The IJC's science and policy partnership

By David Burden, Director, International Joint Commission Great Lakes Regional Office

SCIENCE AND POLICY are challenging partners. Policy makers make decisions within deadlines that reflect legislative and political timelines. Scientific research on those issues often takes years or even decades to reach conclusions, or at least reduce uncertainty. In the absence of solid science, policy decisions should reflect the precautionary approach, but they often don't because even that can be hard to define within time demands without adequate research.

Both partners have the best of intentions, particularly when it comes to accomplishing the goals and objectives of the Great Lakes Water Quality Agreement. But by nature, the two federal governments act bilaterally rather than binationally. In many locations, binational direction through the agreement with community action has proven successful; for broader basinwide issues, progress is only as good as the collective political will and lowest common approach.

Scientists also have a deep commitment to and best intentions for their research, but their work is often driven by the issue of the moment in agencies or by what will result in funding in the university setting. Thus scientists tend to work in their own silos, resulting in duplication and repetition of work and databases that are confusing to interpret for policy makers and the public.

Opportunities to anticipate policy and research needs at a decadal scale are limited, but they are essential to tackle new pressures affecting the Great Lakes region such as climate change, novel chemical pollutants, urbanization and water needs, rapidly evolving agricultural practices, habitat loss, and invasive species.

For more than a century, the International Joint Commission (IJC) has demonstrated that the challenge of science-informed policy making and policy-informed science making is possible to surmount with cooperation, collaboration, and coordination. In 1913, epidemic proportions of Great Lakes basin residents were stricken with cholera. The newly created IJC conducted one of the largest ever transboundary bacteriological contamination studies to understand ties between sewage pollution and the waterborne pathogens killing residents. Scientists from across the international border contributed to the study, which led to development of the region's wastewater treatment. Fast forwarding a century, the IJC's Health Professionals Advisory Board is now developing a framework proposing a repeat of this groundbreaking study in a modern context to see where we've made progress and where we need new policies to attack longstanding pollution problems affecting our waters.

In 1972 after Lake Erie was declared "dead," Canada and the United States signed the Great Lakes Water Quality Agreement that, among other things, empowered the IJC to advise governments on their priorities for research and management through the creation of the Water Quality Board and the Science Advisory Board. The boards' studies and the IJC's resulting recommendations helped both countries to restore Lake Erie. When faced with the same issue again in 2011, the IJC completed the Lake Erie Ecosystem Priority study, and in 2014 it recommended, among other actions, a 40 percent reduction in the amount of phosphorus entering the lake. Policies and programs with this reduction requirement have been agreed to by state, provincial, and local governments, and coordinated implementation throughout the Lake Erie basin is the last hurdle.

The IJC's boards exemplify the cooperation, collaboration, and coordination needed for science and policy to be mutually reinforcing. Members include scientists, researchers, government representatives from all levels, nongovernment organizations, businesses, and the public. The IJC also meets with other scientists, decision makers, and the public as part of its assessment of progress under the agreement; it did so in June at the IAGLR conference in Brockport, New York, and will continue to do so in communities around the basin this summer and fall.



Strong consensus is developing among Great Lakes researchers that we are doomed to repeat past mistakes, as seen in bacterial contamination in Lake Erie, unless support for investigation and exploration is improved significantly. Our Science Advisory Board is supporting efforts to develop a decade-long binational plan for Great Lakes research that will help to address the challenge of providing effective, conclusive, and timely scientific findings to policy makers. Such a science plan is required to increase the collective ability of scientists and policy makers to forecast change, mitigate impacts, and help the goals of the agreement seem less daunting.