

Utilisation and disposal of seafood waste at sea

Traditional seafood waste disposal routes have become increasingly restricted and expensive. In the past onshore sectors of industry returned seafood waste back to sea, but this is only permitted if it has been approved by the relevant authorities.

Is disposal of seafood waste at sea permitted?

The disposal of seafood waste from vessels at sea is not subject to restrictions or licensing. However if the waste material is brought back to shore and landed, it cannot be returned to the vessel for sea disposal. This also applies to material landed from a shellfish aquaculture / harvesting facility.

Different rules apply to waste that has been produced in a shore-based facility. The Animal By-product Regulations (Reg. 1774/2002) sets out certain treatment methods for the disposal or utilisation of waste of animal origin, including seafood. Sea disposal is not a permitted route for any animal by-product, with the exception of certain types of shell which can be utilised in the sea for 'technical purposes'. However these would only be permitted in very specific circumstances.

What seafood by-products can be used for technical purposes at sea and how can they be used?

Only clean shell, notably mollusc shell and crab carapace, may be used for technical purposes at sea. These include activities such as cultch, sea bed enhancement, and habitat creation etc. Finfish waste and Nephrops shell cannot be used for these purposes.

Is a license needed to utilise shell at sea?

Cultch is used in shellfish aquaculture as a substrate on which oyster spat can grow. The use of cultch in a shellfish aquaculture facility requires registration with the regulator (see contacts).

In order to dispose of shell, or to utilise shell at sea for any other purpose, a licence must be granted from the relevant authority (see contacts). It is important to engage with the regulators from the outset to help reduce the timescales involved and avoid any unnecessary work or delays. Licences are usually only granted in exceptional circumstances. There are a few key stages in obtaining a licence;

1. Contact the relevant authority and inform them of your intentions. They will then inform you of the requirements (information and financial) necessary to proceed with the application.
2. Make an estimate of the quantity, origin and type of material designated for use at sea. Assess any land-based alternative routes for the shellfish material, as a licence will usually only be granted if no other viable alternatives exist.
3. Identify potential site(s) for the utilisation of seafood by-products at sea. This will have to be a shellfish aquaculture site or area of the seabed which requires replenishment or enhancement etc.
4. Once a site is proposed, an initial site environmental survey will need to be conducted. This will help to identify the impacts of the proposed operation. This may involve sampling the marine environment by using remotely operated cameras, grabs and trawls. The extent (and hence costs) of the survey should be discussed with the regulators to avoid overly complex surveys which may be unnecessary. There will be other information to collect at this stage, such as identifying suitable vessels, which will be specified in the application form.
5. Complete the application form and submit it to the regulator for their initial comments and feedback as quickly as possible. Providing you have consulted fully with the regulators throughout the process, this should be relatively straightforward. The application is then considered by other relevant organisations and groups, including environmental organisations, to identify any objections or wider implications of the proposed operation.
6. If the application is successful a licence will be issued to a named operator and will include a list of vessels licensed to utilise shell on the site. The location, method and quantity/types of shell permitted for use in the sea will be specified.
7. Monitor the site after the operation commences. This will involve the use of underwater survey equipment such as cameras and grabs. The nature and frequency of monitoring should be agreed with the regulators.
8. Renew the licence periodically (every one to three years depending on the region of the UK).

How long will it take to get a licence?

The whole process could be completed within three months. Engaging with the regulators from the outset will help to reduce the timescales involved and avoid unnecessary work and delays. However there are no guarantees that a licence will be granted even if an environmental assessment has been carried out.

How much will it cost?

Given available information, it has only been possible to provide an approximation of the indicative costs of setting up this type of operation. These costs can vary significantly between regions and are dependent on many factors. Assumptions on some of the costs have been made, for example, the labour cost is set slightly above the minimum wage and includes all employment costs. Businesses or regions wishing to look into this option should only use these costs as a guide and will need to forecast their own costs more accurately. Two contrasting scenarios are presented overpage.

