sheen, which is very obvious to the observer. Oil of this thickness will disperse and biodegrade by natural action, especially in warm and bright conditions and may be assisted in doing so by wind and wave action, or by artificial agitation by boat wash etc.

If the spillage is into a boatyard basin or side dyke it may not so quickly disperse by wind or tidal action. In these conditions it may, if it is disturbed and becomes mixed with water, take on a milky or opaque appearance (especially if it is lubricating or hydraulic transmission oil). Although this is less obvious than the coloured sheen, it may indicate a higher concentration or thickness and correspondingly greater prospect of containing and recovering significant amounts of oil. Likewise, spillages of diesel or marine gas oil into an undisturbed basin or still water dyke may result in the oil building up to considerable thickness on the water surface. In these circumstances it may be possible to install effective containment booms at the mouth of the basin or dyke to prevent the oil dispersing out into the main river (perhaps on turn of tide or change of wind), and also to prevent boats entering the oil with the effect of firstly breaking up the thick and hence easily removable oil, and secondly spreading oil by it attaching to their hulls.

In circumstances where oil has accumulated to considerable thickness removal by disc skimmer or oleophilic mop will be particularly effective.

Therefore, the Authority will install containment booms especially across the entrances of boatyard and marina basins and side dykes where that will operate to contain oil for removal and prevent spread of oil out into the rivers system.

While there are hundreds of side basins and small dykes where containment booming might become appropriate, there are a number of locations where frequency or intensity of boatyard and re-fueling activity suggests that preparation for emergency booming should be a priority (for example Hobro's Dyke, Brundall or Daisy Broad, Wroxham). Such locations are listed in Appendix 7.

Management of River Traffic

The Broads rivers are very heavily used by large numbers of recreational craft, both hire and private. Boat traffic census information indicates in excess of 1,000 boat movements per day (0900 to 1800) at busy locations in the northern part of the system in summer. Of these movements about 80% are self-drive hire craft of different kinds. Sustained delay or interruption to boating traffic on the main rivers can have severe operational and commercial consequences for boat hire operators and is therefore not to be undertaken lightly. Closures of the main rivers to navigation for dredging or river maintenance work usually takes place only out of season and after publication of Notices to Mariners, and is usually limited to overnight or very short period closures. However, the Authority has the powers to close the river to navigation in the event of emergency and those powers would be used in the event of a major oil spill, especially where:

- There might be risk to health or safety from continued boat traffic through the affected area.
- Cross-river containment booming was required to prevent a major spill entering or affecting a designated nature conservation area, nature reserve or important habitat.
- Cross-river containment booming was required to prevent a major spill entering or affecting a village or urban area where there was serious threat to the amenity of riverside residences or properties.
- Passage of vessels through the affected area might exacerbate the effects of the oil spillage (e.g. by effects of boat wash) or might hinder or delay clean-up operations.

It should be noted however that the Authority has no means of communicating directly with the majority of boats circulating in the system and that emergency closure of any section of the system can only be achieved by direct communication to vessels from the Authority's patrol launches. Closure for periods of more than a few hours can be communicated by social media email to boatyards and marinas (the Authority maintains an up to date contact list) and by direct leafleting of craft at moorings, especially those near the closed section.

It should be further noted that in the frequent case of small spillages of oil which have become well dispersed so as to be beyond practicable containment, the passage of vessels with attendant wash and agitation may be beneficial in promoting break up, dispersion and biodegradation of spilled oil.

Potential Temporary Waste Oil Storage Sites

There are a great many possibilities for siting temporary waste oil holding tanks, including over one hundred boatyard sites (subject to owners' permission) which all have good road access.

The Broads Authority also owns/operates over sixty public mooring areas, although not all these have road access.

There are also a large number of Riverside Pubs with good road access where, subject to permission of the proprietors, temporary oil storage tanks could be established in car parks etc.

Temporary waste oil holding tanks would need an exemption from the Environmental Permitting regulations. Any waste oil can be stored at the place it is produced under a non-waste framework directive (NWFD) 2 exemption which doesn't need to be registered.

4.11. Information to be obtained as initial Spill Report

Date: Time:

Name of person reporting incident:

Job title:

Details of company/organisation or address:

Call back number:

Location of incident:

Estimated quantity of spilled oil litres/tonnes

Type of oil spilled:

Action taken to prevent further spillage:

Other relevant information:

4.12. Action Sheet

In the event of a call out requirement, the following action sheets should be used as a check list to ensure proper cover of all aspects of response.

Navigation Officer (or deputy)

No.	Action	Refer to
1.	Obtain all available information. Ensure that an Incident Log has been started and POLREP Report Form filled in.	
2.	Determine initial level of manpower and equipment resource mobilisation required.	Tiered Response and Section 10
3.	Establish communication with all concerned parties and ensure that statutory reporting requirements have been carried out.	Statutory Notification Section 4.6 and 4.7
4.	Determine level of response that has been initiated and inform MCA, EA and NE of intended response. Determine level of response required from duty personnel.	Tiered Resources
5.	Contact/Call out Response Team personnel as appropriate.	Mobilisation Procedure
6.	Ensure that a sample of spilt oil is taken in accordance with the Police and Criminal Evidence Act, especially when the origin of the spill is unknown or legal proceedings are liable to be taken. This will ensure that it could be used in a court of law if required (e.g. continuity of evidence)	MCA's STOP Notice 4/2001

Tier 1 Spill Response

No.	Action	Refer to
7.	Call out additional personnel as required to handle spill notifications.	Statutory Notification Section 4.6
8.	Monitor situation. Obtain regular briefings from Clean-up Supervisor on progress of clean up.	

No.	Action	Refer to
9.	Determine likely impact of incident. Consider deployment of booms to shut off waterways. Complete and log a full report.	
10.	If it appears that the spill has escalated, proceed for Tier 2 incident.	

Tier 2 Incident

No	Action	Refer to
11.	Contact Response Contractor and agree primary level of response required.	Section 9
12.	Start and maintain an accurate log of all communications with contractor.	
13.	Establish communication link with the contractor's Response Manager and issue a call back number.	
14.	Determine extent of incident in terms of: - any casualties; - any safety hazard; - damage to facilities; - extent of pollution; - results of any actions taken so far.	
15.	Brief Response Supervisor of actions as appropriate.	
16.	Establish review/planning meetings. Continue normal communications and ad hoc briefings.	
17.	When incident stood down confirm incident closure with all agencies involved.	
18.	Complete incident log and ensure receipt of report from response supervisor.	

4.13. Escalation of Response

In the event that a response escalates to Tier 2 level, sufficient office-based personnel must be mobilised to establish a Marine Response Centre. A room must be made available to meet with personnel from external agencies.

The Navigation Officer will retain the position of on-Scene Commander unless any change is agreed with the Government Agencies involved.

If the response is likely to become protracted, the Navigation Officer must make arrangements for the Marine Response Centre to be managed and run according to the needs of the response team. This may entail providing catering and accommodation arrangements locally.

In the event that outside contractors are employed to assist with the clean-up, due notice must be taken of the Health and Safety Policy contained in Section 7 of this plan.

4.14. Broads Authority, Chief Executive

The Chief Executive should be ready to assist if deemed necessary by the Navigation Officer and must be in a position to make corporate decisions regarding media reporting, liaising with underwriters and agreeing contracts.

Chief Executive

No.	Action	Refer To
1.	Obtain briefing from Navigation Officer with situation report and then relocate to Head Office if required.	
2.	Assess incident in terms of: • people; • environment; • damage to facilities • disruption to business.	
3.	Approve outline response strategy.	Response Strategy
4.	Approve immediate and future contracted equipment requirements.	Tiered Resources Section 10
5.	Arrange initial public relations programme.	Utilise advice and pro-forma statement Section 8.3

No.	Action	Refer To
6.	Attend review meetings in Marine Response Centre.	

5. Waste Disposal Operations

5.1. Relevant Legislation

The safe handling and disposal of recovered oil is governed by relevant sections in the following legislation:

- a) Environmental Permitting Regulations 2016
- b) Hazardous Waste Regulations 2005

If oily waste material is produced as a result of a pollution incident then the polluting party (operator) has a duty of care to ensure that the waste is handled, transported and ultimately disposed of in an appropriate manner. If the material is to be handled by contractors then the operator (to reduce liabilities to a minimum) has to ensure that each contractor has the relevant waste transportation and disposal licenses.

Natural England should be consulted on any proposal to dispose of or store waste material to ensure that sensitive wildlife areas and designated/protected sites are not affected. The Environment Agency must also be consulted to ensure any storage of waste does not cause risk to the Environment and is within the Environmental Permitting requirements— see section 4.9.4.

It is vitally important that the waste streams are kept separate, rather than being mixed together to enable the waste to be recycled or reused effectively.

In addition, HMRC must be notified if recovered oil is brought ashore by dedicated oil recovery vessels. Landing should not be hindered by the absence of an official from HMRC; however, the Operator should maintain a careful log on quantity and nature of the recovered oil.

The options for waste disposal or treatment of material, be it oily liquids or oiled solids are:

- a) temporary store, clean, stabilise and then recover or re-use;
- b) temporary store and then take to appropriate disposal site for burial;
- c) take to a refinery/incinerator (mainly for oily liquids only);
- d) take to appropriate disposal site.

Each disposal option will be examined in turn with various points for consideration highlighted.

(a) Temporary Storage/Clean, Treat, Stabilise, Recover, Re-use

This option aims to store temporarily the material and then, slowly over the ensuing period, to clean it or stabilise it and then to recover or reuse it.

