



# Assessing Inland Accidental Drowning Risk

# About

## **The Royal Society for the Prevention of Accidents (RoSPA)**

The Royal Society for the Prevention of Accidents (RoSPA) is a registered charity and has been at the heart of accident prevention in the UK and around the world for almost 100 years. More than 14,000 people die as a result of accidents across the UK each year. There are millions of other injuries. Accidents cause loss and suffering to the victims and their loved ones, employers and UK society as a whole. We promote safety and the prevention of accidents at work, at leisure, on the road, in the home and through safety education.

## **The RoSPA / BNFL Scholarship Scheme**

The BNFL scholarship is a unique scheme that provides support for safety related research projects that will produce defined, practical and influential outcomes to help save lives and prevent injuries in the UK and around the world. It was established with £500,000 of legacy funding following the winding up of BNFL (British Nuclear Fuels). Entrants are invited to submit concise details of their proposals, setting out the aims of proposed research, methodologies to be employed, timescales, anticipated costs and benefits and supervisory arrangements.

# Assessing inland accidental drowning risk

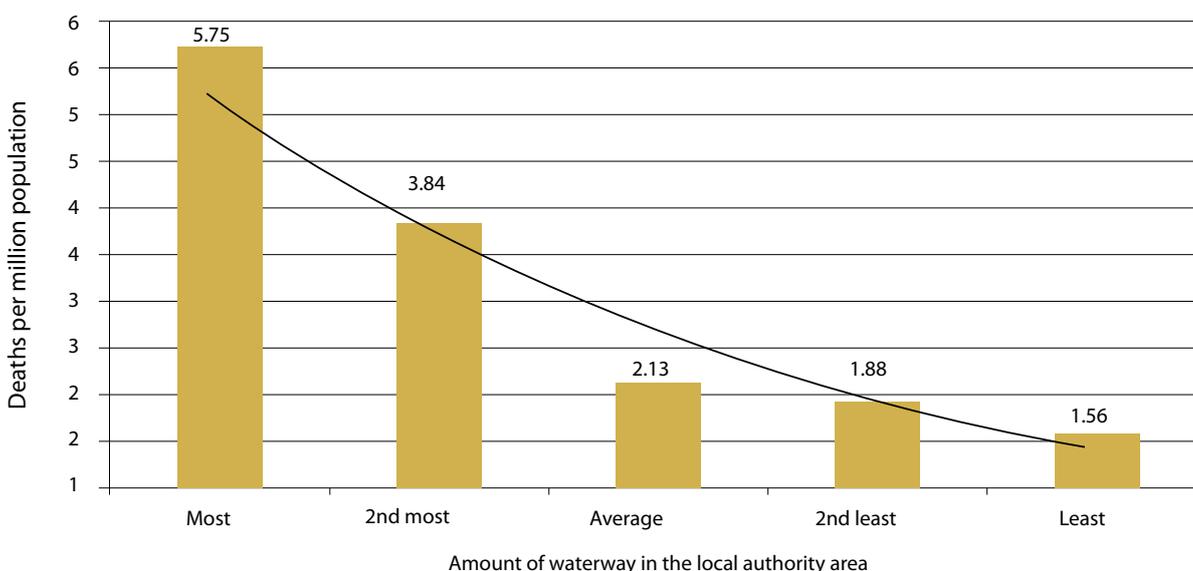
There are about 260 accidental inland fatal drownings each year in the UK. The chance of drowning is far higher for some types of people, areas and activities, with a 'High' rate of death amongst men especially in areas with a lot of rivers, canals and other open water. Also, the rate of drowning is 'Very High' or 'High' in some watersports. Inland drowning prevention initiatives should be targeted by area, type of watersport, age and gender, with new initiatives focusing on open water safety which is where most drowning occurs.

A new analysis of inland drowning reveals some clear risk factors that indicate where new drowning prevention work needs to be focused. This new analysis (of 2009, 2010 and 2011 incidents) has been made possible by the creation of the Water Incident Database (WAID<sup>1</sup>), managed by the National Water Safety Forum (NWSF), which for the first time provides a valid and complete database of British incidents.

