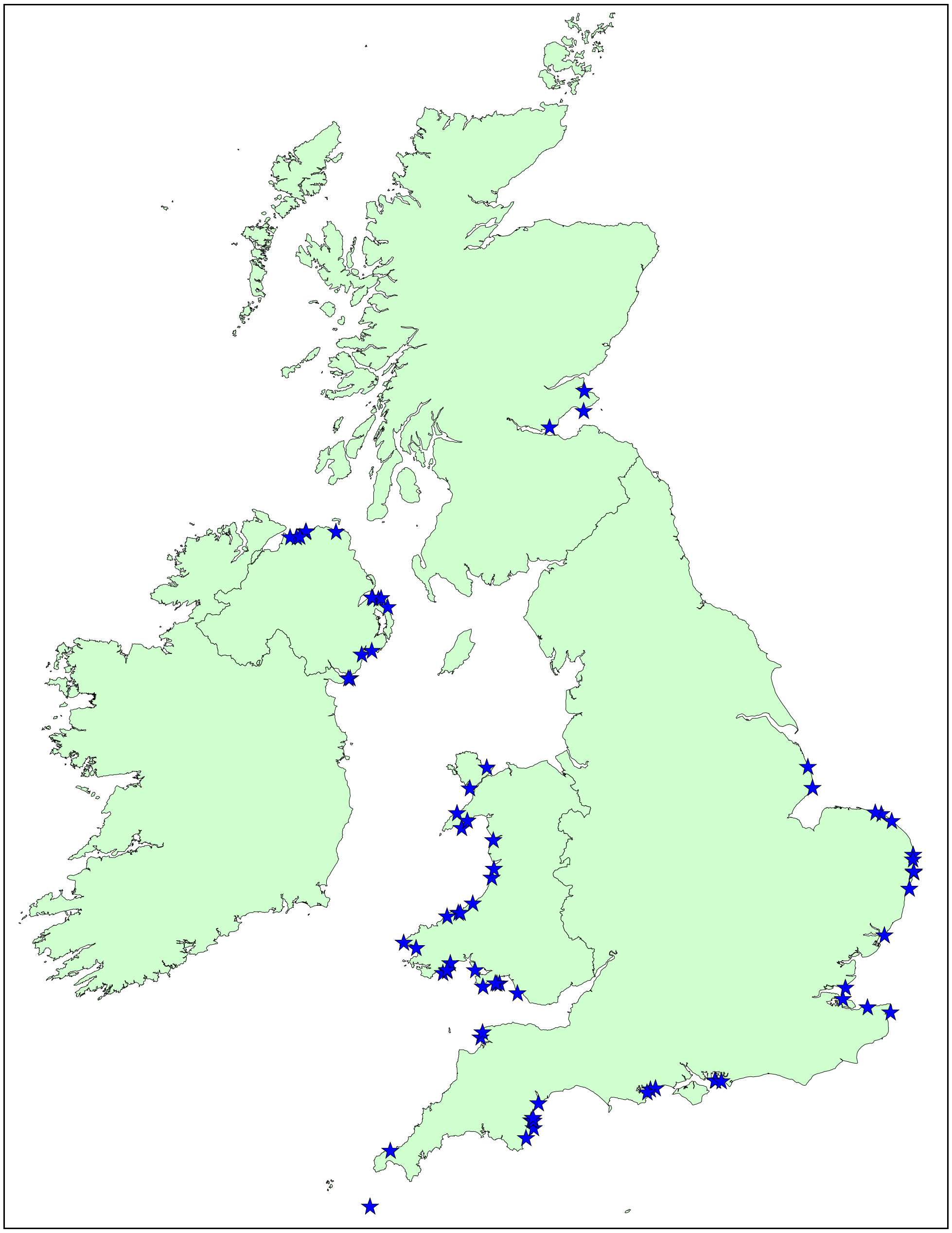

Figure 17.1 Locations of Blue Flag Beaches

Source: Tidy Britain Group (2000), Environment and Heritage Service (2000).