In most cases this is the best environmental option. It avoids the risk of changing what was

a marine oil pollution problem into an inland surface pollution problem or groundwater pollution problem.

From temporary storage the contaminated material can be stabilised with cement, lime, clay, organic binders, asphalt and composting. The characteristic of each product needs to be considered when determining the ultimate disposal route or any perceived end use. It is important to note that the treatment of wastes also comes under the waste management licensing system. Therefore, any strategy to deal with the waste in this manner can only be developed through close liaison with the local authority concerned and the Environment Agency.

(b) Temporary Storage

The reasons for constructing a temporary storage site are as follows:

1. There is no immediate disposal outlet for large quantities of oil/sand mixture or for oil/water mixtures and clean-up cannot be allowed or stopped.
2. The equipment used to clean beaches is usually labour intensive and therefore requires an immediate transfer area adjacent to the site to be provided.
3. The nature of the roads precludes high traffic densities.
4. The in-situ treatment of contaminated material is often preferable to removing large quantities of material from the shoreline.

Under the Environmental Permitting Regulations 2016, any waste oil can be stored at the place it was produced under a non-waste framework Directive (NWFD) 2 Exemption which does not need to be registered. <https://www.gov.uk/guidance/waste-exemption-nwfd-2-temporary-storage-at-the-place-of-production--2>.

Each site will have to be constructed in a specific manner. It is therefore essential that the construction of temporary storage sites be done through close liaison with the local authority concerned and the Environment Agency.

(c) Take to a Refinery/Incinerator (mainly for oily liquids only)

This material should be removed from site by a licensed waste handling company who will then arrange for its disposal in an appropriate manner. If there is suitable access, oily liquids produced from a shoreline clean-up operation can be removed from site by road tanker.

If the oily liquids are on-board a dedicated recovery vessel following an at sea containment and recovery operation then it can be transferred across the quay, at a suitable berth, to a road tanker or other suitable waste reception facility. Alternatively, this waste can be fed directly into the reception facility at a marine terminal of an oil refinery. It is the responsibility of the ship's Master to ensure that this waste is disposed of appropriately. However, the Broads Authority must confirm that any contractors have the necessary

licences and permits to handle and dispose of the waste. The disposal route should also be agreed with the Environment Agency to ensure it meets with their satisfaction.

(d) Direct to Appropriate Disposal Site

All disposal sites require an Environmental Permit. The permit is specific to the type of material that can be disposed of at the site. There are only a few sites that are permitted to receive organic or chemically polluting materials (includes oily waste). There will be a charge levied by the site operator for depositing material at the site. In addition, there is landfill tax/levy applied to all waste deposited in a landfill.

5.2. Hazardous Waste Transportation

Furthermore, waste oil is likely to be classified as a Hazardous Waste and should be treated as such until otherwise determined. It would therefore be subject to the Hazardous Waste Regulations (2005). Mixes of oil/sand and oil/seawater etc. would probably be considered as Hazardous Waste if the percentage of carcinogenic compounds is above 0.1%. It is therefore likely that oily beach materials and oil/water liquids would have to be handled as Hazardous Waste.

The transportation of Hazardous Wastes generally requires that the Environment Agency (EA) be informed before the waste is removed. This is done by filling in parts A, B and D of a Consignment Note, available from the EA website, which is sent to the Department responsible for the receiving facility. This should be done at least three clear working days before the waste is to be moved. <https://www.gov.uk/dispose-hazardous-waste> However, in the event of an “emergency” the EA may waive the requirement for pre-notification. The licensed waste carrier completes part C of the Consignment Note and takes it with the load to the receiving facility. The licensed operator of the receiving facility then signs the consignment note to say that they have accepted the load and that they are authorised to manage it properly.

The requirement for pre-notification generally does not apply to hazardous waste from ships. Therefore, oil recovered at sea by a dedicated Oil Recovery Vessel could be discharged within a harbour to an appropriate waste reception facility without having to pre-notify the EA. However, a consignment note will have to be supplied with each load sent for disposal.

To ensure that oily waste material is transported and disposed of in an appropriate manner, a licensed waste carrier and disposal company should be contracted. The Operator and Waste Disposal Company should then liaise with the EA to confirm that the disposal route identified meets with their satisfaction.

5.3. Disposal Plan

Waste Oil is classed as a hazardous waste, and should be treated as such. It would therefore be subject to the Hazardous Waste Regulations 2005. Mixes of oil/sand and oil/seawater may be considered hazardous waste if the percentage of carcinogenic compounds is above 0.1%. It is likely that oily beach materials and oil/water liquids would have to be handled as Hazardous waste.

It is not necessary to contact the Environment Agency before transport of hazardous waste. An appropriate contractor would be required to remove the waste from its initial storage site and they would then become the waste producer. All hazardous waste producers are required to register as a hazardous waste producer at the Environment Agency and the contractor should be asked to provide proof that they are registered.

A member of the Broads Authority should be present when the waste is removed to ensure that waste is removed appropriately.

5.4. Waste Disposal Action Checklist

Waste Generated from a Shoreline Clean-up Operation

(a) Temporary Storage/Clean, Treat, Stabilise, Recover, Re-use

1. Discuss requirement to establish temporary storage sites along the river bank with EA, Natural England (NE) and the Local Authority, when on or adjacent to an SSSI.
2. If agreed, identify temporary storage sites in close liaison with EA, NE and Local Authority.
3. Instruct Oil Spill Response Contractors to construct temporary storage sites. Area to be isolated, outlets and drains plugged, membrane laid, bunded area created, skips set or lagoons lined.
4. Confirm treatment methods and ultimate disposal with EA and Local Authority.
5. In close liaison with the Oil Spill Response Contractors agree course of action and assist with the necessary arrangements where necessary.

(b) Temporary Storage and then to Appropriate Disposal Site for Burial

6. Discuss requirement to establish temporary storage sites along the riverbank with EA, NE and the Local Authority.
7. If agreed, identify temporary storage sites in close liaison with EA, NE and Local Authority.
8. Instruct Oil Spill Response Contractors to construct temporary storage sites. Area to be isolated, outlets and drains plugged, membrane laid, bunded area created, skips set or lagoons lined.

9. Identify suitably licensed waste carrier to remove material from site.
10. Confirm with waste carrier the disposal route and ultimate disposal site. Liaise with EA to ensure that the disposal strategy is acceptable.
11. Ensure all associated paperwork, i.e. consignment notes, are retained and catalogued.

(c) Take to Refinery/Incinerator (mainly for oily liquids only)

12. Identify suitably licensed waste carrier to remove material from site.
13. Identify suitable facility to receive the waste.
14. Confirm with waste carrier the disposal route and ultimate disposal site. Liaise with the Regulator to ensure that the disposal strategy is acceptable.
15. Ensure all associated paperwork, i.e. consignment notes, are retained and catalogued.

(d) Direct Transportation to Appropriate Disposal Site for Burial

16. Identify suitably licensed waste carrier to remove material from site.
17. Confirm with waste carrier the disposal route and ultimate disposal site. Liaise with the EA to ensure that the disposal strategy is acceptable.
18. Ensure all associated paperwork, i.e. consignment notes, are retained and catalogued.

5.5. Bonn Agreement Oil Appearance Code

The quantity of spilt oil may be estimated using the following oil quantity table taken from the Bonn Agreement Oil Appearance Code (BAOAC). This should be used to estimate the amount of spilt product if direct information is not available. The table below details the BAOAC colours; calculation of the volume of spilt oil from the appearance of film on the water is as follows:

1. Estimate total size of the area as a square/ rectangle in km
2. Assess the area affected by the slick in km² calculated as a % of the total area
3. Estimate the area covered by each colour, calculated as a % of the total area affected
4. Multiply the area covered by each colour by the appropriate BAOAC
5. Adding all of the colour figures will give the total quantity of oil in m³ within the slick

The Bonn Agreement Oil Appearance Code (BAOAC)

Code	Description	Layer thickness interval (μm)	Volume per km^2 (1km by 1km)
1 	Sheen (Silver/ grey)	0.04 – 0.30	$0.04 - 0.3\text{m}^3$
2 	Rainbow	0.30 – 5.0	$0.3 - 5\text{m}^3$
3 	Metallic	5.0 – 50	$5 - 50\text{m}^3$
4 	Discontinuous true oil colour	50 – 200	$50 - 200,000\text{m}^3$
5 	Continuous true oil colour	200 and above	$\text{Over } 200,000\text{m}^3$

6. Training and Exercise Policy

6.1. Training Policy

In order to familiarise personnel in the use of this Oil Spill Contingency Plan and comply with MCA guidelines, Oil Spill Response training courses will be held for all appropriate employees of the Broads Authority and river operators with an identified role within the plan. In addition, there will also be awareness briefings with other river users and the Agencies who were involved in the consultation process.

After initial training, instruction will be specific; with the use of Tier 1 and Tier 2 oil spill response equipment located at the Dockyard and on-board the Broads Authority's launches. This will be tested and deployed using those personnel who will be responsible for operating this equipment in the event of a spill.

In order to meet the minimum levels as recommended in the MCA guidelines, the training and exercising of key personnel is detailed below.

Training in the use of this plan

Position	Timing	Type of Training
The Navigation Officer and Head of Safety Management, Head of Operations	At plan approval	MCA level 4p
Broads Authority designated staff	At plan approval plus annually	MCA level 1
Chief Executive	At plan approval	Contingency Plan Familiarisation briefing

6.2. Exercise Programme

To ensure that the Oil Spill Contingency Plan is "user friendly" and understood by all those involved in its use, communications and practical exercises will be undertaken on an annual basis.

