



CAN WE AFFORD MARINE LITTER?

In this activity, learners work on a given case study presenting the economic implications of marine litter and analyse these implications taking into account a list of related parameters.

SUBJECTS

Environmental Studies, Language, Political Economy

LEARNERS' AGE

14-15 yrs

DURATION

2 hours

OBJECTIVES

- To work on a case-study presenting economic impacts of marine litter.
- To analyse information around a conflicting / multidimensional issue and draw conclusions.
- To strengthen decision-making skills.

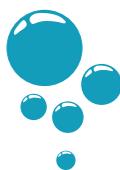
SECTION **C**

EXPLORING
THE IMPACTS





The marine environment represents significant economic value throughout the world as it sustains a diverse range of activities to surrounding communities including fishing, commercial shipping and tourism. Without question, marine litter has far-reaching economic implications that may both reduce economic benefits derived from marine and coastal activities and/or increase the associated costs. In practice, the extensive range of impacts of marine litter makes measuring the entire economic cost extremely complex. Primarily, it is easier to assess direct economic impacts such as increased cleaning costs than it is to consider the economic implications of ecosystem degradation or reduced quality of life.



CASE STUDY: **The economic impact of marine litter in the Shetland Islands, UK**

The Shetland Islands, located midway between the UK mainland and Norway, is a group of over 100 islands with a population of approximately 22.000 people living across 15 inhabited islands. With more than 2.700km of coastline, the Shetland Islands are very dependent on marine resources which are critical to the inhabitants' livelihoods. On average, marine litter costs the Shetland economy approximately €1 million every year based on the increased costs and losses affecting key industries relying on the marine environment.

Since fishing is one of Shetland's main industries, it carries the highest burden in terms of costs and losses as a result of marine litter. Lost earnings due to time spent removing marine litter from nets constitutes a relatively high proportion of these costs. This is of particular concern given the ongoing European restrictions on the number of days vessels are permitted to spend at sea.

Marine litter also presents widespread issues for Shetland's crofters mostly in terms of litter removal costs but also as regards harm to livestock and damage to property and equipment. Since many crofters in Shetland operate on a small scale, marine litter places additional strain on their time and their profit margins.





**KNOW
FEEL
ACT!**

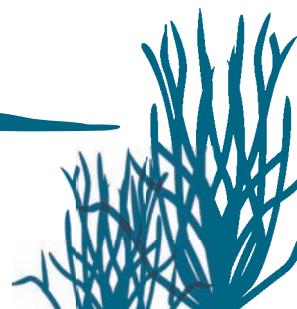
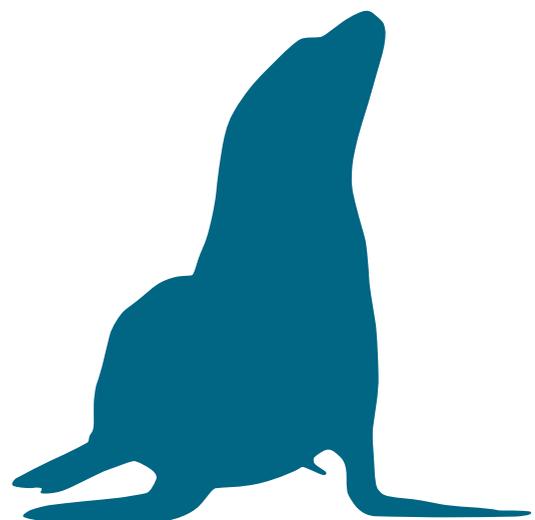
to Stop Marine Litter



The aquaculture industry experienced relatively low costs accounting for just 1.2% of the total cost of marine litter in Shetland. Similarly, the rescue services sector also experienced relatively low costs as the coastguard attended to only one vessel with a spoiled propeller during 2008. The local Power Station reported very few problems related to marine litter and incurred zero costs as a result. Unfortunately, it has been impossible to conduct a meaningful cost analysis on the financial impact of marine litter on either the tourism industry or marinas within Shetland.

Shetland's active response to marine litter comes in the form of an annual event, *Da Voar Redd Up* (or "spring cleaning" in Shetland dialect) where volunteers remove litter from beaches and roadsides that have accumulated during the year. As the largest community clean up event in Scotland, Redd Up has been responsible for the removal of well over 1.000 tonnes of litter and has received numerous awards including the UN Dubai International Award for Best Practice to Improve the Living Environment. During the 2009 Redd Up volunteers spent over 8.250 hours removing a total of 65 tonnes of marine litter from around Shetland. The cost of running the event that year is estimated at € 55.000 based on the value of volunteers' time and a small donation from a private company to cover operational costs. This figure is likely underestimated for the total cost of the Redd Up as it does not include a contribution from the Shetland Amenity Trust, which organises the event, nor the disposal cost of the litter collected, which is covered by the Shetland Islands Council.

****A crofter is the person who occupies and works a small landholding known as a croft (average size is around 5 hectares). Most crofts cannot support a family or give full-time employment, and most crofters have other occupations to provide the main part of their income (e.g. small-scale tourism).*





Materials and Equipment

Notebooks and pens

Instructions step by step

1. In groups of four, learners read the case study on the economic impacts of marine litter in the Shetland Islands in the UK.
2. Learners assume they are working for the local government of the Shetland Islands. The issue of marine litter and particularly the economical impacts is currently on the government's agenda for discussion and possible action in the coming months. They have been asked by their 'supervisor' to brief him/her on the topic.
3. They read through the "Issue Analysis Questions" and discuss any concepts they do not understand.
4. Learners select half of the questions from the "Issue Analysis Questions" list they consider as most important regarding the impact and cost of marine litter. In groups they discuss their replies to these questions and prepare a one-page brief with their arguments. Their 'supervisor' will rely on these briefs in order to prepare for the municipality meeting.

Are there any popular questions that were selected by most of the groups?

5. The educator collects the completed assignments and informs the class on the questions learners considered to be the most important regarding the issue of marine litter.
6. A class discussion is held on why learners identified the specific questions as being the most important and on the arguments they have developed.



Extension

Role playing the municipality meeting: A debate is held in class where the learners present and defend the positions of the community member they represent.