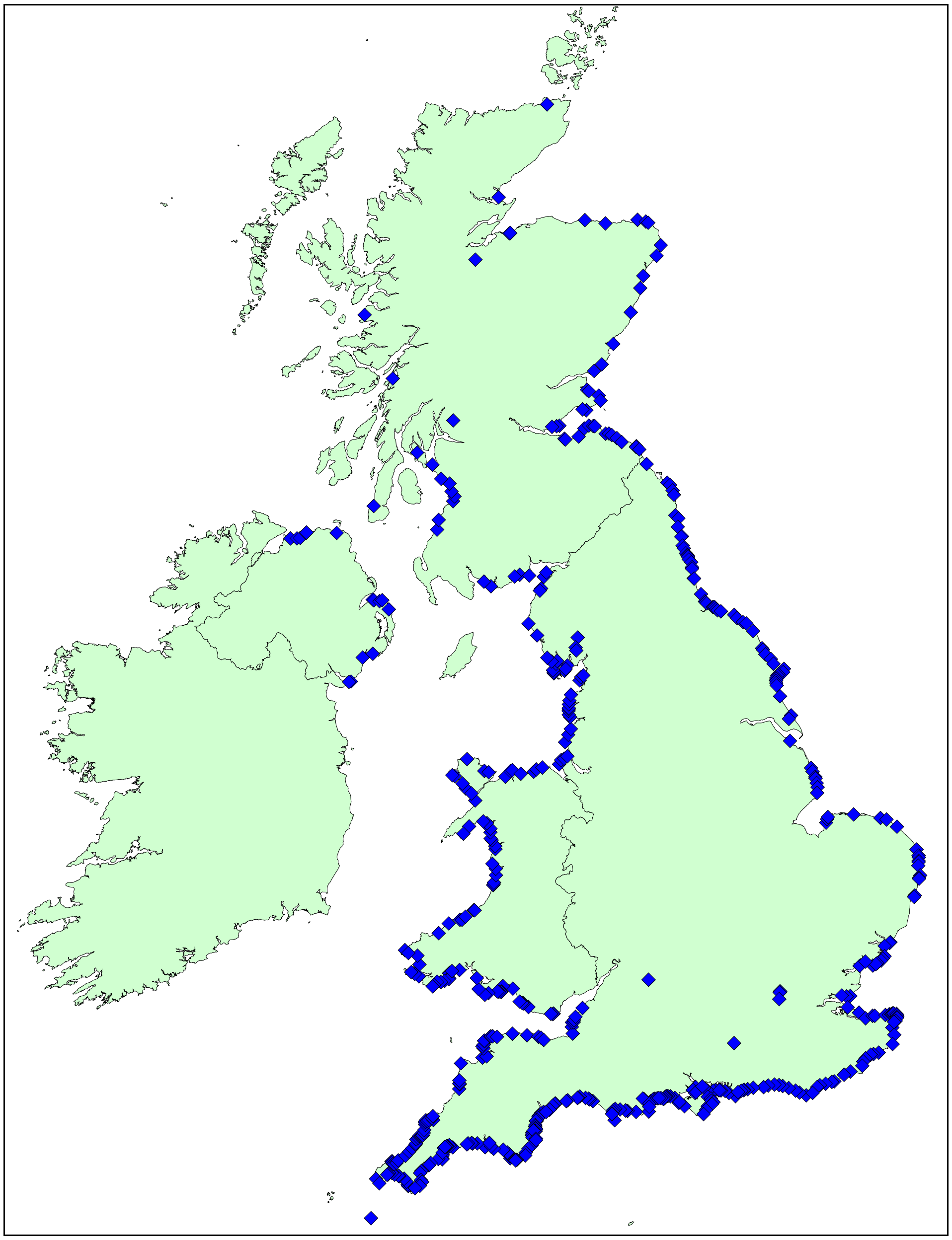

Figure 17.2 Locations of EA Bathing Waters in UK

17.4 Density Map – SAR Grid

The beaches and bathing waters data was combined and the density of sites within each cell of the SAR grid was calculated. The resulting map is presented in Figure 17.3.

