

42nd STUDENT CONFERENCE (E2)
Student Team Competition (3)

Author: Mr. Aafaque Khan

Maulana Azad National Institute of Technology, India, aafaque.khan@spacegeneration.org

Mr. Arun P. V.

India, arunpv2601@gmail.com

Ms. Apoorva Sridhar

India, apoorva.sridhar@spacegeneration.org

Mr. Shashank Dhingra

Maulana Azad National Institute of Technology, India, shashank.0604@gmail.com

STUDENTS CAN SIGNIFICANTLY CONTRIBUTE IN MAPPING AND MONITORING OF
WETLANDS IN THEIR LOCALITY BY USING REMOTE SENSING DATA AND GIS TOOLS**Abstract**

Wetlands are areas of land that are either temporarily or permanently covered by water (Westlake Pratt, 2006). Wet lands exhibit enormous diversity according to their genesis, geographical location, water regime and chemistry, dominant plants and soil or sediment characteristics. Wetland maps are prerequisite for wetland inventory and for wetland development planning, management, protection, and restoration. Detailed wetland maps are necessary for providing baseline spatial data for the assessment of the effects of national and local policies and activities. Geographic Information System and Remote Sensing tools can be (are) extensively used for wetland mapping.

This project demonstrates that student level small projects can significantly contribute to monitoring and mapping of wetlands in the locality. In this project, a group of undergraduate students at Maulana Azad National Institute of Technology-Bhopal are working on mapping and monitoring of Bhoj Wetland, a wetland of International importance in the city of Bhopal (M.P.) in India. Through this project learning and teaching modules are also being developed, that can be incorporated in future student projects to easily learn the relevant methods and software.

This project establishes that groups of high School and undergraduate students in the local community can be given hands on training for using open source RS data and GIS tools to map and monitor Wetlands in their locality. Such student projects can be then submitted to administrative and policy making agencies to prepare their action plans to conserve wetlands and the biodiversity therein.

This project investigates over the possible parameters that can be used for wet land mapping. It also provides an overview of the use of Remote Sensing and Geographic Information System (GIS) tools in flood zonation mapping, in monitoring irrigation and cropping patterns, water quality analysis and modeling, change analyses and in mapping of surface water bodies and wetlands. It provides a methodology and an action plan for evolving a nationwide network of conservation preserves of wetlands using participation from students of local community. The major elements of this methodology involve use of various sensors for delineating turbidity, aquatic vegetation and major geo-morphological classes of wetlands. An extensive fieldwork to generate attribute information on biodiversity and socioeconomic themes is a significant component of the suggested methodology. GIS tools to integrate habitat information with the field information are envisaged to be the final component in evolving a conservation network of small and large wetlands for the entire country.