Developing the Deep: evaluating the feasibility of establishing a recreational diving sector in the Ísafjarðardjúp area of Iceland

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Declaration

I hereby confirm that I am the sole author of this thesis and it is a product of my own academic research.

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Alan Deverell
Abstract

One of the main goals of coastal zone management is to encourage the sustainable and integrated use of an area’s natural resources. Some activities lend themselves more readily to these objectives than others. Marine based tourism is one of them, and in particular recreational diving, one of the world’s fastest growing sports. The Westfjords of Iceland, with its unique coastline, rich biota and long maritime heritage, appears to have all the potential to be an excellent diving destination. Yet, it suffers from its remoteness, basic infrastructure and lack of tourism development. This thesis looks at the possibilities for establishing a thriving recreational diving sector in the area around Ísafjarðardjúp that would provide a number of new opportunities for the tourist industry, as well as support for marine-based research and education. It proposes a development model based on close collaboration between these sectors and uses data from a number of surveys that provide information on visitor characteristics and preferences. The thesis concludes that while the establishment of a successful diving sector is possible, this will depend upon developing a clear and integrated tourism policy for the region and providing adequate support to the businesses and associations involved.
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PART ONE

“From birth, man carries the weight of gravity on his shoulders. He is bolted to earth.
But man has only to sink beneath the surface and he is free”.

Jacques-Yves Cousteau

Chapter 1 - General Introduction

When Jacques Cousteau, the father of popular diving, and his colleagues began developing the first self-contained underwater breathing apparatus (SCUBA) at the close of the second world war, they could hardly have imagined the impact this would ultimately have on our experience of the marine environment. For the very first time the general public were able to explore and enjoy the wonders of what Cousteau referred to as, ‘le monde du silence’ (‘the silent world’). As technology improved and diving equipment became more affordable and widely available, the numbers of diving enthusiasts quickly grew. Today, recreational diving has become one of the fastest growing outdoor activities, involving millions of participants and making an important financial contribution to the economies of regions where diving has become established.

The popular image of the sport, certainly as it has been portrayed by Cousteau and others in numerous underwater documentaries, is of tropical seas, large shoals of exotic fish and brightly coloured coral reefs. Yet recreational diving now encompasses a much broader range of activities carried out in many diverse environments. While the perception is that the majority of people who participate in diving do so during a vacation to some tropical region of the globe, there are large numbers of divers who regularly dive in somewhat less exotic locations closer to home.

As diver numbers continue to increase, possibly reaching saturation levels in the more popular diving locations around the globe, many enthusiasts are beginning to seek more
challenging and unusual variations on the sport. Cave diving now has an important following in many regions and other forms of so-called extreme diving, such as ice diving are attracting greater numbers of participants. For many divers the activity of diving is often combined with other interests. Many belong to clubs and associations, which provide an important social element to the sport. Diving may be combined with a passion for hunting, as is evidenced by the large numbers of spear-fishermen in some countries. Increasingly however it has become associated with an interest in, and concern for, the environment. Recreational divers regularly assist in undertaking ecological surveys of the marine eco-systems and provide invaluable support to professional scientists. Indeed, a whole new tourist sector has been built up around these activities. Divers are also regularly involved in ocean clean-up operations. Furthermore, with a growing interest in maritime heritage in many regions, particularly North America and Europe, using scuba diving and other underwater techniques has become an important means of pursuing that interest.

Given the growing interest in these activities, many parts of the world that were previously not considered as obvious locations for recreational diving and which remain largely unexploited, may now begin to attract the type of enthusiast who seeks out unique and challenging environments in which to dive. This thesis looks at the potential for the Westfjords region of Iceland, in particular the area around Ísafjarðardjúp, to establish itself as one such location.

Diving as a recreational activity in Iceland is in its infancy and most Icelanders have little or no experience of the underwater environment. Indeed, for an island nation whose very existence has depended on its long tradition of maritime activities, the inhabitants have a somewhat limited and uneasy relationship with the sea. In recent years scuba diving has become established as a tourist activity, with most of it centred around Lake Þingvellir in the Þingvellir National Park. Up to this point there has been very little diving activity in the Westfjords region and most of the coastal waters below the waves remain unexplored. Yet this part of Iceland, with its unique coastline, rich biota and fascinating maritime heritage, appears to have all the potential to be a popular diving destination.

With the decline in the traditional fisheries that were the economic backbone of the Westfjords, the region is now undergoing a re-evaluation of its future prospects. One of the key elements of ensuring continued economic growth may be the development of a
thriving tourism sector, based on principles of sustainability and successfully integrated with other marine and land-based activities within the Westfjords, that can take advantage of the unique attributes of the region’s environment. Recreational diving might be considered as one potentially vital component of that developing sector.

1.ii Research Goals and Objectives

Establishing a thriving recreational diving sector in the area around Ísafjarðardjúp would, I argue, not only provide a number of new business opportunities for the tourist industry, but also the possibility for local residents to engage in a recreational activity that would be particularly attractive for younger members of the community. Furthermore, it might also provide the kind of support for marine-based research and education in the region that is for the most part now lacking. The following evaluation will assess whether a well-developed and respectful collaboration between these interests is possible and whether it might in fact be key to the successful realization of such a development project.

To help answer these questions I have drawn up the following objectives as a framework for such an analysis:

1. To assess the natural, technical and social resources available in the region that would be favourable to the development of a new diving sector. This would include a preliminary list of dive sites that would be of interest to future tour operators
2. To evaluate the potential for local research and educational institutes to collaborate with recreational divers to assist with marine-based research
3. To explore possible links between established tourist businesses and a potential new diving sector
4. To assess the general level of interest in opportunities for diving in the Westfjords from visitors and residents
5. To offer recommendations that might be used to draw up a development plan for setting up a recreational dive operation and dive club in the Ísafjörður area.
1.iii  Methodology

Local tourist data has been collected in recent years that will be invaluable to understanding the interests and concerns of visitors to the area (Elíasdóttir et al, 2008). This has been supplemented by a questionnaire directed at clients of a local adventure tourism business, Borea Adventures, to assess levels of interest in diving tours in the area. A survey of dive clubs and organisations in Europe has also been undertaken using email, to estimate the possible frequency of organised visits by foreign clubs. Diver training has been offered in Ísafjörður by Dive Iceland, an organisation from Reykjavik, in the spring of 2010, as well as by Dive.Is in October 2010. Feedback from these training sessions has enabled me to evaluate the interest of local residents in membership of a diving club and future diver training. In the autumn of 2010 there were visits by Sportkafarafélag, a popular dive club from Reykjavik and Dive.Is, the largest diving business in Iceland, to assess the area as a future dive destination and to hold further training. This has provided invaluable information on potential diving locations. I have also been working closely with a local tour operator, Borea Adventures to investigate the possibility of integrating diving and snorkelling into their current range of adventure-based activities.

The local research institutes contacted have provided information on research projects that would benefit from diving support. Nattúrustofa Vestfjarða has previously worked with volunteers on a number of projects, mostly ornithological. This provides a valuable comparative study for the development of volunteer participation in sub-aqua research. The local Archaeological Heritage Agency under Dr Ragnar Edvardsson is also interested in drawing up a protocol for working with volunteer divers and organising heritage education workshops for dive clubs around Iceland. Data from the various research institutes has been useful in establishing a list of possible dive sites. This includes information on biota and heritage sites such as shipwrecks, as well as topography, currents, temperatures and other factors affecting diving.

1.iv  Outcomes

It is anticipated that this thesis will not only help develop an interesting area of research as yet relatively unexplored in this part of Iceland, but will also generate a practical set of
proposals. This might provide a model that could be applied to other areas of the country where the possibilities for an integrated approach to coastal development, particularly those involving sustainable tourism, are being considered. The thesis will include proposals for establishing a new tourist sector in the Westfjords. It will also set out recommendations on future collaboration with local research establishments, including the possibility of bringing diving and underwater research into educational programmes such as the Coastal and Marine Management programme at the University Centre of the Westfjords. Furthermore, it will generate a preliminary map of potential dive sites and a set of recommendations for further development.

1.v Contribution to Development

The results of this project will potentially make a contribution not only to the local economy, but also to the sustainable development of the region by providing research data and a proposal to help:

- Establish a new tourist sector that is not only in sympathy with the region’s commitment to sustainable development, but will also help extend the tourist season
- Develop a revenue source that will feed directly into the local economy
- Enhance the image of the region as a destination for those interested in adventure activities, the natural environment, maritime heritage and research tourism
- Increase the appeal of established tourist businesses (adventure tours, aquatic sports, photography, heritage and nature-based tourism) by providing additional activities
- Establish a year-round activity for local residents that is particularly appealing to young people (thus developing the type of interests that help retain the current population and make the region more attractive to new residents)
- Establish a centre of excellence within the diving industry that can develop connections with the research community, coastal industries, and educational institutes such as the University Centre of the Westfjords
• Increase awareness within the local population of the marine environment and of the potential issues facing the world’s oceans.
Chapter 2 – Theoretical Background

2.i Introduction

In order to evaluate the feasibility of establishing a new recreational diving sector in an area such as the Westfjords, one that may eventually have a significant impact on local business and research activities, I propose generating a conceptual development model. This will be used both as a theoretical baseline against which the likelihood of successfully establishing the new sector may be assessed, and as a general framework that might provide guidance for any actual implementation of these activities. It will also serve to identify areas that need to be considered when ultimately drawing up a business plan. While this model will need to take into account conditions specific to the Westfjords region, which will be discussed at length in the following chapter, it will be based primarily on a review of the literature that has already been published in the fields of marine-based tourism, recreational diving, research tourism and tourism business development.

2.ii Sea Changes

Humans, throughout their history, have been living on the coast and exploiting the generous bounty of the world’s oceans. Yet historically humanity’s relationship to the marine environment was an uneasy one according to Alain Corbin in his book *Lure of the Sea* (1994, p.2). The oceans were something to be feared; an unpredictable place, potentially violent and the abode of fearsome creatures. Certainly not a place for recreation and relaxation. Despite failing to acknowledge the obvious delight that cultures such as the Romans, as evidenced in their art, took in the pleasures of coastal regions, Corbin’s analysis is accurate in suggesting that traditionally the sea was valued primarily for the purposes of ‘fishing and navigation’ (Cicin-Sain & Knecht, 1998, p.16). It is only in more recent times that it has become valued for its own sake and the desire to live and play by the sea has become a common aspiration. Corbin asserts that the delights of the ‘seaside’ as it became known, were not discovered, certainly in the Western world, until
the Romantic period of the 18th century. What began as tentative steps to ‘take the waters’ in the name of bodily health, and to commune with the oceanic forces of nature as a means of ‘feeding the soul’, dramatically escalated as modern forms of transport allowed members of all social classes to spend time at the beach. Beginning in England, resort towns quickly developed along the coasts of Europe to cater for this new-found interest in the seaside. This rapidly expanded to other parts of the world. The last century in particular has seen not only a huge increase in the numbers of tourists travelling to enjoy the delights of the coastal regions, but an enormous expansion in the number and size of coastal communities as people seek out the lifestyles and economic opportunities that these regions afford.

This profound cultural shift in our relationship to the sea has come about during a period when the concept of tourism itself, previously the reserve of the leisured classes, has become a reality for people of all social classes. As societies industrialised, ordinary workers eventually gained rights to paid holidays and the relative increase in wealth meant that people could now afford to indulge in leisure activities, including excursions to the seaside. In fact, it might be argued that this new-found change in attitudes to the sea is at the core of what is now the worldwide phenomenon of tourism.

2.iii  Marine Based Tourism

2.iii.i  A World of Tourists

By some accounts tourism is the largest industry on the planet (Miller, 1991). It is certainly one of the most economically important. The United Nations World Tourism Organisation (WTO) estimates that in 2008 international tourist arrivals peaked at 922 million, an increase of almost 2% on the previous year, and that tourism receipts reached US$944 billion, having grown 1.8% in real terms. Factoring in receipts from transportation, the total was over US$1 trillion (WTO, 2009). While the previous year has seen a significant downturn in international tourism receipts of up to 6% due to the worldwide economic crisis, the fact remains that tourism is still a major source of income for many countries, particularly in the developing world, and a important provider of employment opportunities.
2.iii.ii  Defining Tourism

These figures however tell only part of the story. Depending on how it is defined, tourism as an economic and social activity is far more encompassing. The WTO defines tourism as "travel to and stay in places outside their usual environment for more than twenty-four hours and not more than one consecutive year for leisure, business and other purposes not related to the exercise of an activity remunerated from within the place visited." A vast range of activities may fall under this definition. This may include not only trips to distant countries, but also local excursions. Domestic tourism in general accounts for 80% of all tourist activity (UN, 1999). Indeed, any activity that we undertake for our own interests, or any hobby pursuit, might be classified as tourism if it involves leaving our homes for a period of time. A day trip excursion to a theme park or local beauty spot is clearly a form of tourism, despite beside being outside the WTO definition, as would be an activity carried out as part of a club or association. If all forms of tourism are taken into account then the figures for tourism spending it might be concluded are significantly higher. It is important to bear in mind this broader definition when evaluating the financial impact of introducing a new tourism and recreational activity into a region as would be the case with diving in the Westfjords.

2.iii.iii  Marine Tourism Overview

While tourism in general has shown enormous growth over the last two decades, what might be termed marine tourism has posted the strongest gains (Cater & Cater, 2007, pp. 265–282). According to the United States National Oceanic and Atmospheric Administration, “Of all the activities that take place in coastal zones and the near-shore coastal ocean, none is increasing in both volume and diversity more than coastal tourism and recreation” (NOAA, 1997). Clearly there has been a developing interest in the marine environment that has evolved far beyond the mere delights of ‘taking the waters’ at Brighton Beach.

The scope of activities that might be classified as marine tourism is vast. It may include anything from visiting maritime heritage museums to sea angling, from whale watching to
ocean-going cruises. The full range of leisure, tourism and recreational activities that can take place in the coastal zone or offshore waters might be termed marine tourism. In many ways, the scope is limited only by how one defines the concept of ‘marine’. Garrod and Wilson in their book *Marine Ecotourism: Issues and Experiences* (2003) use a broad definition which includes the ‘foreshore, offshore and coastal zones’ arguing that “there will be no clear distinction between these geographical zones in practice” (p.2) since they are so closely interrelated in the context of tourism. Similarly in *Marine Tourism: Development, Impacts and Management* (1999, p.10), Orams defines marine tourism as including ‘those recreational activities that involve travel away from one’s place of residence and which have as their host or focus the marine environment (where the marine environment is defined as those waters which are saline and tide-afl ection)’. For this study, what is important to acknowledge is how interlinked many of these activities are. The underlying attraction for most people is to experience the marine environment, any number of activities may become a means by which they may interact with it.

2.iii.iv Evaluating Marine Tourism

Clearly, a significant element of what constitutes the vast global industry of tourism involves some kind of marine-based activity. Yet only recently has marine tourism been the focus of research and academic study. Coastal managers and planners are now just beginning to take into account the demands and impacts of marine tourism when developing policy and planning for the uses of coastal zone resources (Miller, 1993). In economic terms, it is interesting to note that while the WTO and other organisations regularly publish figures on the value of the tourism industry in general, it is difficult to find any information that estimates total values for the marine tourism industry (Orams, 1999). This may in part be due to the large spectrum of activities that might be included in the term. There is little doubt however that the financial impacts of marine tourism are huge. For island and coastal communities in particular, this can represent the largest part of their economic activity (Miller, 1991).

As an example, the CRC Reef Research Centre in Queensland, Australia published a report in 2003 that estimated that the commercial value of marine tourism in the Great Barrier Reef Marine Park to be approximately A$1.6 billion per year, while employing
some 48,000 people (Harriott, 2002). Additionally, the Environmental Management Charge that all visitors must pay provides an important source of funding for scientific studies, educational projects and the management costs of the marine park. In one sector of the marine tourism industry, whale watching, a report by the International Fund for Animal Welfare in 2009 estimated that in 2008 over 13 million visitors in 119 countries participated in tours that generated expenditures of more than US$2.1 billion (IFAW, 2009). There are now more than 3000 whale watching operations around the world employing over 13,000 people. For developing nations, many of which are in regions particularly conducive to the type of activities associated with marine tourism, receipts from these activities provide a vital contribution to their economies and a major source of employment.

2.iii.v Marine Tourism Business

Part of the issue of studying marine based tourism is the enormous spectrum of businesses that make up the industry, ranging from small single-owner operations to large international tour companies (Orams, 1999, p.8). With the advent of mass tourism since the 1960’s there has been some consolidation in the industry as large, multi-national companies have moved into the sector, but given the vast range of tourist activities that are carried out in the marine environment, the possibilities of a few large companies dominating the industry, as is the case in other sectors, are limited. This does mean that there are almost unlimited possibilities for developing new business opportunities, particularly as new areas open up for tourism. Despite the recent economic downturn this is likely to continue and tourism will remain for coastal states one of the principal economic activities (Miller, 1991).