The Navigation Officer will hold a record of all Personnel Training and Contingency Plan Exercises. Post exercise/incident reports to be forwarded to the Counter Pollution and Salvage Officer.

Exercises designed to evaluate the plan

Exercise Type	Frequency
Notification exercise	Twice per year
Mobilisation exercise	Twice per year
Table-top Exercise (may incorporate mobilisation and deployment of local response equipment)	Once per year
Incident Management Exercise (will incorporate mobilisation and deployment of resources up to Tier 2 level)	Once every 3 years

7. Health and Safety

7.1. Statutory Duties

Applicable Statutory Law and its Implications

The Health and Safety at Work etc. Act 1974 places a clear duty on all employers and persons responsible for premises to ensure that the workplace is safe and in the case of the employer, to have a safe system of work. This duty is placed regardless of whether the workers are employees; sub-contract workers, temporary workers or self-employed persons.

Implementation of the Management of Health and Safety at Work Regulations 1999 requires that all employers carry out suitable and sufficient Risk Assessments of all tasks to be undertaken in the workplace. Where five or more employees are employed then the Assessment is to be recorded and those at particular risk must be informed according.

These same regulations require that the employer executes a Safety Management System and that measurement of performance against standards is made. All employees must receive adequate training, information and supervision.

Additionally, there is a requirement for all employees to receive suitable and sufficient health surveillance to ensure that they are fit to carry out the work and that the work conditions do not cause them adverse effect.

The Provision and Use of Work Equipment Regulations 1998 requires that all equipment provided for use at work is safe and fit for purpose. The persons using the equipment must be adequately trained in its use and the operation must be properly supervised.

The Personal Protective Equipment Regulations 1992 requires that all equipment provided is fit for purpose and does not cause adverse effect. That all personnel are trained in its use and that all associated risks are recorded, controlled and pointed out to those affected.

The Manual Handling Regulations 1992 requires that all work where lifting, pulling and pushing is involved, is assessed and all risks to the health and safety of those involved are reduced to a level as low as reasonably practicable.

The Control of Substances Hazardous to Health Regulations 2002 requires that all substances to which a worker may be exposed, including dusts and gases, are properly assessed and the risks to health reduced to a safe and acceptable level.

7.2. Site Safety Assessment

To achieve a Safe Operation, those in charge of the Response must follow those generalised parts of the Contingency Plan, which apply in all circumstances.

Additionally, they must have available the means to prepare those elements of the plan which are Site and Response Specific.

The Site Safety Assessment is intended to prevent uncontrolled incidents occurring which may cause further damage to the environment or loss due to damage, injury or illness. The Site Safety Assessment should comprise the following sections:

- A. Site Survey
- B. Operations Analysis
- C. Site Control
- D. Logistics and Supplies
- E. Personnel.

Each section should be addressed and documented before work commences and the appropriate steps in place to ensure that requirements are adequately met.

(a) Site Survey

A Site Survey Form should be available, which when followed correctly will add all of those site unique details which assist in the decision making process and remind staff of essentials which might otherwise be omitted.

The Site Survey should address the safety of those personnel taking part in the clean-up as well as those members of the public who may also be involved.

The following list indicates a few of those subjects which should be addressed, assessed and reported in the survey. The list is by no means exhaustive.

- communications requirements;
- exposure to temperature;
- feasibility of handrails or ropes;
- hazards to the eyes;
- hazardous substances;
- lack of or shelter from weather;
- lighting conditions;
- machinery usage;
- noise levels;
- maneuverability;
- manual handling;

- pedestrian traffic;
- requirement to access confined spaces;
- sample collection;
- terrain surface and incline;
- vehicle traffic;
- visibility;
- water hazards.

(b) Operations Analysis

Having surveyed the site and assessed the aspects which are influenced by the terrain, water conditions, and other pertinent factors, the On-Scene Commander will assess the way in which the operation is to be conducted.

The intention to use the following facilities should be stated and the reasons for and priorities of each facility established.

- cranes;
- boats;
- breathing apparatus;
- dispersants
- fork lifts;
- hoses and pumps;
- low loaders;
- motor vehicles;
- raking and sweeping gear.

(c) Site Control

It is essential that those in charge of the spill clean-up have control of the site as soon as possible and before any significant part of the clean-up operation begins. Access to the site must be restricted to those personnel who are essential to the clean-up operation.

Arrangements must be made for the area to be barriered, closed and policed such that no one can enter the work area without reporting to the site supervisor. No workers should be allowed onsite until they have received the full vetting and briefing with respect to the Safety Plan.

(d) Logistics and Supplies

Specifically, with respect to safety, it should be ensured that the appropriate equipment, materials and substances are available at the required times.

Particular attention should be paid to the availability of the various sizes of the personal protective clothing and equipment required. This sometimes cannot be established until the members of the workforce have been detailed and their individual roles and tasks decided.

Consideration must be given for a prolonged clean-up operation, possibly stretching to 24-hour operations. In this case shelter, accommodation, feeding, refreshment, rest areas, sanitation and first aid must be available.

Where training has to be delivered prior to work commencing, the necessary instructors and equipment must be available before work commences. It is an error to allow experienced workers to commence work while others are waiting for training.

Protective Clothing. If the weather is at all inclement, the protective clothing issued to workers must be warm, water and chemical-proof. It should include coveralls, gloves, boots, eye protection and headgear. If the weather is warm, the use of the same protective clothing may be necessary, but the requirements for ventilation and cooling will be greater.

Personal Protective Equipment (PPE)

PPE includes;

- breathing apparatus including respirators;
- flotation suits and vests;
- gloves/gauntlets;
- protective clothing;
- goggles, visors and safety glasses;
- hard hats;
- insulated clothing;
- reinforced boots, shoes and gloves.

First Aid. The Health and Safety (First Aid) Regulations 1981, together with the New Code of Practice on First Aid lay down the requirements for trained first aiders and the equipment that must be provided. A foreshore clean-up is considered as a special circumstance and the appropriate extra provisions should be taken into account.

Personnel

Selection of personnel to carry out the clean-up must be dominated by safety considerations.

7.3. Safety on the Foreshore

During the execution of a foreshore Site Survey, access to the area to be cleaned must be carefully assessed. Account needs to be taken of low and high tides and the need for workers to access inlets, cliffs and terrain difficult to navigate. Tide tables should be consulted as well as the taking of advice from those with knowledge.

Where necessary and appropriate, the use of equipment such as handrails, ropes and ladders should be considered.

Where workers are, by necessity, required to work out of sight of one another, communication between them and the supervisor is essential.

The provision and use of Personal emergency Beacons and Distress Flares by appropriate personnel should be considered.

7.4. Safety on the Water

Agreements with the Coastguard should be reviewed and complied with. At the very least, they should be informed of the vessels operating in their area together with all necessary detail of vessel capability and persons on board (POB).

Protective Clothing. Workers operating from seagoing vessels should be equipped with harnesses which comply with:

- **BS EN 361** for full-body fall arrest harnesses- (belt-type harnesses are widely prohibited due to internal injury risks).
- **BS EN 355 & EN 358:** Standards covering shock-absorbing lanyards and work positioning/restraint systems.
- **ISO 12401:** International standard for deck safety harnesses and tethers used explicitly on seagoing vessels

They should, at all times, wear a self or automatic inflating lifejacket and should be protected by a survival suit.

7.5. Safe Operations

Risk Assessment

Hazard Identification. The identification of all hazards at a worksite or spill location is a singular task that should be done by involvement of the people who are expected to carry out the work. The supervisor responsible for co-ordinating the risk assessment should ensure that all hazards are identified before the next step in the process is attempted. A hazard is an object, place, processor circumstance with the potential to do harm in the form of injury, damage, delay or pollution.

7.6. Decontamination

Conditions requiring decontamination. Where workers have been wearing waterproof and protective clothing it is likely that the clothing will become contaminated by crude oil or chemicals that might have been used during the clean-up operation. The clothing needs to be cleaned to prevent further contamination.

Facilities for such cleansing should be made available either near to rest or feeding areas or close by, but clear of the work site

Personal hygiene practices on the job. Workers should be instructed on the dangers of ingesting hydrocarbons and chemicals through contact of contaminated equipment or clothing, such as gloves via the mouth and nose. Facilities for removing protective clothing and washing before consuming food or smoking should be made available.

Decontamination area drainage. The decontamination area where clothing and personal equipment is cleansed should be arranged so that cleansing water and contaminants are drained into tanks. Care should be taken to ensure that contaminated waste does not drain into either the normal drainage system or into the soil under the decontaminated area.

Disposal of contaminated clothing. Clothing which is not fully washable or capable of having all traces of contaminant removed may need to be disposed of safely. Such clothing may comprise Hazardous Waste. If incineration facilities do not exist at the site, the clothing may need to be delivered to the local authority or to a Hazardous Waste Contractor.

7.7. Health and safety regulations, likely to apply to major, clean-up operations

- First Aid at Work Regulations 1981
- Control of Noise at Work Regulations 2005
- Management of Health and Safety at Work Regulations 1999 Manual Handling Operations Regulations 1992
- Personal Protective Equipment at Work Regulations 1992 The Provision and Use of Work Equipment Regulations 1998
- Personal Protective Equipment at Work (Amendment) Regulations 2002
- The Control of Substances Hazardous to Health Regulations 2002
- Construction (Design and Management) Regulations 2015
- Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013

(NB each set of Regulations listed has a companion Approved Code of Practice or Guidance on Regulations.)

7.8. COSHH

Data sheets are available to all Broads Authority staff on our Sharepoint system .

