

1 INTRODUCTION

1.1 STUDY AUTHORITY

Section 503 of the Energy and Water Appropriations (EWA) Act of 2002 directed the U.S. Army Corps of Engineers (Corps) to “conduct and submit to Congress a study that examines the known and potential environmental effects of oil and gas drilling activity in the Great Lakes (including effects on the shorelines and water of the Great Lakes).” The guidance for the 2002 EWA, approved by the Assistant Secretary of the Army (Civil Works), was to initiate the study when specific funding was provided. In June 2004, the House Energy and Water Appropriations Subcommittee requested that the Corps initiate the study, and full study funding was received in March 2005.

Section 503 of the EWA of 2002 further established a 2-year moratorium on all Federal and state permits and leases for new oil and gas drilling in or under the Great Lakes. That moratorium was subsequently extended through fiscal year (FY) 2005 (Section 505 of the Consolidated Appropriations Resolution of 2003) and again through FY 2007 (Section 504 of the Consolidated Appropriations Act of 2005). In July, 2005, Congress issued a permanent ban on the issuance of Federal and State permits or leases for new oil and gas drilling in the Great Lakes, which the President signed into law on August 8, 2005 (the Energy Policy Act of 2005). Specifically, Section 386 of this Act bans the issuance of “Federal or State permits or leases for new oil and gas slant, directional, or offshore drilling in or under one or more of the Great Lakes.”

This study was coordinated with other Federal agencies through the Regional Working Group of the Great Lakes Interagency Task Force established under Executive Order (E.O.) 13340 (U.S. President 2004). Federal departments and agencies participating in the Task Force include the U.S. Environmental Protection Agency (EPA), Council on Environmental Quality, and the Departments of the Army, Interior, Agriculture, Commerce, Transportation, State, Housing and Urban Development, and Homeland Security. The study was also coordinated with the U.S. Department of Energy (DOE).

1.2 STUDY PURPOSE

The purpose of this study was to identify the potential effects that oil and gas exploration and production (E&P) might have on the Great Lakes Basin and its resources. The study reviewed and synthesized existing information in order to characterize the potential environmental effects that could be incurred if gas and oil resources beneath the Great Lakes were to be developed. The study was not intended to be all inclusive or site-specific, but rather to provide a comprehensive review of oil and gas technology and the potential effects that could occur with the development of oil and gas resources beneath the Great Lakes. This report identifies data gaps that would need to be addressed should detailed, site-specific analyses be necessary. This environmental report does not address nor recommend any particular Federal action and is intended for informational purposes only.

1.3 LOCATION OF STUDY

The Great Lakes constitute the largest system of fresh surface water in North America, containing nearly 20% of the world's supply. The Great Lakes Basin, which includes Lakes Superior, Michigan, Huron, Erie, and Ontario and their drainage basins in the states of Minnesota, Wisconsin, Illinois, Indiana, Michigan, Ohio, Pennsylvania, and New York (Figure 1.1), is a major economic, population, and resource center for both the United States (U.S.) and Canada. The discussions regarding the current status of resources within the Great Lakes Basin, the past and current production of oil and gas within the Basin, and the potential environmental effects that could be associated with development of offshore oil and gas resources are limited to the U.S. portion of the Great Lakes and Basin (up to the Lake Ontario outfall to the St. Lawrence River). It should be acknowledged that many of the natural resources provided by the Great Lakes Basin are shared by the United States and Canada, and that activities within the U.S. portion of the Basin may affect Canadian resources and activities within the Basin (and visa versa). Each Great Lakes state has a portion of its boundary within a lake, and any oil or gas development of resources beneath the lakes would occur within the political boundaries of the states.

Great Lakes Demographics

- 25 U.S. cities with more than 100,000 residents are within 100 mi (160 km) of a Great Lakes port.
- 29% of the U.S. population lives in the Great Lakes Basin.
- 30% of U.S. personal income is distributed in the eight Great Lakes states.
- 31% of the U.S. population over 65 resides in the Great Lakes states.

Gas and oil resources underneath the Great Lakes have been or are currently being accessed by vertical wells in Lake Erie (e.g., 2,200 offshore wells in Ontario, Canada, since 1913) and by slant drilling underneath Lake Michigan (13 wells in Michigan since 1979). Potential gas and oil resources occur within a number of geologic formations in the Basin, primarily under Lakes Ontario, Erie, and Michigan, and southwestern Lake Huron. Currently within the Basin, active oil and gas production occurs within each of the Basin states except Wisconsin and Minnesota. This production is accessing oil and gas reserves located onshore and not beneath the lakes.

