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WATER QUALITY AND WATER-BASED RECREATIONAL ACTIVITY

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INTRODUCTION

The Environmental Protection Agency's recent report on surface water quality confirms that there was a deterioration of water quality at hundreds of water bodies around the country between 2013 and 2015 (EPA, 2017). Water pollution has many impacts across the economy and society, including the potential to hinder water-based recreational activities. This Bulletin summarises research that investigates how different levels of water quality affect where recreational boating activity is undertaken.

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 in which they partake. This research study is based on that survey data, combined with water quality monitoring data for the same locations. The analysis examines how water quality at 10 specific waterway sites affects the choice of which location recreational users undertake their boating activities. Water quality test scores are not posted at recreational sites so boaters are not aware of a site's water quality measurements. The analysis examines whether boaters' decisions on where to go boating, based on their perception of water quality, is also reflective of laboratory measures of water quality.

¹ This Bulletin summarises the findings from: Curtis, J., Hynes, S., Breen, B., "Recreational boating site choice and the impact of water quality", *Helyion*, <https://doi.org/10.1016/j.heliyon.2017.e00426>

FINDINGS

The results show that boaters are responsive to water quality conditions, as indicated by both biochemical oxygen demand (BOD) and phosphorus (P) levels. For a 1 mg O₂/l increase in BOD level the odds that a specific site is selected for a boating trip falls by 70%. For a 1 mg P/l increase in phosphates the odds falls by almost 100%. Boaters are less likely to visit waterway sites with higher levels of BOD and phosphorus. This is consistent with previous research by Breen et al. (2017) on trip duration for four categories of recreational users (i.e. anglers, boaters, water sports and walkers & cyclists) which shows that more time is spent on water-based recreational activity at sites with better water quality.

Other findings include that for each 10km increase in distance to a waterway site, the probability that a boat user visits a particular site declines by 7–10%. All else equal, water users are more likely to engage in their boating activity at their 'local' waterway. While there is a clear message in terms of boaters' actions with respect to water quality, it is less clear with respect to other boating site attributes such as boat slipways, parking or toilet facilities. Facilities required for various types of boating activity (e.g. rowing, cruising, etc.) vary substantially and specific facilities, e.g. slipways, are important to some but not all users.

IMPLICATIONS FOR POLICY

It is widely accepted that water pollution has detrimental impacts. This research helps quantify the impacts on recreational activity. There are also consequent economic impacts for the tourism, sporting and recreational sectors of the economy. Where water pollution results in fewer recreational trips or trips of shorter duration associated visitor spending will also be lower in these local areas, e.g. on food, accommodation, and equipment. Tourists, whether domestic or international, will seek alternative locations to engage in their water-based activity.

REFERENCES

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