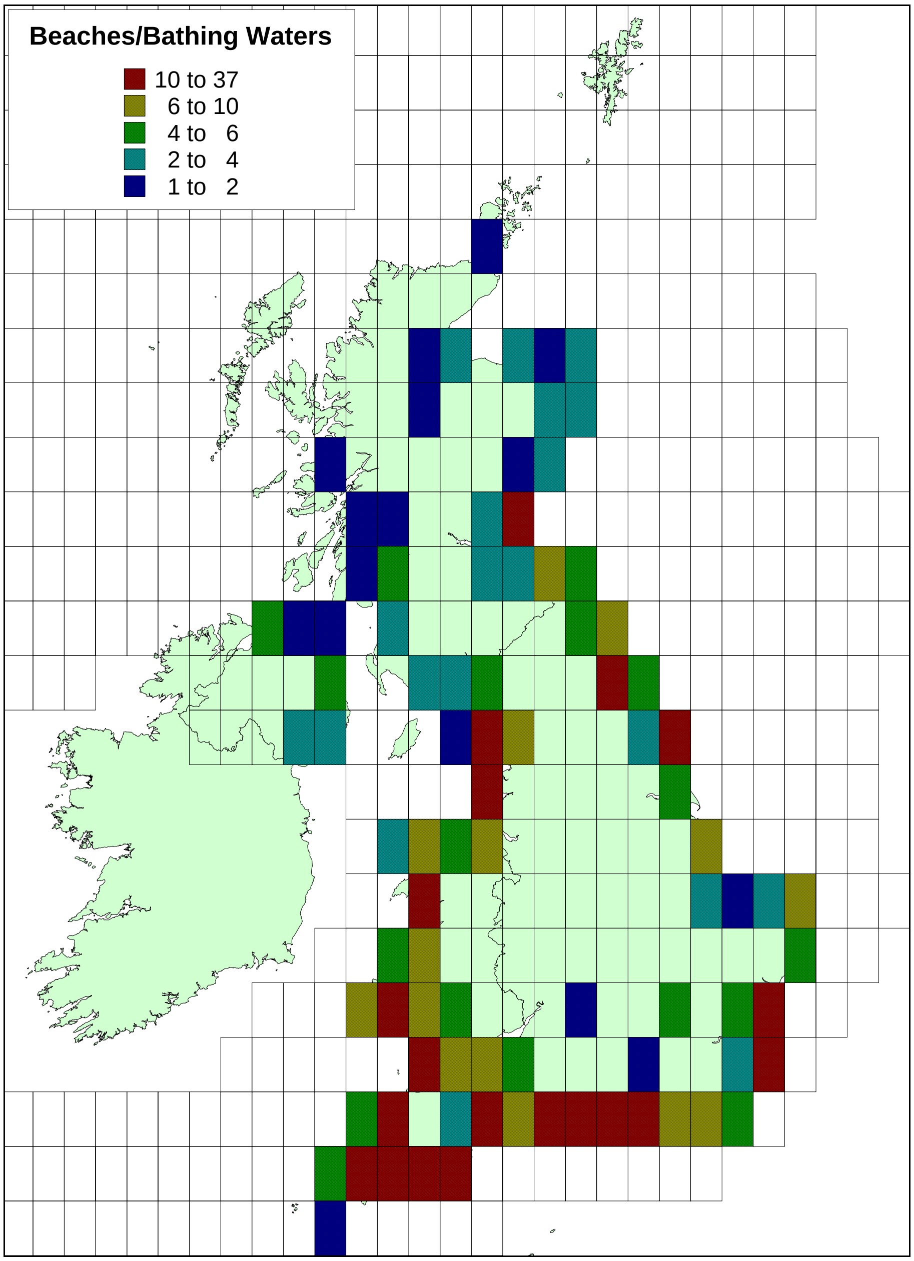

Figure 17.3 Beaches and Bathing Waters Density Map

18 MARINA BERTHS

18.1 Introduction

Data on two types of marina have been collated in the course of this work:

- Blue Flag Marinas
- Royal Yachting Association (RYA) Marinas

This is the only estimate that can be made as to where the greatest level of yachting activity take place around the UK Coastline and hence where SAR is mostly likely to be required. Descriptions of each of these are given below before the final density map is presented.

18.2 Blue Flag Marinas

The European Blue Flag is awarded by the Foundation for Environmental Education in Europe (FEEE) to marinas across Europe that meet strict criteria for both water quality and environmental management based on the water quality directive. Its aim is to promote environmental protection internationally. The FEEE is working on its extension outside Europe, along with the United Nations Environmental Programme and the World Tourism Organisation. The European Blue Flag award for marinas is based on 16 specific criteria covering four aspects of management: water management, general environment, environmental education & information and safety & services.

Twenty-six marinas have been classified as Blue Flag marinas as presented in Figure 18.1.

18.3 RYA Marinas

The locations of other marinas around the UK were obtained from the Royal Yachting Association. A map of the marina locations is presented in Figure 18.2.

