diogelwch dŵr
Cymru
water safety
Wales

Water Safety Wales
Signage Report

Written by P Gallagher (RoSPA) and C McAvoy (RoSPA)

Version: 1

diogelwch dŵr
Cymru
water safety
Wales

Executive Summary

The need for improvements to water safety signage within Wales was highlighted by the Welsh Government Senedd Petitions Committee in Mark Allen's Law.[1] Water Safety Wales (WSW) also outlines in its drowning prevention strategy the need to ensure that consistent water safety messages reach people at the right time.[2]

The report details two phases of research which aimed to examine, scrutinise and improve water safety signage by expert consensus. This signage was then tested with members of the public to ascertain their understanding of the signs as well as overall clarity of the signs.

Background

On average, 51 people lose their life each year due to a water-related fatality in Wales.[3] 25 of these are classified as accidental, which gives an accidental drowning rate of 0.80 per 100,000 population. This is a much higher rate than other areas of the UK.[3]

WSW works to prevent water-related fatalities through the implementation of Wales' Drowning Prevention Strategy (WDPS)[2], which has seven key aims:

- Improve water incident data and intelligence in Wales

- Promote and develop learning to swim and water safety education

- Promote and support the development of water safety plans

- **Promote public awareness of water-related risks and ensure consistent messages reach the right people at the right time**

- Promote the safe participation in water activities across Wales

- Contribute to the reduction of water-related suicide

- Work with families affected by water-related incidents.

The Wesh Parliament Petitions Committee published Mark Allen's Law in response to the death of Mark Allen who tragically drowned in 2018. Recommendation 4 of Mark Allen's Law addresses water safety signage:

Recommendation 4. The Welsh Government should take steps to ensure that there is clarity about the minimum safety information and signage required around water bodies to increase awareness of the risks present to those who enter the water. Good quality and visible information has been cited as essential, whilst there was concern about the lack of such information at key locations. This is one of a range of control measures identified as part of thorough risk assessments of water bodies.[1]

In Scotland, in 2022 to 2024, a project was successfully completed by Water Safety Scotland to create consistent signage for Scotland's waterways. This project resulted in guidance for landowners and managers and was successfully trialled in 2024/25. This report, which details the signage project running in Wales in 2024/25, was based on the same process as the Scottish project with the omission of the audit phase.[4]

Aims of the project

The project had two aims:

- Build a consensus view from experts on water safety signage for Wales

- Test the agreed signage with the public to ensure the signs are easily understood.

Methods

The project was completed in the following two phases:

Phase one

This phase sought to create a WSW signage group in order to gain a consensus view from experts on water safety signage for Wales. The panel was set up using a stakeholder analysis completed by WSW. Inclusion criteria included: (1) Wales or UK based organisation or landowner; (2) practitioner active in water safety and drowning prevention; (3) individual or organisation with remit for the management of water safety.

The project sought consensus via two tasks:

- An online survey to gather initial consensus on several aspects of the signage. This was completed between the 14th and 30th August 2024. Informed consent was provided by each participant before participation. Participants were asked to fill in an online Microsoft Forms survey and were asked to vote 'agree', 'neither agree nor disagree' or 'disagree' on 28 initial statements relevant to the water safety signage. Statements were accepted as having reached consensus when the statement had the same response at ≥ 70%. This percentage is considered within a median threshold in academic research.[5]

- An online workshop to reach consensus on any aspects not reached in task one. The workshop took place online on 30th October 2024 10am – 12pm. Anonymity was waived by attending the workshop. Participants were presented with the results of the statements that did not reach consensus, short discussions were held and participants were then asked to vote on the statement again. Two further statements were added during this workshop.

Phase Two

This phase took the agreed water safety signs, as reached by consensus in phase one, and tested the signage with members of the public. A quantitative descriptive design was undertaken to achieve this.

The self-administered questionnaire was created to assess and evaluate the target audience's understanding of the signs as well as their understanding of the hazard icons and emergency information advice. Two signs were used to test this: one general water safety sign (including hazard information) and a specific sign for use on PRE stations.