2.iv Marine Ecotourism

2.iv.i Ecotourism

Tourism is not, as will discussed, without its potential negative impacts on the environment in areas where it is established. As a consequence, one of the most important developments in recent years has been the advent of ecotourism. Ecotourism is estimated
to be the fastest growing form of tourism. According to Fennell in his 1999 book *Ecotourism – An Introduction*, this rate of growth is between 10% and 30% per year, and worth, at the time of writing, some US$10 to US$17.5 billion. A more recent survey carried out by The Travel Industry Association shows that three-quarters of Americans feel it is important when travelling to have little or no impact on the environment, with 38% saying that they would pay a premium to travel with companies that are more environmentally aware (Goeldner & Ritchie, 2009). Nature tourism and ecotourism together account for approximately 20% of all international tourist travel (Self *et al*, 2010).

Again, ecotourism can be somewhat difficult to define accurately and a number of definitions have been proposed. One of the most commonly accepted is the International Union for Conservation of Nature that describes ecotourism as ‘environmentally responsible travel and visitation to relatively undisturbed natural areas, in order to enjoy and appreciate nature (and any accompanying cultural features — both past and present) that promotes conservation, has low negative visitor impact, and provides for beneficially active socio-economic involvement of local populations’ (Stem, Lassoie, Lee & Deshler, 2003). Despite the difficulty in arriving at a consensus with regards to a definition, it is generally agreed that ecotourism should be primarily nature based, incorporate principles of sustainable development, be a community initiative and provide some educational experience for those participating (Garrod & Wilson, 2004).

2.iv.ii Ecotourism in the Marine Environment

One important element of the increasing interest in ecotourism has been in the area of marine ecotourism. Or as Halpenny (2002) simply defines this, ‘ecotourism that takes place in coastal and marine settings’. Growth in this area is particularly strong. What is not at first apparent are the differences between the uses of the terms marine tourism and marine ecotourism, as many of the activities included are similar. For Cater and Cater (2007) this has often been reduced, as with other forms of ecotourism, to a question of ‘consumptive’ versus ‘non-consumptive’ usage and ‘the issue of scale’. While ‘non-consumptive’ tourism would encompass activities where nature might only be observed, ‘consumptive’ tourism includes activities such as sports fishing and hunting. As such, it is often viewed in a negative light. However they argue that on the one hand all tourism is to
some degree consumptive, and on the other, that even activities like fishing can be sustainable if managed effectively. With respect to scale, clearly there are limits to the extent to which ecotourism can be developed without itself having a detrimental impact on the relative purity of the environment that was the attraction for the tourist in the first place. Again however, if a tourist activity, such as whale watching or scuba diving, is managed in a responsible and sustainable manner, then participant numbers may be on a scale similar to other forms of tourism. It is more a question of whether the type of person seeking a more personal ecotourism experience is willing to share that with a large group of other ecotourists. This is an important consideration for the development of tourism in an area such as the Westfjords.

Interestingly, while there is some discussion as to whether cultural heritage should be included in any definition of ecotourism, marine or otherwise, the IUCN definition does so. A report published by the University of the West of England’s Centre for Research, Innovation and Industry, highlights the value of ‘non-wildlife resources’ for coastal communities with a rich maritime heritage in extending the options for marine ecotourism (Bruce et al, 2001). These forms of tourism are by no means incompatible and it would be a mistake to assume that humans are not an essential part of the environment anyway. Again this is pertinent to an area such as the Westfjords given its unique maritime heritage, particularly when establishing an activity such as recreational diving.

2.iv.ii Opportunities

Many of the definitions of ecotourism, including the one cited above, include some reference to travelling to remote or unspoilt regions. These ‘peripheral’ areas as Garrod and Wilson (2004) refer to them, are typically the type of environment that is the most appealing to those people who are attracted to marine-based ecotourism activities. Yet in many instances they are also areas that suffer from issues such as poor infrastructure, high levels of unemployment, limited educational opportunities and vulnerable economies. For Garrod and Wilson there is an important opportunity for the coastal communities in these areas to exploit the increasing interest in marine ecotourism as a means of sustainable development and economic regeneration. They point to six factors that make this particularly advantageous. When evaluating the case of the Westfjords, which by Garrod
and Wilson’s standards might well be described as ‘peripheral’, it would be helpful to take these factors into account as it considers its own regional development strategy.

- **Marine ecotourism offers peripheral coastal areas a more sustainable development alternative**. Due to the decline in traditional coastal industries such as fishing, and the potentially negative environmental and social impacts of ‘mass’ tourism, marine ecotourism provides an alternative or supplemental source of revenue that encourages preservation of the natural environment, since it is in the economic interest of the local community to do so.

- **Peripheral areas contain the pristine marine resources that are highly sought after by marine ecotourists**. Areas such as the Westfjords contain the type of unspoilt natural environments, attractive marine (and terrestrial) wildlife and low visitor density that are particularly appealing to marine ecotourists. These areas, because of their remoteness have not suffered from the type of environmental degradation that has accompanied economic development in more populated regions.

- **Marine ecotourism offers the opportunity to redeploy unemployed or underemployed resources**. Many areas have capital equipment and infrastructure that was put in place to service vital local industries such as fishing. With the decline in these industries, many of these resources remain underutilized. These may be redeployed to be used in marine ecotourism activities, such as the use of ‘retired’ fishing boats for whale watching or as platforms for scuba diving. This is important since the infrastructure costs for establishing new ecotourism sectors, particularly in such remote or ‘peripheral’ areas can be prohibitively expensive.

- **Marine ecotourism can help address the seasonality problems faced by peripheral areas**. The limited length of the season available for tourism activities is an important issues, particularly in regions with harsh climates such as the northern Atlantic. Marine ecotourism can help extend this season since many of the attractions, such as observing large marine mammals or the migrations of particular species, may only occur outside of the traditional holiday period. Indeed, scuba diving is best practiced outside of the warmer summer months, as visibility in the sea is much greater. Furthermore, the type of individual interested
in marine ecotourism activities is less likely to confine themselves to the constrictions of the traditional vacation calendar.

- ‘Marine ecotourism represents product diversification rather than market diversification’. Even the remotest regions already contain some form of established tourism. This is certainly the case for the Westfjords. Marine ecotourism, rather than developing a totally new tourism sector is more a means of enhancing what is already on offer and providing new opportunities and products. By making these products available, current tourists might be encouraged to spend longer periods in the area, including what might be considered the off-season, and as a consequence increase the amount they spend. Furthermore, the type of person who engages in one form of marine ecotourism such as scuba diving may well be drawn to exploring other activities such as kayaking or kite surfing.

- ‘Marine ecotourism tends to suffer lower ‘leakage factors’ than other forms of economic activity in peripheral areas’. One of the issues within the tourism industry is the limited amount of money that is spent by tourists which stays within the local economy, even though that is where many of the infrastructure costs have been borne. Cruise ships are a typical example. The very nature of marine ecotourism products and the characteristics of the people engaged in this form of tourism mean that there tends to be less financial ‘leakage’. Many of the businesses providing these services are small and locally-owned and the ecotourists themselves are generally drawn to eating in restaurants favoured by locals and staying in more ‘authentic’ accommodations. Leaving more money in the local economy often means increased investment in infrastructure and research, as well as an increased appreciation of the benefits of sustaining a healthy environment. It should be noted that ecotourists in general tend to spend more than other tourists and are predominantly in a higher income bracket (Dolnicar, et al., 2008).

In conclusion however Garrod and Wilson do warn that this regeneration cannot be founded solely on marine ecotourism, but it can certainly form one part of a broader sustainable development strategy in ‘peripheral’ areas, such as the Westfjords.
2.v Loved to Death

In many ways it was the reaction to the unbridled development of tourism along the world’s coastlines, which characterised the 1970’s and 1980’s, that led to the growth of the ecotourism movement. While ecotourism, guided by the principles of sustainability, was meant to alleviate many of the destructive impacts of tourism on the environment, it sometimes fails to live up to its own ideals of conservation. All too often, ruthless operators have been keen to exploit the ecotourism label to promote their activities while not adhering to the standards that it is meant to encourage. In order to combat this form of ‘greenwashing’, the tourist industry has attempted to introduce some kind of certification for genuine ecotourism operations, but with over 100 eco-labelling programmes in existence, there is some debate as to how effective this actually is (Self et al, 2010).

Marine-based ecotourism is subject to many of the same issues. A report by the CRC Reef Research Centre in Queensland, Australia looked into the impacts of marine tourism activities on the Great Barrier Reef. Many of their findings are pertinent to other regions of the globe where marine tourism has become established. The negative impacts fall into two main categories; those that are a result of building tourism infrastructure, and direct impacts from the activities themselves (CRC, 2006).

- **Coastal development.** Providing tourism facilities, albeit on a small scale, often means building infrastructure to provide transport, lodging, restaurants and entertainment. Not only does this mean the potential loss of natural habitats and land for other uses, but the impacts of construction can have a serious effect on local ecosystems. Even after construction these effects may continue due to the discharge of sewerage and other effluents from the hotels, restaurants and other facilities. The construction of marinas and jetties can have similar impacts and may also cause further issues due to changes in erosion patterns and ocean currents.

- **Marine-based infrastructure.** The placement of pontoons and permanent boat moorings can cause disturbance to the sea floor as well as effect behaviour patterns of marine wildlife.

- **Boats and vessels.** Anchors and anchor chains can cause damage to benthic organisms on the seafloor as can the grounding of boat hulls in shallow water.
Pollution from boats in the form of litter, wastewater and leaking contaminants such as oil from engines is a constant problem.

- **Recreational activities.** Diving on coral and other fragile ecosystems can cause damage due to unnecessary diver contact. This occurs particularly when large numbers of divers are concentrated in one area and where divers are insufficiently trained. Recreational fishing, although often less destructive than commercial fishing, can have a noticeable impact on the populations of certain species. Lost tackle can also cause problems for marine animals and other organisms.

- **Wildlife interactions.** One of the most popular marine tourism activities is observing wildlife such as marine mammals and birds. As the numbers of tourists increases and more areas of the coastline become accessible, so does the potential for these activities to disrupt the behaviour of the species observed, particularly during the breeding season. Feeding patterns may also be affected due to the availability of food not normally found in the environment. There is the further danger with vessels encroaching even closer to the animals, of injury and death from ship strikes or other human interactions.

Effective management is crucial to mitigate the negative impacts of tourism within sensitive marine environments. In the case of the Great Barrier Reef this is assured by the Great Barrier Reef Marine Park Authority (GBRMPA) operating under a framework of regulations, zoning plans, permits, codes of practice and detailed management plans. Unfortunately many regions are far less successful at implementing such measures. It is vital that communities and authorities consider the potential impacts of encouraging even the seemingly most benign forms of marine ecotourism.

### 2.v.i Social Impacts and Attitudes

As well as direct environmental impacts, it is also important to address the question of social and cultural impacts. While many studies consider the impacts of tourism on indigenous cultures or the societies of non-Western or developing nations, the impacts of establishing a new tourism sector in any location will rarely be negligible (Pizam, 1978). This will certainly be the case with communities in which there is no tradition of tourism activities, or those with a cultural heritage founded on other activities, such as fishing or
agriculture. While many residents may see the economic benefits of increased tourism, many may resent the potential environmental impacts and increased strain on local infrastructure (Allen et al, 1988). This is comprehensible in areas that may have been subjected to unbridled mass-tourism development. Yet Garrod and Wilson’s ‘peripheral’ areas, although not subject to the same levels of development, may suffer a proportionally greater impact due to the very limited infrastructure and fragility of the local eco-system. Culturally they may also be less aware of, or willing to provide, the level of ‘service’ that is often demanded by the tourist industry. In a paper on ‘cold water island tourism’, Baldacchino (2006) argues for the potential for ‘high value added per capita’ tourism in these regions, but only if it is not at the expense of the local environment and unacceptable strains on the infrastructure. Resident support for tourist activities can be related to a number of factors including; the potential for personal economic gain, access to the actual tourism resource and level of attachment to the local community (Jurowski et al, 1997). Ultimately the success of any tourist sector, particularly in relatively isolated communities, will depend upon the perceptions and attitudes of the local residents as to its potential benefits or negative impacts.

2.v.ii Brokers, Locals and Tourists

In attempting to understand these dynamics between the tourists and local residents Miller and Auyong (1991) have developed a particularly useful model. In it they identify the power dynamics of tourism which are dependent on three categories of players; the tourism ‘broker’, the tourism ‘local’ and the actual tourists. The ‘broker’ is anyone who ‘seeks to control tourism outcomes’, which might equally apply to locals as well as to external operators.
This BLT model is valuable in helping to identify those individuals and business who are directly implicated in the tourism industry of a region and those who ‘facilitate’ its existence and may directly, or indirectly, determine its ultimate success. It also identifies those group of locals who derive little or no benefit from tourism activities and whose perceptions may be coloured by this lack of personal interest in the sector.

2.vi Recreational Diving

2.vi.i Into the Ocean

Although some forms of recreational diving, most notably spearfishing using free diving techniques, were practiced as far back as the 1930’s, it was not until the development of the first ‘self-contained underwater breathing apparatus’, or SCUBA as it became known, that the sport became generally popular (Garrod and Gössling, 2008). Jacques-Yves Cousteau and Emile Gagnan invented the first effective scuba equipment, or aqualung, during the closing years of the Second World War. With it they explored the waters of the Mediterranean off the coast of Southern France. Although at the start, fairly crude and difficult to use, nonetheless this equipment meant that the first time it was possible to spend extended periods under the water without support from the surface. As aqualung design improved and with the development of the wetsuit and other diving equipment in the 1950’s, diving became an activity that became accessible to all. This led to a
proliferation of interest in diving for recreational purposes. That interest was inspired in
great part by a whole generation of film-makers, most notably Cousteau himself, who
produced a large number of documentaries and feature films in which the newly-
discovered wonders of the underwater world could be seen by members of the general
public at cinemas or on their television sets.

The simple pleasure of putting on diving gear and exploring some exotic tropical reef has
now developed into an extensive range of diving specialisations. In their book *New
Frontiers In Marine Tourism*, Garrod and Gössling (2008) list some of these recreational
diving activities.

- technical diving (or diving in extreme circumstances such as cave diving, wall
diving, wreck diving, altitude diving, ice diving, night diving and drift diving)
- under-water photography and videography
- diving with marine mammals and exotic species
- undertaking underwater biological, geological or archaeological surveys
- underwater search and recovery

To this I would add those who dive to hunt fish and gather shellfish, as well as those
engaged in souvenir (or treasure) hunting. The wide range of activities underscore the fact
that enthusiastic divers are now seeking ever more challenging diving experiences in more
and more remote parts of the world.

2.vi.ii Diver Training

As the interest in recreational diving increased, schools began to appear to train people in
diving techniques and use of the equipment. Indeed, the first courses were started in
France in the 1950’s to train purchasers of Cousteau and Gagnan’s aqualung. The National
Association of Underwater Instructors (NAUI) was set up in 1959 in the United States as a
non-profit organisation to provide one of the first professional certification programmes
(NAUI website). A for-profit branch was split off in 1966 to become the Professional
Association of Diving Instructors (PADI). There are now a number of diver training
organisations around the world, many of them specific to one country or region such as the
Fédération Française d'Etudes et de Sports Sous Marins (FFESSM) in France, or the
British Sub-Aqua Club (BSAC) in the UK. Yet PADI, with representation around the globe, remains by far the largest provider of diver training and has done more to popularise, and some might say commercialise, the sport than any other organisation (PADI website). In Iceland, while there are currently only two dive centres providing regular training, both of these offer PADI diving qualifications.

2.vi.iii Diver Demographics

While it is difficult to find exact numbers concerning divers who regularly practice their sport, in 2003 Tourism Queensland estimated that at that time there were 5 to 7 million active divers worldwide. PADI now puts this estimate at over 10 million (PADI, 2009) and Cater and Cater (2001) arrive at a much higher figure of 14 million, based on projected growth over the last decade. Similarly, with diver certification. Up to 2009 PADI, which trains 60% of all divers worldwide, claims to have provided over 18 million certifications. While some of these may be multiple certifications for the same diver, nonetheless, this gives some indication of the popularity of the sport.

![Figure 2: PADI certifications worldwide (Source: PADI, 2010)](image)

Despite the recent decrease in numbers, probably due to the worldwide economic recession, this popularity is likely to continue to increase.
PADI offer a number of other statistics that provide an important insight into the demographics of the diving community. The split in certifications according to gender over the period 2004 to 2009 consistently remained around one-third for female divers, to two-thirds male. Similarly, the median age of divers acquiring certification, during the same period, was 30 years for males and 27 for females. In terms of regional variations, 33% of entry level certifications (PADI Open Water Certification) in 2009 were in the United States, 25% in Asia and 17% in Europe. Higher level certification was 27%, 19% and 20% respectively. Professional membership of PADI, required for those providing diver training, was 31% for the USA, 22% for Europe and 15% for Asia (however, no actual numbers are given for these qualifications). This would indicate that by far the largest markets for diving are in these three regions, with divers in the United States and Europe tending to pursue their sport to a more advanced level. This has implications for more marginal regions such as the Westfjords, which provide a more challenging diving experience, since they are likely to be of greater interest for this category of diver.

Other important factors include education levels and income. According to their report by Tourism Queensland, most divers are well educated. They cite research by Ditton et al (1999) which reveals that 64% of divers in Texas have at least four years of college education. Similarly, PADI claim that 80% of divers obtaining certification have some tertiary education (Cater and Cater, 2001). Divers also tend to have higher-than-average income levels (Ditton et al, 1999), (Garrod and Gössling, 2008). This may bear some relation to the fact that recreational diving tends to have fairly high start up costs in terms of equipment, as well as costs associated with travel to desirable diving locations. It does mean however that diving enthusiasts are more likely to spend substantial amounts in order to practise their sport and to travel to locations to do so.