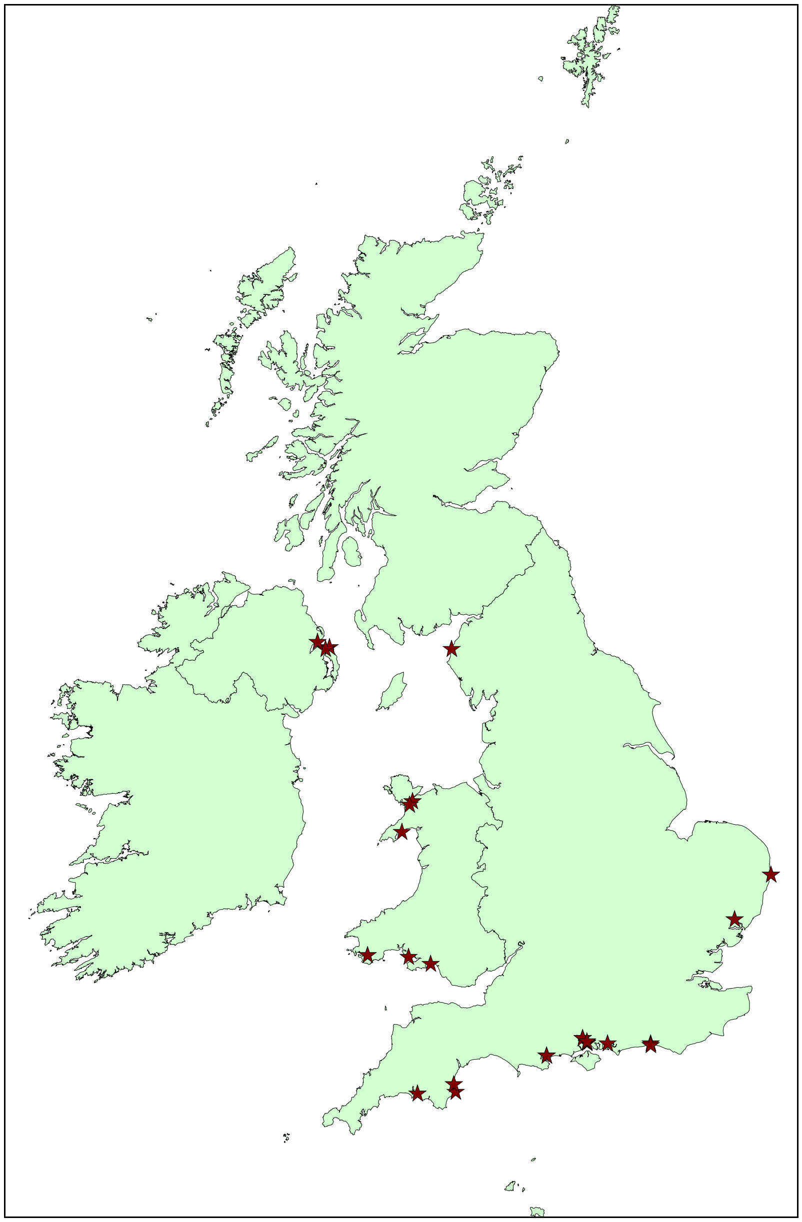

Figure 18.1 Locations of Blue Flag Marinas

Source: Tidy Britain Group (2000)