Scenario 1: Large-scale, regional basis - In this example the costs are based on the assumption that a business is specifically created to utilise 50 tonnes/week of waste material, collected from about 15-20 processors within a 20 mile radius of the vessel. This would utilise the material for sea bed enhancement, which could take large quantities of material. In this situation, the business will need to invest in equipment for cleaning, collecting, storing and handling shell, as well as investing in a dedicated vessel fit for purpose.

Scenario 2: Small-scale, individual basis - This involves the utilisation of shell at sea on a more ad-hoc, localised level, such as for cultch. For example, each evening the processor uses their own transport to deliver their clean shell (e.g. 60 boxes approximately 2 tonnes) to the harbour, where the waste is unloaded onto a local fishing boat for sea dispersal. About 520 tonnes of shell could be utilised this way each year.

Indicative costs of sea disposal (2006 costs)

		Standard rates	Scenario 1 Large-scale	Scenario 2 Small-scale
		Annual Tonnage	2600	520
Licensing	<i>Annual licence cost</i>	£2,000	£2,000	£2,000
	<i>Environmental Assessment</i>	£20,000	£20,000	£20,000
	Licensing costs		£22,000	£22,000
Infrastructure and start up costs	<i>Vessel cost</i>		£100,000	£0
	<i>Vessel Capacity</i>		20 tonne (15m)	2 tonne (9m)
	<i>Harbour dues</i>	£2,000 p.a.	£2,000	£0
	<i>Diesel cost p.a.</i>	40p/ltr	£4,000	£1,000
	<i>Vessel labour cost</i>	£10/hr	£10,000	£10,000
	<i>Vessel maintenance</i>		£5,000	£0
	<i>Skip costs</i>	£2,000 each	£40,000	£0
	<i>Transport vehicle</i>	£20,000 each	£20,000	£0
	<i>Vehicle maintenance</i>		£5,000	£1,000
	<i>Vehicle labour</i>	£10/hr	£20,000	£5,000
	<i>Office admin costs</i>	£10/hr	£10,000	£1,000
		Infrastructure costs (Year 1)		£216,000
Cost analysis	Total set up costs (Year 1)		£238,000	£40,000
	Running costs per year (from Year 2)		£58,000	£20,000
	Running costs per tonne (excluding set up costs)		£22.30	£38.46
	Cost per tonne (3 year pay-back)		£45.38	£51.28

Can I reduce the costs of the environmental assessment?

The environmental survey and subsequent monitoring are important parts of the licensing process. This ensures that these activities have no unintended environmental consequences. The initial survey costs represent a major element of the overall cost, but can be mitigated by ensuring that there is as much information about the site as possible before the application is made. Close collaboration with the regulator is important, equally a good initial desk study of the site is very useful. Consider more than one site so that an alternative is available in reserve.

Is grant assistance available for helping with the costs?

No.

Conclusion

Government policy and legislation discourages, and in some cases prevents, disposal at sea so this is not considered a viable solution for seafood waste disposal.

The application of certain types of shellfish by-products in the sea must involve activities such as sea bed enhancement or cultch for aquaculture, so it is very limited as an option. To avoid wasting effort and resources, any business considering utilisation of shell at sea should liaise with the regulators from the outset.

Contacts

Regulators

- **England** - Marine Management Organisation
<http://www.marinemanagement.org.uk/works/licensing/fepa.htm>
- **Wales** -
<http://wales.gov.uk/topics/environmentcountryside/consmanagement/marinefisheries/?lang=en>
- **Scotland** - Marine Scotland, <http://www.scotland.gov.uk/Topics/marine/Licensing/marine/fepa>
- **Northern Ireland** – Department of Environment (Environment and Heritage Services)
<http://www.ni-environment.gov.uk/>

Seafish - m_archer@seafish.co.uk

Seafish has undertaken a number of projects on the treatment and utilisation of shell. Information is available to download from the publications page of our website – <http://www.seafish.org/resources/publications.asp> (search for 'waste')

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