The profile of the typical diver therefore could well be described as an American or European male in their late 20’s or early 30’s with a college education and reasonably comfortable level of disposable income. The value of this information, with respect to establishing a new regional diving sector, is in helping to develop a clearer picture of the potential market for recreational diving services and the characteristics of the likely customers for those services.
2.vi.iv Dive Tourists

With respect to the typical dive tourist, Garrod and Gössling (2008) look at the research undertaken on dive tourism and conclude that while the activity is still predominantly male-orientated, the gender balance is beginning to change, with proportionally more women participating, particularly in certain regions such as South East Asia. Similarly, the average age of tourist divers, while still relatively young, is higher than for recreational divers in general. This may be explained in part by the fact that tourist divers tend to be trained to a higher level than the average diver and are generally more experienced, although recreational diving is becoming increasingly popular with retirees and people in their forties and fifties. As is the case with divers in general, dive tourists also tend to be particularly well off. Garrod and Gössling cite the 2001 WTO report which suggests that 78% of international dive tourists are in full-time employment, with an average income, estimated at US$80,000, which is substantially greater than other international tourists. Again, this might be partially explained by the relatively elevated costs associated with recreational diving, particularly when it involves foreign travel.

The authors do warn however on taking these findings too literally when building up a profile of the typical diver, particularly in the context of dive tourism. What needs to be considered is ‘the centrality of diving to their lifestyle’. They point to a spectrum of diving tourist. These range from what they term ‘mainliners’ at the one end, , who travel with the express purpose of diving, and the ‘sideliners’ at the other, who take vacations for other reasons but may participate in diving if the opportunity presents itself. This has important implications for marketing in the diving tourism sector.

2.vi.v Defining The Market

In establishing what will in essence be a new business sector, it is vital to define the potential clients for any goods or services that may be offered. From this knowledge it is possible to develop more effective business and marketing strategies (Kotler et al, 2008). Despite the warnings of Garrod and Gössling mentioned above, it is important to develop some idea of the typical diver profile, in particular a sense of what motivates them to choose one form of diving over another, or what locations may best serve their interests.
In his contribution to *New Frontiers in Marine Tourism: Diving Experiences, Sustainability, Management*, Carl Cater (2008, p.49) summarizes what he sees as some of the primary motivations for recreational divers. For him the most fundamental attraction for divers is the desire for “immersion in a strange and alien environment”. The unfamiliarity of this environment provides a unique set of challenges, potential dangers and a high level of physical demands. This may go some way to explaining the traditional male-orientated image of the sport. The underwater environment is also a world of heightened senses. The feeling of weightlessness moving through the water, the bodily sensations from the pressure of being immersed in a dense liquid, the distorted visual perception and the amplified sound of one’s own breathing, all contribute to enhancing the physical experience. Diving is not without its discomforts; difficulties in equalizing, extreme coldness and cramps, cuts and bruises from contact with sharp rocks and the ever-present threat of decompression sickness, and even dangerous creatures. While diving is in fact a relatively safe sport (Hagberg and Ornhagen, 2003), it carries with it an image of adventure, daringness, individuality and a degree of machismo, surrounded by an aura of sexuality (Garrod & Gössling, 2008). As such it bears more in common with extreme sports and adventure sports than the common image of mass tourism.

Cater cites the work of Beard and Ragheb (1983) in which they identified four areas of motivation for those pursuing leisure activities, but which may also be applied to diving. The first of these is ‘stimulus-avoidance’ or the desire to escape to a world that is totally different from our everyday experience. It is difficult to imagine another instance where one has the opportunity to so easily cross the threshold between our day to day existence and to enter a completely alien world. Cousteau constantly refers to this ‘liminal’ experience in his films and writing. The second motivation is ‘social’. While clearly not a team sport, diving offers ample opportunities for social interactions. It is never recommended to dive alone and the ‘buddy’ system or dive partner can create close bonds with those on whom your life may depend. Many divers belong to diving clubs (discussed in more detail later) that provide opportunities for sharing experiences and knowledge. Beard and Ragheb identified the importance of ‘esteem’ in this context, which may be acquired by sharing stories of exploits, working one’s way through the increasingly challenging levels of diver certification or having engaged in ‘ultimate’ diving experiences in unusual places. Cater uses the example of diving with sharks, but diving in the
Westfjords might well fulfil the same criteria. ‘Competence-mastery’, the third motivation, is the desire to obtain expertise in the underwater environment. Even basic diving requires a degree of technical competence due to the equipment necessary to practice the sport and physical prowess to master the unfamiliar conditions of the aquatic realm. The required levels of skill become increasingly more demanding depending on the type of diving undertaken, with the more extreme pursuits such as cave, cold-water and wreck diving, or the use of specialized equipment such as re-breathers, being highly technical. The final motivator ‘intellectual’, is one that I will explore further in section 2.vii. It embodies the desire to learn about the natural world and experience its wonders, and is not confined to checking off lists of sightings of charismatic flora and fauna. With this sense of curiosity in the underwater realm often comes the genuine desire to conserve and protect these fragile environments.

These profiles can prove useful when evaluating the potential for attracting recreational divers to the Westfjords. Diving in this region is clearly more challenging than areas traditionally exploited by the mass tourism market and it already evokes the image of adventure and extremes. However, it may also appeal to those divers who are strongly motivated by the third and fourth categories defined by Beard and Ragheb.

2.vi.vi Dive Tourism Economics

Developments in diving technology and the increase in diver numbers have seen diving move from being a specialist activity, practiced by a limited number of enthusiasts, to one that has become an important element of the mass tourism market (Garrod and Gössling, 2008). Diving tourism is now one of the fastest growing parts of the marine tourism industry (Cater and Cater, 2001). The most popular destinations tend to be in the warmer regions of the globe, in particular the Caribbean and the Red Sea, with Australia, South Africa and Asian countries such as Thailand becoming increasingly more frequented. However, in recent years what might be termed ‘temperate’ or ‘cold water’ diving destinations have increased in popularity, providing an important source of new business opportunities (Garrod and Gössling, 2008). This has been accompanied by an increase in the pursuit of activities such as wreck diving and ice diving, as well as a growing interest in maritime heritage.
Diving tourism is a major source of income for many coastal regions around the world. For some countries income generated from diving tourism generates a significant contribution to their national economies, particularly with respect to foreign currency earnings (Scalkos et al, 2009). The World Tourism Organisation in 2001 estimated the international diving tourism market to be worth in the region of US$4-6 billion per year. Furthermore, up to a third of divers embark on an international trip each year to dive. According to Tourism Queensland, ‘around 80% of divers have a valid passport’.

One example may give some indication of just how economically significant this form of tourism actually is. Tourism Queensland claim that up to three-quarters of a million people dive on the Great Barrier Reef each year. Not only does this generate significant sums of money in the form of user fees for the Marine Park, but also provides an enormous number of opportunities for businesses to provide services associated with diving tourism, such as accommodation, restaurants, entertainment, transport and dive shops. In reality, diving tourism represents a significant chunk of the estimated AU$1 billion generated by reef-based tourism each year. Income from diving tourism can provide an important source of revenue for regions, most crucially in developing nations, where marine protected areas (MPAs) and marine parks have been established. This can be vital where the designation of an MPA may have led to a loss of income related to so-called ‘consumptive’ activities such as fishing, being prohibited. Again, user fees can directly support the work of the park authorities, and associated business activities may provide invaluable earnings for local economies, as well as provide alternative employment opportunities for those affected by the loss of traditional commercial activities. Significantly these tend also to be some of the areas that are of particular interest to recreational divers.

As previously mentioned, defining what constitutes tourism is not a straightforward task. Similarly with the dive tourist. Limiting the definition to someone who may travel to some distant part of the world to dive on an exotic coral reef, does not give a completely accurate picture. The WTO defines dive tourists as “persons travelling to destinations with the main purpose of their trip being to partake in scuba diving. The attraction of the destination is almost exclusively related to its dive quality rather than any other factor, such as the quality of accommodation or land-based attractions” (WTO, 2001). This is clearly a very broad definition and one that would also include those divers who travel to
domestic dive locations and those who dive as a sports activity, or as part of a social club. It would suggest that the economic impacts of dive tourism may be greater than suggested by much of the current research. When looking at the potential for establishing a new diving sector in the Westfjords, this broader definition, I would argue, should be employed as it gives a more accurate picture of the potential contribution of diving to the local economy.

2.vi.vii Negative Impacts of Dive Tourism

Without question recreational diving can provide much needed income to coastal communities, however, as with all forms of tourism, some of the impacts may not be so desirable. Much of the research that has been carried out on the economics of dive tourism tend to offer some kind of cost benefit analysis with respect to the impacts of increased diving within an area. Scuba diving and snorkelling may be considered non-consumptive by their very nature since they are primarily experiential activities. However, this is true only up to a certain point. Some of the potential problems, particularly with irresponsible diving practices, is the destruction of fragile environments through accidental diver contact, disturbances to wildlife and the anchoring of dive-boats and platforms. Another important issue is the temptation to collect souvenirs, particularly the removal of artefacts from wrecks. High stress levels on the diving locations are in large part due to diver density, but also the level of experience of the divers. For example, an area of coral reef will have its own carrying capacity. This has been estimated at approximately 5000 divers per site per year in a report published by Dixon, Scura and van’t Hof in 1993, based on the results of both biological surveys and qualitative data. Beyond this point the very environment which is attractive to divers in the first place becomes so degraded as to diminish its appeal.

In a paper entitled Economic Management of Recreational Scuba Diving and the Environment, Davis and Tisdell look at the optimal allocation of users within particular dive sites. They argue that the recreational use of certain goods such as dive sites are in fact consumptive beyond a certain point. Not only do the activities inadvertently degrade the environment as mentioned, but there is a level of ‘rivalry’ that sets in due to ‘congestion’ at the dive locations. They look at two options for mitigating these effects.
The first is to directly impose limitations on diver numbers, as well as excluding these activities from certain areas. The second is to restrict numbers using financial instruments such as the imposition of user fees. Davis and Tisdell conclude that the most effective means of reducing what are in essence external costs on the environment, is through a combination of both regulation and financial instruments. To this I would add diver education as one of the most important factors in reducing the potential for negative impacts. Educating tourist and local divers on the ecology of the area and ways to approach it will help increase awareness of potential negative impacts. Similarly with wrecks and other vestiges, developing an appreciation of the value of maritime heritage will help reduce the occurrence of disturbance to these sites.

Many of these issues are particular to the more popular diving locations around the world and it may be difficult to imagine this to be a problem in more marginal areas such as the Westfjords that up to this point have seen very limited diving activity. However, it is vital that the potential for negative impacts from diving be considered from the beginning and should become an integral part of any management plan. While the Westfjords may never see the level of diving activity found in other regions, certain locations may become more frequented than others and much of the region’s underwater landscape remains unexplored.

2.vii  Research Tourism

As will be explored in the actual case study of the Westfjords, one of the categories of divers that may well be attracted to this region is what Beard and Ragheb (1983) describe as those with ‘intellectual’ motivations. These are people drawn by the desire for knowledge and learning, often with a deep concern for the environment. A whole new branch of tourism has sprung up in recent years to cater to the interests of these individuals.

2.vii.i  Definitions

Throughout history people have travelled the world in search of knowledge and understanding. Many of the great explorers and naturalists undertook what were often perilous voyages, usually under their own initiative, to experience and record the Earth’s
wonders. In recent years it has become common for people to travel not only for the purposes of learning and self-education, but also to assist others in their research. They do so at their own expense in order to volunteer their time.

A number of terms have been employed to describe this kind of activity. In the last few years a whole new sector of ‘volunteer tourism’ has appeared, attracting people who seek more meaningful travel experiences. One obvious example is the phenomenon of the ‘gap year’ in the UK, whereby students travel to work on projects in developing countries during the period between leaving secondary school and entering university. Many older and retired people undertake similar trips to volunteer their time and expertise. While some of the projects categorized as ‘volunteer tourism’ may be scientific in nature, for the most part they are concerned with social development, poverty alleviation or environmental restoration.

Another term in common usage is ‘citizen scientist’, which describes the use of non-specialist volunteers as field assistants in on-going programmes of scientific work (Cohn, 2008). More often than not, these are local volunteers engaged in some form of ecological or environmental project. Claire Ellis uses the term Participatory Environmental Research Tourism (PERT) to describe volunteers who pay to take trips with scientists, primarily helping wildlife managers in environmental field research Ellis, 2003). Again, the focus is mainly on projects dealing with environmental issues.

While these are all valid descriptions, they do have some limitations. My main interest is in voluntary participation in underwater research, which might also include such things as marine archaeology. Therefore, to broaden the definition, by using the term ‘research tourism’, it describes the interested layperson spending his or her leisure time and money to travel with the purpose of assisting on scientific projects.

2.vii.ii The Research Projects

While the appearance of specialized tour operators to serve the interests of research tourists may be recent, the involvement of enthusiastic volunteers in scientific data collection has a long history. The field of ornithology provides some of the oldest example of this fruitful collaboration. Indeed the Audubon Society began the annual Christmas Bird Count as far
back as 1900. Today there is a world-wide network of volunteer ‘twitchers’ who provide
invaluable information to scientists on bird numbers, migration patterns and species range.
Similarly, large numbers of volunteers are engaged in monitoring wild animals, plants and
other environmental markers across the globe.

These activities have been extended to the underwater environment. Many organisations
are now involved in using recreational scuba divers to undertake fish counts and monitor
the health of the marine eco-systems. At the forefront of this effort is the Reef
Environmental Education Foundation (REEF), established in 1990 to enable the diving
community to participate in the understanding and protection of marine populations (REEF
website). An extensive network of volunteer divers, located along much of the coastline of
the American continent, provides important data for scientists and park managers on fish
populations through REEF’s Fish Survey Project. A companion to this programme is The
Living REEF Project which monitors invertebrate populations.

Similarly in the UK, the Sea Watch Foundation, which interestingly describes itself as a
marine conservation research charity, is dedicated to the protection of cetaceans around the
coasts of the British Isles (Sea Watch Foundation website). Other projects are focused on
the preservation and health of reefs and marine protected areas. The Global Coral Reef
Monitoring Network brings together a large number of projects and institutions monitoring
the health of the world’s coral reef, many of which use volunteers to collect data and carry
out surveys. One of the most active organisations in this field is Reef Check, whose stated
goal, amongst others, is to “create a global network of volunteer teams trained in Reef
Check’s scientific methods who regularly monitor and report on reef health” (Reef Check
website).

Another area in which volunteers are keen to participate is the field of marine archaeology.
While traditionally the domain of the specialized archaeologist, recreational divers are
more frequently being used to carry out surveys of shipwreck sites and artefact
conservation and preservation. As an example, The Maritime Archaeological and
Historical Society (MAHS) which is based in Washington DC, is a well organised
volunteer group that supports the work of marine archaeologists around the world.
Similarly the Nautical Archaeological Society based in Portsmouth, England provides
training for volunteer divers in research and conservation surveying techniques and
methodology. Trained volunteers go on to assist with projects in a number of countries
(NAS website). Indeed some organisations such as the National Marine Sanctuaries programme, part of the National Oceanic and Atmospheric Administration (NOAA) in the United States, uses the NAS training to develop its own corps of volunteer divers.

2.vii.iii Motives

When so much of tourism is commonly marketed as an enticing mix of hedonistic pleasures and escapism in sun-drenched and exotic places, it might be asked what motivates an individual to forgo these temptations for the challenges and even discomforts of volunteering their time and finances to scientific research. Granted, projects that appear to have the least difficulty in attracting volunteers, even where there is a substantial financial contribution required, tend to be in exotic parts of the world working with charismatic wildlife. However, this does not explain the motivations of the majority of volunteers. Nor it seems does a sense of altruism or environmental concern. In an interesting study of what makes SCUBA divers wish to participate in research studies, presented at the 2005 Puget Sound Georgia Basin Research Conference by Sine and Gaydos, the most important reason given by divers, whether they had previously participated in research or not, was to ‘become familiar with species’. For divers who had previously participated, giving a purpose to their diving was second, with environmental concerns being significantly less important. When recreational divers who were not interested in participating were asked what might motivate them to do so, by far the largest number stated ‘free classes’.

2.vii.iv Educational Opportunities

These results indicate that while volunteers may have genuine concerns for the environment, their overriding motivation is self-improvement and curiosity. What is more, many people find it exciting to be at the cutting edge of research and knowledge, even if they are not themselves experts in the field. This would also indicate that there are opportunities for educational establishments to capitalize on this interest in learning by offering courses and workshops that provide a strong academic component coupled with more field-based experiences. There are now institutions in a number of countries offering underwater field schools. One example being the Field School in Maritime Archaeology.
conducted in Bermuda by Saint Mary’s College of California (SMC) and the University of Rhode Island or the Maryland Underwater Reconnaissance and Low-Visibility Site Mapping field school (Oceanearth website). Many of these are focused on maritime heritage, in particular archaeology, but also cover areas related to marine ecology and technical training in photography and videography.