8. Press and Public Information

8.1. Media and Information Policy

In the event of a pollution incident, it will be necessary for an efficient and comprehensive information service to be brought into action so as to:

- Deal professionally with the representatives of the media.
- Co-ordinate and release information to the general public regarding the pollution incident and the Broads Authority's response to it.
- Keep staff and Authority members informed of developments regarding the progress of the incident; insofar as it affects their responsibilities.
- Minimise the pressures on those directly concerned with combating the spill.

Responsibility for media relations will be dealt with by the Broads Authority's Public Relations Office (PRO). All enquiries are to be forwarded to the Broads Authority's PRO. No media interviews, soundbites or statements should be provided to the media without the involvement of the PRO. The only exception to this is the agreed 'holding statement' if the incident takes place out of normal working hours and all attempts to consult with members of the PRO have failed.

8.2. For guidance it would be expected as follows:

Tier 1 spill - Broads Authority involvement only

Tier 2 spill - Broads Authority, Ambipar (Tier 2 contractor), Local Authority's (as applicable)

Tier 3 spill - not applicable.

It is essential that the media are provided with a 'balanced' view of the incident and actions taken. Remarks like 'No comment' only increase rumour and fuel unnecessary speculation. Below is the format of an Initial Press Statement that can be used by a responsible Broads Authority representative pending full details becoming available and a press release issued. The statement should not be issued by non-members or the PRO unless the incident urgently requires it, it is out of normal working hours and all attempts to consult with members of the PRO have failed.

8.3. Initial Press Statement

"The Broads Authority confirms that an incident has occurred (*state where and give brief description*) at approximately (*give time*) hours today.

Emergency response procedures have been initiated and relevant authorities (*have been/are being*) advised. All support services are being co-ordinated through the Authority's incident response team and every possible effort is being made both to minimise risk to personnel at the scene and to contain and mitigate any effects.

Further information will be released, (*as it becomes available/at a press conference scheduled for time*) today".

9. Contact Directory

Broads Authority

Head Office, Yare House, Norwich, NR1 1RY

Reception Tel: 01603 610734

Broads Control: Yare House (9am to 6pm April to Oct, 9am to 5pm Nov to March)

Tel: 01603 756056

email: broads.control@broads-authority.gov.uk

Maritime and Coastguard Agency Operations Room (Humber)

Tel: 01262 672317

email: Zone10@hmcg.gov.uk

Environment Agency

Regional Control Room (24 hour) 0800 807060

email: incident@environment-agency.gov.uk

Marine Management Organisation

Emergency Contact dedicated Spill Response number

Tel: 0870 785 1050 If there is no reply call the 24hr Duty Room on: 0845 051 8486

email: info@marinemanagement.org.uk

Helpline: 0300 123 1032

Natural England

National Marine Incidents line Tel: 0300 060 1200

email marineincidents@naturalengland.org.uk

Peel Ports (Great Yarmouth Port Company)

Harbour Office Tel: 01493 335501

24 Emergency Tel: 01493 335511

email gyharbouoffice@peelports.com

HMRC

Tel: 0300 200 3700

Norfolk Resilience Forum

Tel: 01953 424 866

Email nrf@norfolk.pnn.police.uk

RSPB

Regional Office, 65 Thorpe Road, Norwich. NR1 1UD

Tel: 01603 660066

Strumpshaw Reserve Tel: 01603 715191

email strumpshaw@rspb.org.uk

Berney Marshes Reserve

Tel: 01493 700645

(if office not manned - for emergency ring Strumpshaw)

Norfolk Wildlife Trust

22 Thorpe Road, Norwich NR1 1RY

Tel: 01603 625540

email: info@norfolkwildlifetrust.org.uk

Ted Ellis Trust

Warden Wheatfen Reserve Tel: 01508 538036

Email: info@wheatfen.org

National Trust

Regional Headquarters at Blakeney

Tel 01263 740241

Warden Horsey

Tel: 07885 581 070

email: stephen.prowse@nationaltrust.org.uk

Norwich City Council

Customer Services: 0344 980 3333

Out of Hours: 01603 412180

North Norfolk District Council

Customer Services: Tel: 01263 513811

Out of Office Hours: Tel: 01223 849782

Broadland District Council

Customer Services: Tel: 01603 431133

Emergency Planning Manager Tel: 01603 430434

Out of Hours: Tel: 01603 705121

South Norfolk District Council

Customer Services: Tel: 01508 533701

Out of Hours: Tel: 0800 3896109

Great Yarmouth Borough Council

Customer Services: Tel: 01493 856100

Out of Hours: Tel: 01493 330369

East Suffolk Council

Customer Services: Tel: 0333 0162000

Out of Hours: Tel: 0800 4402516

Joint Emergency Planning Unit (JEPU)

Duty Officer 24/7 Tel: 01473 265376

emergency.planning@suffolk.gov.uk

Oil Spill Response Contractor (Tier

Two) Ambipar – **emergency response**

number Tel: (24hour) 01202 653558

Oily Waste Disposal Contractors

ZZRM-Customer Service Administration, ASCO UK

Tel: +44 1493 856 722

email: Technical.Sales@ascoworld.com

Offshore Supply Base, South Denes Road, Great Yarmouth, NR30 3LX

10. Resources Directory

Tier 1 - Resources held by Broads Authority:

Vessels

8 x River Patrol launches
1 x 4m RIB, 40 hp outboard
1 x 28' twin screw steel work barge
1 x 24' steel work barge
3 x 24' weed harvester/litter collecting barge
3 x 16m Wherries with open hold
2 x 18m Wherries with open hold
Tug Aberdour 10.5m
Tug Richard 9m
Tug Bantam 7.3m
0 cranes on pontoons (various locations on system).
4 x Land based crane at Dockyard. (only 1 of these could be loaded to pontoons)
5 x JCB excavators
1 x New Holland tractor with trailer (for agricultural use only)

Vehicles

Various including pick-up trucks, various sized vans

Oil Pollution Containment and Clean-up Equipment held by the Broads Authority

Containment boom

4 x 20m inflatable boom
2 x 10m inflatable boom
4 x 5 m inflatable booms

Sorbents

12 x 3m heavy duty sorbent booms
12 x 2m sorbent booms 12cm
150 x sorbent pads 46 x 46cm

Miscellaneous

Inflator for containment boom
50 x heavy duty oily waste disposal sacks
60 x light rubbish sacks
8 x oil sample bottles
Rond anchors and rope
50 x sandbags
Mudweights
Toolbox and miscellaneous hand tools
Telescopic floodlights/Floodlight stand

First Aid Kit

Assortment of manual and powered winches

2 x 'Oil Spill No Entry' signs

1 x red/white safety tape

Inflator for containment boom plus 12-volt adaptor

Ropes/shackles etc.

PPE

10 x Complete PPE kits

Coverall protective suits

Safety glasses

Rubber gloves

Leather gauntlets

Face masks

Ear defenders

100 x disposable rubber gloves

2 x First Aid Kits with eye wash

Handwipes

Miscellaneous tools

Torches / Batteries

Spot light. Flashing warning lights.

Patching/leak control equipment

2 x wreck buoys

Oil spill sample kit 2 x Buckets

First Aid Kit Mechanical hand Light on clamp Foot pump

Hand Saw Crow Bar Piston Air Pump

Sharps Container

Kits held on each of 8 Broads Authority patrol launches and 3 workboats

1x 3m sorbent boom 10cm diameter

1x sorbent pillow 40 x 8cm

10 sorbent sheets 46 x 46cm

1x nylon cord

2x heavy duty oily waste disposal sacks/ties

1x goggles

1x gloves

1x Instruction Sheet

Tier 2 equipment

Resources held by Tier 2 Response Contractor Ambipar Ltd for immediate deployment on call-out basis (on site 2 - 6 hours).

Equipment commensurate with Tier 2 responder. Exact equipment list to be reviewed at time of contract placement.

Appendix 1 – Plan distribution list

Distribution List	
Company	Copy Number
Broads Authority staff: • Chief Executive • Head of Safety Management • Head of Ranger Services (Navigation Officer) • Head of Operations • Director of Delivery • Head of Strategic Services	1 (Digital Copy)
MCA CPSO	2 (Digital copy)
MRCC Humber	3 (Digital copy)
Environment Agency	4 (Digital copy)
Great Yarmouth Port Authority	5 (Digital copy)
Peel Ports Great Yarmouth	6 (Digital copy)
Broadland District Council	7 (Digital copy)
South Norfolk Council	8 (Digital copy)
East Suffolk Council	9 (Digital copy)
North Norfolk District Council	10 (Digital copy)
Great Yarmouth Borough Council	11 (Digital copy)
Norfolk County Council	12 (Digital copy)
Norfolk Resilience Forum	13 (Digital copy)
Natural England	14 (Digital copy)
RSPB	15 (Digital copy)
Marine Management Organisation	16 (Digital copy)
Ambipar Response	17 (Digital copy)

Appendix 2 – Standard Pollution Report Form CG77

To MCGA – Humber
Copy to Agencies as required
From Broads Authority

Part 1 : Information which should be provided in an initial pollution report

A. Classification of report

(i) **doubtful**

(ii) **probable**

(iii) **confirmed**

(Delete as necessary)

B. Date: _____ **Time:** _____ **pollution observed**

Identity of observer/reporter _____

C. Position of pollution: _____
(by latitude and longitude if possible, state range and bearing from some prominent landmark)

Extent of pollution: _____ **Litres/barrels/tonnes**

Size of polluted area _____ **from:** _____
(from where sighted)

(estimated amount of pollution, e.g. size of polluted area, number of tonnes of oil spilled or number of containers. When appropriate position of observer)

D. Wind Speed _____ **knots; direction from:** _____

Tidal status at time pollution observed: _____ **after/before HW/LW**

E. Weather conditions and sea state:

_____ **sea state/ wave height** _____ **metres**

F. Characteristics of pollution:

Type: _____
(E.g. oil, crude, diesel, packaged bulk chemicals UN number if known, garbage)

Appearance: _____
(E.g. liquids, floating solid, liquid oil etc.)

