

## **Safety Management System Development for Land Based Sites**

Report by Head of Safety Management

**Summary:** This report sets out the proposed development of a safety management system for managing visitor safety at Broads Authority land based facilities.

The views of Forum Members are sought on the draft Hazard Log.

### **1 Introduction**

- 1.1 Since the successful development and implementation of the Safety Management System for marine activities the Authority has had aspirations to develop a similar management system to address visitor safety at land based sites that the authority either leases or owns. Additionally once developed it is the intention to amalgamate land based activities into the current safety management system such that all activities and sites both marine and land based are part of a comprehensive safety management regime.
- 1.2 The management of Visitor Safety is important to the Authority for the following reasons:
- **Moral**  
First and foremost we want our visitors to return home safe, happy and satisfied with their experiences. We have a moral obligation to consider their safety, and to protect them from unnecessary and unreasonable risk. We also need to ensure that they do not feel over protected. We must consider their right to willingly accept the risks that might come with the benefits they are seeking.
  - **Legal**  
We have legal duties to ensure the safety of those the Authority does not employ but who may be affected by our work- our visitors
  - **Reputation and Authority**  
An entirely risk free environment is not achievable. However we must be able to demonstrate to the public, regulators and government that we have done all that is reasonably practicable to manage risk down to acceptable levels. If there is a major accident we are then in a better position to retain trust.
  - **Business**  
Attracting and satisfying visitors forms a key part of the local tourism business success. We want to optimise the use of our assets. It therefore makes good business sense to create an appropriate environment to attract visitors. This helps to create a virtuous circle as money raised from visitors can be reinvested in conservation, maintenance and improvements. This in turn creates a better environment likely to attract new and repeat visitors.

- Financial  
People affected by accidents often look for someone to blame and want compensation. We want to be able to defend unreasonable claims. There is often a clamour for something to be done after an accident. We need to be in a strong position to resist the introduction of excessive control measures we can then avoid creating unwelcome precedents and incurring unnecessary costs.

1.3 Visitor Safety management is about balancing benefits and risks in order to provide benefit to society and individuals. It is not about creating an environment that is without risk or stopping important recreation or learning activities where the risks are considered and accepted.

1.4 Nevertheless the Authority has a duty to ensure, as far as is reasonably practicable, that visitors are not put at risk of harm. They should not be exposed to hidden dangers.

1.5 At all of the Authority's sites the responsibility for safety of visitors should be one that is shared between the Authority and the visitor. The Authority will take reasonable measures to minimise risk in ways that are compatible with our conservation objectives – but not to eliminate risk.

## **2 Risk Assessment**

2.1 The essence of risk management is to focus resources on reducing the most serious risks. These are both those that occur most often and those that have the greatest potential for harm.

2.2 To allow resources to be allocated and prioritised to managing risk it is firstly required to identify and categorise hazards. A draft hazard log detailing the current known hazards and current and proposed control measures are set out in Appendix 1.

## **3 Risk Assessment Process**

3.1 Each of the hazards identified was risk assessed by officers of the Authority to determine the risk classification. The risk matrix approach is used to combine the estimated likelihood of a hazard occurring with its estimated severity of the consequences to people, the environment and assets (the higher the risk numbers the greater the risk).

3.2 Figure 1 also shows the risk acceptance criteria: those that fall in the green region (C) are considered to be "Broadly Acceptable" and those within the red region (A) are "Intolerable". Risks that fall between these categories are in the As Low As Reasonably Practicable (ALARP) region. It should be noted that it is incorrect to say that a risk in region B "is ALARP". Its placement in this region means that the risk has to be demonstrated to be ALARP by means of mitigations and risk reduction.

- 3.3 Intolerable risks (class A) would require urgent attention and be the focus of regular reviews by the Broads Authority and any suitable risk control measures that are identified should be seriously considered for implementation. Such risks cannot be declared ALARP, a means of reducing or avoiding the risk must be found and implemented;
- 3.4 Risks in the ALARP region (class B) require review to ensure that they can be satisfactorily weighed against the time, trouble, cost and physical difficulty in taking further measures to reduce them;
- 3.5 Broadly acceptable risks (class C) would require some attention and occasional review (e.g. annually) to ensure that they remain under control.

		Likelihood →					
Catastrophic	<b>B</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	↑ Consequence	
Severe	<b>B</b>	<b>B</b>	<b>A</b>	<b>A</b>	<b>A</b>		
Major	<b>B</b>	<b>B</b>	<b>B</b>	<b>A</b>	<b>A</b>		
Moderate	<b>C</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>A</b>		
Minor	<b>C</b>	<b>C</b>	<b>B</b>	<b>B</b>	<b>B</b>		
	Extremely Remote	Remote	Probable	Frequent	Very Frequent		

**Figure 1 - Risk Matrix**

Definitions of the likelihood and consequence categories are given Table 1, Table 2, Table 3 and Table 3

<b>Likelihood Category</b>	<b>Definition</b>
Extremely Remote	Less than 1 incident per 100 years.
Remote	Between 1 incident per 10 years and 1 incident per 100 years.
Probable	Between 1 incident per year and 1 incident per 10 years.
Frequent	Between 1 incident per month and 1 incident per year.
Very Frequent	More than 1 incident per month.