2.vii.v The Value of Volunteers

One of the most often heard criticisms of using volunteers for serious research is that the data collected will be somehow less valuable or scientifically rigorous. Amateurs, it is argued, can hardly be expected to match the professionalism and methodological consistency of trained researchers, particularly when large groups of volunteers are used, or there is a constant turnover of participants. These attitudes however are beginning to change, with a number of studies having been carried out which indicate that the research tourist can indeed make an important contribution to science. A 1994 study by Darwall and Dulvy on the suitability of non-specialist volunteer researchers for coral reef surveys found that the levels of precision achieved by the volunteers closely matched that of experienced researchers. Furthermore, it was found that the length of training required to reach these levels of accuracy was relatively short, in this case, under two weeks. A similar study by Foster-Smith and Evans in 2002 involving volunteers mapping marine organisms on the coast of Scotland, also came to the conclusion that volunteers could perform straight-forward tasks with as much competence as trained scientists involved in the project.

What both studies found however was that accuracy depended very much on the nature of the data-collecting task. More complex tasks, particularly involving numerous species that bore a close resemblance to each other, achieved less satisfactory results. As might be expected however, the more seasoned volunteer tourists with previous experience of research projects performed to a higher level of accuracy. On the other hand, there was evidence that repetitive tasks carried out by all volunteers over extended periods in one location reduced accuracy (Darwall & Dulvy, 1994). This would support the claim that the novelty factor of being involved with data collection at the cutting edge of research may be an important part of the attraction for research tourists. As a consequence they might lack
the academic rigour of the professional scientist whose reputation or salary might depend on the quality of the data.

Perhaps the most important factor in achieving high levels of accuracy is the training given to the volunteers. This can sometimes be a neglected part of a research project. A high turnover of volunteers means that there is a constant need for training, which may not be the best use of a professional researcher’s time. Using experienced volunteers to train new volunteers is one solution, and there is evidence that data collection accuracy improves with the increased experience of the trainers. It is essential that scientists, when designing research projects, take into consideration volunteer assistance and develop well-structured study protocols, which need to be regularly assessed for accuracy (Cohn, 2008). With research tourism becoming ever more popular, there may be increased opportunities for project designers to share methodologies, and there is certainly an increased likelihood that a volunteer will have had some exposure to at least one data collecting protocol.

2.vii.vi Opportunity for the Scientist

Data collection in the field can be an expensive and highly labour intensive activity. Research budgets are often tight and access to the free labour provided by research tourists can provide huge savings in costs (Darwall & Dulvy, 1994). Furthermore, the Participatory Environmental Research Tourist that Ellis identifies, can also provide much of the funding for many projects through the fees that are part of the costs of participation (Ellis, 2003). In this way, by partnering with the tourist industry and non-profit agencies, the scientific community is able to supplement meagre research budgets while providing interesting and fulfilling opportunities for research tourists.

With the assistance of volunteers much larger areas of an ecosystem or archaeological site can be surveyed. Furthermore, it may be possible to collect data over an extended period, for example by organising an annual wildlife census with the help of associations of volunteers with a common interest, such as REEF’s network of SCUBA divers or the Audubon ‘twitchers’. Rather than diminish the quality of the data as is feared, the expanded data sets that are made possible by involving research tourists may in fact be more complete and as a consequence, less prone to error.

In looking at the case of the Westfjords one area of consideration will be to assess whether it is possible, or even desirable to develop research tourism as an activity in this region.
Certainly there are a number of institutes that might benefit from assistance with underwater research. The question is whether the structure can be put in place to facilitate the support of research using the efforts and interests of underwater enthusiasts.

2.viii Dive Clubs

2.viii.i The Diving Fraternity

The social dimension of diving has already been briefly considered and according to some authors appears to be one of the main motivations for practicing the sport (Cater, 2008), (Beard & Ragheb, 1983). This appears to generally be the case for those engaged in various forms of tourist activity. According to Miller (1993) “tourism…provides a basis and reinforcement for group membership and social solidarity”. One of the most gratifying elements of the ecotourism experience it seems is the opportunity to engage with like-minded people (Cater, 2008), with a similar sense of appreciation for the environment. This is also undoubtedly true for the diving fraternity, particularly Garrod and Gössling’s ‘mainliners’. Cater cites a study of divers in Texas by Ditton et al (2002) which indicates that 56% of them regularly dived with friends. His studies show that it is not just sharing the underwater experience that is important, but also the opportunity to discuss the experience afterwards. This pleasure may, he suggests, be heightened by the fact that communication during diving is extremely limited.

Much of this would help account for the popularity of diving clubs and associations in countries throughout the world. Contrary to what might be expected, many of these are in regions that do not necessarily offer the best diving conditions. A prime example is the UK where divers are described as ‘dive fanatics’, with fewer than average undertaking international diving holidays. Yet the waters around Britain are ‘characterized by low visibility, low temperatures, strong drifting currents, strong cooling winds, and rough seas’ (Jones et al, 2009). Similarly with Switzerland, a land-locked country where diving is often limited to cold, muddy lakes. Both countries have relatively large numbers of diving clubs, which would support the argument that the social aspect of diving is a vital part of the enjoyment of the sport.
2.viii.ii Club Numbers

Very little research has apparently been carried out on the numbers and popularity of diving clubs around the globe. Yet they are an important phenomenon in the world of diving. One useful source of information is the World Wide Scuba Diving Clubs Directory which lists clubs by region and country. In England alone, a total of 46 dive clubs are listed in the directory. The United States has a much greater number. In just one coastal state, Florida, the directory lists 42 clubs. The French *Annuaire des Clubs de Plongée* lists over seventy clubs and associations that include some kind of scuba diving activity, solely in the Mediterranean city of Marseilles. There are dive clubs for African Americans, for women, for people with disabilities, for Christians and gays, not to mention large numbers linked to educational institutions and professional associations. Many clubs specialize in particular activities such as technical diving, photography and spearfishing.

Dive clubs can serve an important purpose, not limited to sharing stories and socializing with fellow enthusiasts. They provide an effective forum for diver education, in terms of training (with many of them organising basic certification for members), as well the dissemination of information regarding developments in the sport, changes in regulations and, most importantly, helping to increase environmental awareness (Lindgren *et al*, 2008). There are strong links between clubs, with many of them planning activities together, particularly when travelling abroad. In areas with limited diving activity, such as the Westfjords, they not only provide an important repository of knowledge about the sport, but also act as a point of reference for visiting divers. Furthermore, they can provide a pool of experienced divers from which the tourist industry may draw to find guides to lead diving tours. They also usually contain an important stock of diving materiel and can provide services such as equipment repairs, inspections and the filling of dive cylinders. Dive clubs ensure that there are year-round diving activities, not restricted to what may be a relatively short tourist season.
PART TWO

“How inappropriate to call this planet Earth when it is quite clearly Ocean”.
Arthur C. Clarke

Chapter 3 – Feasibility Study

3.i. Introduction

Appearing like the craggy skull of some awesome beast from Norse mythology, jutting far out into the Atlantic Ocean, the Westfjords is one of the most wild and remote regions of Iceland. Separated from the rest of the country by a narrow neck of land and the aeons of geological time, the area remains a world apart, proud of its unparalleled landscape and the unique character of its people. This is a land of rugged mountains, deep fjords, towering cliffs teeming with birdlife and a natural silence that is the very essence of its pristine nature. Along its deeply indented coastline small fishing communities cling doggedly to their traditional way of life. Yet the once dominant fishing industry is in serious decline and the region struggles to maintain its already sparse population. Large areas remain uninhabited or have been abandoned in recent times. Small sheep farms dot the landscape, but the land is inhospitable and the climate too harsh for anything more than the most meagre of existences.

While fishing still remains the largest industry in the Westfjords, some relief has come in the form of tourism, which despite its short history in the region, is beginning to play an increasingly important role in the local economy (Jóhannesson et al., 2003). Indeed the Westfjords is a paradise for nature lovers and outdoor enthusiasts. However, tourism as an economic sector is underdeveloped and efforts to implement a regional policy are at best fragmented, as is the case of many peripheral regions of the country (Jóhannesson, Huijbens & Sharpley, 2010). Yet opportunities for exciting tourist activities abound, as does the possibility of developing an integrated approach to tourism that will ensure that
these activities are pursued in a manner that is both sustainable and respectful of the
region’s natural attributes, all the while providing a vital source of revenue and job
opportunities for local communities.

One of the deepest fjords in Iceland with a total length of 120 kilometres, Ísafjarðardjup
cuts deep into the heart of the Westfjords like some giant cleft. It is the largest fjord in the
Westfjords region and also the most populated. The regional capital of Ísafjörður with its
population of approximately 3000 lies on its southern shore along with the smaller
settlements of Bolungavík, Hnífsdalur and Sudavík. To the north, the abandoned region
of Hornstrandir, now an important nature reserve, and Snæfjallaströnd, with its snow
covered mountains bordering Iceland’s fifth largest glacier, Drangajökull. At the extreme
end of the fjord is Reykjanes, one of the few areas in the Westfjords containing abundant
gеothermal heat and a favoured destination for outdoor enthusiasts. The unique fjord
system of Ísafjarðardjup contains three islands, Æðey, Vigur and Borgarey, and a number
of narrow, finger-like fjords branching off from the main body of water. Typical of the
region as a whole, it boasts abundant wildlife, both terrestrial and marine, and ample
opportunities to experience nature at its most pristine.

This section focuses on the feasibility of establishing a new recreational diving sector
centred around the area of Ísafjarðardjup, in the north west part of the Westfjords. The
following chapter will give a brief survey of tourism in Iceland as a whole, with a
emphasis on the Westfjords. It will also provide an overview of the current recreational
diving sector in the country. I will then propose a development model which I believe will
provide a crucial element of ‘resilience’ into the fledgling sector, particularly given some
of the challenges of setting up a new tourism activity in a ‘marginal’ area such as the
Westfjords. Finally, I present the results of two surveys which were drawn up to help
gauge interest in diving opportunities in the region.

3.ii Tourism in Iceland

3.ii.i A Desirable Destination

In recent years visitor numbers have grown considerably as Iceland has become one of the
world’s most desirable tourist destinations. Drawn by the inspiring landscapes, impressive
geological features and rich cultural heritage, the average year-on-year increase in visitors over the last ten years has been in the order of 6.8% (Icelandic Tourist Board, 2010). For the first time in the year 2000, the number of foreign tourists visiting Iceland exceeded the number of residents, and in 2008 it reached half a million. Should current trends continue, one million visitors will visit the country each year by 2020. At almost 120,000, the largest group of visitors by region in 2009 were from the Nordic countries, followed by that of Central and Southern Europe (117,000). By nationality the largest numbers are the British (61,619), although this has recently shown a steep decline, followed by the Germans (51,879) and Americans (43,909). As for Icelanders themselves, almost half of them travelled solely within Iceland during 2009, a marked increase from previous years. They took far fewer international vacations, no doubt due to the current economic crisis and depressed value of the krona.

Tourism contributes a substantial amount to the national economy. Its contribution to the Gross Domestic Product between the years 2000 to 2007 was on average 4.6%. Revenues from foreign tourist spending alone reached ISK 155 billion in 2009. The tourism industry now employs 4.8% of the workforce either directly or indirectly, which translated into 8,400 jobs in 2007.

A brief view of visitor demographics is useful in determining which groups might provide potential clients for recreational diving services. Many of the nations with the greatest visitor numbers are also ones in which the sport of diving is particularly popular, as for example the UK and USA, two of the three largest groups by nationality. What is also revealing is the ‘seasonality’ of visits by the various groups. While most visitors travel to Iceland during the peak summer period, particularly those from Central and Southern Europe, with some nationalities visits are more evenly distributed. Again, this is primarily the case with visitors from the UK and USA.
The importance of this is that much of the best diving is outside of the peak tourist season, when ocean conditions are more favourable, certainly in terms of visibility, and it will be easier to market these services to visitors who are not constrained to travel during the warmer summer months. Similarly with regards to the age. While the average age of foreign tourists is 40 years old in winter and 42 in summer, by far the largest group is in the 26 to 35 age range. This closely matches the optimal age for recreational diver certifications (PADI, 2010). This group also is also more likely than any other to visit Iceland in the winter season.

Despite the global downturn in tourism due to the world economic crisis, Iceland has bucked the trend with tourist numbers increasing 12% in 2009. With the collapse in the value of its currency Iceland has become both an affordable destination for foreigner tourists and one of the few places Icelanders can now afford to take their vacations. Even
the recent eruption of the Eyjafjallajökull volcano, despite disrupting air travel in Europe, became a major attraction and has helped increase the profile of Iceland as a destination.

3.iii The Westfjords

3.iii.i Tourist Demographics

Despite its obvious attractions to those who know it, the Westfjords is one of the least visited areas of Iceland, particularly when it comes to foreign tourists. Clearly this has much to do with its remoteness and the difficulty of accessibility. Also as an isolated peninsula off of the north west tip of Iceland, it is not included in Route 1, the 1,300 kilometre ring road that circles the country, along which most tourists travel. Exact visitor numbers to the Westfjords are not available, but in a survey conducted by the Icelandic Tourist Board in 2007, it was estimated that on average only 8.25% of foreign tourist travelling to Iceland visited the area.

![Figure 5: Sites/Regions Visited (Source: Iceland Tourist Board, 2007)](image)

When it comes to Icelanders the numbers are more substantial. Up to 23% of overnight stays during travel in Iceland were in the Westfjords (Icelandic Tourist Board, 2010). Of course, some of these figures may be explained by the fact that many Icelanders still have family connections to the Westfjords region and are not necessarily engaging in traditional tourism activities.

Research on tourism in the region is extremely sparse, but one study by the University of Iceland in the summer of 2008 (Elfasdóttir et al., 2008) found that of the tourists who did visit the Westfjords, 64% were foreigners. By far the largest group, at over 27%, were Germans, with the French (9.7%), the Swiss (8.9%) and the Americans (6.8%) making up
the next largest groups. Unlike the rest of Iceland where they constitute the majority of visitors, the British were only 6.4% of those travelling to the Westfjords. The disparity in numbers regarding German tourists can be explained in great part by the popularity of sea-angling tours in the towns of Suðureyri, Flateyri and Sudavik, which have been established by a German tour operator and marketed directly to German fishermen. Almost 92% of foreign visitors are from Europe or North America. With respect to Icelanders, 74% were from the capital area which is consistent with the demographics of the country as a whole. Whereas with Icelanders women made up the majority of visitors at nearly 59%, with foreigners the numbers were more evenly balanced with men making up just over 51%. This is somewhat unusual given the region’s reputation for remoteness and inaccessibility, although at least one third of respondents said they were accompanied by their partner.

When looking at the relative ages of visitors the figures to some extent reflect the national trend. The largest group is again the 26 to 35 year olds. With respect to foreign visitors, the figures (37.2%) are even higher than the national average and well over twice the percentage of any other age group. Again, given the region’s increasing reputation as a destination for adventure activities, this is not surprising. It also means that the optimum age group for divers is well represented in the Westfjords. Furthermore, the education levels of visitors according to the report is consistent with certified divers as earlier described, with over 73% percent of foreign visitors having some kind of tertiary education, 52% of which is at postgraduate level. Similarly, income levels were relatively high with over a third of foreigners in the two highest income categories. These figures would be even greater were it not for the large number of students who visit the region.

3.iii.ii The Appeal of the Westfjords

One of the most revealing areas of the above mentioned study, particularly as it relates to the image of the region, was when respondents were asked about their initial reasons for visiting the Westfjords. The main reasons given, by a significant factor, related to ‘nature’ and the ‘outdoors’ (Útivist). This was equally the case for both Icelanders and foreigners. Again when asked what was most important to experience while visiting the region, most placed ‘nature’ at the top of the list, although ‘history and culture’ were also extremely important for Icelanders. When questioned on their own personal interests, 94% of both
Icelanders and foreigners answered ‘the outdoors’. Environmental protection and conservation scored extremely high, particularly amongst foreign tourists, as did photography and sustainable tourism. This helps us begin to establish a picture of the average visitor to the Westfjords, who it seems is someone interested in nature and outdoor activities, with a well-developed awareness of the environment.

3.iv Diving in Iceland

3.iv.i Diving History

Little has been recorded of the history of recreational diving in Iceland. As in many parts of the world it probably began with a few enthusiasts who had access to scuba equipment, such as Navy divers from the NATO base in Keflavik, exploring new dive spots during their leisure time. While Iceland does not immediately spring to mind when considering diving locations around the world, interest in diving in the country has been increasing over the last few years. In some respects this has paralleled the increase in visitor numbers over a similar period. Although a small number of local enthusiasts had started to take an interest in diving, according to the diving company DIVE.IS, it was with the founding of the Sport Diving School of Iceland in 1997 by Tómas J. Knútsson that the activity became established. A committed environmentalist and outdoor enthusiast, Knútsson brought a number of journalists and TV crews to Iceland to explore Silfra Ridge in the Þingvellir Lake (DIVE.IS website). This stunning geological feature, essentially the fissure between the Eurasian and American continents and containing some of the clearest water found anywhere on the planet, is the one diving location in Iceland that is generally considered to be ‘world class’. It is a UNESCO world heritage site and has become the quintessential diving experience for any diver travelling to Iceland.