The survey included 13 questions and used convenience sampling via adverts on social media on Facebook. The survey was live between 14th – 31st January 2025 but was repeated on the 9th April – 12th May 2025 in order to secure a bigger response rate. Survey results from both dates were analysed together.

Results

Phase one

15 organisations were invited to respond to the online survey. Seven completed the survey and 18 of the 28 statements reached consensus ≥ 70% in this first round.

The online workshop was attended by 10 participants with 7 eligible to respond (three were observers or facilitators). The 10 remaining statements were voted on again. All 10 statements reached consensus ≥ 70% in round 2.

Two extra statements were added and reached consensus ≥ 70%.

An itemised list of all statements reaching consensus is displayed in Table 1.

No	Statement	Decision	Round achieved
1	The Scotland signs need to be modified to suit Wales.	Agree	1
2	Only two signs are required - a core water safety sign (for information and hazard awareness) and a public rescue equipment specific sign.	Agree	1
3	Other signs (e.g. signs which include maps) may be applicable for certain locations, but the guidance will not cover these as they are not applicable to all locations.	Agree	2
4	Water safety signs should include hazard warning icons.	Agree	2
5	Hazards icons should be yellow and black and follow icons as per the ISO standard.	Agree	1

6	Mandatory actions, as per the ISO standard, should be blue.	Agree	1
7	Prohibition icons should be red and follow icons as per the ISO standard.	Agree	1
8	Emergency information should be green (as per the ISO standard).	Agree	1
9	What to do an emergency should be clear on the sign e.g. call 999.	Agree	1
10	The emergency agency responsible for coordination should be included e.g. In an emergency, call 999, and ask for FRS/HMCG.	Agree	1
11	The emergency information should include a location code of some sort.	Agree	1
12	The emergency information should include what3words.	Disagree	2
13	The emergency information should include OS Grid reference.	Agree	1
14	The emergency information should include a location name.	Agree	1
15	Only one location code is needed on the water safety sign.	Disagree	2
16	Two location codes are needed on the water safety sign.	Agree	2
17	Three location codes are needed on the water safety sign.	Disagree	2
18	Four location codes are needed on the water safety sign.	Disagree	2
19	The signs should also incorporate the emergency services relay signals for deaf people.	Disagree	2
20	The sign should include a QR code to further information on water safety.	Agree	1
21	The sign should focus specifically on water only and should not highlight other information such as first aid locations or defib locations.	Agree	1
22	The guidance should note that it is possible to use different staged signs of differing sizes/dominance e.g. Primary signs, Secondary signs etc.	Agree	1
23	The guidance should make clear that this is for applicable areas only and is not a requirement.	Agree	2
24	Different staged signs should be categorised into: Primary signs, Secondary signs and Reminder signs.	Disagree	2
25	The guidance should include examples of these staged signs.	Agree	1
26	The RNLI coastal guidance should be linked to the document for further information.	Disagree	2
27	Scotland also suggests a specific dedicated PRE sign for PRE equipment. This is a valuable asset where a hazard warning is not needed.	Agree	1
28	The design aspects agreed for the hazard water safety sign (e.g. colour green) should be the same for PRE signs.	Agree	1
29	Icons on the sign should be limited to a maximum of 8.	Agree	2
30	Actions e.g. mandatory actions or prohibition icons should take predominance over hazard identification icons.	Agree	2

Table 1: Items reaching consensus

Phase Two

Based on the information gathered in phase one, the signage was created into new mock up signs for use in the online public facing survey. These mock ups can be seen in Appendix 1.

An initial bilingual survey was live from 14th – 31st January 2025. In order to secure a bigger response rate, the survey was split into a Welsh only and English only version. These surveys were live from the 9th April – 12th May 2025. The three surveys were amalgamated together at the end and the question set remained the same across all surveys, with only the language used changing. An incentive was used where one participant could win a £20 amazon voucher. 300 participants responded and completed the survey*.