**Table 1 - Likelihood Categories**

<b>Consequence Category</b>	<b>Definition</b>
None	No injuries or fatalities.
Minor	1 minor (recoverable) injury.
Moderate	1 major injury (e.g. broken bones); or <10 minor (recoverable) injuries; or 1 minor occupational illness.
Major	1-10 major injuries; or multiple occupational illnesses.
Severe	1-5 fatalities; or up to 50 major injuries.
Catastrophic	>5 fatalities or >50 major injuries.

**Table 1 - Consequence Categories - People**

<b>Consequence Category</b>	<b>Definition</b>
None	No environmental damage.
Minor	Minor local pollution with short-term environmental damage; limited pollution response required by BA & NCC and/or other local organisations.
Moderate	Moderate local pollution with medium-term environmental damage; significant pollution response required by BA & NCC and/or other local organisations.
Major	Major but recoverable (in the medium term) environmental damage over a local area; significant pollution response required by BA & NCC and/or other regional organisations.
Severe	Severe but recoverable (in the medium to long term) environmental damage over a large area; significant pollution response required by the BA & NCC and/or other regional organisations.
Catastrophic	Persistent and severe environmental damage over a large area; major pollution response required by the BA & NCC and/or other national organisations.

**Table 2 - Consequence Categories - Environment**

Consequence Category	Definition
None	No damage to assets.
Minor	No disruption to commercial activities; cost of repair £0-£10K.
Moderate	Brief and partial disruption to commercial activities; cost of repair between £10K-£100K; few users affected.
Major	Significant short-term or minor long-term disruption to commercial activities; cost of repair between £100K-£1M; many users affected.
Severe	Significant and long-term disruption to commercial activities; cost of repair £1M-£10M; many river users affected.
Catastrophic	Complete and long-term disruption to commercial activities (e.g. river closure for up to 1 week); cost of repair >£10M; all users affected.

**Table 3 - Consequence Categories - Assets**

#### **4 The 'ALARP' principle**

- 4.1 Ideally the risk of each hazard occurring should be As Low As Reasonably Practicable or 'ALARP'. The following explains how the ALARP status should be derived.
- 4.2 Risk assessments should be undertaken by people who are qualified or appropriately skilled to do so, especially when deciding which techniques to use and when interpreting the results. Risks should be judged against objective criteria, without being influenced by the financial position of the Authority, to ensure they are kept as low as reasonably practicable (ALARP). The greater the risk, the more likely it is that it is reasonable to go to the expense, trouble and invention to reduce it. There is a preferred hierarchy of risk control principles
- eliminate risks -by avoiding a hazardous procedure, or substituting a less dangerous one;
  - combat risks -by taking protective measures to prevent risk;
  - minimise risk -by suitable systems of working.
- 4.3 A risk can be declared ALARP, provided it is not in the "intolerable" region, if it is believed that all possible mitigating actions and safeguards have been identified and, if considered reasonably practicable, implemented.
- 4.4 The ALARP principle recognises that it is seldom possible to entirely remove risk, and this is particularly true in a marine environment.
- 4.5 Once the risks have been assessed as ALARP, an ALARP statement can be written to document why the risk was deemed ALARP. This ALARP statement will include details of safeguards, mitigations and judgement.

### **3 Conclusions**

- 3.1 The hazards in Appendix 1 are all in the acceptable region and providing that measures to control risk are completed in a timely manner the hazards can then ultimately be declared “as low as reasonably practicable” the ALARP principal.
- 3.2 The forum’s views are sought regarding the completion of the Hazard log, the risk ratings for each hazard and indeed if there are hazards which have not been identified arising from land based recreation on land/property which is the responsibility of the Authority.

Background papers: None  
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Broads Plan Objectives: None