3.iv.ii Diving Tourism in Iceland

While Sifra is still by far the most popular destination, excursions to other diving locations are now being offered. Many of these are relatively close to Reykjavik, primarily along the coast of the Reykjanes Peninsula. Here the waters contain rich underwater landscapes and abundant marine life. One of the most fascinating salt-water locations is Strýtan in the
north of Iceland, close to the town of Akureyri. This 55 metre tall, geothermal chimney is the site of a unique marine ecosystem and the only such chimney in the world that is accessible to recreational divers. It has been a nature reserve since 2001 and dive tour operators offer regular excursions to dive on it. The maritime heritage of Iceland is vast and wreck diving is growing in popularity. One of the regular excursions offered by the dive tour companies is to the wreck of El Grillo in Seyðisfjörður, on the east coast. This is the wreck of a British oil tanker that was sunk by enemy action during World War II. According to Tobias Klose, the director of DIVE.IS, operators are continually seeking new diving locations around the country for multi-day tours and expeditions. One area under consideration, as will be discussed further, is the Westfjords.

Despite the interest in other parts of Iceland, dive tourism is still very much centred on the capital area where all the dive tour companies are currently located. There are three diving centres that now operate tours and organise training for diver certification. The largest of these, Dive.Is, estimates that they have on average approximately 1500 customers per year, over 80% of them being foreign visitors. However, this is divided equally between those who take scuba diving tours and those who are interested in snorkelling. Given the relative size of the companies, Tobias Klose calculates that currently there may be approximately 2000 divers per year taking dive tours in Iceland.

3.iv.iii Diving in the Area of Ísafjarðardjup

While diving is not unknown as an activity in the Westfjords it has been limited to professional diving services for ship repairs and a small number of local enthusiasts who have explored some areas of the coastline. According to Sveinbjörn Hjálmarsson, a resident of Ísafjörður who holds a ‘divemaster’ qualification, an attempt was made to organise local enthusiasts into a dive club, but due to the small numbers, this was unsuccessful. There is however a small group of 3 qualified divers at the Ísafjörður chapter of Slysavarnafélagið Landsbjörg (Icelandic Rescue Squad). Here there is access to some equipment, including a compressor and an RIB (rigid inflatable boat). Although their diving activities mainly involve training exercises for rescues, the rescue squad’s premises have become somewhat of a focal point for other divers.
In the spring of 2010 the very first training session for the basic PADI Open Water Diver qualification was held locally by Scuba Iceland, a dive centre from Reykjavik. This resulted in 12 newly certified divers graduating from the course, most of whom were local residents. In October 2010 another training session was held in Ísafjörður, this time by Dive.Is, during which a further six divers obtained certification. Members of the Dive.Is staff also used this opportunity to explore areas of the coastline with a view to offering future tours and expeditions to the region for their customers. Earlier in the autumn a dive club from Reykjavik, Sportkafarafélag, visited the area for four days of exploratory diving. By all accounts the club members were extremely impressed by the quality of the experience.

These developments apart, recreational diving as a tourist activity in the Westfjords is as yet totally unexplored. This is in no way due to the unsuitability of the region for such activities. On the contrary, there is much it has to offer to those interested in the sport, not least the novelty of diving in a region that few have yet experienced. I now turn to how such a tourist sector might be established, providing not only an exciting new activity for tourists, but also providing new business and employment opportunities for the local community.

3. v Theoretical Development Model

The principal question that needs to be answered is, how can a region such as the northern part of the Westfjords gain recognition, both nationally and internationally, as a diving destination? What elements need to be brought together to build this image and enhance its appeal to the diving community? With any new initiative there are a number of concerns that need to be addressed in terms of structure, management and viability. As will be discussed, business development conditions in the Westfjords, while favourable, are not ideal. By virtue of its remoteness there are a number of inherent weaknesses that need to be addressed, including limited infrastructure, skills shortages and insufficient amenities. For tourist-based activities there is the added disadvantage of seasonality and unpredictable weather. It is vital to establish a solid foundation for any new development sector, particularly one with reasonably high start up costs such as diving. In my experience working in business and project development for a number of years, an
important factor in achieving a successful outcome has been to take an integrated approach, identifying and linking activities that are mutually supportive and which contribute towards building a stronger public awareness of the new sector. This has become recognised as an important tool in building resilience into organisations and businesses (Goble et al., 2002). I am therefore proposing a development model, based on a preliminary assessment of local conditions, which would be founded on three supporting pillars as shown in the following diagram.

![Figure 6: Basic Development Model](image)

While diving tourism would be the principle commercial activity and primary source of revenue, I would argue that its potential cannot be fully exploited without the support of the other elements. Each of these pillars reinforces and nourishes the others. For example, while tourism may provide the greater possibility for generating income, the research element not only enhances the appeal for a particular type of tourist who would be attracted to dive here, but also provides cultural and ecological information that would be important to marketing diving in the Westfjords, as well as identifying the best dive sites. Similarly, a strong network of local divers provides not only supplemental business opportunities through equipment sales and related services, but also a pool of qualified support staff and expertise for tourist dive operators. Furthermore they might provide
year-round assistance with marine-based research and educational projects, and as a diving community, a point of reference for visiting dive clubs and individuals. Indeed, one of the key elements of reaching an optimal level of diving activity in the region is that it increases the possibility of extending the season for recreational and tourism activities. In effect, the whole is greater than the sum of its parts.

To some extent this mirrors the model now commonly used to represent the three dimensions of sustainability in which the environmental, social and economic dimensions are symbolised by interlocking circles or pillars (Adams, 2006), (UN, 2005). In this case the tourism sector might represent the economic dimension, the dive club, the social, and the research/education sector would ideally represent awareness of the environment. This model is often used to support the argument that these core elements need to be better integrated and harmonized. None can be managed in isolation from the others, since they are fundamentally interdependent. In the case of the Westfjords, without an integrated approach to business development many of these initiatives, particularly in the tourism sector, are unlikely to achieve an adequate level of sustainability, from an economic, social or environmental perspective.

3.vi  Principal Brokers

When evaluating the potential for a new tourism sector, particularly in a remote region like the Westfjords, it is important to identify those local stakeholders who will play a key role in determining its success. Given the limited degree of tourism development to date, only a small number of tourist operators would be included. However, the development model that I am proposing, in particular the potential for research tourism and a local dive club, means that a number of other ‘brokers’ need also to be considered.

3.vi.i  Tour Operators

**Borea Adventures**: Started in 2006 by two local outdoor enthusiasts and highly experienced wilderness guides, Sigurður Jónsson and Rúnar Óli Karlsson, Borea Adventures offers adventure and wildlife tours based around a 60-foot sailing yacht, the *Aurore*. The company is run on the principals of ‘low-impact, sustainable tourism’ and
prides itself on providing customers with an unforgettable ‘wilderness experience in
perfect harmony with the environment’ (www.boreaadventures.com). The owners fully
appreciate that a healthy environment is essential to the success of their business and are
involved in a number of environmental initiatives, including 1% for the Planet. Borea
Adventures offers a number of multi-day tours and expeditions, most notably to the local
Hornstrandir wilderness area, the east coast of Greenland and the remote Arctic island of
Jan Mayen. Tours are undertaken principally in the summer months, but the company has
attempted to extend the season by offering back-country skiing trips to Hornstrandir during
the winter.

In the spring of 2010, Borea Adventures established a separate company, North Explorers,
to cater for those tourists interested in shorter adventure tours of less than one day. This
now operates from their premises in Ísafjörður and offers a large number of tours based
around kayaking, hiking and mountaineering. Again, these tours are offered primarily in
the summer months, but the company is interested in developing the market for winter
tours and is currently offering skiing and ice-climbing trips. North Explorers had a
successful first season with an estimated 600 to 700 clients over July and August, with
demand for tours continuing well into the autumn. In part this popularity has been due to a
very favourable write-up in the latest edition of the influential Lonely Planet Guide for
Iceland (Parnell, 2007).

Borea Adventures is also an active member of the Westfjords cluster of the Wild North
project. This project was set up to give tourism companies, research institutes and
scientists in the Northern Periphery region the opportunity to share knowledge and
expertise, as well as increase co-operation, in the area of wildlife tourism
(www.thewildnorth.org). Wild North holds regular seminars and workshops on aspects of
wildlife tourism for tour operators and also currently supports research into the impacts of
tourists on wildlife in the Northern Periphery region. This is with a view to drawing up a
code of conduct that may be used throughout the industry. As an activity that provides
numerous opportunities to encounter wildlife in its natural surroundings, recreational
diving would also benefit from being included in this code of conduct.

In many ways, Borea Adventures sets the standard for adventure tourism in the region and
they have successfully capitalised on a section of the market that is particularly appealing
to a large group of the visitors to the Westfjords. Significantly, their clientele share many
of the characteristics that have been identified as typical of recreational divers (PADI, 2009). Indeed, in recent discussions, they have voiced a strong desire to eventually incorporate diving and snorkelling tours into their portfolio of activities. Due to their importance in the local adventure tourism market I have focused a good part of my research on this company and, as will be discussed in the next section, a recent survey of their customers has provided me with data on the potential interest in recreational diving in the area.

Vesturferðir (West Tours): Founded in 1993, Vesturferðir has been a major player in the local tourism sector since its inception. It was established with a vision to help organise some of the smaller tourism businesses in the area and provide an outlet for their activities (Jóhannesson et al., 2003). Not only does it act as a tour operator, organising well-crafted tours for the area’s visitors, but is also the only travel bureau in the region, providing a ticket sales service for most of the local bus and boat operators. In conjunction with these operators, Vesturferðir offers a number of popular tours to Vigur Island, Hesteyri and Hornstrandir. In recent years there has been a marked increase in visits by cruise ships to Ísafjörður and Vesturferðir has been primarily responsible for organising short bus tours for groups of passengers, many of them focusing on the life and culture of this part of the Westfjords. The company works closely with the Icelandic Tourist Board, the local municipality and tourism representatives of the Westfjords Development Agency and has shown a strong commitment to sustainable tourism development in the region.

While Vesturferðir might not necessarily be the most appropriate organisation to participate in the initial stages of establishing a recreational diving sector, as a local broker of tourism services they enable many of the associated activities that would support such a sector and could provide an essential element in the marketing of any future diving tours and expeditions.

Dive.Is: As previously mentioned, Dive.Is is the most established, and currently largest, dive centre in Iceland. Located in the waterfront district of Reykjavik, they offer an extensive range of diving and snorkelling tours around Iceland, primarily to Þingvellir and the Reykjanes Peninsula. The tours offered are primarily short day tours, but Dive.Is does offer a number of multi-day tours and expeditions. Of those clients undertaking the day tours, Americans are the largest group at around 50%. The second largest are the British, followed by the Scandinavians and the Germans. The majority of clients for the multi-day
tours are German, but this is probably due to Dive.Is’s marketing campaign which is focused on the German market. They also hold regular training sessions and courses to certify divers, from the basic to the most advanced levels. Dive.Is certifies between 40 and 50 new divers per year, over 80% of these being Icelanders. They hope to increase these numbers as interest in diving in the country develops, particularly in communities outside of Reykjavik.

The company has been run by Tobias Klose since 2006 and he has made it his goal to travel around the country to explore new diving areas that may be added to the extensive list of tours. Each year they organise a couple of ‘expedition’ dives, lasting a number of days to relatively unexplored areas. These are of particular interest to those divers who are seeking a unique and somewhat challenging dive experience. According to Tobias, he has been considering the Westfjords as a possible destination for a number of years. On hearing about this research project, he decided that it was an appropriate time to organise an investigatory expedition to the area. Seven members of the Dive.Is staff, including Tobias, travelled to Ísafjörður at the end of October 2010 to explore the area around Ísafjarðardjup, and to hold a diver certification training session. The Dive.Is team were impressed by the quality of the diving in the area as well as the general environment of the Westfjords. They identified a number of interesting dive sites and plan to organise two expeditions in 2011 to the Westfjords, with clients, to explore further.

3.vi.ii Research and Educational Establishments

_Fornleifavernd Ríkisins:_ Despite their obvious value as a tool for underwater research, scuba diving techniques have been little used by the local institutes involved in marine research, due to what is perceived as the elevated costs of hiring professional divers. One notable exception is the current work of Dr Ragnar Edvardsson, District Antiquarian at Fornleifavernd Ríkisins, the Archaeological Heritage Agency of Iceland, which is based in Bolungarvík. Having obtained certification as a scuba diver, he has recently started to use diving to explore and catalogue the extensive vestiges of Westfjord’s maritime heritage which lie off the shores of the local fjords. Marine archaeology is in its infancy in Iceland and Dr Edvardsson is helping develop an area of research that promises to offer revealing insights into Iceland’s history as a seafaring nation. However, resources to carry out
extensive surveys of the local fjords are limited and given the quantity of possibly archaeological remains that they contain, much may disappear, due to natural forces or even pillaging, before they are successfully catalogued. Dr Edvardsson is now being assisted by a PhD student who will help with cataloguing. One further option is to call on the services of the diving community to assist in locating and inventorifying wreck sites.

*Nattúrustofa Vestfjarða:* The Westfjords Natural History Institute, as it is known in English, is also located in Bolungarvik. Founded in 1997, it is one of seven regional nature research institutes in Iceland. Its main purpose is to collect and disseminate information on the natural history and nature of the Westfjords. Many of its day-to-day activities centre around applied research, principally in the fields of ecology, botany, zoology and geology. Náttúrustofa Vestfjarða is often contracted to assist with the ecological research element of environmental impact assessments in the region. Their premises also house an extensive natural history collection of the birds and animals of Iceland, that is open to the public.

*Háskólasætur Vestfjarða:* The University Centre of the Westfjords, established in 2005, is the principal tertiary level educational institute in the Westfjords. Its main activities include a distance learning programme for local students, a Master’s programme in Coastal and Marine Management (CMM), and a number of summer courses covering a diverse range of interests. The CMM programme is now in its third year and is a cross-disciplinary course in environmental and resource management focusing on the marine and coastal environment. While not itself engaged in research, the University Centre is currently building links to the local research institutes, and in order for students to complete the CMM programme they are required to undertake a research project in areas related to coastal and marine management. A significant number of these projects have so far been focused on Iceland, and the Westfjords in particular.

3.vi.iii Clubs and Associations

*Sæfari Kayaking and Sailing Club:* While there is as yet no diving club in Ísafjörður, Sæfari currently serves as a focal point for water-based recreational activities in the area. Housed in a prime location on the historical waterfront, adjacent to the Westfjords Maritime Museum, it was established in 1979 by a group of local kayaking and sailing enthusiasts. Although primarily a sports club serving the interests of its members, Sæfari
operates an open-door policy and welcomes members of the local public as well as visitors
to become involved in their activities. It also provides an important service to local youth,
offering activities throughout the year and water sports training and education in the
summer months. During an informal conversation with one of the founders, Halldór
Sveinbjörnsson, he expressed his vision of seeing the club become the centre for all
marine-based recreational activities in the area. This would obviously include diving and
snorkelling, activities of which he and a number of club members have some experience.

3.vi.iv Public Bodies

Atvest: The Westfjords Development Agency is a semi-private organisation owned by
companies and individuals in the Westfjords. It is funded by the central government
through Byggðastofnun, the Icelandic Regional Development Institute which itself is
responsible to the Ministry of Industry. Atvest’s main focus is to assist start up projects
and fund new business development, including a number of tourism initiatives. They are
also responsible for funding research which supports local development, including this
current project.

Nýsköpunarmiðstöð Íslands: The Innovation Center Iceland, which is under the Ministry
of Industry, is one of the leading business support and R&D organisations in the country.
Its main purpose is to “increase innovation, productivity and competitiveness” of business
through research, dissemination of information and support to entrepreneurs; particularly
start up companies developing new ideas and products. There are seven offices around
Iceland, one of which is located in Ísafjörður. They have been extensively involved in
supporting the development of new tourism products and business ideas.

Markaðsstofa Vestfjarða: The Westfjords Marketing Agency is owned and funded by
three organisations; the Association of Municipalities of the Westfjords, Atvest and the
Westfjords Tourism Association. Its main focus is the marketing of the Westfjords as a
tourist destination and providing support and expertise to local businesses in the
development of tourism products. In many respects the Marketing Agency integrates the
tourism policy, as far as it exists, and market positioning of the Westfjords. It is also
responsible for maintaining the Westfjord’s website, which is the main internet portal for information on the region.

Ferðamálasamtök Vestfjarða: The Westfjords Tourism Association is a non-governmental organisation that represents most of the businesses and organisations that are involved in delivering tourism services.

Tourist Information Centre: Located in the same building as the Marketing Agency, the Tourist Information Centre provides information on local activities and tourist services. It is funded partly by the town of Ísafjörður and partly by the central government.

3.vii Quantitative Data Results

Whereas my analysis of the potential for developing a recreational diving sector in the Westfjords is based primarily on non-structured interviews and informal conversations with key brokers in the fields of tourism and research, it was also important to gauge the level of interest in diving from those tourists and divers who would be most likely to take advantage of the opportunity if it was available. To this end two surveys were carried out. The first was in the form of a questionnaire addressed to the clients of Borea Adventures and the second, an email survey of dive clubs in the British Isles who I believed might be interested in visiting the Westfjords region as a group to dive.

3.vii.i Borea Adventures Client Questionnaire

During the month of July 2010, a random selection of clients who had booked tours with Borea Adventures were asked to fill out a questionnaire (see Appendix 1) relating to their potential interest in diving tours. My justification for choosing this particular group was that of all the visitors to the region, they were the most likely to engage in some type of adventure activity such as diving. A total of 30 questionnaires were answered which, although a relatively small sample, is nonetheless over 10% of the company’s estimated clients for the month of July.