The findings include:

- 61% of those surveyed believed the sign was a clear water safety sign (Figure 4)

- 46% agreed that the location information on the signs was clear (Figure 5)

- We tested understandings of the different parts of the signs (Figure 6):

    - 82% understood where the emergency information on the sign was located

    - 66% understood where the mandatory information on the sign was located

    - 91% understood where the hazard information on the sign was located

- We also tested understanding of the specifics of hazard information (see Figure 7)

    - 97% were aware that the hazard information was in yellow

    - 97% correctly identified steep drop hazard information

    - 95% correctly identified cold water hazard information

    - 91% correctly identified deep water hazard information

- 82% correctly identified what to do in an emergency (see Figure 8).

 * Not all participants chose to answer the full set of questions. Please see figures for further information.
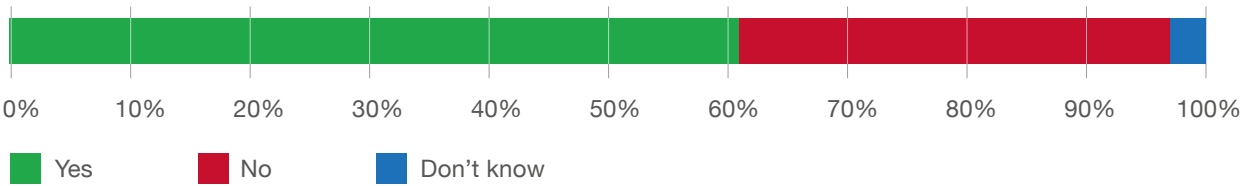
Figure 4: Clarity of the sign as a water safety sign, n = 289
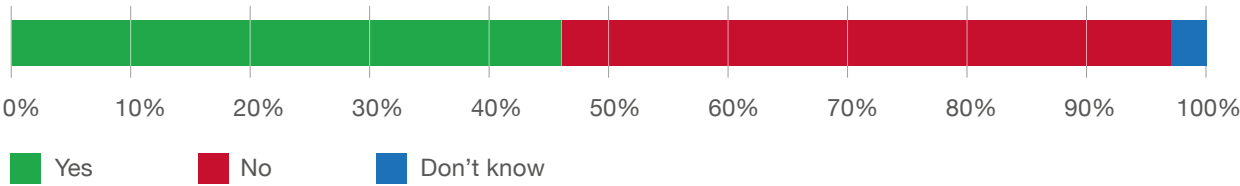

Figure 5: Clarity of the location information e.g. the location name and grid reference, n = 290
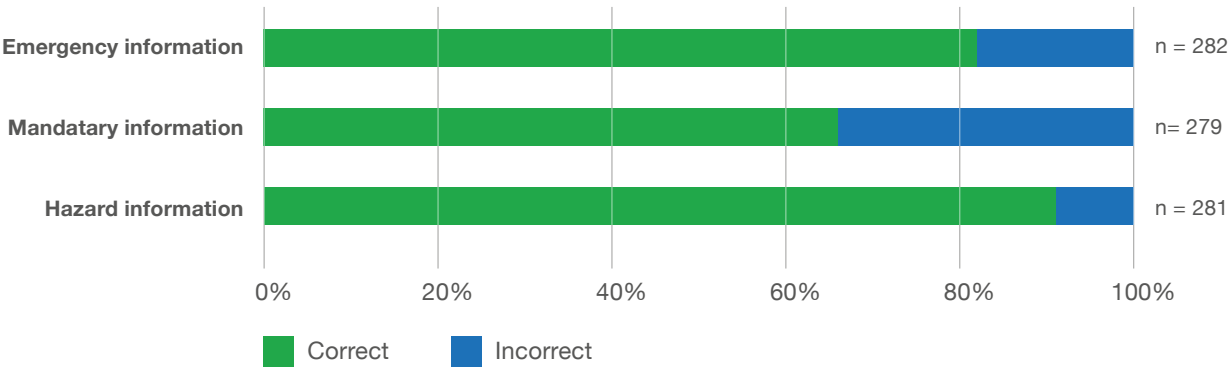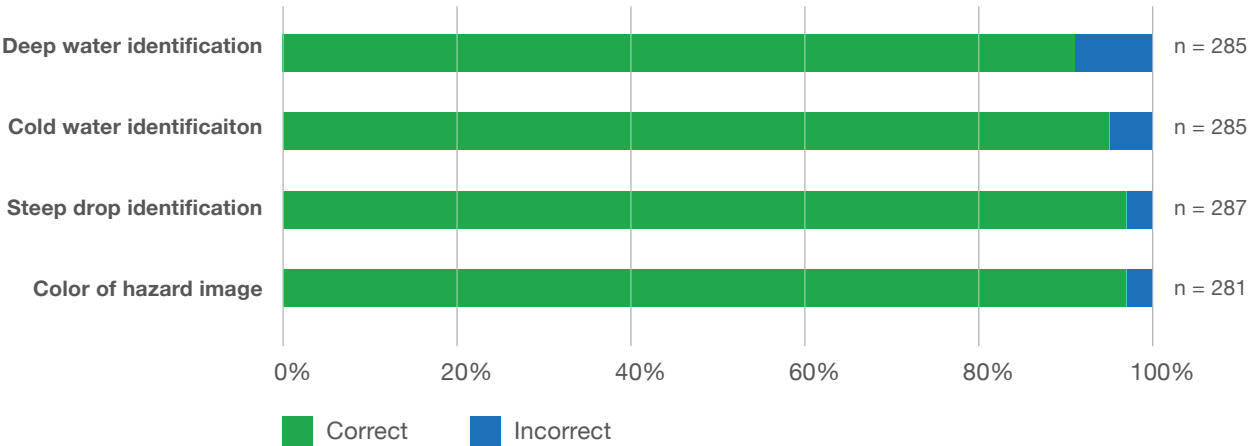