Appendices: Appendix 1 Hazard Identification Table

Appendix 1 Hazard Identification Table

Hazard No.	Title	Description	Consequences	Safeguards/mitigations in place	Current Classification					New Classification					ALARP? Y/N	ALARP Statement	Further Actions	Comments
					Prob	Pers	Env	Ass	Class	Prob	Pers	Env	Ass	Class				
001	Livestock	Livestock , Cattle, Horses etc. on land where public or permissive access is allowed.	Cattle may charge resulting in injury / death. Livestock may crowd walkers resulting in crushing injuries Livestock may be distressed or more inquisitive if dogs are present with walkers	Guidance available from HSE regarding Cattle and public footpaths. Countryside code information available and the Countryside agency leaflet "you and your dog in the countryside" advising of precautions to take when walking dogs. Fences erected and maintained to segregate livestock and people where landowner feels necessary.	Erem	Maj	None	Min	B						Hazard is not presently ALARP			
002	Adverse Weather	Users affected by extreams of weather	Heat exhaustion, Sunburn, Cold, Hypothermia and Hypertheria	Weather forecasts available on the Broads Authroity website.	Pro	Mod	None	None	B						N	Hazard is not presently ALARP		
003	Ground Conditions	Surface of footpaths and access areas being impassable through high water levels / rain, animal interaction forming deep ruts and holes, slips from mud, trips from parched earth ruts.	Slips and Trips resulting in injuries from minor sprains through to broken limbs,	Footpaths are regularly inspected however users are to judge conditions and wear appropriate footwear. There is a reconised acceptance of risk by the user associated with the activity. Footpaths are closed when conditions dictate.	Frequent	Mod	None	None	B						N	Hazard is not presently ALARP		
004	Fall from Height	Users falling from footpaths and access areas	Possible broken bones, strains and sprains	Edge protection in place where approprite to prevent / guide users away from hazard although generally natural features of the landscape require user reliance on hazard identification and appropriate user action.	Rem	Mod	None	None	B						N	Hazard is not presently ALARP		
005	Furniture	Stiles, fences, benches gates	User being injured through faulty furniture, minor injuries	All furniture is condition checked regularly and maintained when required.	Erem	Min	None	Min	C						N	Hazard is not presently ALARP	Broads Authority design stands need to be developed in accordance with appropriate British standards	Designs vary and it is recommended that design standards are developed for all new structures and when maintenance is carried out structures are brought up to new standards where possible.
006	Structures	Bridges, Boardwalks	Degradation of structures resulting in failure or collapse, injury resulting in broken bones, strain and sprains	All structures are inspected to an agreed standard and frequency, maintained as appropriate. New design are to developed as appropriate for the environment and duty concerned	Erem	Mod	None	Min	C							Hazard is not presently ALARP	Broads Authority design stands need to be developed in accordance with appropriate British standards	Designs vary and it is recommended that design standards are developed for all new structures and when maintenance is carried out structures are brought up to new standards where possible.
007	Trees	Trees adjacent to footpaths, trees present on land accessed by the public	Trees are know to shed limbs even fall completely particularly after periods of drought and high winds. Failure of trees can result major injuries and or death.	Tress are inspected in accordance with site management plans and maintenance is carried out where issues are identified.	Erem	Major	Min	Min	B							Hazard is not presently ALARP	The Broads Authority is developing a policy for the mangement of trees in the area, whn published this policy will set out standards for the inspection and management of trees on Broads Authority property.	
008	Vegetation	Overgrown vegetation can encraoch onto footpaths and public.	Encraoching vegetation can change routes which can divert users towards a hazards and the vegetation when overgrown, such as briers, can become a hazard in themselves resulting in slips trip and minor injuries.	Footpaths are regularly inspected and where vegetation is impacting the site remedial action is taken. Grass cutting is schedlued and responsive cuts are completed when necessary.	Prob	Min	None	Min	B						N	Hazard is not presently ALARP		
009	Motorised vehicles and bicycles	Cars, Motorcycles and bicycles using public access sites and footpaths	Collision between pedestrians and motorised vehicles using public access areas resulting in major injuries /death. Collision between pedestrains and cyclists resulting in minor injuries / broken bones.	Vehiulcar access to public access areas is restricted to BA vehicles only for maintenance and patrolling. Pinch Points where cyclists and pedestrians may collide are controlled by staggered gates and or signs requesting cylists to dismount.	Rem	Sev	None	None	B						N	Hazard is not presently ALARP		
10	Giant Hogweed	Areas of giant hogweed adjacent to or in areas accessed by the public	When touched can cause burns and blisters and geeneral discomfort, affected ares become sensitised by light	Regular site checks are undertaken dnwwhen found in areas which may come into contact with users the Hogweed is removed	Prob	Mod	Minor	None	B						N	Hazard is not presently ALARP		
11	Litter	Litter can include needles and other sharps, dog feaces and general litter	Sharps injuries may result in transmisoin of diseases such as hepatitis, dog feaces may transmit bacteria and spread toxocariasis which can result in loss of sight	Sites are regularlut inspected and litter poked when required. Dog litter bins and free dog waste bags are provided at key sites	Erem	Maj	Minor	None	B						N	Hazard is not presently ALARP		
12	Angling	Anglers obstruct the footpaths with long rods and poles	Trips resulting in minor injuries	None at present	Rem	Min	None	Min	C						N	Hazard is not presently ALARP		
13	Power Lines	Power lines crossing footpaths or areas used by the public	Anglers with long rods or poles coming into contact with power lines may result in death	All access points where power lines are present are signed advising of the warning.	Erem	Maj	none	Min	B						N	Hazard is not presently ALARP		