## Assessing risk by area

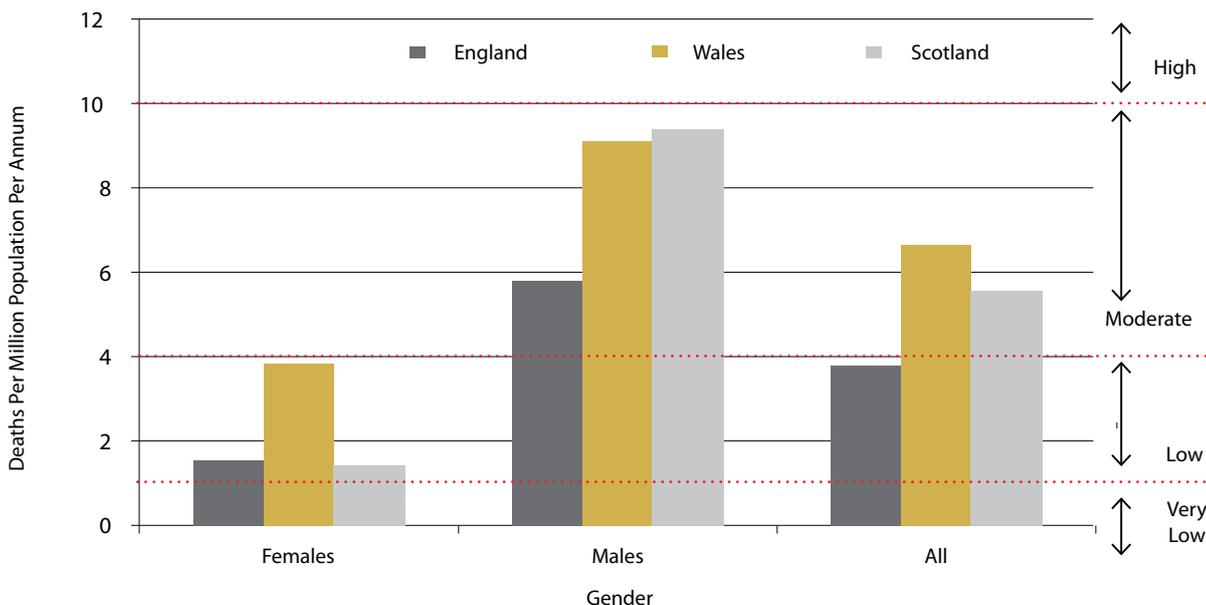
The risk of accidental inland drowning varies greatly between areas depending on the amount of waterway in an area, the number of people and extent of local watersports. As shown in Figure 1, the rate of death is about four times higher in areas with the greatest amount of rivers and canals. The main activity associated with accidental inland drowning comprises falling into rivers, canals and lakes whilst walking around during 'everyday/night' activities, suggesting a need to look at matters such as local lighting, footpath safety and local educational and information initiatives. The timing of accidents reflects day to day periods of activity, with peaks in later mornings, mid-afternoon and late evening. Whilst there is a seasonal trend, with a skew towards the summer, no one season is a majority, suggesting a need for prevention all year round.

**Figure 1: Rate of death by amount of waterway in English local authorities**



There is also a big difference in the rate of drowning between countries, with far higher rates in Scotland and Wales, as shown in Figure 2. The rate of accidental drowning is on the cusp of being 'High' for Scottish and Welsh men when they are considered as a whole, and is 'High' for young (15 to 30 yrs) Scottish and Welsh males. In England the overall male fatality rate is close to 'High' in areas with the most length of waterway, suggesting that safety improvements should be sought where reasonably practicable in these areas.