Figure 6: Understanding of the signs
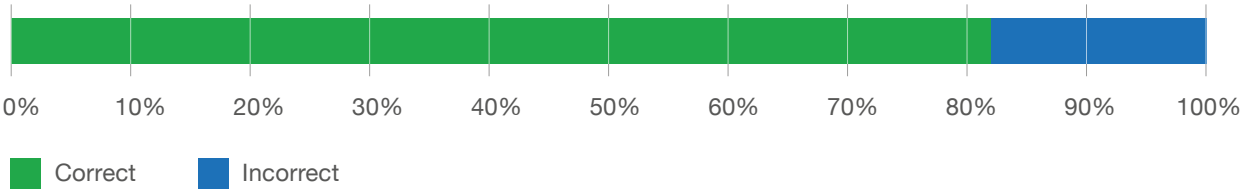

Figure 7: Understanding of hazard identification

Figure 8: Correct emergency response, n = 282

Discussion

This two phased project has provided extremely important insight into water safety signage in Wales. Using signage created by Water Safety Scotland following their research into water safety signage,[6] WSW utilised an expert panel to reach consensus on different aspects of the signs and how they would be best modified to suit Wales. Appendix 2 shows the original Scottish signs that was discussed by the panel.

From this expert panel, key aspects of the sign were agreed upon. This included the use of British ISO standard hazard symbols and the use of green, blue and yellow in the design. The expert panel also showed that location codes were considered extremely important to help with emergency response to an incident. The group agreed that two specific codes should be utilised on signs: An OS grid reference and a location name. The inclusion of what3words did not reach consensus for various reasons and was not included in the final design.

The inclusion of a QR code linked to water safety advice and the WSW water safety code was also considered necessary as well as the specification of which emergency service to call e.g. Fire and Rescue for inland, HMCG for coastal.

Having reached consensus, the signs were altered and tested with members of the Welsh public. The public survey found that 61% believed the sign was a clear water safety sign and 46% agreed that the location information on the signs was clear.

A limited number of comments were provided that the sign was cluttered and that the presence of both Welsh and English made the sign confusing with suggestions that it should appear in one language only. This could explain why the Welsh signs, which were heavily influenced by the Scottish signs (with the major difference being language), received lower percentages in these questions. However, the Welsh Language (Wales) Measure 2011 is clear that ...

> *the Welsh language must not be treated less favourably than the English language.[7]*

Other more numerous and established signs such as those on highways also contain both languages meaning that the signs should continue to be bilingual.

Importantly, the breakdown of information on the sign into emergency information, hazard identification and mandatory information was well understood (>66%). Hazard identification was particularly good with over 90% of the participants able to correctly identify the meaning of the three specific hazard symbols.

