

An Interagency Database for Manatee Population Research: The Manatee Individual Photo-Identification System (MIPS)

Cathy Beck¹, Ron Osborn², Howard Kochman¹, and Jacob Udel³

¹U.S. Geological Survey, Florida Integrated Science Center, Sirenia Project, Gainesville, Florida

²U.S. Geological Survey, ORT, Ft. Collins, Colorado

³Contractor, Johnson Controls, Inc., USGS, FORT, Ft. Collins, Colorado

Many individual Florida manatees are recognizable by the unique features, primarily scars and mutilations from collisions with boats, which they acquire during their lifetime. In the late 1970s, the Sirenia Project, USGS, began a long-term study to photographically document individual manatees to answer various life history and population biology questions. As a result, a database was developed to automate the management of images, sighting records, and life history information of approximately 2,000 individually recognized manatees. This database, the Manatee Individual Photo-identification System (MIPS), has been employed for nearly two decades to enhance manatee population research. The MIPS provides the individual life histories currently used to estimate population parameters and to model manatee population dynamics for state and federal population assessments. In 1988, the Florida Fish and Wildlife Conservation Commission, Florida Wildlife Research Institute (FWRI), joined the effort and began to photograph manatees in SW Florida. Likewise, researchers at Mote Marine Laboratory (MML) also joined the collaboration in the SW region in 1993. USGS has been responsible for collection and maintenance of data for the Atlantic Coast, St. Johns River, NW Florida, and sites outside of Florida.

Because coordinating the management of separate databases at each agency proved complex and inefficient, a solution incorporating a secure, integrated database server was developed. To support remote access by Partners outside of the USGS, including FWRI and MML, efforts began in 2003 to migrate from a MS Access database to a multi-agency relational database using MS-SQL Server 2000. A distributed MIPS MS-SQL database that includes data contributed by each agency will significantly improve the efficiency of data management, while maximizing data availability, security, and reliability. The resulting multi-user database will be fully integrated with data and images from all participating institutions, and will be accessible to all cooperators based on predefined security roles.

Recovery of the endangered Florida manatee will benefit from this interagency database collaboration. Integration of data archived by each agency into a single, replicated database will ensure appropriate data use for analysis and research, will greatly facilitate efforts to further advance manatee research, respond to the needs of state and federal managers, and contribute to meeting the prescribed research goals and timelines.