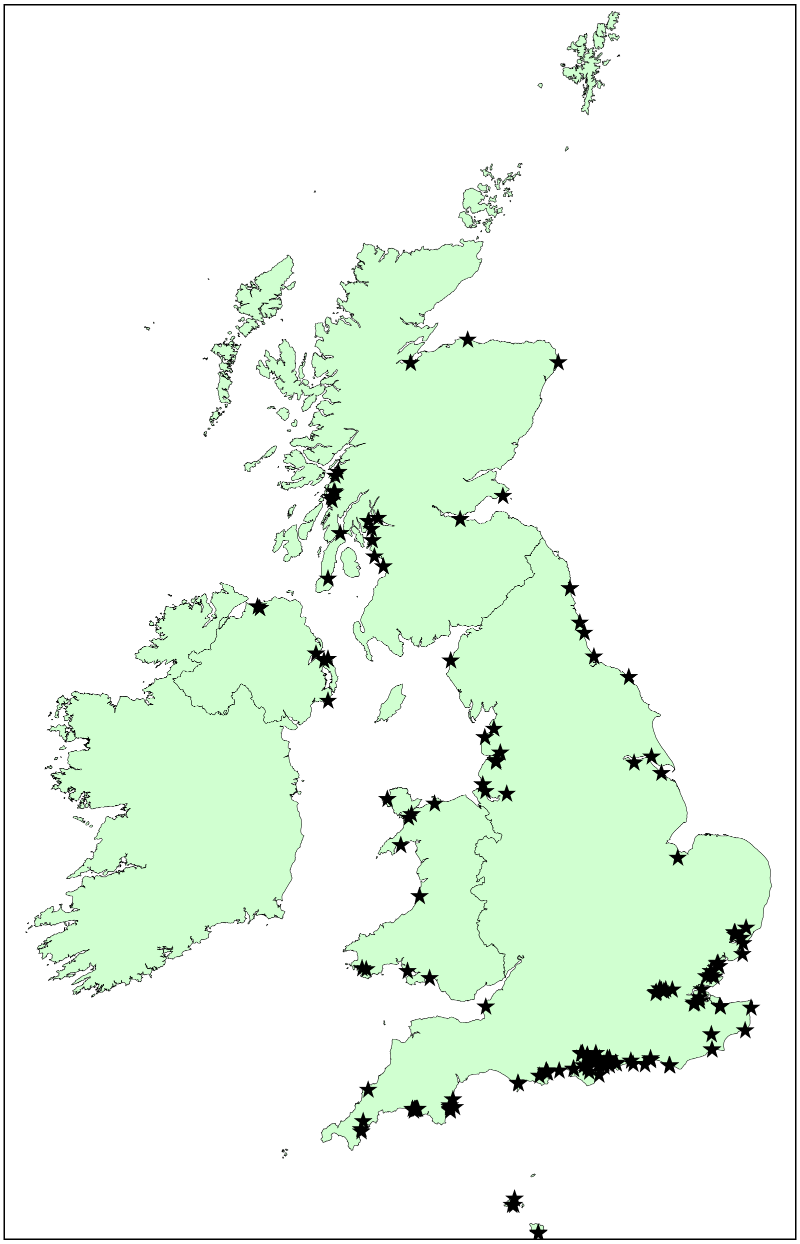

Figure 18.2 Locations of Royal Yachting Association (RYA) Marinas

18.4 Final Density MAP – UKSAR Grid

The marina data was combined, and a density map plotted on the SAR grid. This map is based on the total number of marina berths within each cell of the SAR grid.