Whilst only 46% agreed that the location information was clear, there was high understanding of what to do in an emergency - 82% were able to understand the emergency information on the sign. Given the high understanding of the contents of the sign – both in hazard identification and in what to do in an emergency, the signs provide a good basis from which WSW could create and develop guidance for Wales on water safety signage. Key limitations of the study however should be noted. The expert panel was based on a WSW stakeholder analysis, and it is possible that some key organisations were missing from the panel. With regards to the public facing survey (phase two), the sample size was small with 300 responses and not representative. Additionally, the three hazard symbols tested were chosen at random by Water Safety Scotland in their original project. It may be that these symbols were easy to identify, and it is possible that other symbols could have been more difficult to identify which could impact the results of the study.

Conclusion

In conclusion, this two-stage project aimed to examine, scrutinise and alter the Scottish signage for Wales by expert consensus. The agreed water safety signage was then tested with members of the public to ascertain their understanding and awareness of the signs.

Expert consensus was reached in several important elements of the sign including the design aspects and the information to be included. The public facing survey showed promising results with the majority understanding the hazard symbols and what to do in an emergency.

It is recommended that WSW and partners consider creating guidance based on this research for use across Wales as well as a pilot project to trial these signs in a physical location in Wales.
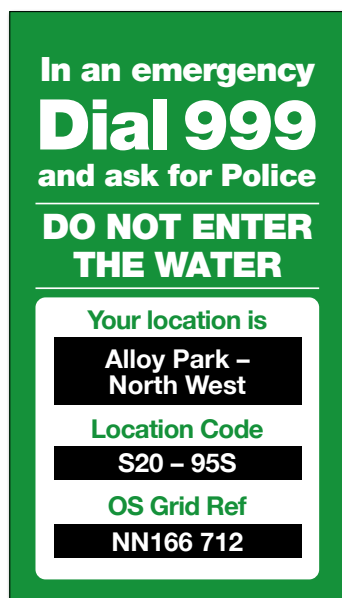
Appendix 1
Tested Welsh/English language sign

Appendix 2
Original Scottish Signs

Core water safety signage

Public Rescue Equipment (PRE) signage

References

1   Welsh Parliament Petitions Committee, 2018. Mark Allen's Law: water safety and drowning prevention [online]. Senedd. [viewed 07 November 2024]. Available from: **https://senedd.wales/media/cn4fcehy/cr-ld15291-e.pdf**

2   Water Safety Wales, 2020. Wales' Drowning Prevention Strategy (2020–2026) [online]. National Water Safety Forum. [viewed 07 November 2024]. Available from: **https://www.nationalwatersafety.org.uk/media/1236/water-safety-strategy-2020-2026.pdf**

3   Water Safety Wales, 2024. Mid-Strategy Review Wales' Drowning Prevention Strategy (2020–2026) [online]. National Water Safety Forum. [viewed 07 November 2024]. Available from: **https://nationalwatersafety.org.uk/media/1430/wsw-mid-strategy-review-wdps-2020-2026-v3.pdf**

4   Water Safety Scotland, 2024. Water Safety Signage: Research Report 2024 [online]. Water Safety Scotland, [viewed 07 November 2024]. Available from: **www.watersafetyscotland.org.uk/media/m2dp1x4j/water-safety-signage-research-report.pdf**

5   Diamond, I., Grant, R, Feldman, B., Pencharz, P., Ling, S.,Moore, A & Wales, P., 2014. Defining consensus: A systematic review recommends methodologic criteria for reporting of Delphi studies, Journal of Clinical Epidemiology, 67 (4). [viewed 09 August 2023]. Available from: (**www.sciencedirect.com/science/article/pii/S0895435613005076**)

6   Water Safety Scotland, 2024. Water Safety Signage Guidance 2024 [online]. Water Safety Scotland, [viewed 07 November 2024]. Available from: **www.watersafetyscotland.org.uk/media/boidmjwm/water-safety-signage-guidance.pdf**

7   Measures of the National Assembly for Wales, Welsh Language (Wales) Measure 2011 [online]. Senedd. [viewed 12 May 2025]. Available from: **www.legislation.gov.uk/mwa/2011/1/introduction**