G. Sources of pollution: _____
(from vessel or other undertaking)

Cause of pollution: _____

(Apparent deliberate or casualty. If the latter give a brief description. Where possible name, type, size and nationally and Port of Registry or polluting vessel. If vessel underway gives course speed and destination if known).

H. Details of other vessels in the area _____
(to be given if the polluter cannot be identified and the spill is considered to be of recent origin)

I. **Photograph taken** Yes / No
Sample taken for analysis Yes / No

J. **Remedial action taken, intended to deal with spillage:**

K. **Forecast of likely effect of pollution:** _____

L. **Names of those informed other than addresses:**

M. **Any other relevant information:** _____

(E.g. names of other witnesses, references to other instances of pollution)

Part 2 : Supplementary Information which should be provided Later
(this may be disregarded when POLREPS are for UK internal distribution only)

N. **Results of sample analysis:** _____

O. **Results of photographic analysis** _____

P. **Results of supplementary enquiries** _____

(E.g. inspection by surveyors, statements from ship's personnel etc.)

Q. **Results of mathematical models:** _____

Appendix 3 – Incident log sheet

Incident:

Date:

Name:

Location:[illegible]

Appendix 4 – Broads wildlife and habitat importance and designations

1. Summary

The Broads is one of Europe's finest and important wetlands for nature conservation. It includes designated sites for nature conservation, including 28 Sites of Special Scientific Interest (SSSIs), which cover 24% of the Broads executive area. One-third of SSSIs are designated National Nature Reserves (NNRs) (Map 3). Virtually all SSSIs also have international designation under European Habitats and Birds Directives and Ramsar Convention (Map 4). For more on the legislation see section 3 in this Appendix.

The Broads, apart from having many designated sites for nature conservation, is also important for wildlife throughout its area, with land and water managed for both biodiversity and landscape. Often, hydrological connections between the waterways, fens and grazing marsh dykes will result in pollution in one part of the wetland affecting a wide area.

The Water Framework Directive establishes a framework for protection surface water, groundwater, and coastal and transitional waters. Targets are set to protect and improve the ecological status of the waterbodies.

2. Habitats

Maps 1 and 2 show the distribution of important habitats for nature conservation in the Broads.

2.1. Water and Reedswamp

There are 63 broads, of which 68% are directly connected to the rivers. Pollution from the river has been shown to affect these connected broads. Several of the broads and rivers are home to rare aquatic plants; some found nowhere else in the UK, such as holly-leaved naiad and intermediate stonewort.

2.2. Fens and Reedbeds

The Broads has the largest expanse of lowland species-rich fen in lowland Britain. Fens and reedbeds as part of the Broads wetland are in hydrological connection to the river water thus water quality is important for this habitat as it is for the open water itself.

2.3. Estuary

Breydon is an important salt marsh area with mud-flats which provide an internationally important staging post for migratory birds.

2.4. Grazing Marshes

These drained or grazing marshes, if managed correctly provide habitat to farmland birds, particularly waders and wildfowl. The grazing marsh dykes are important for aquatic plants and rare invertebrates such as snails. Water to supply these dykes can come from the river. This is the case for Halvergate Marshes Special Area of Conservation, (SAC) where river water is pumped into the grazing marsh dykes via the Stracey intake.

3. Legislation

3.1. International Legislation

Ramsar Convention: Or to give it its full title, the 'Convention on Wetlands of International Importance, especially as Waterfowl Habitat'. This is a global convention, signed at Ramsar in Iran in 1971, and ratified by the UK in 1976. It has 3 main aims: designation of wetlands as Ramsar sites, 'wise use' of wetlands, and international co-operation.

3.2. EU legislation

Habitats Directive: To promote maintenance of biodiversity by requiring member states to take measures to maintain or restore habitats and species at 'favourable conservation status', with national governments reporting to the EU every 6 years. It includes designating a series of protected sites (Special Areas of Conservation SAC), which together with SPAs classified under the **Birds Directive** (see below), makes up an EU-wide network of sites (the **Natura 2000** series).

Birds Directive: Requires member states to take steps to protect listed bird species and the habitats on which they depend by classifying Special Protection Areas (SPA).

Both the Habitats and Birds Directives are enshrined in UK legislation under the Conservation (Natural Habitats &c) Regulations 1994, otherwise known as the 'Habitats Regulations'.

Water Framework Directive: To establish a framework for protection of inland surface waters (and) groundwater. It aims to ensure all aquatic ecosystems, and, with regard to their water needs, all terrestrial ecosystems and wetlands meet 'good status' by 2015. The Directive requires member states to establish river basin districts and management plans, to be reviewed every 6 years.

3.3. UK legislation

Wildlife and Countryside Act 1981 (as amended): this underpins statutory nature conservation in the UK, and most significantly, makes provision for the notification by English Nature of Sites of Special Scientific Interest (SSSI), and where appropriate, National Nature Reserves managed by 'approved bodies' other than EN.

The Act is supplemented and amended by the **Countryside and Rights of Way Act 2000**, which strengthens protection of SSSIs by giving English Nature greater enforcement powers,

and makes provision for open public access to certain types of land (defined as mountain, moor, heath, and down). Section 28 places a duty on all public bodies, including the Broads Authority, to enhance the special interests of SSSIs.

The provisions of the 1995 Environment Act (Section 62) and 2000 CRow Act (Sections 85 and 97) confer statutory duties on 'relevant authorities', which include statutory agencies and local authorities, to have regard to the purposes of national parks, Areas of Outstanding Natural Beauty and the Broads.

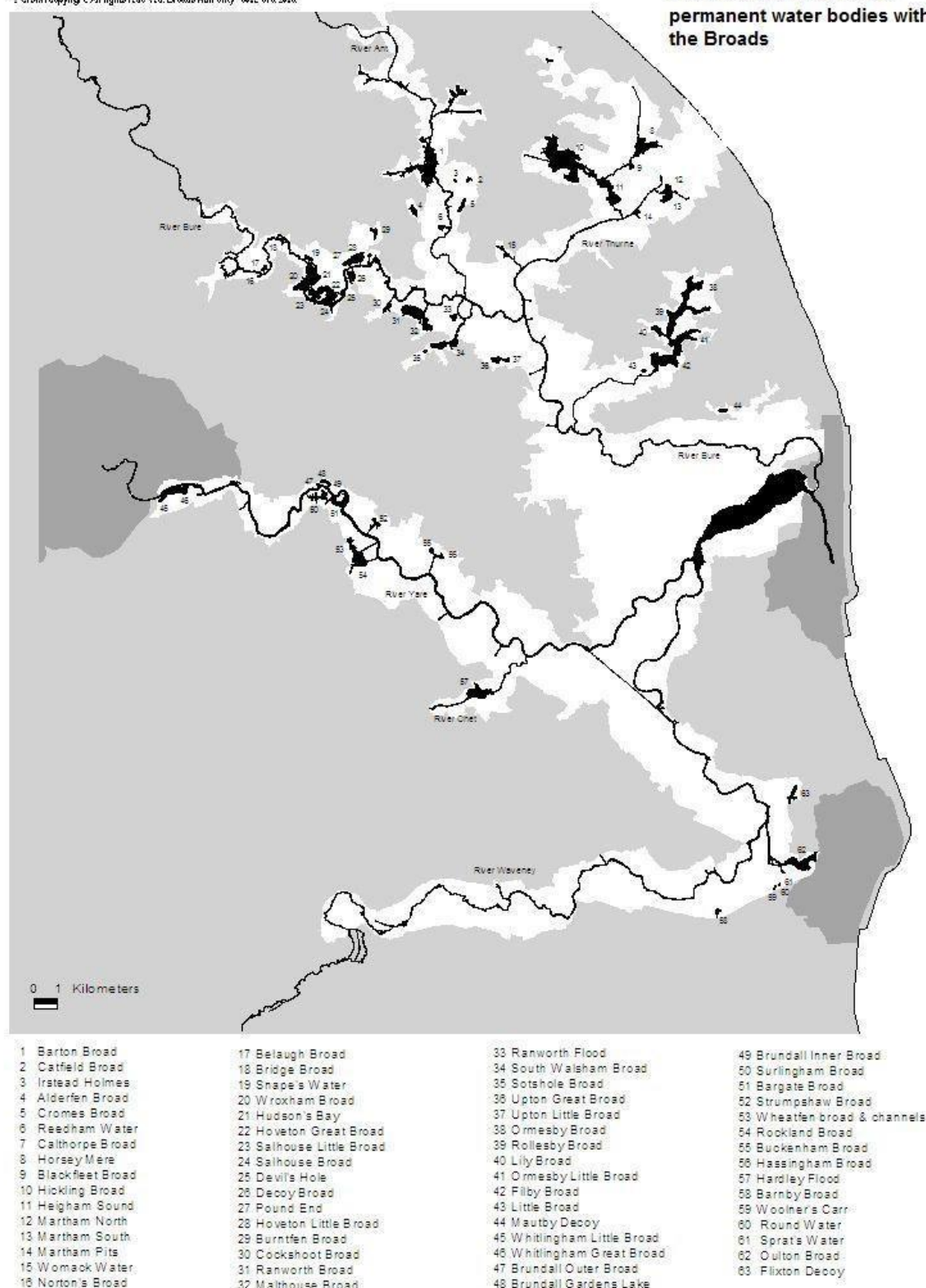
Map 1: location and condition of permanent water bodies within the Broads

