Great Lakes Water Levels in a Changing Climate: Vulnerabilities of the Recreational Boating Sector

Greg Ross and Dan Waddell
Ontario Center for Climate Impacts and Adaptation Research at MIRARCO

In the Great Lakes basin, human activities are closely intertwined with the water levels of the Great Lakes. To assess the vulnerability of the recreational boating industry, research and survey work were carried out by two researchers in ten sample areas around the Great Lakes, surveying 88 marinas. Depth measurements were completed at 9457 wet slips to assess the regional and sector-wide capacity of the marinas to accommodate boats under hypothetical fluctuations in water levels. In addition, 77 marina operators were interviewed in order to assess how fluctuations in water levels had affected their marinas in the past, adaptations they had undertaken in response, as well as current adaptive capacity and threshold vulnerabilities in light of the same hypothetical water level fluctuations. An economic valuation will be attributed to the different fluctuation scenarios using the slip loss results as well as the information expressed in the interviews. These results will be used to identify potential improvements to the Lake Superior outflow regulation plans as part the International Upper Great Lakes Study (IUGLS), enacted by the International Joint Commission (the bi-national committee responsible for cooperative governance of the Great Lakes).