

# WATER QUALITY AND RECREATIONAL USE OF PUBLIC WATERWAYS

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## CONTEXT

Approximately half of the adult population participate in some form of water-based activity every year, across activities such as angling, boating, swimming, and water sports. Prior research from 2003 suggests that water-based tourism accounted for 22 per cent of the domestic tourism market and generated 45 per cent of domestic tourism revenue, all of which is underpinned by Ireland's marine and freshwater resources. The Environmental Protection Agency's most recent State of the Environment report notes that while the quality of Ireland's surface waters is among the best in Europe improvements are still needed and insufficient progress is being made. Over the past six years there was no improvement in quality of river, transitional and coastal waters, while lake water quality has got slightly worse. This research examines how recreational activity is impacted by changes in water quality.

## BACKGROUND

Waterways Ireland (<http://www.waterwaysireland.org/>) is responsible for the management, maintenance, development and restoration of seven inland navigable waterways on the island of Ireland, principally for recreational purposes. Waterways Ireland commissioned surveys in 2010 and 2014 to obtain information about waterway users; including details about the recreational activities they partake. This research study is based on that survey data, combined with water quality monitoring data for the same locations. Four categories of recreational users are considered: anglers, boaters, other water sports (e.g. rowing, swimming, canoeing, etc.) and land-based activities at water sites, specifically walking and cycling.

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<sup>1</sup> This Bulletin summarizes the findings from: Breen, B., Curtis, J., and Hynes, S. "Recreational use of public waterways and the impact of water quality", *Journal of Environmental Economics and Policy*, Available online: <https://doi.org/10.1080/21606544.2017.1335241>

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## FINDINGS

The research finds strong evidence that higher levels of recreational demand (i.e. recreational trips of longer duration) occur at sites with better water quality. As the number of recreational sites included in the data sample is relatively small and because the water quality at those sites is generally quite good, the findings are not necessarily representative of all waterway sites across Ireland. However, it would be reasonable to assume that recreational users are not any less responsive in terms of recreational trip duration at locations where water quality is poorer.

The research finds no statistical association between overall Water Framework Directive (WFD) status (i.e. high, good, moderate, poor or bad) and the duration of the recreational trip, which indicates that WFD status is of limited practical use for recreational users. This result, while unexpected, is not surprising. An important determinant of overall WFD status is the constituent biological status, which is unlikely to be of relevance to most recreational users (possibly with the exception of anglers). Another reason why WFD status is of limited practical use to recreational users is that WFD water quality monitoring does not include any measure for faecal coliform, which is a metric that should be of particular interest to recreational users concerned about health risk. We find that most recreational users are responsive in terms of trip duration to the level of faecal coliform contamination. Overall, faecal coliform measurements are taken at relatively few recreation sites (i.e. just at canal sites) and consideration should be given to extending such measurements to all popular recreation sites and not just designated bathing sites.

The research also considered the value to users of their recreational activity at waterway sites. Across the four categories of recreational users (i.e. anglers, boaters, water sports and walkers & cyclists) the minimum estimated value of a day's recreational activity in excess of expenses is €66 and slightly higher for international visitors at €76/day. Given that approximately half the adult population participate at least once per year in a water-based recreational activity, this illustrates the potential scale of recreational benefit to users associated with Ireland's marine and freshwater resources. The research also finds that recreational users spend more time at sites where there has been investment in user infrastructure (e.g. toilet facilities), which is justification for further investment for recreational users, including tourists.

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