Of those who completed the questionnaire, one third were from North America, mainly the United States. The remaining two-thirds were from Europe, with the majority of those
from the southern European countries of France and Spain. Only four were Icelandic. The largest age group represented was the 31 to 40 year olds (33.33%), closely followed by the 41 to 50 year old group (26.6%). The two groups covering the ages from 18 to 30 made up a similar figure (26.6%) when combined. The average age of the respondents is significantly higher, it should be noted, than that of the typical certified diver.

Indeed, when asked if they had any experience of diving, 40% replied in the negative. However, 80% of the total had had some kind of experience snorkelling while on holiday, albeit almost exclusively in tropical seas. Perplexingly, of those that had previously been scuba diving, only two-thirds had any certification. Obviously, this has implications for offering dive tours through a bona fide operator, since certification is a necessary prerequisite to dive in Iceland, even if this is apparently not the case in other countries. Given the somewhat harsh conditions in Icelandic waters, any avoidance of this regulation would be highly irresponsible.

None of the respondents had had any experience of travelling with the purpose of assisting with research or data collection. While it cannot be concluded that there would be little or no demand for such activities, it may mean that the marketing strategy will need to focus primarily on specific groups likely to be interested, such as clubs and amateur associations.

When asked whether they would be interested in diving tours if they were available in the Westfjords 60% of respondents answered positively. Of these, 44.4% were in the 31 to 40 age group, slightly older than the average age of recreational divers (see fig. 8). This would indicate a strong positive interest in diving in the area. However of these, two-
thirds had never been diving or held any certification. Clearly this would prove problematic in terms of offering diving tours as none of these respondents would be permitted to participate without first obtaining certification. On the other hand, this may present an opportunity to offer diver training which is currently only available in the Reykjavik area.

Despite there being no question asking respondents for reasons for their lack of interest in diving, two of the participants added comments stating that they considered the water ‘too cold’. One was an experienced diver, the other had no experience.

One of the most unexpected results from the questionnaire was when respondents were asked whether they were interested in shipwreck diving. Two-thirds answered that they were, 30% of these stating that they were ‘very interested’. Of the respondents who were interested in wreck diving, 40% had never previously dived, including one who had also never snorkelled. Not only does this provide some guidance when planning the format for new diving tours, but also indicates a strong interest in maritime heritage. This is an area that the Westfjords is in a strong position to capitalize on, particularly when visitors are given the opportunity to combine this interest with some underwater experience.

3.vii.ii Dive Club Survey

In order to gauge the interest in the Westfjords as a possible recreational diving destination for dive clubs, the board members of 50 clubs in England, Scotland and Ireland were contacted by email in the month of September 2010. These countries were chosen due to their large numbers of recreational divers, the relative ease of travelling to Iceland and the fact that divers in the British Isles are more habituated to diving in conditions similar to those found in the Westfjords. After a brief explanation of the research, the clubs were asked four basic questions;

1) Does your dive club organise diving trips abroad?
2) If so, have you been to any ‘cold water’ destinations (such as Scandinavia, etc)?
3) Have you heard of Iceland as a diving destination?
4) If there were diving opportunities available in the Westfjords, do you think your club members would be interested in coming here to dive?

Only 10 of the clubs contacted replied to the survey. All of these regularly organised diving trips abroad. Half of the clubs had at some point travelled to ‘cold water’ destinations. Norway and the Scottish Isles were the two destinations that were most often cited. Six out of ten of the respondents had heard of Iceland as a diving destination. When asked whether their members might be interested in diving in the Westfjords, half of the clubs responded negatively. The main reason given was that their preference was for ‘warm water’ destinations. A number cited costs as a factor, believing that Iceland was an expensive destination. One respondent stated that they would be unwilling to travel to a country that still practised whaling. Two dive clubs responded that indeed they would consider the Westfjords as a destination and requested information to be sent to them once the sector had been established. Three dive clubs responded with a qualified ‘maybe’, saying they might consider it if the appropriate infrastructure were in place and more information was available.

The level of response to the inquiry was disappointing. While the sampling is small, those who did respond, clearly showed a bias against diving in Iceland. Although the desire to dive in warm water destinations is quite understandable, one of the things that was apparent from the responses was that although 70% of the clubs had heard of diving in Iceland, there was an obvious lack of knowledge about diving opportunities in the country. Many assumed that the only possibilities were in the freshwater lake at Þingvellir. Three of the respondents, in explaining why members would not be interested, stated that they were ‘mainly interested in wreck diving’. Again this pointed to a limited understanding of diving possibilities in Iceland. As with the clients of Borea Adventures, there is clearly an opportunity to market the rich maritime heritage of the Westfjords to a much wider audience.
Chapter 4 – Discussion

4.i  Introduction

In order to assess the feasibility of establishing a recreational diving sector in the area of Ísafjarðardjúp, I have chosen to first evaluate it through the use of a SWOT analysis. This strategic planning tool has been used for a number of years to evaluate the strengths, weakness, opportunities and threats that are involved in implementing a new project or business venture and to analyse the prevailing conditions that may or may not be favourable to its success (Hill & Westbrook, 1997). It is a tool that I have found particularly effective in my project development work, primarily during the initial planning stages. In this instance it will include an assessment of the feasibility of establishing diving as an activity for tourism in the Westfjords, the potential for contributing to the data gathering requirements of the local research institutes and the viability of developing community interest in the sport. Recommendations for implementing the new sector will be put forward, including proposals for actual business development.

4.ii  SWOT Analysis

4.ii.i  Strengths

Environment

The Westfjords is, without question, a region of outstanding natural beauty. As one of the most remote parts of Iceland, it is amongst the few areas of wilderness remaining in the continent of Europe. Its rugged isolation, spectacular landscape and abundant wildlife make it a desirable destination for nature enthusiasts and outdoor adventurers alike. Indeed, many of the qualities that make the Westfjords unique are similar to those that motivate and inspire individuals who are drawn to the underwater world. As Cousteau describes, it is the sensation of entering a ‘silent’ world that is totally outside of our day-to-day existence that is so appealing. He might well have been describing the Westfjords. While diving might be the focus of recreational divers travelling to this region, the
opportunity of experiencing the area’s natural environment would enhance its appeal and is an important element in marketing the Westfjords as a diving destination.

This is true also for the underwater environment. While perhaps not as exotic as some tropical reefs, the flora and fauna of the northern Icelandic waters is just as interesting and almost as colourful. The fjords are home to a large number of marine species, not least of which are marine mammals such as seals and small cetaceans. According to local divers, it is not uncommon to encounter seals while underwater. In some parts of Ísafjarðardjup a diver might well be surrounded by dozens of feeding seabirds, even at quite considerable depths. These could be unique selling points for attracting divers to the region. While it is important not to knowingly disturb these creatures in their natural environments, the possibility of encountering them while diving would be particularly appealing to many divers.

**Water Quality**

Visibility is an important factor in the diving experience. No matter how interesting the underwater environment, if the visibility is poor then the pleasure of diving can be severely diminished. The divers from Dive.Is remarked on the clarity of the water in Ísafjarðardjup and surrounding fjords compared to other regions that they regularly dive. While local divers report that the visibility is much poorer in the summer months due to the amount of plankton and micro-organisms in the water, outside of this period the area offers some exceptionally clear water. It is also free of much of the pollution that is found in more urban or industrialized parts of Iceland.

**Topography**

Ísafjarðardjup is more than just a simple fjord. It is an unusually-shaped fjord system with a number of smaller fjords projecting from the main body of water. While the orientation of Ísafjarðardjup is along a north-westerly line, many of the tributary fjords lie at different angles. Many of them are also quite narrow with steep sides. Depending on its direction, this means that they can be relatively sheltered from the influence of the strong wind that is common along the Atlantic coast, particularly in this part of Iceland. Winds are an
important factor in diving since high waves and strong currents are the most common restriction on diving activity. Clearly, for a business based on dive tourism this an important consideration. The advantage of the fjord system in Ísafjarðardjúp is that if it not possible to dive in one area due to the high winds, then another area may be still be suitable. This helps reduce some of the negative impacts on business due to the unsettled weather that the region is renowned for.

**Adventure Activities**

Recreational divers tend to be, according to a study by the University of California Los Angeles School of Medicine (Taylor *et al.*, 2001), “thrill, adventure and experience seekers”. It is therefore likely that individuals who travel to the Westfjords to dive would be also be interested in many of the large numbers of other adventure activities that are available in the region. Depending on the season it may be possible to engage in kayaking, sailing, hiking, rock and ice climbing, skiing, kite surfing and boarding, surfing, horse riding and sea-angling. The list is by no means exhaustive and new activities are being introduced every year. Many of these activities are offered by companies such as Borea Adventures and West Tours. The type of adventure activity available in the region is highly compatible with recreational diving and would add to the appeal to divers of travelling to such a remote area to practise their sport. Not only is it possible to combine many of these activities, but during times when it is not possible to go diving due to weather conditions or other factors, it may be possible to enjoy other options.

**Maritime Heritage**

Iceland’s very existence as a nation is closely tied to it maritime heritage. Traces of its maritime past can be found all around the country. None more so than in the Westfjords. Given its long history as a fishing, whaling and trading region, extending back to the times of the first settlement, many vestiges of these activities litter its shores and the bottoms of its fjords. Much of this is yet to be discovered, let alone surveyed and catalogued. A number of shipwrecks have so far been identified, yet according to Dr. Ragnar Edvardsson, there may be large numbers yet to be found. Throughout its history, there were frequent sinking of vessels along the coast of the Westfjords due in great part to the extreme
weather conditions in the region. Many of these may be at depths that are accessible to recreational scuba divers.

During their visit to the area in October, one of the highlights for the staff of Dive.Is was diving on the wreck of a whaling ship in Álftafjörður, near the small settlement of Súðavík. Around the wreck the bottom of the fjord was covered in the remains of whale bones from the whaling station that had been situated on the shore. Wreck diving is extremely popular amongst the diving fraternity, as was indicated in the feedback from the two surveys, and is the primary interest for many dive sports clubs. The attraction is not merely the physical experience of exploring the wreck, but also learning about the story and history that lies behind it.

Some of these stories are already being told in this part of the Westfjords through the Maritime Museum in Ísafjörður and the reconstructed fishing station of Ósvör in Bolungarvík. Both are extremely popular with visitors and comprise an important part of the guided tours that are offered for cruise ship passengers. They are also an important repository of local maritime knowledge that may be further exploited to enhance the appeal of the area for visiting divers. What is more, in a region that made an important contribution to the Icelandic sagas, the talents for story-telling are well developed.

**Local Amenities**

While much of the appeal of the Westfjords region is its remoteness and lack of human impacts, establishing diving as a recreational and tourism sector does require a certain degree of infrastructure. The northern part of Ísafjarðardjup contains the largest population centre in the region. Although at approximately 4000 inhabitants the population is small, the towns of Ísafjörður, Bolungarvík, Súðavík and surrounding settlements offer a number of amenities that would support a fledgling diving sector. Apart from the standard tourism amenities such as accommodations and restaurants, the area also provides access to services such as boats that may be hired to carry divers, equipment repairs and the possibility of filling diving tanks with air. The local rescue squad in Ísafjörður currently plays host to visiting groups of divers. This well-equipped organisation provides logistical support and would be the available to intervene in the case of any emergency. The area
also boasts a number of good quality swimming pools that are available for training and the ‘closed water’ component of diver certification.

*The Unexplored*

Much of the coastline around the Westfjords remains as yet unexplored. A limited number of dive spots have been identified, but many locations are still to be investigated. Any of these may contain an uncharted shipwreck or a unique underwater landscape. The appeal of this for the typical recreational diver should not be underestimated. Even the remote possibility of discovering the next Strýtan or El Grillo is an important incentive to travel to regions such as the Westfjords to dive. Furthermore, the fact that so little research has been undertaken on the ecology and underwater heritage that has already been identified is an important motivation for the growing number of divers interested in assisting with research.

4.ii.ii Weaknesses

*Climate*

One of the main constraints on the tourist industry in the northern part of the Westfjords is the unpredictable and often unsettled weather. While the annual range of temperatures is relatively small compared to many regions at the same latitudes, particularly along the coast, wind velocities can be high due to the frequent passage of low pressure systems, most notably during the winter months (Einarsson, 1984). Snowfalls can occur as early as August and can last well into June. Dense fog and mist are common in the summer months, particularly in the northern end of Ísafjarðardjup. This not only limits the number of days that are available for outdoor activities, but also impacts transportation, with flights into Ísafjörður being regularly delayed. While some of these conditions are not necessarily an impediment to diving, the effects of strong winds on the water can make it unadvisable. During their six day visit to the region in October 2010, the Dive.Is team was unable to dive on two of those days due to unfavourable weather conditions.
**Diving Conditions**

Many divers, as was indicated in the two surveys, show a particular bias against diving in cold water environments. While not as cold as might be expected in an area so close to the Arctic Circle, due to the influence of the gulf stream, sea temperatures are cool, ranging from +2°C in the coldest months to approximately +10°C in the summer. In terms of water clarity, as mentioned, visibility is extremely good in the spring and autumn months. However, it can be quite poor in the months of July and August, which is the time when the majority of tourists visit the region. Diving in the waters around the Westfjords is demanding and only advisable for those with some degree of experience.

**Accessibility**

While part of the charm of the Westfjords is in its remoteness, the area is relatively inaccessible compared to other parts of the country. Its geographical location, well removed from Iceland’s main ‘ring road’, means that it is often not included in the typical tourist itinerary. Transportation links are infrequent, especially outside of the peak summer months and, as suggested, can often be disrupted by adverse weather. At over 450 kilometres by road from Reykjavik, Ísafjörður is a considerable distance from the main areas where diving takes place and where the dive centres are currently located. The roads through the Westfjords can be challenging, with many of them still unpaved, making it difficult to travel between dive spots, often at considerable distances from each other, with all the necessary equipment. Furthermore, a number of roads are frequently closed due to snow, often during times of the year that are optimal for diving. As mentioned, flights are often cancelled due to weather conditions. Many locations are only practicable by boat, which, while it tends to enhance the diving experience, is highly dependent on weather conditions and inevitably increases costs.

**Costs**

Scuba diving is sport with relatively high start up costs. This is especially the case in ‘cold water’ regions where more specialized equipment such as a dry suit is essential. Taxes and transport costs make it even more expensive in Iceland. The current price of a basic set of good quality diving gear is in region of half a million kronas (US$4,500). These are costs
to equip an individual diver and do not include the costs of other materiel necessary to establish a diving business. These might include: a suitable dive boat (either purchased or hired), a compressor for filling dive tanks and a suitable vehicle. Storage and office costs, insurance, taxes and registration fees also need to be covered. In the case where divers are not using their own diving gear, enough equipment needs to be available to accommodate divers of different heights and weights. In particular, dry suits, the most expensive equipment item, need to be relatively close-fitting. Even if they have their own equipment, divers rarely travel with dive tanks and weights due to the inconvenience, and these need to be made available at the destination. Maintenance costs of equipment can also be relatively high given the harsh conditions of diving and the strict requirements for safety inspections.

**Amenities**

While amenities in the Ísafjörður area are more comprehensive than in other parts of the Westfjords, some elements are lacking that could handicap the development of a successful diving sector in the region. Despite the hospitality of the local rescue squad, no place yet exists that might serve as a locale for local or visiting divers. This would provide facilities to stock equipment, house a compressor and act as a focal point for those interested in diving. Ideally such a centre would incorporate many of the other water-based recreational activities that the area offers.

Although accidents in diving are relatively rare (Hagberg & Ornhagen, 2003), they do occur even with the best trained divers. The most common incident, directly attributable to diving, is decompression sickness, or the ‘bends’, which normally occurs when the diver surfaces too quickly. The standard treatment for this condition is to place the diver in a hyperbaric chamber which recreates the increased pressure that the diver experiences underwater. The pressure is then slowly reduced to normal surface pressure. No hyperbaric chamber currently exists in the Westfjords. Any incidence of decompression sickness would mean that the diver would need to be airlifted to the capital for treatment, an expensive and time-consuming option. Furthermore, the findings of a study carried out in Leicester, UK on the treatment of diving incidents (Hart *et al.*, 1999) found that it is vital...
for staff in hospitals located in areas where diving is practised to be trained to cope with possible accidents, currently not the case.

Tourism Policy and Planning

Despite the fact that tourism is Iceland’s third largest industry in terms of foreign currency earnings and many regions are looking to it to reinvigorate their ailing economies, tourism management and policy making are ‘in their infancy’ (Jóhannesson, Huijbens & Sharpley, 2010). The Tourism Administration Act of 2005 proposed that the guiding principles of tourism development should be “economic efficiency, Icelandic culture, environmental protection, professionalism, and the safeguarding of consumer interests” as well as outlining the main duties and responsibilities of the various parties. The accompanying Tourism Strategy 2006 – 2015 document outlines a number of ‘primary objectives’ for the tourism industry based on the Act’s guiding principles. It calls for “collaboration amongst stakeholders” and the use of public monies for “collaborative promotion”, as well the formulation of “processes for the development of products and services” with support being given to “baseline .... and applied research”. Yet according to Jóhannesson, Huijbens & Sharpely, many of these initiatives have not been fully implemented, and in general policy remains fragmented and uncoordinated. Indeed, research into tourism accounts for a mere 1.1% of the national research budget, despite the value of the industry to the economy.