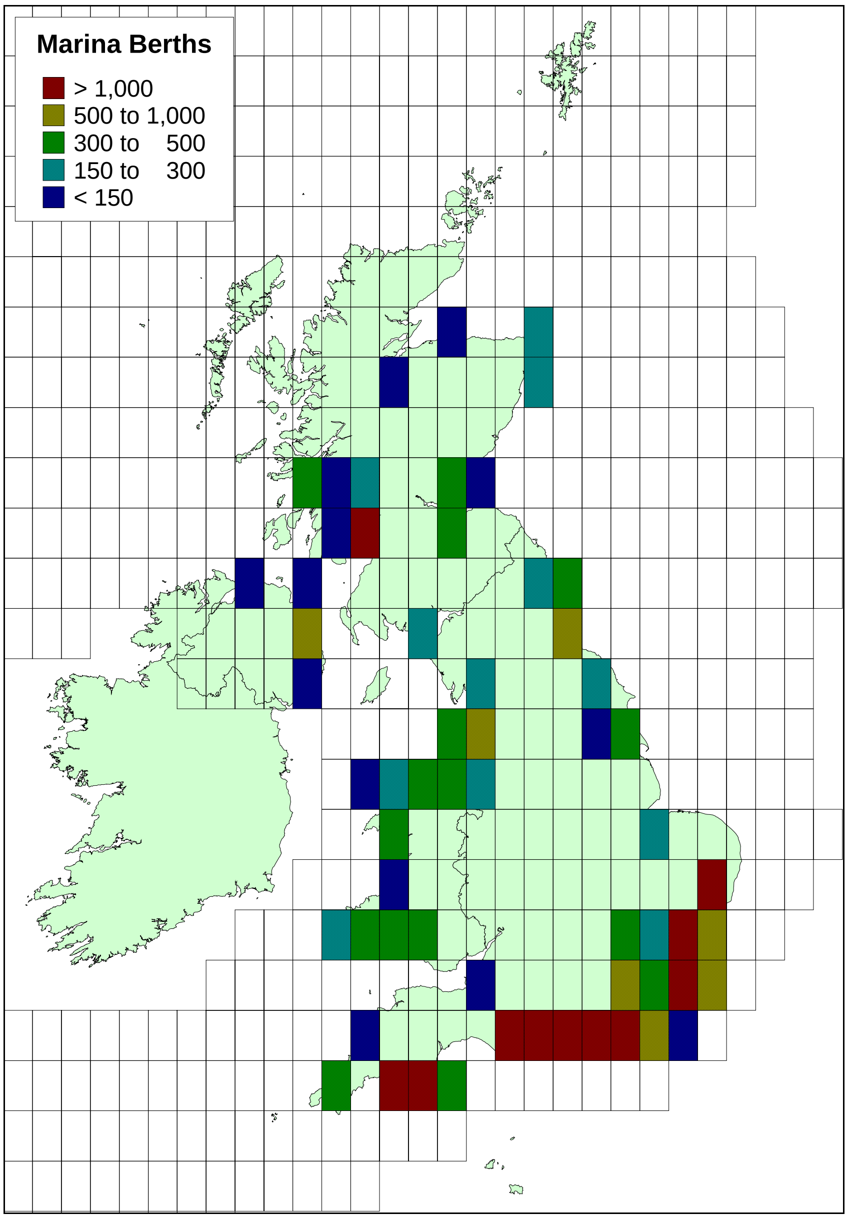

Figure 18.3 Density of Marina Berths in SAR Grid Area

19 OFFSHORE HELICOPTER MOVEMENTS

This section presents details on the movements of helicopters to offshore platforms. The data has been collated based on information received from the UK Offshore Operators Association (UKOOA) as well as helicopter operators in Liverpool/Morecambe bay and Penzance /Isles of Scilly.

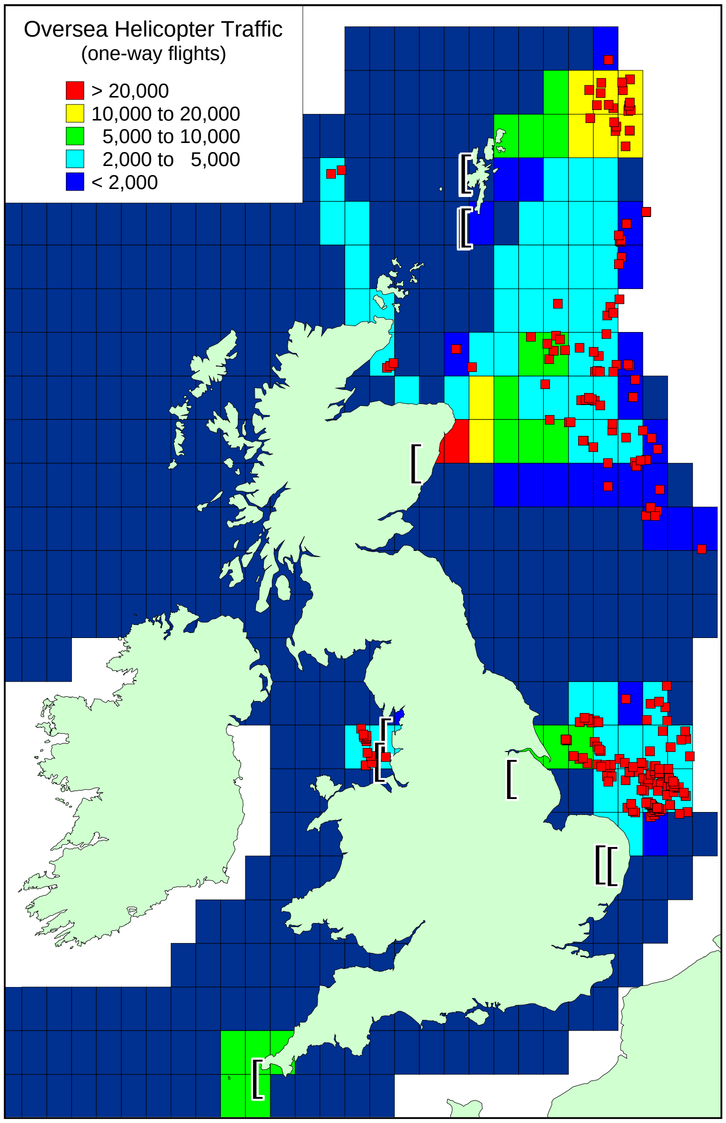

Figure 19.1 Density of Offshore Helicopter Movements on UKCS

20 OFFSHORE PLATFORMS ON UKCS

The following figure presents the location of offshore platforms on the UKCS.