Data Sources:

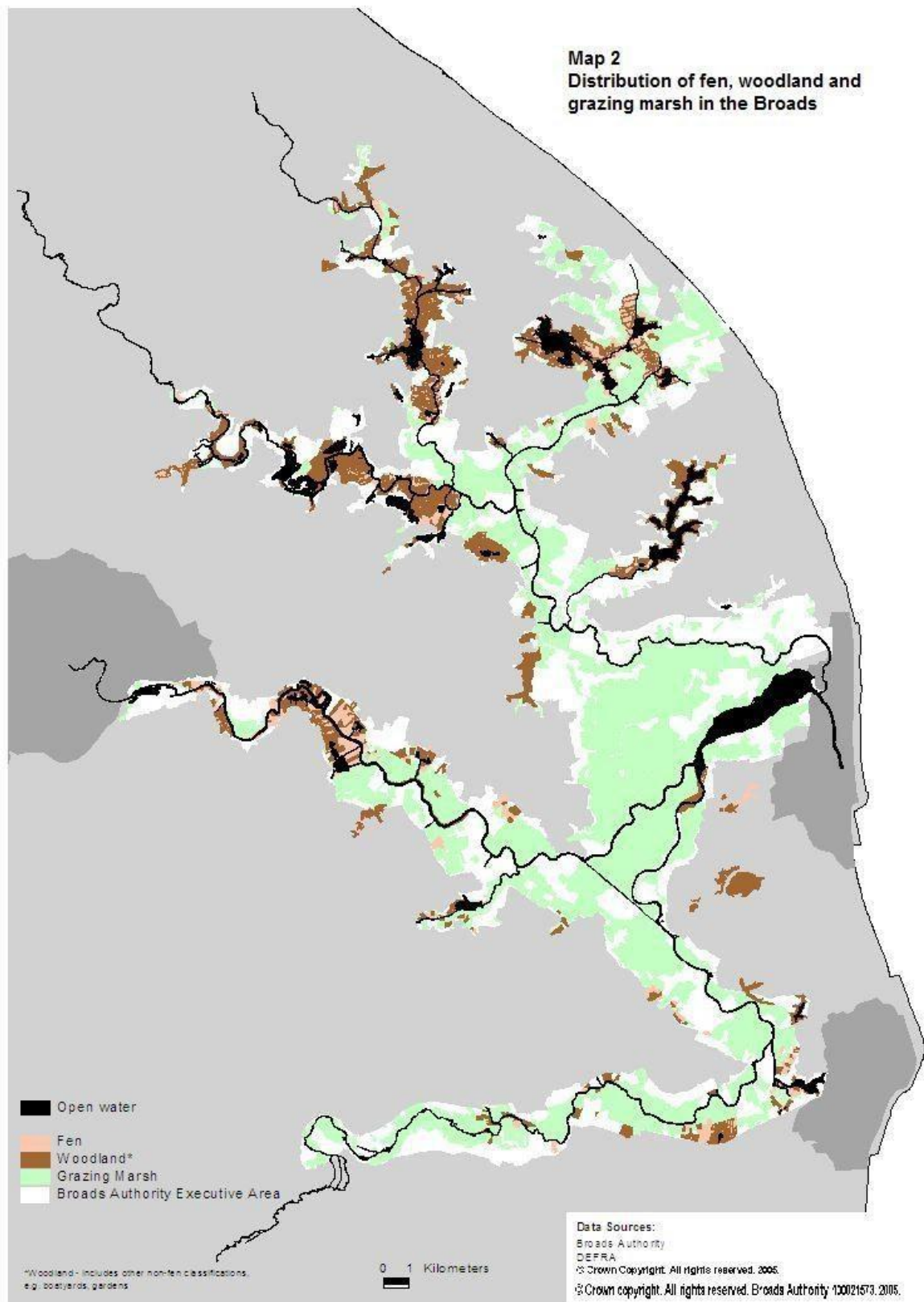
Broads Authority

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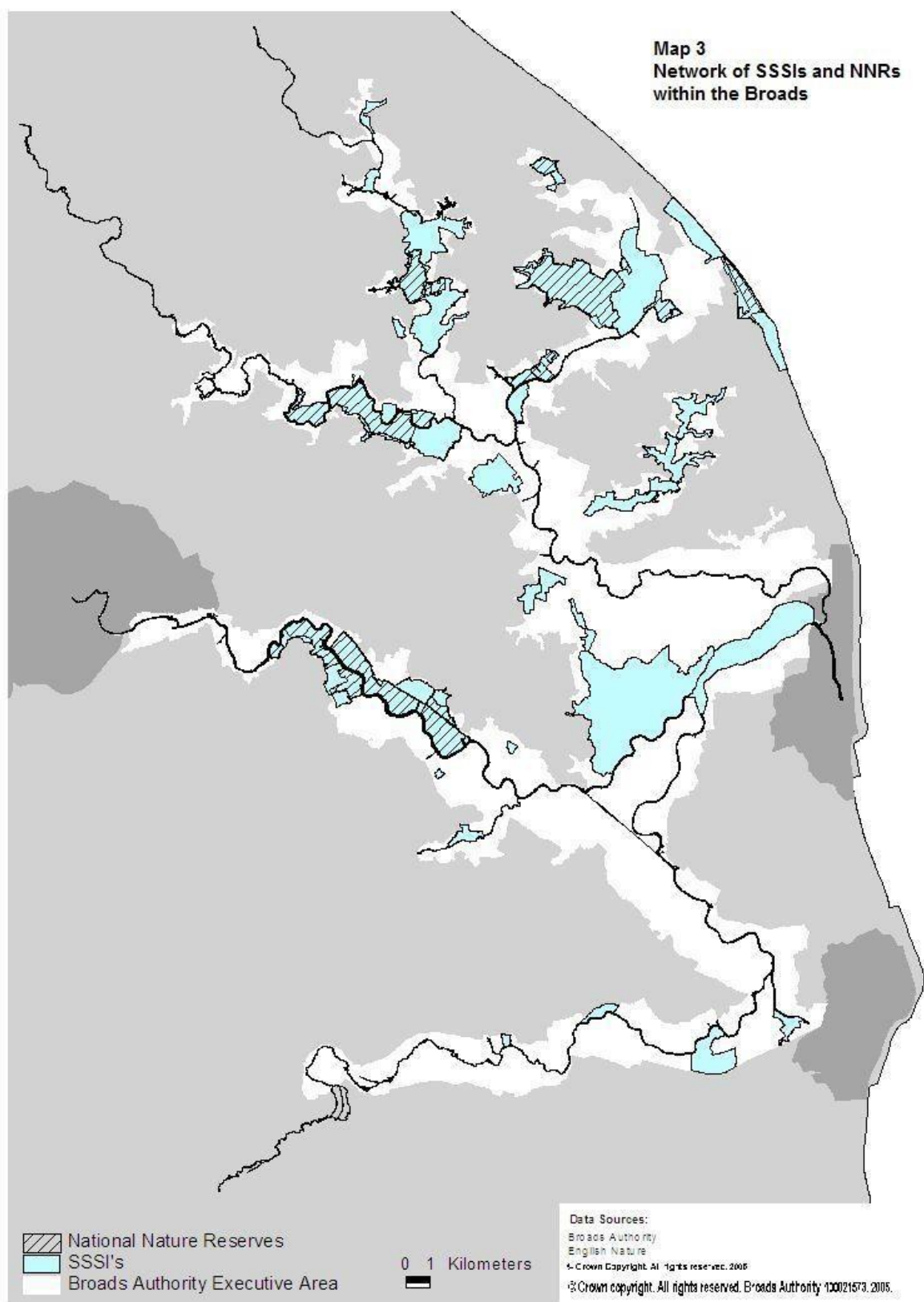
Map 1
Location and condition of
permanent water bodies within
the Broads



