Cold-water coral reefs

Science, Biology

Can mapping established by scientists provide information to organizations on the distribution of cold-water corals to help prevent them from declining?

Introduction

1. 1 Cold-water corals, in the past decade, have become one of the most fascinating ecosystems on Earth.

Cold-water corals feed on microscopic plants, which live inside their body and providefoodfor coral reefs. ‘ The unusual changes disturb the populations, which are part of the systems’ [8]. Corals are slow growing and very vulnerable to physical damage. These spectacular species are in decline due to human activities. The major concern among scientists is the effects of trawling. Cold-water corals can be instantly destroyed by fisheries. This is an immediate concern amongst scientists as trawlers are beginning to ‘ gauge four kilometres (2. 5 miles) long through the coral’ [4]. In the past recent years scientists have begun mapping, establishing locations where cold-water coral reefs occur, in order to increase their knowledge of coral ecosystem and help to prevent them from declining. Scientists argue that if no action is to be made ‘ an estimated 60 percent of the world’s coral reefs will be destroyed in the next 30 years’.

1. 2 Methods used to help protect cold-water corals

Advancedtechnologyhas led scientists develop their knowledge and improve their research. In order to have appropriate data of cold-water corals, scientists need to map the seabed habitats. This is established effectively by using a variety of powerful instrumentation such as a high quality resolution camera, record videos and images of the seabed. This technique helps

improve knowledge about the physical factors of the distribution of the cold-water corals [4].

Similarly, the MESH project scientists investigate the deep under water canyons of the UK, Ireland and France. They generally map the shape, topography and geology. [4]

1. 3 Are the maps used for cold-water coral research reliable?

The map identifies the occurrence of cold-water coral reefs. Maps are very important in research as scientists move onto analysing seafloor topography on maps. It is essential to gain information based on cold-water corals as this will heighten the current information on cold-water coral distribution. This is needed in order to understand patterns of their occurrence, and to find the regions where they exist in which this will help extend information towards protecting coral locations from damaging activities.

Why is the use of maps an appropriate method?

‘ The Mesh project aims to generate high quality, consistent maps of our seabed habitats.’[7] This is essential for the NW European Sea. The reason for this is that it gives reliable information to be used for effective marine resource management in the future. The Mesh project helps improve the decrease in such species. They do this by supporting resource managers, giving information of the areas of coral habitats.

Scientists have gathered more information and data from mapping, and for this reason cold-water corals are now receiving political debates. Such

examples of actions taken by national governments and European Community are The World Conversation Union.

Economic Issues

2. 1Coral reefs are preferred habitats by fisheries. This suggests that reef is an area that is significant for fish stocks as there are different types of species under water ‘ from small herbivorous fish to large predatory fish’ [10]. For this reason fisheries use trawling to fish coral reefs and this damages the ecosystem and the deep waterenvironment. Furthermore due to the harm of bottom trawling I think that a closure of coral reef area should be established. This will help prevent the decline in cold-water corals and help maintain a diverse ecosystem.

2. 2 In order to maintain a variety of fish habitat and a higher survival and growth of individual fish, areas where coral reefs occur need to be closed. This will be beneficial for the ecosystem and the fisheries in the long-run because closing the area will create a high fish population and therefore more stocks for fisheries will be produced. On the other hand, there will be effects in short-term run. The reason for this is because fish stocks will decrease due to the closures creating higher costs for the fisheries to achieve and initially end up with a lower income.

Alternatives: Law Legislation

2. 3 Although scientists gather masses of information and help prevent the decline in cold-water corals, they also need people to also take responsible in help for the protection of such species. My view is that there should be an encouragement of the fishing industry and fishing work force to comply with the ‘ code of conduct for responsible fisheries’ [2]. This act helps to protect

under-water environment [2].

Moreover, to reduce the threats of human activities to cold-water corals, these dangers have to be considered both at international and national levels. The reason for this is because it is important to expand the awareness of protection of cold-water corals. This should essentially be informative to international and national sectors and would be an encouragement to actively involve and support the process of developing management regulations.

Environmental Issues

2. 1 The environmental impact that cold-water corals have is still unknown, however it is evident that cold-water corals protect the diverse ecosystem. Cold-water corals have the potential to protect coastal areas from natural disasters such as tsunamis. Initially we should protect cold-water corals from declining as it plays an important role to the environment [1].

Alternative

2. 3 We need to pave the way into increasing the amount of data and information becoming available from various sources. Cold-water corals are ‘ worth an amazing $172 billion a year to the world economy’ [6]. There is a need to maintain database facilities and regular publications on thehealthand status of cold-water corals. It is necessary to develop strategies and guides to understand the social and economic costs.