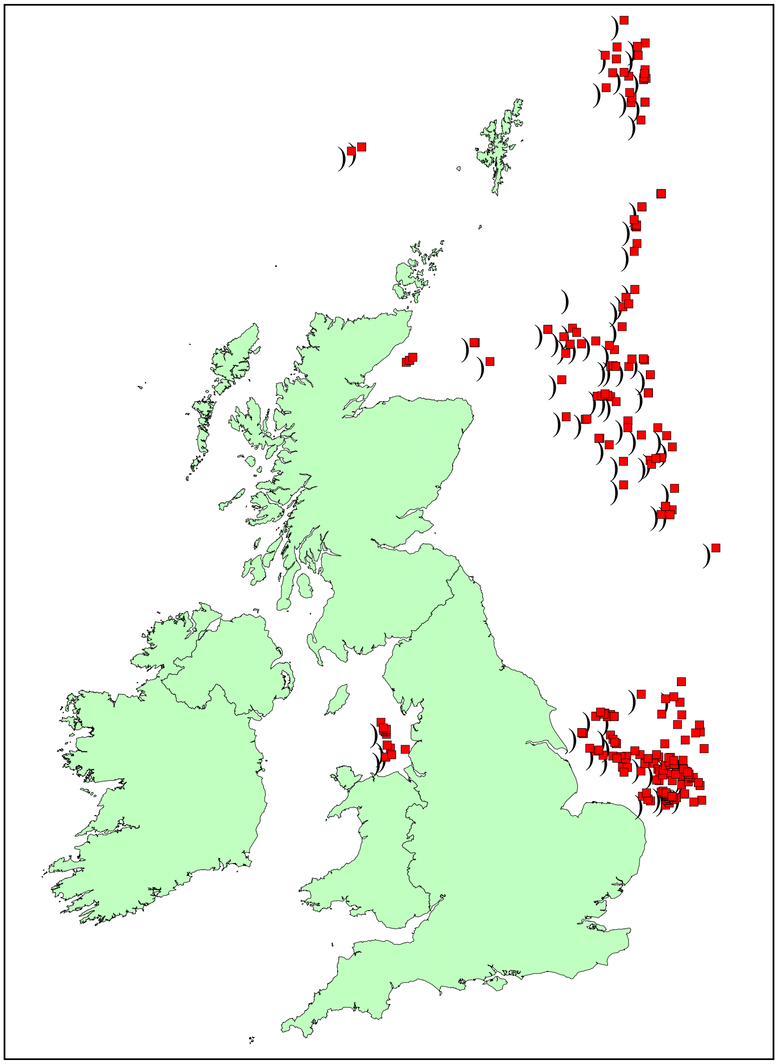

Figure 20.1 Location of Offshore Platforms on UKCS

21 MOUNTAIN/HILL & FELL WALKING AREAS

Whilst the main areas of Mountain/Hill and Fell walking areas are well known in the UK as depicted in the following figure. However, little information seems to be available on the number of visitors and level of activities in these areas.