**Figure 2: Rate of death by gender and country**



## Inland watersports risk

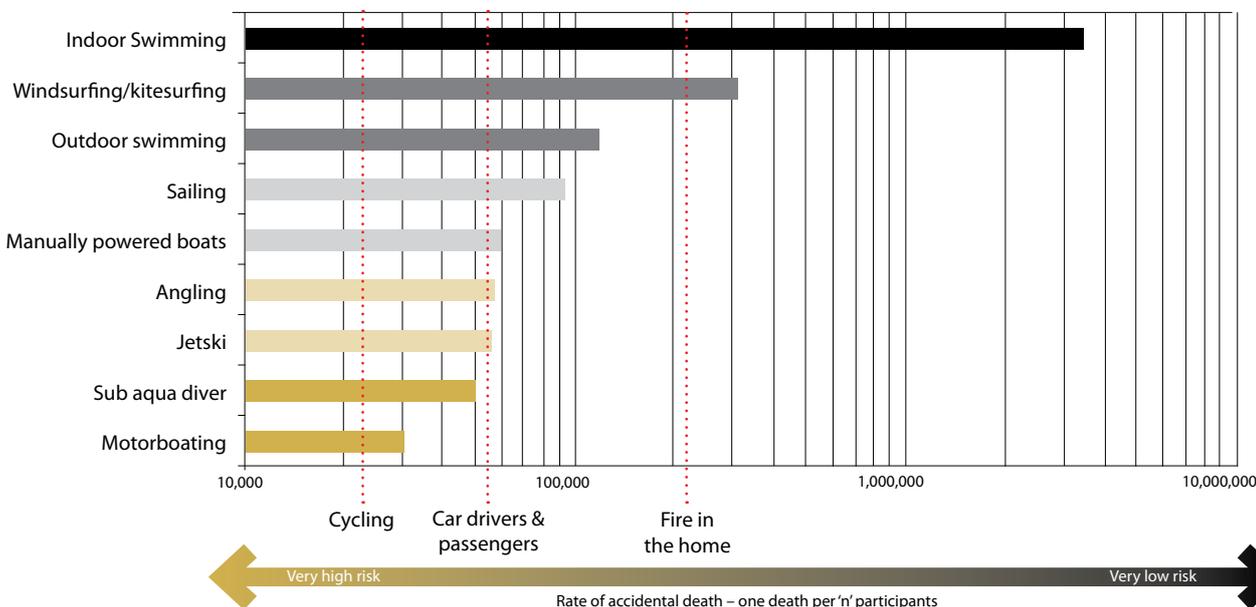
About 30% of deaths occur during specific watersports. Whilst the risk of death is not assessed to be intolerable for any individual sports, the rate of death (per 'n' participants) does vary greatly between sports (as per Figure 3) and is 'Very High' or 'High' in some cases – indicating a case for action.

The highest rates (defined as 'Very High') are found for motorboating and scuba diving, although it should be noted that there are relatively few inland scuba diving deaths but the rate is 'High' due to the relatively low participation rate. There are four activities (angling, sailing, jet skiing and kayaking/canoeing) where the rate of accidental death is defined as 'High'. These activities would be the second highest priority for improved safety. Two activities have a 'Moderate' rate of death, namely, outdoor swimming and wind/kite surfing, with outdoor swimming being in the cusp of 'Moderate' to 'High' risk. These activities would be third priority for improved safety and improvements should be reasonably practicable.

Swimming indoors has a very low rate of death, and would be defined as negligible, indicating little need for additional safety requirements. This reflects the benefit of lifeguarded safety managed environments as well as the relative safety of swimming in warmer and clear water amongst other swimmers. It should be noted though that about 4 infants and children drown each year in indoor swimming pools, mostly boys. Whilst this is a low rate, this is the main sport related cause of child drowning.

The majority of watersport deaths occur during outdoor swimming, angling, motorboating and kayak/canoeing, suggesting priority should be awarded to drowning prevention in these activities.

**Figure 3: Risk of drowning in different inland watersports**



## Drowning in baths

Nearly 20 people drown in baths per year in Great Britain, which is defined as a 'Negligible' rate for the British population as a whole. However, the rate varies by age with people aged over 65 having the highest rate in the region of one in 400,000 people, which is classed as 'Low', suggesting a case for awarding some attention to drowning in baths within home safety work for elderly residents.

### The case for improved water safety – area risk assessment and national watersports priorities

Given the association of population levels, participation in watersports and length of waterway with the rate of death, this suggests that the priority awarded to local water safety should be assessed area by area. The variation in rates of drowning between sports suggests that national drowning prevention work should also be prioritized for those watersports assessed as 'Very High' or 'High' risk, with proportionate weight awarded to outdoor swimming which also suffers a significant number of drownings.

Given the predominance of drowning in open water, there is a strong case for improving open water safety education and management. Open water is characterized by moving water, variable temperatures, low visibility, no lifeguarding and (often) no local water safety management. Most accidents involve unintentional entry into open water meaning people are unlikely to be suitably attired or prepared for escaping from the water. Water safety should focus on preventing falls into water and increasing the possibility of self rescue and survival.

## Recommendations

- **Responsible organisations should assess local risk by considering numbers of residents and visitors, amount of waterway and watersports and then invest a proportionate effort into drowning prevention.**
- **There is a particular need to prioritize new drowning prevention work for young Scottish and Welsh men and teenagers.**
- **Drowning prevention should be prioritized for the higher risk watersport activities whilst trying to maintain current very low rates of drowning in indoor swimming.**

## References

1. <http://www.nationalwatersafety.org.uk/waid/>
2. <http://www.rospace.com/occupational-safety/conference-events-awards/bnfl-rospace-scholarship.aspx>

This work was completed by Michael Wright, Eshani Ghosh and Fowzia Ibrahim of Greenstreet Berman Ltd under the management of David Walker of RoSPA and was funded by the BNFL/RoSPA scholarship fund for safety related research<sup>2</sup>.

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