1.4 REPORT ORGANIZATION

Section 1 of this report introduces the study and report. Section 2 describes the technologies currently used for oil and gas exploration and extraction, while Section 3 provides an overview of the types of environmental effects associated with oil and gas drilling, both in the Great Lakes Basin and elsewhere. Section 4 provides an overview of the current regulatory background affecting oil and gas exploration in the Great Lakes, as well as other environmental regulations and policies that could apply if exploration and development were to occur. The current environmental setting of the Great Lakes Basin, including the distribution and status of oil and gas resources, other natural resources (such as fish and wildlife, wetlands, and water quality), and human activities (such as recreation, land and water use, shipping, and current oil and gas production within the Basin) within the region, is described in Section 5. The types of potential effects, and the resources that could be affected, if oil and gas beneath the Great Lakes

were to be developed are identified and discussed in Section 6. Section 7 summarizes the report, while Section 8 presents the references cited in the report.

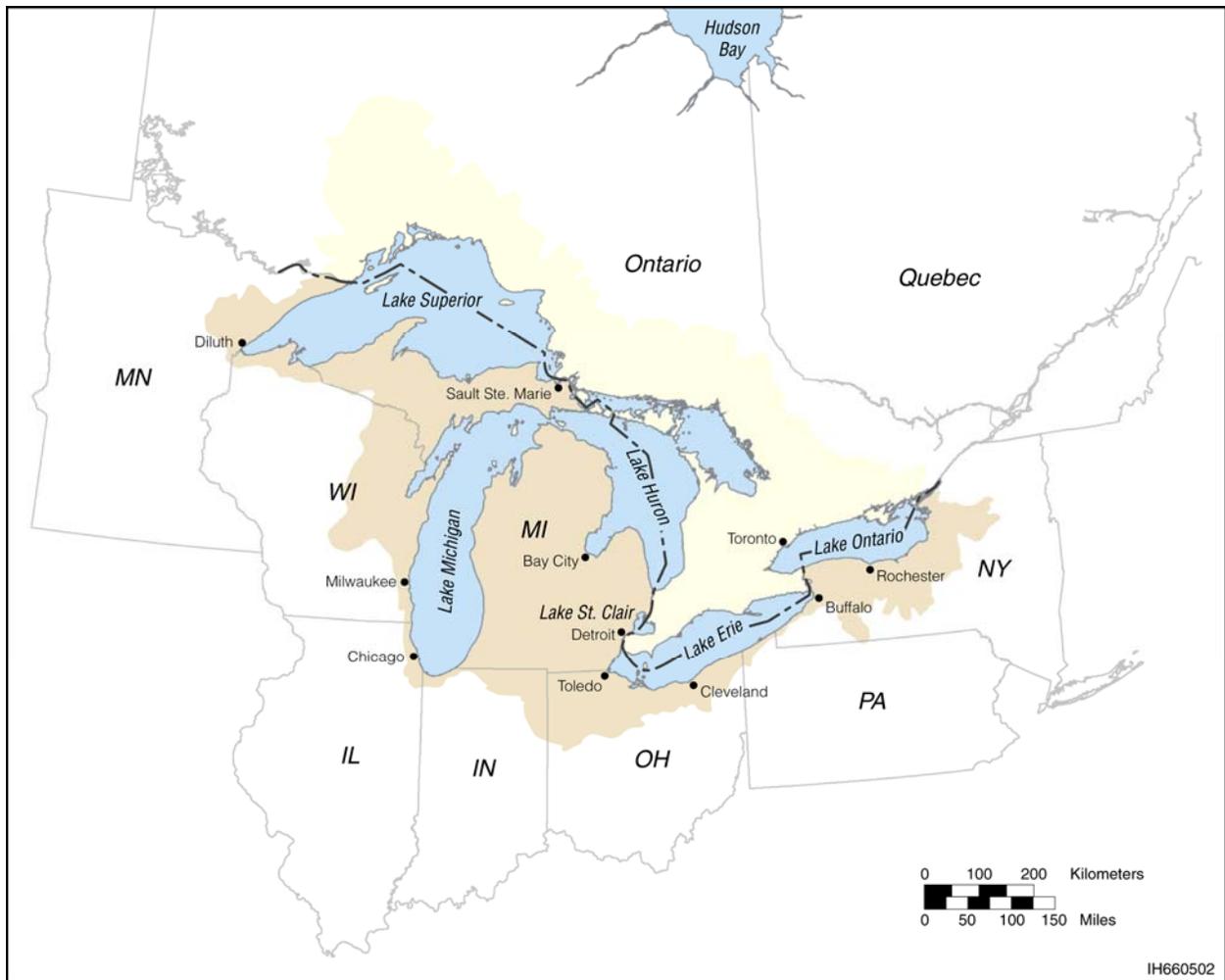


FIGURE 1.1 The Great Lakes Basin

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