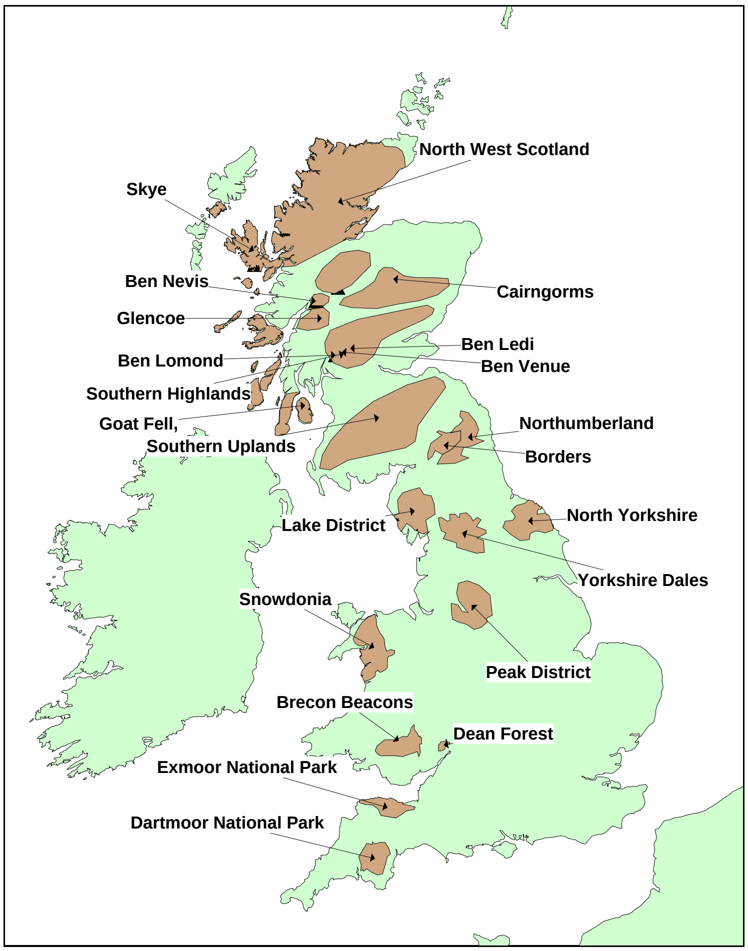

Figure 21.1 Overview of Mountain/Hill & Fell Walking Areas in the UK

22 PRINCIPLES OF PREDICITION OF IMMERSION SURVIVAL

22.1 Introduction

This section presents a discussion on the principles of the prediction of immersion survival by Dr Howard Oakley of the Institute of Naval Medicine. The discussion demonstrates the great uncertainty surrounding survival times for a person who is immersed in water.

22.2 Immersion Survival

Despite many attempts to develop techniques for predicting the likely survival of immersed casualties, current attempts are at best an art rather than a science. For practical purposes, it is best to divide immersion survival into four phases:

a. risk of early drowning from ‘cold shock’ and swimming failure, up to 15 minutes
b. risk of drowning during more prolonged immersion without protective equipment
c. risk of failure (or limitation in performance) of protective equipment during longer immersion
d. risk of death during or soon after rescue.

Immersion (without good protective suits) in water of 15˚C and below can suddenly kill a small proportion of victims, so-called ‘hydrocution’. This appears to be the result of heart problems and is generally unpredictable. Those who survive the first few seconds then normally suffer from ‘cold shock’. In that, they take a deep inspiratory gasp, followed by hyperventilation. This may prevent them from holding their breath, for instance to duck-dive out of a capsized vessel or escape underwater from a ditched helicopter. Hyperventilation persists for the first couple of minutes of cold immersion, and is accompanied by an increased heart rate and blood pressure which can also bring on potentially fatal medical problems. Hyperventilation makes drowning more likely, particularly in rough water. Thus, the colder and rougher the water, the less protective clothing worn and in the absence of an effective lifejacket, the more likely death is within the first few minutes.

Even if someone survives the first few minutes, they may stop swimming (or keeping themselves afloat) at any time during the first 15 minutes, from ‘swimming failure’. Again, the colder and rougher the water is and the less their protective equipment, the higher the chance of them succumbing from swimming failure. In very rough and cold water, as many as 75% may die during the first 15 minutes (including both cold shock and swimming failure). However, in warm and calm water, particularly if wearing a lifejacket and immersion suit, death may be exceptionally unusual during this period.

Those who survive more than 15 minutes will usually start to show the effects of body cooling, unless they are wearing an effective immersion suit. If wearing a high-performance lifejacket, they may survive long enough (several hours) to become deeply hypothermic and for that condition to threaten their life. However, the majority of casualties need to make swimming actions and tense the neck muscle to keep their head above the water and as those powers ebb away (with cooling of the body), they become more liable to drowning. Once again, the colder and rougher the water is and the leaner the victim is, the more quickly this cooling will happen and the more likely they will become to drown. Expected survival times for this phase may range between 30 minutes in very rough and cold water and up to 6 hours or longer in calm, warm conditions.

Those expected to survive longest are those who are best equipped, with high-performance lifejackets, splash screens and effective immersion suits (which do not leak). However, even when properly maintained, minor events can greatly modify the effectiveness of such equipment. During abandonment, it is easy for a small tear to render a ‘dry’ immersion suit near-useless, or for a lifejacket to be donned improperly and thus to give only limited protection. Minor shortcomings in calm-water performance may rapidly become life-threatening in rough seas, even if survivors are believed to have boarded a liferaft or similar safe haven.

Finally, depending on their condition at the time of rescue and the mode of rescue, up to 20% of those alive at the start of rescue may die during or shortly afterwards. Effecting rescue whilst keeping the casualty in a near-horizontal position is normally a great help but a few may still die even when conditions are optimal.

The preferred approach for addressing this very complex area is to start with a ballpark figure for likely survival and then to intelligently adjust it up and down as detailed knowledge of conditions, equipment worn and so on, become available. However, the reliability of predictions remains low and ample allowance must be made for surprisingly brief or prolonged survival times.