Similarly, no comprehensive assessment has been made of the tourism resources of the country, nor any coordinated database of the ‘brokers’ and infrastructure that enable the development of tourism activities. Without this knowledge, strategic planning is at best ineffective, and at worst, counterproductive. Furthermore, in the absence of detailed spatial planning, both marine and terrestrial, that focuses on tourism uses, it is difficult to predict areas of over-utilization and potential points of conflict between stakeholders.

These shortcomings in policy and planning are clearly the case in the Westfjords. As yet no coordinated plan exists for the development of tourism in the region despite the increasing hope that it will begin to fill the economic void left by the decline of the local fishing industry. Nor is there any inventory as such of current tourism activities and resources that might be available for future development. Furthermore, responsibility for
development of tourist businesses and products is shared between at least three agencies (Atvest, Nýsköpunarmiðstöð Íslands and Markaðsstofa Vestfjarða). This fragmented approach hardly offers a coordinated vision of tourism development. It may even lead to confusion for entrepreneurs who wish to develop new business ideas. Many small tourism businesses continue to operate with minimal cooperation between the various players, and with little or no common vision of the tourism market.

Marketing

While the national Tourism Strategy puts great emphasis on “collaborative promotion and advertising projects”, the marketing of the Westfjords as a destination, up to this point, remains relatively ineffective. Again, the approach to marketing appears uncoordinated and there is little promotion of a coherent regional identity, as has been the approach in other parts of the world. There is certainly no sense of how the Westfjords might be distinct from other parts of Iceland. This may be a key element to successful marketing the region given its geographical location somewhat separate from the rest of the country. While relatively informative, the Westfjords website is uninspiring and does little justice to the true appeal of the region’s natural environment. Nor does it give any indication of how the various activities and amenities that are available might be integrated into a holistic tourism experience. Apparently a new website is now under construction.

Lack of Cooperation

It is a sad fact that there is a distinct lack of cooperation in the region between businesses and organisations within the private and public sectors. Local research and educational institutes have a poor record of collaboration, despite the obvious advantages of sharing intellectual and physical resources in a part of Iceland where such resources are somewhat limited. This short-sighted approach seems to be more about defending academic territory and personal influence than the true pursuit of science and education.

Similarly in the tourism sector, there is little history of what Jóhannesson and Huijbens describe as the, “small, mostly family-run businesses around the periphery”, working together to develop the local tourism industry. Rather than seeing the benefits of collaboration, many of these businesses are more concerned with jealously preserving their
own small corner of the market and tend to view any new initiatives as a potential threat rather than a mutual opportunity.

The development model I am proposing is based in great measure on cooperation between and within the various sectors. Without the development of more mature links between these sectors this promise of development will inevitably remain unfulfilled.

4.ii.iii Opportunities

Economic

There are a number of obvious economic benefits to the development of diving as a recreational and tourist activity in the Ísafjarðardjúp area of the Westfjords. Dive tourism would mean increased employment opportunities for those directly involved in diving such as divemasters and instructors, dive shop staff and tour operators, as well as a number of areas of the hospitality industry. It would also mean new locally-based business opportunities. Dive tours could be offered through companies such as Borea Adventures or West Tours. These tours would be focused uniquely on diving or might be combined with other activities such as kayaking or sailing. It would be possible to develop a number of speciality tours such as ‘diving at midnight’ during the summer months, ice-diving during the winter, or heritage diving trails. Other business opportunities would include; a dive shop offering equipment sales and rental, boat services, equipment repair and servicing, transportation and numerous associated activities. Most importantly, apart from the initial investment in diving materiel, most monies generated through dive tourism are likely to remain in the local economy, since many of the associated businesses would be locally owned. As observed, divers have higher incomes than the average tourist and tend to invest significant funds in their sport. They are also more likely to be interested in many of the other adventure and wildlife-based activities that are already available in the area.

Dive.Is has suggested that this is an extremely favourable region for organising diving expeditions. These would involve multi-day tours based in Ísafjörður, travelling out each day to explore various dive spots around Ísafjarðardjúp. Obviously this would mean visitors remaining in the area for longer periods, contributing more into the local economy. What is even more significant is the possibility that recreational diving holds for extending
the tourist season. In the Westfjords this is extremely short, which increases the difficulty of establishing economically viable tourist businesses. Underwater visibility, as mentioned, is an important factor in diving. The best diving conditions are not during the summer months when most tourists visit the Westfjords, but in the early spring and autumn when there are far fewer micro-organisms in the water. In fact diving is a year-round activity in locations such as Silfra and there is little reason that this should not also be the case in Ísafjarðardjúp, if not for tourists, then for local divers and those interested in research.

**Diving Club**

Establishing a diving club in the region would deliver a number of benefits for the local community and any fledgling dive tourism industry. The diving club would provide an important repository of knowledge about diving in the local vicinity that would be invaluable to the tourism industry when planning dive tours. It also means that there would be a pool of qualified divers available to provide support staff and guides for those tours. Diving equipment might be stored on the premises which would enable members to share resources and to organise regular maintenance of materiel including annual inspections of regulators and air tanks. Collectively the club would be in a position to purchase equipment that would be prohibitive for an individual, such as a compressor or a dive boat. These might even generate funds for the club through the filling of air tanks and the hiring of the boat for dive tours. Furthermore, given the elevated cost of diving equipment it may also be possible to develop some kind of cooperation with the local research and educational institutes so that these resources might be shared.

As with other sports clubs and associations, dive clubs serve an important social function. They provide a forum for people interested in the sport to meet and exchange ideas, as well as to plan activities. This is important in areas with small populations lacking many of the distractions of larger communities. In areas such as the Westfjords which has suffered a population decline in recent years, providing interesting activities for local residents is a important incentive for people to remain in the area, as well as to attract new residents. This is especially the case for young people. Diving can be practiced at an early age and is extremely popular amongst adolescents and young
adults. PADI has a number of Junior Scuba Diver courses and children are able to obtain certification from the age of 10 (PADI website).

**Research**

The rich biota and extensive maritime heritage of the Westfjords has already been touched upon. As has the lack of research that has been undertaken in these fields, particularly in the sub-aquatic environment. Underwater research is an expensive endeavour, often requiring the use of highly specialized equipment. Research budgets are limited and can suffer drastic reductions during times of financial crisis. One option, as suggested, is to make use of volunteer divers; either members of the local diving community or visitors to the region. These enthusiasts are effective if properly managed, particularly in carrying out basic research which may entail the collection of large quantities of data.

In the area of underwater archaeology volunteers might be used to record and survey shipwrecks and other historical artefacts. At the very least they might be recruited as observers, reporting any finds that are encountered during recreational dives. In many countries, dive clubs encourage their members to fill out detailed reports of such finds that are then submitted to the relevant authorities. Often training is provided in what to look out for and how to record the discovery. A similar system might be established in the Westfjords with Fornleifavernd Ríkisins serving as the primary contact point. The institute would develop a close working relationship with the local dive club and tour operators willing to assist in gathering data, and for its part provide guidance on identifying and recording artefacts. This might be extended even further given the obvious interest in maritime heritage that the research has revealed. Based on the opportunities that are offered in other parts of the world, it would be safe to assume that divers would travel to the Westfjords with the express purpose of participating in research to locate and survey the region’s submerged heritage, even paying for the privilege. Regular expeditions might be planned throughout the year and marketed directly to dive clubs and educational institutes. This would appeal to both the ‘passionate amateur’ and those students seeking practical experience to add to their curriculum vitae.

Similarly, while a significant amount of Náttúrustofa’s work is carried out along the shores of the Westfjords, and includes sampling of the water column and benthic life, little use is
currently made of divers for underwater research. According to Dr. Þorleifur Eiríksson, the institute’s director, this is mainly due to the elevated costs of hiring professional divers. This is unfortunate as there are a number of tasks that divers might assist with including; sampling, species surveys, observations and the placement of scientific and monitoring equipment. Again, one option is to attract volunteer divers to assist with certain tasks. There is already a precedent for this type of ‘research tourism’ with four groups of amateur ornithologists from the UK having already assisted the institute with the monitoring of bird species in the region.

**Education**

The largest educational institute in the Westfjords, Háskólasetur Vestfjarða, is located on the shores of Ísafjarðardjúp. As a centre of education focusing on marine and coastal affairs, the University Centre is unique in Iceland, situated as it is in a region with such a long tradition of fishing and coastal activities. The University Centre’s flagship course, the Master’s in Coastal and Marine Management (CMM), is a cross-disciplinary programme geared towards environmental and natural resource management. Although many of the modules deal with issues relating to the local marine environment, students have a limited exposure to it. One option might be to incorporate some element of scuba diving into the programme, possibly as an elective course. This would not only give students the opportunity to directly experience the underwater environment, but could also include instruction on underwater research and surveying techniques. A number of schools around the world offer such courses. Due to the associated costs, there might be supplemental fees for such a module. Significantly, of the twenty-five students enrolled in the programme for the year 2010-2011, fourteen have some level of diving certification, including one who is a diving instructor. There is an obvious correlation between the type of individual attracted to the programme and those who are interested in recreational diving.

Similar courses might be offered as part of the University Centre’s summer school. The Westfjords is an appealing destination for those interested in maritime heritage. It would be possible to develop a course that trains participants in archaeological fieldwork and conservation techniques. Many such programmes exist in different parts of the world, including that offered by the Nautical Archaeological Society in the UK. For those with
limited diving experience it may be possible to deliver diver training through one of Iceland’s dive centres. Dive.Is have already put forward such a proposal and one of their team, a qualified underwater archaeologist, would be in a position to deliver the academic component of the course. Such courses might generate an important revenue source for the University Centre, particularly given recent educational cutbacks due to the decline in the country’s economic fortunes.

One of the most important social contributions that the development of a diving sector can make is in youth education. Apart from providing opportunities to engage in an interesting recreational activity, introducing children and adolescents to scuba diving can have important pedagogical outcomes. Courses may be offered through the University Centre, dive club or schools in which young people are educated about the marine environment. An essential part of the programme would be the opportunity for the pupils to experience the sea directly by means of diving or snorkelling at selected points along the coastline. This would provide not only a theoretical grounding in the processes and ecology of the oceans, but more importantly, the possibility of observing these things in their natural state. Furthermore, pupils would be encouraged to engage in certain activities such as specimen collection, sampling or even underwater photography. This would provide material for presentations, discussions and displays. Material would not only cover the ecology, processes and topology of the ocean environment, but also aspects of maritime heritage. Such initiatives, especially when directed at younger members of the community, are an essential part of fostering an increased appreciation of the oceans and the threats that now face this vulnerable environment.

Education of this kind need not be confined to young people. There are opportunities, particularly through the activities of a dive club, to help increase awareness of the ocean environment in local communities. Despite the extensive maritime heritage of the country, other than those that depend upon it for their livelihoods, Icelanders appear to have a very limited understanding of the sea that surrounds them. A dive club might develop an outreach programme that encourages the general public to begin to explore the wonders of the marine environment.
4.ii.iv Threats

Economic

Since the autumn of 2008 the world has been undergoing one of the worst economic recessions since the 1930’s. This has effected tourism worldwide. As it turns out, one of the few countries that has shown a continued increase in tourism numbers is Iceland. However, should the economic crisis continue for an extended period, particularly in areas such as North America and Europe where most visitors to Iceland originate from, this trend may reverse. The recent increase in tourism may, to some extent, be accounted for by the large depreciation of the country’s currency, a victim of the near collapse of the Icelandic economy. If however, the situation improves and the krona begins to return to its previous exchange rate levels against the US dollar, the euro and the pound sterling, then this will likely have a negative impact on tourist numbers from these areas. Indeed, the krona has appreciated by almost 15% on average during the course of 2010.

Environment

Diver numbers in the Westfjords are never likely to attain the levels that are found in more tropical parts of the planet. Numerous studies have been carried out on the impacts of divers on coral reef areas (Harriott, 2002), (Green & Donnelly, 2003), (Barker & Roberts, 2003), but research on diver impacts in ‘cold water’ regions is scarce. What is known however is that the ecosystems of these regions are relatively fragile and may be particularly vulnerable to the effects of some activities. Many organisms have slow growth rates and given the harsh conditions and short breeding season, need to expend more energy for reproduction and the rearing of their young. While it is a unique experience to dive with seals, whales and other charismatic marine mammals, and would be an incentive for many divers to visit the region, even a limited amount of disturbance may have a significant impact on some species. The spring breeding season is also likely to coincide with one of the optimal times for diving. Furthermore, since skill levels amongst participants may vary a great deal, inadvertent damage can be caused to fragile organisms by inexperienced divers disturbing the sea floor, primarily as a result of incorrect buoyancy.
Generally, recreational divers are conscientious about their potential negative impacts on the marine environment and it is an important component of all the major certification programmes. However, the consequences of increased diving activity are as yet not fully understood and it is important that the ‘precautionary principle’ be applied in the development of any new diving sector. It may also be necessary in areas that become popular dive sites to undertake an environmental impact assessment to evaluate the carrying capacity of the site.

Damage to Heritage

Although this thesis has explored the possibilities of using volunteer divers to assist with locating and surveying shipwrecks and other archaeological remains, expanding diving activity in the area could increase the likelihood of damage to these artefacts due to carelessness and even pillaging. With the increased availability of diving equipment in the middle of the last century, so called ‘treasure hunters’ looted and pillaged substantial numbers of shipwrecks, particularly in areas with a long maritime heritage (Alves, 2009). However, as tourism diving has become more popular, there has been a shift in attitudes towards this type of activity. The authorities, tour operators and divers themselves have begun to understand the value of diving on a well preserved wreck, rather than one that has been degraded by pillaging. Nonetheless, the temptation remains for some divers to remove small items from wreck sites as ‘souvenirs’, as well as to disturb artefacts from their original resting place. Poor diving skills and carelessness may contribute to the destruction of these remains. Dr Ragnar Edvardsson, the district antiquarian, has expressed concern about the prospect of increasing numbers of divers visiting the region and causing damage to the region’s underwater heritage, much of which has yet to be surveyed. His concern stems from the fact that legislation protecting shipwrecks and underwater archaeology remains extremely weak. Unlike land-based sites, which are legally protected when more than 100 years old, only those shipwrecks in which there were fatalities are accorded some protection under the law, being classified as grave sites.

While it is important to begin to strengthen legislation to increase protection of heritage sites, many of the negative impacts are due to a lack of awareness rather than malicious intent. An obvious solution is to work closely with the diving community and develop a
programme of educating divers on how to approach shipwrecks and submerged artefacts. This could be implemented through a dive club, or working directly with dive tour operators. It is also essential to draw up a protocol or guidelines that could be easily communicated to local and visiting recreational divers.

Conflicts

One of the insights from studying Coastal and Marine Management is how exceptional it is to find an area of coastline that is not a potential zone of conflict between the various stakeholders. Recreational diving is unlikely to reach levels that would adversely impact other resource users, such as the local fishing industry. However, areas that are traditional fishing grounds may also be of interest to divers due to the abundant fish life. While their presence may not directly affect the success rates of fishing, it may be perceived to do so. The aquaculture industry might present a similar case. The spectacle of huge numbers of fish swimming around the cages is an attraction for divers, yet may be frowned upon by the aquaculture operators. Certainly the presence of fishing boats in areas where there are divers in the water increases the potential for accidents. It would be valuable to research the extent to which local boat operators are familiar with the rules concerning the distances to respect on observing a dive flag being flown. Compliance with such rules needs to be assured.

Accidents

Despite its image as a dangerous sport, diving actually results in very few accidents. Statistics show that approximately one in 200,000 dives result in fatalities, a quarter of these due to cardiac arrests, not necessarily attributable to the activity itself (Denoble et al., 2008). Nonetheless accidents do occur. If there was an event of this kind in the Westfjords, it might have a disproportionately large impact on perceptions of the area as being suitable for dive tourism. The possibility of a diving accident needs to be taken into consideration when planning for any business offering dive tours. The experience and training levels of guides and divemasters need to be carefully assessed, as does the quality and condition of any equipment used by clients and staff. As mentioned, it is vital that local medical and rescue organisations are well-prepared for such an eventuality.
As yet Iceland does not suffer from levels of regulation that are common in a number of other countries. Diving regulations, while meeting common international standards, are not overly rigorous in terms of accessibility and underwater activities. This is partly due no doubt to the short history of scuba diving in the country. One area that may be impacted by regulation is that of research diving. Although the opportunity exists to use the services of volunteer divers to carry out research there is, as the director of Náttúrurstofa, Dr. Borleifur Eiríksson, points out a ‘grey area’ whereby divers employed to carry out research activities are normally required to be registered as professional divers. It has been mainly for this reason that the use of scuba diving techniques for research has up to this point been limited, given the high level of associated costs. Few institutes can afford the expense of hiring professional divers to carry out basic data collection. While volunteer divers are not necessarily being ‘hired’ for their services, their use may bring up questions of liability, since they are not professionally registered. An informal agreement with the local dive club, whereby members record any interesting observations made while diving in part of the fjord, is not likely to be problematic. Nor would data collected as part of a some training course or workshop on underwater surveying techniques. However, regulations regarding the use of divers need to be evaluated to assess whether they are compatible with the development of a successful volunteer diver sector. If not, then representation might be made to the relevant authorities so that the regulations can be brought in line with other parts of the world where volunteer divers provide an essential service to the advancement of scientific research.
Chapter 5 – Conclusions

5.i Overview

One question sits at the heart of the management of our coastal and marine environments. How do we preserve or develop the natural resources that they contain, ensuring their availability for future generations, all the while addressing the social and economic needs of the people who currently live in those areas? One option that has become increasingly popular, particularly in more marginal or underdeveloped regions of the globe, is the development of some form of sustainable tourism. How that term is defined is still open to debate, yet tourism is often seen as a panacea to the economic and social problems facing coastal regions. Whether this can actually be the case depends to a large extent on developing ‘sustainable’ activities that are appropriate to the environmental characteristics and available infrastructure of a region. A large number of activities are commonly included under the term sustainable tourism. Of these, recreational diving has become an increasingly important element. This thesis has looked at the feasibility of establishing a successful diving sector in the Westfjords region of Iceland that would ultimately make an important contribution to the sustainable development of the region.

