

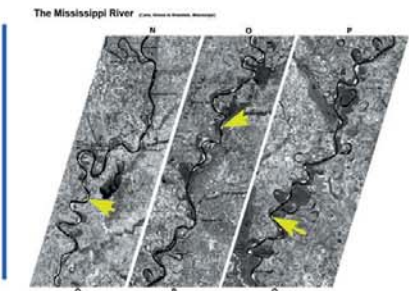
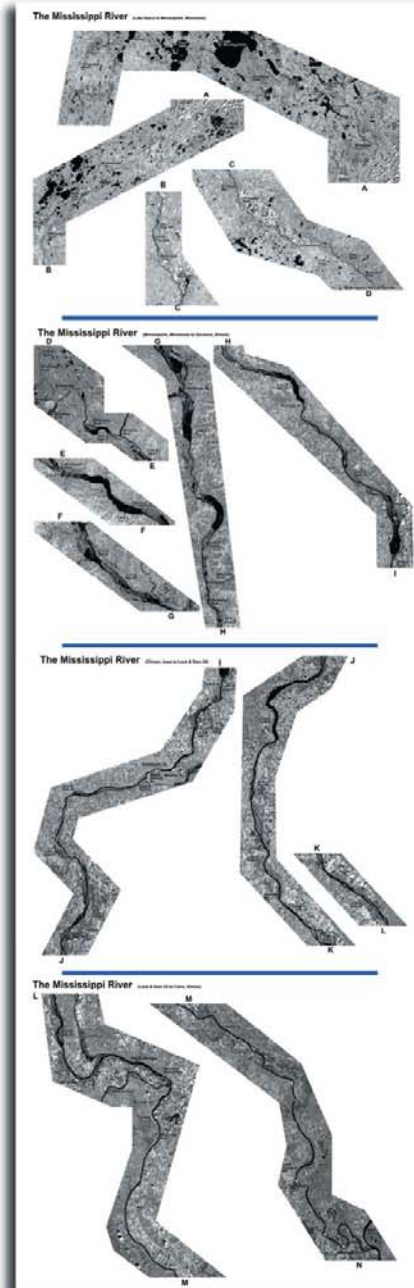
SATELLITE IMAGERY ANALYSES OF THE MISSISSIPPI RIVER: A MAP SERIES FROM HEADWATERS TO THE GULF OF MEXICO

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THE PURPOSE OF THE MISSISSIPPI RIVER MAP SERIES IS TO PROVIDE THE U.S. ARMY CORPS OF ENGINEERS WITH A COMPREHENSIVE AND CONTEMPORARY VIEW OF THE MISSISSIPPI RIVER, AND TO PROVIDE A BASIS FOR IDENTIFYING ECOLOGICAL VULNERABILITY THROUGHOUT THE MISSISSIPPI RIVER BASIN. THE CURRENT MAP SERIES COMPONENTS CONSIST OF SEVERAL PRINTABLE POSTERS, WHICH HAVE A FULL-RESOLUTION NOMINAL SCALE OF 1 INCH = 3 MILES (BELOW, A-U; NOT AT FULL RESOLUTION). WE OPTIMIZED THE NUMBER AND SIZE OF THE PRESENTATIONS TO PROVIDE DETAIL IN THE IMAGES, AND ARE USING THE 15-METER RESOLUTION LANDSAT IMAGERY TO EXPLORE THE PRESENCE OF PERSISTENT AVAILABLE NESTING HABITAT FOR THE LEAST TERN (*STERNA ANTILLARUM*), AN ENDANGERED BIRD SPECIES. A MINIATURE SCALE POSTER SET AT FULL RESOLUTION IS AVAILABLE ON COMPACT DISC (ALSO AVAILABLE AT THE FOLLOWING URL: [HTTP://WWW.EPA.GOV/NERLESD1/LAND-SCI/MISSISSIPPI.HTM](http://www.epa.gov/nerlesd1/land-sci/mississippi.htm)) AS A QUICK REFERENCE FOR MANAGERS AND FOR FIELD ACTIVITIES THROUGHOUT THE RIVER BASIN. SINCE ITS RELEASE IN LATE-2003, THIS REMOTE SENSING PRODUCT HAS BEEN ACTIVELY USED BY THE U.S. ARMY CORPS OF ENGINEERS, THE NATURE CONSERVANCY, DUCKS UNLIMITED, AND OTHER IMPORTANT STAKEHOLDERS IN THE RIVER BASIN. THIS MAP SERIES IS AN IMPORTANT FIRST STEP TOWARD DEVELOPING A SYSTEMWIDE APPROACH TO UNDERSTANDING THE FUNCTIONING OF LARGE RIVERS AT A LANDSCAPE SCALE.



THE RESULT OF USING THE 15-METER LANDSAT IMAGERY IS A MORE ACCURATE AND COST-EFFECTIVE METHOD FOR MONITORING PERSISTENT BIRD HABITAT IN THE LOWER MISSISSIPPI RIVER BASIN. YELLOW ARROWS (LEFT) SHOW SOME OF THE LOCATIONS OF THE MANY BEACHES AND SANDBARS WHERE LEAST TERNS MAY FIND SUITABLE NESTING HABITAT. THESE AREAS ARE SUFFICIENTLY BRIGHT TO BE DETECTED WITH LANDSAT IMAGERY, AND CAN BE DIGITALLY COMBINED WITH SURROUNDING LAND COVER INFORMATION TO PROVIDE AN ACCURATE MAP OF POTENTIAL HABITAT. CURRENT 30-METER SATELLITE-BASED DATASETS DO NOT PROVIDE THE SAME LEVEL OF ACCURACY (SEE MAP, BELOW). THE NEED FOR IMPROVEMENTS IN SATELLITE REMOTE SENSING DATASETS IS INCREASING, AS WILDLIFE MANAGERS AND STAKEHOLDERS SEEK TO PRIORITIZE AREAS FOR ECOLOGICAL RESTORATION AND PROTECTION. THE HABITAT MAPPING PORTION OF THIS PROJECT IS CURRENTLY UNDER DEVELOPMENT.



NOTICE: THE U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA), THROUGH ITS OFFICE OF RESEARCH AND DEVELOPMENT (ORD), FUNDED AND PERFORMED THE RESEARCH DESCRIBED. THIS PRESENTATION HAS BEEN SUBJECTED TO THE EPA'S ADMINISTRATIVE REVIEW AND HAS BEEN APPROVED FOR PUBLICATION.