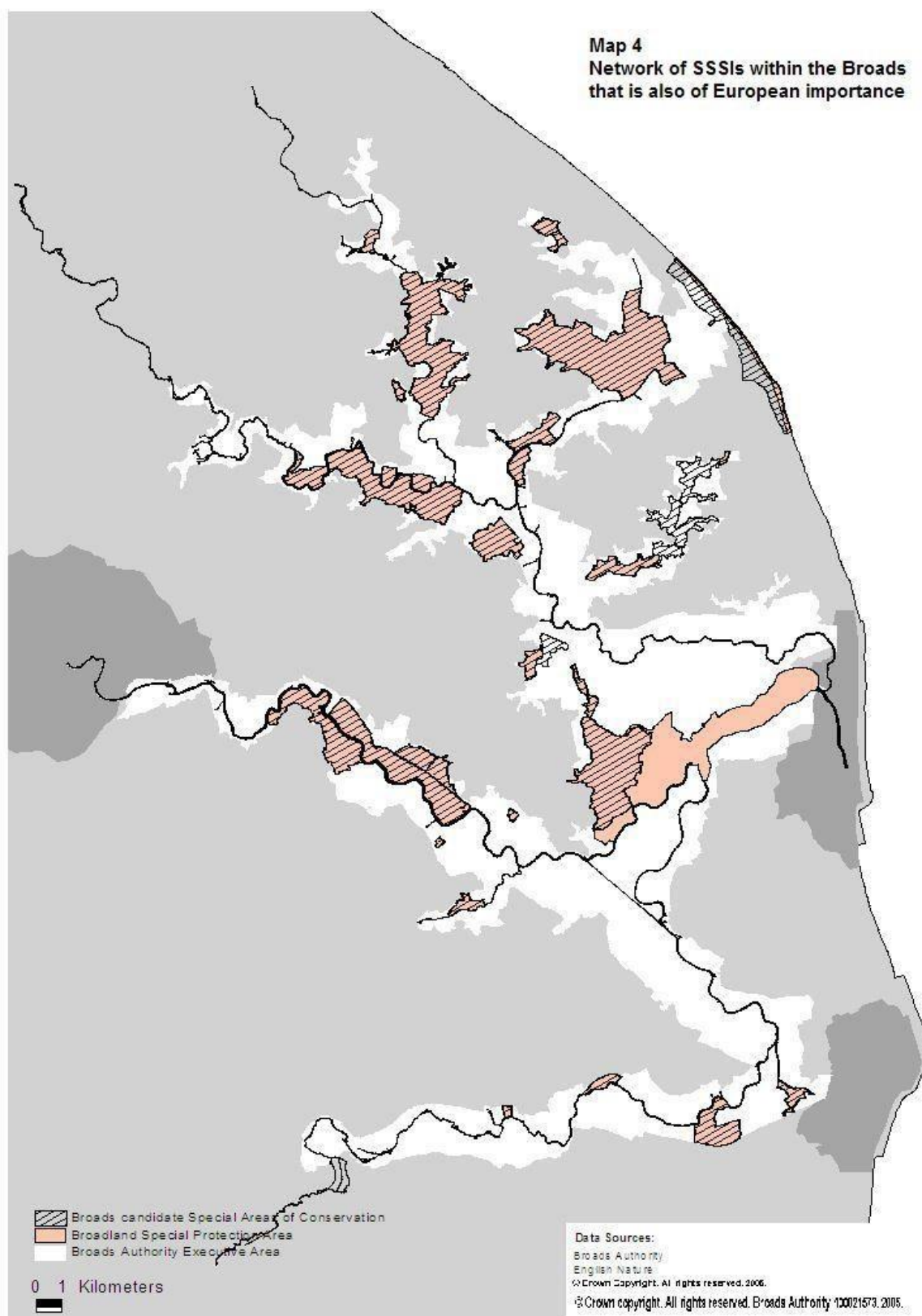
Map 2: Distribution of fen, woodland and grazing marsh in the Broads



Map 3: Network of SSSIs and NNRs within the Broads



Map 4: Network of SSSIs within the Broads that is also of European importance



Appendix 5 –Diesel retail outlets and toilet disposal facilities

August 2025

Location	Site	Diesel Retail	Pump Out	Chemical Toilet Disposal
Acle	Bridge Craft	Yes	Yes	No
Barton Turf	Cox's Boatyard	No	No	Yes
Beccles	Quayway Boats, Bridge Wharf	Yes	Yes	No
	Galleon Moorings, Puddingmoor	No	Yes	Yes
	H E Hipperson Limited, Waveney Wharf	Yes	Yes	No
Brundall	Broom Boats	Yes	Yes	No
	Brundall Bay Marina	No	No	Yes
	Swancraft	Yes	Yes	No
Burgh Castle	Goodchild Marine, Burgh Castle Yacht Station	Yes	Yes	No
Burgh St Peter	Waveney River Centre	Yes	Yes	Yes
Geldeston	Rowancraft Limited, Staithe Yard, Big Row	Yes	Yes	Yes
Hickling	Whispering Reeds	No	Yes	No
Horning	Boulter Marine	Yes	Yes	No
	Ferry Marina	Yes	Yes	No
	Southgates Boatyard	Yes	Yes	No
	Horning Village Marina (Southgates)	Yes	Yes	No

Location	Site	Diesel Retail	Pump Out	Chemical Toilet Disposal
Hoveton/Wroxham	Brinkcraft Limited Riverside Road Hoveton	Yes	Yes	No
	Bridge Broad Marina	No	Yes	No
	Norfolk Boat Sales, Riverside Road	Yes	Yes	No
	Sabena Marine	Yes	Yes	Yes
	Summercraft, Brimblelow Road	Yes	Yes	No
Loddon	Pacific Cruisers The Pits Chedgrave	Yes	Yes	No
Ludham	Ludham Bridge Boatyard	Yes	Yes	Yes
Martham	Martham Boats	Yes	Yes	Yes
Norwich	Norwich Yacht Station (April-October)	No	Yes	Yes
Oulton Broad	Broadlands Marina/Tingdene, Marsh Road	No	Yes	No
Potter Heigham	Herbert Wood	Yes	Yes	Yes
	Maycraft	No	Yes	Yes
South Walsham	Marine Tech	Yes	Yes	Yes
Stalham	Richardson's	Yes	Yes	Yes
	Stalham Marine Services	Yes	Yes	Yes
Sutton Staithe	Sutton Staithe Boatyard	Yes	Yes	No
Upton	Eastwood Whelpton	No	No	Yes

Appendix 6 – Strategic Oil Booming/Container Sites

The following are sites where oil booming might be deployed to prevent oil spreading into designated conservation sites, nature reserves or important habitats, or simply to prevent oil spreading under influence of wind or tide. The significance of each booming site is recited. In many cases booming would be for deflecting oil spills rather than containment/removal, because of the remoteness and difficulty of access for oil recovery.

Some sites would be operable only at certain times, especially because of strength of tidal stream or strong fluvial currents after heavy rainfall.

This schedule of sites is complimentary to Appendix 7, which indicates appropriate to contain oil near source, including sites at high risk due to proximity of boatyard operations, fueling etc.

River Bure

Wroxham: Wroxham Viaduct to Wroxham Viaduct BA Moorings

Boom diagonally across the river from viaduct piers to mooring frontage. To contain a major spill in Wroxham from spreading upriver on flood tide into the unspoiled reaches and Bridge Broad. Would close river to navigation but effect on traffic would be limited. Access to moorings for oil recovery not good but workable. There is available space for temporary oil storage tank. Tidal streams gentle and well sheltered.

Wroxham Broad North and South Entrances

To deflect a major spill in the main river near Wroxham from entering and polluting Wroxham Broad. Both entrances are fairly narrow. Tidal streams are gentle. Access for oil recovery is poor.

Salhouse Broad East and West Entrances

To deflect a major spill in the main river from entering Salhouse Broad.

Hoveton Great Broad Entrances

Upper entrance overgrown and difficult to boom. Lower entrance (opposite Woodbastwick Hall) better defined and more easily boomed. Potential to protect very large area of high conservation importance from pollution.

Hoveton Little Broad (Black Horse Broad) Dyke

Single narrow dyke, if boomed could prevent spillage entering Hoveton Little Broad or Pound End.

Ranworth Dam

Boom across mouth of Ranworth Dam to prevent oil from entering Malthouse Broad and Ranworth Broad from a spill in Main River. Significant disruption to navigation acceptable.

Ranworth Broad

Boom across entrance to Ranworth Broad to deflect spill in Malthouse Broad from entering Ranworth Broad.

South Walsham Fleet Dyke

Boom across mouth of Fleet Dyke to deflect oil in main river from entering the dyke and broad and the high grade marshes which take water from Fleet Dyke.

Boom diagonally across Fleet Dyke near entrance of South Walsham Broad to contain oil spilled into Broad from spreading to main river and marshes. Possibility of oil recovery at Environment Agency moorings: access poor but space available for temporary containment. Tidal streams gentle.

Great Yarmouth Yacht Station

Boom alongside any moored vessels to protect them from oil contamination. Chevron booming where possible.

Oil can be recovered at site if tide is favourable. Good storage areas available but venue are open to the public and closure should be considered. Tidal flow can be in excess of 4mph.

River Ant**Wayford Bridge**

Containment boom diagonally across river from Mr Cooks houseboat site immediately above the bridge to moorings opposite, to contain oil spilled downriver from entering North Walsham and Dilham Canal and Broad Fen or Dilham Arm. Gentle streams. Reasonable access to moorings for oil removal and space available for temporary oil storage tanks. Disturbance to navigation minimal.

Stalham Arm

Boom across mouth of Stalham Arm to deflect oil in Main River from entering Stalham Arm and Sutton Broad. Access for recovery very poor/impossible.

Barton Turf

Booms across main channel (south of Heater Island) and Paddy's Dyke to deflect oil spilled on Barton or in Upper Ant from entering Barton Turf.

Neatishead Arm

Boom across Gay's Staithe to north bank to prevent oil spilled in Barton Broad or main river from entering Limekiln Dyke, conversely to contain oil in Limekiln Dyke from entering Barton Broad, with good oil recovery possibilities at Gay's Staithe.

Irstead Staithe

Diagonal cross-river booming to contain oil at staithe. Possible to install boom for either flood or ebb tide use. I.e. to contain spills on Upper Ant or prevent spills in lower river spreading onto Barton Broad. Good oil recovery possibilities and access. Minimal disruption to navigation.

Ludham Bridge

Diagonal cross-river booming upriver at Ludham Bridge with fair access both sides for oil recovery on flood or ebb. Moderate tidal streams clear of bridge hole. Major disruption to navigation.

River Thurne**Waxham Cut**

Boom across mouth of cut to deflect oil from entering. Very little tide. Very poor access and no possibility of oil recovery from shore. Minimal navigation disruption.

Meadow Dyke

Booming possible at either end of dyke to contain oil to area of source, but access very poor and not practicable to recover oil from shore. Very moderate streams.