There is little doubt that the area around Ísafjarðardjúp is an excellent place for diving. This is something that I was able to personally verify during a diving excursion in Ísafjarðardjúp with Dive.Is in October. The water is clear and the edges of the fjords teeming with colourful marine life. Fascinating wrecks litter the seafloor and the cold waters abound in seals, whales and flocks of seabirds. All this against a backdrop of snow-capped mountains and silent fjords. The question therefore is not whether diving in the area would appeal to visiting divers, but whether this can be translated into a viable tourism activity that will help extent the short tourist season, and provide new income and employment opportunities for local communities?

Based on the research I have undertaken during the course of this study, my overall conclusion is that such an eventuality is certainly possible. Clearly there is significant interest in the possibilities of diving tours from tourists already visiting the area, as well as interest from dive companies located in other parts of the country. However, establishing a
successful dive tourism sector can only be accomplished by focusing efforts on building the region’s identity and reputation, not only as a diving destination, but as a hub for outdoor adventure seekers. In reality, recreational divers are unlikely to travel to this region primarily to dive. While the diving experience in the Westfjords is very good, it is certainly not on the level of other parts of the world, or even other parts of Iceland. Given that the region, at least as far as is known, lacks some of the unique underwater features that attract divers to Silfra, Reykjanes or Strýtan, the most effective way of attracting them to the Westfjords would be through marketing the area, not as a world-class diving destination, but as a ‘total adventure experience’ which may also include diving. Emphasis needs to be placed as much on what the region has to offer out of the water, as it does under it.

The Westfjords is a unique environment with a rich maritime heritage and abundant opportunities for wildlife and adventure pursuits. There is little doubt that those qualities will appeal to the tastes and sensibilities of the typical diver, as it does to many other categories of visitors. This makes the region ideally placed to market itself as an inspiring destination for the diving community. For this to be successful however, there needs to be a close collaboration between the tourism, research and education sectors, supported by a thriving dive club.

5.ii Expanded Development Model

Given the strong links that I believe need to be forged between the various sectors, the development model that was proposed in chapter 3 is, I would conclude, still valid. The associated costs and levels of expertise required to successfully establish diving in the region add weight to this conclusion. The original development model might be expanded, as shown in figure 7, to indicate some of the areas where collaboration might be most fruitful, and to understand in which sectors certain activities are best developed. This model might also provide the basis for developing a business plan based on one of these sectors.
5.iii Recommendations

While given enough time, diving in the area of Ísafjarðardjup might develop naturally as a tourist and recreational activity, with adventurous divers beginning to seek out more and more unusual locations to practice their sport. However, this ‘organic’ approach is unlikely to provide the foundation on which to build a flourishing marine-based tourism sector. This is true for any tourism activity. Such an approach might be acceptable when a region has a vibrant and diversified economy in which tourism is merely a ‘cottage industry’ providing a little extra income each summer for a few of the locals.

Unfortunately for the Westfjords, this is no longer the case. As the value to the local economy of the fishing industry declines, it has become necessary to look at other means of generating livelihoods for the inhabitants. Much hope, it appears, has been placed in tourism as one activity that may begin to improve the economic fortunes of the region.
Whether this promise can be successfully realised remains to be seen. If so, recreational diving may well become one vital component of that development. However, it can only become so if a clear and well-planned development strategy is put in place. As part of that strategy I would propose a number of recommendations.

**Dive Club:** Perhaps the most important next step in establishing the reputation of the region as a diving destination is to set up a diving club. With so many local residents now certified divers, there are more than enough potential members to make a dive club viable. In practice, few of those who are certified regularly dive. This is often as not due to a lack of coordination between the individual divers, rather than a lack of motivation. A diving club would provide a forum for organising activities and developing the sport. All the elements are currently in place that would make it possible to establish the club. It would simply require a small group of people to take the initiative of putting the project into motion by creating a managing board, drawing up a constitution and registering the organisation. One of the biggest incentives for moving this forward, I suggest, would be if the municipality assisted with identifying premises that may be used for a club house.

**Water Activities Centre:** In the longer term, the municipality needs to consider the possibility of establishing a water activities centre that would group all the water-based activities (kayaking, sailing, diving, surfing, sea-bathing, and so on) in one location. This would provide a vital reference point for locals and visitors alike and allow for the sharing of resources. It would also help build the reputation of the area as a centre for such activities. In many respects Sæfari now serves as a model for such a centre. This might be expanded to incorporate other activities. However, this needs the support, both organisational and financial, of the local authorities and development organisations, and should be enshrined into the tourism strategy for the area. Again, many of the elements are now in place for this to happen and what seems to be missing is the organisational will to put it into effect.

**Business Development:** The current market conditions and levels of interest in diving are not favourable, I believe, to the establishment of a dedicated diving business at this point in time. However it is possible, with the appropriate funding and development support, that businesses with an established presence in the adventure tourism market could incorporate diving and snorkelling as activities within their current range of tours. A collaboration
between Dive.Is and Borea Adventures on future diving tours has already been discussed in October 2010 and this needs to be encouraged and supported by the relevant development organisations. Opportunities also exist for a store such as Hafnabúðin, a local retail outlet for sports equipment, to provide sales and rental of diving equipment. Other existing services, such as boat rentals, equipment repairs and tank refills, need to be identified and integrated into the business model.

**Diver Education:** Due to the interest of Dive.Is in establishing a presence in the Ísafjörður area, diver training and certification sessions are likely to be held on a regular basis. However, access to facilities needs to be assured in order to facilitate these sessions. In particular, the exclusive use of a local swimming pool to hold the ‘closed-water’ component of the training programme should be made available. This was unfortunately not the case during the previous certification course.

Opportunities need to be explored of offering programmes through the University Centre of the Westfjords in underwater research techniques and courses that incorporate scuba diving. This might begin with a short summer school for students and interested amateurs, directly marketed to educational institutes, clubs and associations. A programme should also be started for educating young people in the marine environment. An essential part of the programme could be the opportunity for the pupils to experience the sea directly by means of snorkelling at selected points along the coastline. This would provide not only a theoretical grounding in the processes and ecology of the oceans around Iceland, but more importantly the possibility of observing these things in their natural state. It is important to understand that the current generation of snorkelers is likely to become the next generation of scuba divers.

**Guidelines:** It is at this point in time, before diving does become an established recreational activity in the area, that guidelines need to be drawn up regarding wildlife and maritime heritage. Careful thought needs to be given on recommendations for approaching and interacting with the abundant wildlife found in the region. Guidelines have been published by a number of organisations, such as the World Wildlife Fund, which might serve as templates and adapted to the local conditions. Similarly with maritime heritage. It is naive to believe that attempting to impose weak regulations on recreational divers will deter them from exploring wrecks and underwater artefacts that apparently are common along the shores of the Westfjords. Even if stronger legislation is in place, the question
remains of who is in a position to enforce it. It is only by working with the dive community and implementing a programme of education and awareness along with the co-development of guidelines on dealing with historical remains that destructive impacts can be avoided or lessened. Leadership for such an initiative obviously needs to come from the local research and educational institutes.

**Planning:** Under Icelandic law land use planning for the entire country is mandatory and regional plans must be drawn up to cover a period of not less than 12 years (Icelandic National Planning Agency). However, while these plans might cover land use, including the coastal zone, they do not include coastal waters more than 115 meters beyond the low-water mark. No marine spatial planning is currently implemented in Iceland. This impacts the ability of municipalities to effectively manage the natural resources along their coastlines and to resolve and avoid potential user conflicts. With increased marine-based tourism activities, such conflicts are inevitable without adequate planning. Teiknistofan Eik, a local planning agency based in Ísafjörður, and the Association of Municipalities in the Westfjords is currently working on developing a utilization plan for Arnarfjörður which will address activities and natural resource use within the fjord. This is an initiative that quickly needs to be extended to the rest of the Westfjords, and indeed the country as a whole.

**Tourism Policy:** The growth of responsible tourism within the region suffers not only from the lack of an integrated policy as mentioned, but also a fragmented approach to its development. In many parts of the world responsibility for the development and promotion of tourism comes under the responsibility of a single body. What is more, these are often regions with much higher population and visitor numbers than the Westfjords. In a region of only 7,000 inhabitants having three separate agencies responsible on some level for the development of tourism seems somewhat redundant. Such activities might be grouped under one agency, guided by a well-crafted and integrated tourism policy, founded on well-researched marketing.
5.iv Going Forward

If the Westfjords is to evolve beyond an ad hoc, somewhat ‘amateur’ approach to tourism, it is essential then the region develop a clear vision of how it wishes to represent itself to the world. Without a well-crafted tourism policy that addresses the unique attributes of the region, linked to a comprehensive understanding of the demands of the tourist market, many opportunities will be missed. The Lonely Planet guide books recently named the Westfjords as one of the top ten regions in the world to visit in 2011. This is an extremely important acknowledgement. Indeed, the region may be on the verge of becoming an acclaimed destination, but it needs to be in a position to take full advantage of that recognition. Not only do the various sectors need to develop strategies for working more closely together, but also the individual ‘brokers’ within these different sectors. They need to invest in learning new skills and seek new ways of sharing knowledge and resources in order to develop the market, rather than jealously defending some small share against all competition. With the appropriate direction, professionalism and sense of purpose, recreational diving may become a vital element in the regeneration of the Westfjords.

5.v Closing Remarks

“People protect what they love. A lot of people attack the sea, I make love to it.”

Jacques-Yves Cousteau

One of the most curious things about Iceland is the general attitude towards the sea. While the country has a cultural and economic heritage founded upon the surrounding seas, and owes its very existence to seafaring settlers, the relationship of most people to the sea seems limited to the exploitation of its natural resources. Few Icelanders, other than those involved in the fishing industry, spend time on the sea. Far fewer venture into it, let alone under it. There appears to be little appreciation of the ocean as a place of recreation and enjoyment, as is often found in other island cultures. Granted, Iceland’s sub-Arctic waters are not one of the most hospitable of environments, and the country has a long history of tragic losses at sea. However, the inhabitants of other nations, with histories and ocean
conditions that in many respects parallel those of Iceland, not only derive greater pleasure from their coastal waters, but seem to show greater concern for them.

Unfortunately, the world’s oceans are no longer something that we can choose to ignore. They are in trouble. Human activities have not only brought about a depletion of its once abundant fish stocks, but also a profound degradation of the marine environment. While there seems to be increasing awareness of environmental issues relating to the land and even the atmosphere, this has not been accompanied by a similar concern for the oceans.

If we are to increase our awareness of the sea, the wonders that it contains and the challenges that it now faces, we need to develop our relationship to it. This is particularly true for the young people who will inherit a lot of these challenges, and who will ultimately need to find solutions to them. Only by exploring this unfamiliar world and getting to know its unique creatures and plants will we begin to develop the level of understanding and respect necessary to begin that process. My hope is that in promoting opportunities for people of all ages and from all nations to witness for themselves the natural wonders below the waves, this will help foster an increased appreciation and love of the oceans.

We need to feel the cool, briny water on our faces. We need to go below the waves.
References


Icelandic National Planning Agency. *Planning and Building Act No. 73/1997, no. 135/1997 and no. 58/1999*


TEEB – The Economics of Ecosystems and Biodiversity for national and international Policy Makers (2009).


Appendix 1 – Questionnaire on Diving in the Westfjords

We are always looking to offer new activities for the adventure-loving visitors to the Westfjords. At the moment we are trying to evaluate the possible interest in SCUBA diving in this region. It would be very helpful if you would be willing to answer the following questions. Thank you for your assistance.

1) Nationality: .................................................................

2) Age Range: 18 – 25 □ 26 – 30 □ 31 – 40 □ 41 – 50 □ 51 – 60 □ 60 + □

3) Have you ever been SCUBA diving? Yes □ No □ If no, please go to question 9

4) Do you have SCUBA certification? Yes □ No □

5) If yes, which qualification do you have? ..............................................................

6) Do you belong to a diving club? Yes □ No □

7) In which countries have you dived? What kind of diving (reef, wreck, cave, etc.)?……

8) Are you interested in shipwreck diving? Very □ Moderately □ Not □

9) Have you snorkelled when you are on holiday? Yes □ No □

10) If yes, where have you done this?..............................................................................

11) Have you ever been on a trip where you have helped with research or data collection (such as bird watching, fish census, etc)? Yes □ No □

12) If yes, please give details: ..............................................................................................

13) If diving/snorkelling tours were available in the Westfjords, would you be interested?
    Diving □ Snorkelling □ Both □ Little or no interest □
Appendix 2 – Preliminary Map of Diving Sites
Key to Diving Sites:

1 - *Hnifsdalur*: A useful diving site close to Ísafjörður for open-water training sessions. This provides a sheltered environment next to the fish factory pier as well as an interesting underwater landscape for novice divers.

2 - *Arnarnes*: At the point where the first road tunnel in Iceland was built is an ancient basalt outcrop that projects into the water. This unique feature is fascinating not only because of the local geology, but also the underwater flora and fauna that is found around it. The rocks are also a nesting site for a number of bird species. There is easy access to the water from the shore and would be suitable for both diving and snorkeling tours. It is also a short drive from Ísafjörður.

3 - *Ísafjörður Harbour*: At the southern end of the isthmus on which the town is built lie the wrecks of two trawlers extremely close to the shore. These are in shallow water and part of the superstructure can be seen above the surface at low tide. While not of great heritage interest, the sites might be used to introduce novice divers to wreck diving as well as those unfamiliar with Icelandic diving conditions.

4 - *Álftafjörður*: On the north-western shore, four or five kilometres south of Sudavik, lie the remains of a small old whaling station. A few meters from the edge of the shore, in fairly shallow water, is the wreck of a small whaling ship. Scattered around the wreck site are numerous whale bones, the remains of the carcasses that were processed at the station. This is an unusual sight and one that would appeal to many divers. Given the depth of the wreck, the easy access to the water and the historical interest of the area, this could be an excellent dive spot for tourists, particularly those with limited experience of diving in harsh conditions.

5 - *Hvitanes*: This peninsular between Hestfjörður and Skötufjörður, accessible from the main road, is a prime location for spotting seals. A relatively large colony makes its home on the rocks extending from the shore into the fjord. Easy access for diving and interesting geology.

6 - *Vigur*: The island of Vigur is a regular tourist attraction, with visitors travelling by boat from Ísafjörður to visit the nesting eider ducks and puffins. In the channel on the southern tip of the island is the site of at least one interesting shipwreck. This site is only accessible
by boat and diving needs to be carefully timed due to the strong currents that flow through
the channel.

7 - Skötufjörður: Along the eastern side of Skötufjörður, four or five metres from the edge
of the shore is a ‘wall’ that plunges steeply to the bottom of the fjord. This is a fascinating
dive which evokes a strong sense of the dramatic geology of the fjords as well as an
experience of the abundant sea life clinging to the ‘wall’.

8 - Mjóifjörður: Opened in 2009, the bridge across Mjóifjörður over which the main road
crosses, has created an exciting dive spot. The reduction in the width of the mouth of the
fjord has caused strong currents to occur during the ebb and flow of the tides. If timed
correctly, this offers the opportunity of an exhilarating drift dive, in both directions. At
one point along the ‘wall’ of the fjord is an unusual shipwreck of a shrimp trawler leaning
with its bow against the side, making an arch under which it is possible to swim.

9 - Reykjanes: The area around Reykjanes is already an important tourist destination due
to the abundant thermal heat, unique in the Westfjords, found there. A hotel is located on
the shore of the fjord which has one of the largest thermally heated pools in Iceland. The
heated water that enters the fjord has created a unique ecosystem which makes for
interesting diving. The area is also renowned for the abundant wildlife that can be found
there, including large numbers of seals, whales and seabirds.

10 and 11 - Snæfjallaströnd: These are the approximate locations of the sites of two
whaling stations that existed along the shores of Snæfjallaströnd on the north-eastern side
of Ísafjarðardjúp. The exact locations are yet to be determined, but this would provide a
fascinating location for exploratory diving expeditions.

12 and 13 - Jökulfirðir and Hesteyri: These are the approximate sites of two shipwrecks
that lie in quite shallow waters in the fjord closest to main landing point on Hornstrandir.
The exact location is not known, but local fishermen have information on sites that would
be useful in finding and surveying the wrecks. Again, this would provide material for an
exciting expedition which could be combined with land-based activities in the beautiful
Hornstrandir nature reserve.