Candle Dyke/Thurne Junction

Possible deflecting booming site to prevent oil coming upriver from Potter Heigham from approaching Hickling/Horsey. Possible effective especially if used in conjunction with (a) a secondary containment/collection boom diagonally across river to the Eel Set by the Holt (or Candle Dyke) and (b) deflection boom at Martham Ferry to deflect oil for collection in Martham Ferry Dyke where access for recovery is good, thus minimising spread upriver towards Martham Broad. A further secondary collection boom might be installed at Dungeon Corner. Moderate navigational disruption but extremely high conservation priority.

Such a deflection/containment system would be even more effective if a diagonal cross-river boom from Broads Authority moorings, Martham Bank, to mooring basin on Broads Authority land immediately down river of bypass road bridge.

Potter Heigham

Flood tide containment boom diagonally across river from premises of former Bridge Hotel immediately upriver of bridge to Broads Authority frontage opposite with collection and removal from mooring basin at upriver end of Broads Authority frontage. Good access and still water in mooring basin. Moderate tidal stream. Ebb tide containment by diagonal cross river boom from Broads Authority moorings, Martham Bank, to mooring basin on Broads Authority land immediately down river of bypass road bridge.

Womack Water

Deflection boom across entrance of Womack Dyke to prevent oil in main river entering dyke,

with possible secondary deflection boom across dyke, deflecting oil into Broads Authority field base mooring basin for removal.

River Yare

Whitlingham Country Park/Thorpe Meadow

Diagonal booming across River Yare from Thorpe Marshes to piling at southern end of Whitlingham Country Park. Used on ebb tide for any spills from Norwich or Thorpe Island area. Containment and access from woodland car park at Whitlingham Country Park.

Thorpe Rail Bridges (Upper or Lower)

Boom installed across the bridges could prevent spill emanating from Thorpe Old River entering the main River Yare or vice versa. Access for oil recovery is poor, especially at lower bridge and streams can run moderately strongly. Effectiveness probably greatest if deployed as deflection booms to prevent main river pollution from entering the Old River.

Great Yarmouth

Underway Containment and Recovery (With support from Ambipar Response and vessels of opportunity, utilise purpose built containment and recovery systems to corral the slick along the Yare and in Breydon Water). Tidal flow can be in excess of 5 mph. See Appendix for plan

Surlingham Broad Dykes

Booms could be deployed across the mouths of both Surlingham Fleet Dyke (the short dyke at the downriver side of the broad) or Surlingham Birds Dyke (the longer dyke at the upriver, west end of the broad) These would be deflection booms to prevent main river oil spills from entering the broad. Shore access to both dykes for oil removal is very poor or impossible. A spill within Surlingham Broad would be contained with booms across the dykes and in this case would be essential also to deploy a boom across the dyke at the junction of Birds Dyke and the broad, which gives access to a very large area of marsh and reed bed and the creeks up to Surlingham Staithe. Disruption to navigation by closure would be minor.

Rockland Broad Dykes

Booms would be deployed across the mouths of Rockland Fleet Dyke (the longer upriver dyke and the short, downriver dyke to deflect main river oil from entering the broad and thence the dykes and reed beds of the Ted Ellis Wheatfen Reserve. This would be a high priority in view of the undefended and highly vulnerable nature of this very important reserve and its habitats.

Haddiscoe New Cut

It should be a primary aim to prevent oil spillage in the Yare entering the Waveney system and vice versa. It is therefore important to deploy containment booming in the Haddiscoe new cut to cope with oil passing in either direction. The Reedham end of the cut is not ideal; on the ebb the flow is mainly from Haddiscoe towards Reedham, leading to turbulence and strong streams at the Reedham junction. Access for oil removal is also extremely poor. A more appropriate place to deploy containment booming would be the vicinity of the Haddiscoe Flyover with diagonal cross river booming and oil removal from the moorings immediately west of the flyover, which has good road access and space for temporary tank storage.

River Waveney

Geldeston Locks

Possible deployment of containment boom across the main river beneath the footbridge near the Locks Inn (the head of navigation) with containment and removal from meadow opposite. Boom able to be deployed for both flood and ebb tide operation to contain oil from downstream entering the non-navigable river to Ellingham and up-river oil entering the navigable sections below Geldeston.

Geldeston Dyke

Deflection boom across mouth of Geldeston Dyke to prevent main river oil from entering the dyke and boatyard moorings.

Beccles Dam Bridge

Ebb tide containment boom using bridge fendering Gillingham side for securing, running diagonally across river to town side with deflection onto Loaves and Fishes Dyke for removal. Good access to dyke for oil removal and temporary storage. To contain oil spills emanating from Beccles and upriver. Strong stream may be experienced on spring ebbs or after rainfall. Moderate disruption to navigation.

Beccles Bypass Bridge

Diagonal cross river containment booming beneath Bypass Bridge to public bridge mooring frontages immediately downriver of bridge. Good access for oil removal but still water containment area and river subject to moderately strong streams on spring ebbs and after rainfall (2-3 knots).

Haddiscoe Environment Agency Depot

Possible deflection booming to deflect surface oil into New Cut for containment and removal adjacent to Haddiscoe Cut junction. Strong streams would require midstream anchors.

Appendix 7 – Oil Spill Booming – Potential Locations

Boatyards Basins/Mooring Dykes etc

The following are locations where there is an increased risk of oil spillage due to boatyard operations, refueling etc. and where containment booming could be effective to contain oil spills close to source and minimise spread of oil into the main river system.

This schedule is complimentary to Appendix 4 which indicates strategic containment or deflection booming sites where deployment might protect particular areas, including conservation designated sites, nature reserves etc.

River Bure

Wroxham

- Bridge Broad moorings/ Connoisseur Cruisers. Across entrance to broad/moorings
- Broads Tours/Faircraft Loynes mooring basin entrance
- Moores Boatyard basin entrance
- Powles Marina entrance
- Ashtons mooring basin entrance
- Barnes Brinkcraft basins upper and lower
- Daisy Broad entrance (from Beehive)
- Summercraft Boatyard/mooring dyke/Across entrance from Wildwood (Mr Royall)

Horning

- South Quays Marina
- Percivals mooring basin (opposite staithe)
- Burehaven moorings dyke
- Ferry Marina Dyke
- Woods Dyke
- Horning Pleasurecraft basin entrance

Cookshoot Dyke/South Walsham Broad/Boundary Farm Dyke/Oby Dyke/Upton Dyke

- R & J Russell boatyard basin

Acle

- Horizon Craft boatyard basin
- Anchor Craft/ Bridgecraft Dyke
- Acle Boat Dyke/Hermitage Dyke entrance

River Ant**Wayford Bridge**

- Wayford Marina upper basin
- Wayford marina middle basin
- Wayford Marina downstream dyke
- Smallburgh Staithe dyke
- Peter Linfords mooring dyke

Stalham

- Keir Bedwells Chapelfield mooring basin
- Broadsedge Upper Dyke/Lower Dyke/Mooring basin
- Stalham Yacht Services basin entrance
- Richardsons boatyard main basin entrance

Sutton Staithe

- Boatyard basin/Boatyard mooring basin

Barton Turf

- Coxs Boatyard moorings entrance
- Coxs Boatyard upper dyke (adjacent to staithe)

River Thurne**Horsey Staithe Dyke****Hickling**

- Pleasureboat Dyke
- Staithe Dyke
- Whispering Reeds Dyke

Martham Ferry Dyke

Martham Staithe Dyke

Potter Heigham

- Repps (upper) staithe dyke/Phoenix Fleet
- Staithe Dykes/Herbert Woods Dayboats
- Broadshaven entrance
- Repps (lower) staithe dyke

Thurne

- (west bank) EACC mooring dyke

Thurne Dyke

- Inner end/Lambs moorings
- Entrance

River Yare

Thorpe

- Reliance Boat dyke entrance

Thorpe/Whittlingham

- BA Commissioners Cut Mooring dyke

Thorpe/Griffin Lane

- Griffin Marine Dykes/Highcraft Boatyard dyke

Brundall Gardens

- J Broom boatyard dyke
- Brundall gardens marina/Linder boats basin entrance

Brundall

- Bells Marina entrance dyke
- Brooms upper (hirecraft) basin (adjacent to shop)
- Brooms middle (hirecraft) dyke
- Brooms marina entrance
- Hobro's dyke across mouth of dyke
- Brundall Bay Marina entrance

Rockland

- Boat dyke; across mouth of dyke

Langley Dyke

- Across mouth of dyke

Hardley Dyke

- Across mouth of dyke

Reedham

- Holly Farm mooring dyke/Yareside moorings

River Chet**Loddon**

- Princess Cruisers (Aston Boats) boatyard basin
- Mistral Craft to upper end Pyes Mill mooring (crossover)

River Waveney**Geldeston Locks**

- Downriver and Broads Authority moorings to centre island

Geldeston Dyke

- Rowan Craft; across rail bridge hole/ Rowan Craft; across bridge bypass channel
- Across mouth of dyke

Beccles

- Anglia Yacht Brokers Sales Dyke; across mouth of dyke
- Yacht Station; across Yacht Station dyke mouth
- Aston Boats; across boatyard basin entrance
- Hipperson Boatyard; across boatyard basin entrance

Burgh St Peter

- Waveney Yacht Centre, Staithe dyke, across mouth
- Waveney Yacht Centre, upper basin, across entrance
- Waveney Yacht Station, lower basin, across entrance

Oulton Broad

- Broadland Holiday village basin entrances

- Colemans Dyke entrance

Somerleyton

- Crown Cruisers basin. Across entrance

St Olaves

- St Olaves marina across entrance
- Alpha Craft boatyard across mouth of mooring dyke
- Castle Craft boatyard across mouth of mooring basin