

corresponding change in the rate of population growth or decline (Marmontel *et al.*, 1997). Accordingly, the Service is continuing to assess, and take steps to reduce, significant causes of mortality to manatees.

Collisions with watercraft are the largest cause of human-related manatee deaths. Data collected during manatee carcass salvage operations in Florida indicate that 1,145 manatees (from a total carcass count of 4,545) are confirmed victims of collisions with watercraft (1978 to 2002). This number may underestimate the actual number of watercraft-related mortalities, since many of the mortalities listed as "undetermined causes" show evidence of collisions with vessels and because not all carcasses are found. Collisions with watercraft comprise approximately 25 percent of all manatee mortalities since 1978. Approximately 75 percent of all watercraft-related manatee mortality has taken place in 11 Florida counties (Brevard, Lee, Collier, Duval, Volusia, Broward, Palm Beach, Charlotte, Hillsborough, Citrus, and Sarasota) (Florida Fish and Wildlife Commission's (FWCC) Florida Marine Research Institute (FMRI) Manatee Mortality Database, 2003). The last 5 years have been record high years for the number of watercraft-related mortalities.

The second largest cause of human-related manatee mortality is entrapment in water control structures and navigation locks (FWCC: FMRI Manatee Mortality Database, 2003). Manatees may be crushed in gates and locks or may be trapped in openings where flows prevent them from surfacing to breathe. Locks and gates were responsible for 164 manatee deaths from 1978 to 2002, or approximately 4 percent of all deaths during this period. While there are no well-defined patterns characterizing these mortalities, it is believed that periods of low rainfall increase the likelihood of manatees being killed in these structures. These periods require more frequent, large-scale movements of water, which require more frequent gate openings and closings in areas that attract manatees searching for fresh water. We have been working, through an interagency task force, with various Federal and State agencies to retrofit these structures with reversing mechanisms that prevent manatee crushings.

Manatees are also affected by other human-related activities. Impacts resulting from these activities include deaths caused by entrapment in pipes and culverts; entanglement in ropes, lines, and nets; ingestion of fishing gear or debris; vandalism; and poaching.

These activities have accounted for 124 manatee deaths since 1978, an average of more than 4 deaths per year. As with watercraft-related mortalities, these deaths also appear to be increasing, with 40 of these deaths occurring from 1998 to 2002 (an average of 8 deaths per year over the last 5 years).

Manatee Protection Areas

To minimize the number of injuries and deaths associated with watercraft activities, we and the State of Florida have designated manatee protection areas at sites throughout coastal Florida where conflicts between boats and manatees have been well documented and where manatees are known to frequently occur. These areas include posted signs to inform the boating public about restrictions and prohibitions. We are enhancing existing protection by establishing three additional manatee refuges in five Florida counties.

Federal authority to establish protection areas for the Florida manatee is provided by the ESA and the MMPA, and is codified in 50 CFR, part 17, subpart J. We have discretion, by regulation, to establish manatee protection areas whenever substantial evidence shows such establishment is necessary to prevent the taking of one or more manatees (that is, to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or to attempt to engage in any such conduct). In accordance with 50 CFR 17.106, areas may be established on an emergency basis when such takings are imminent.

We may establish two types of manatee protection area—manatee refuges and manatee sanctuaries. A manatee refuge, as defined in 50 CFR 17.102, is an area in which we have determined that certain waterborne activities would result in the taking of one or more manatees, or that certain waterborne activities must be restricted to prevent the taking of one or more manatees, including but not limited to, a taking by harassment. A manatee sanctuary is an area in which we have determined that any waterborne activity would result in the taking of one or more manatees, including but not limited to, a taking by harassment. A waterborne activity is defined as including, but not limited to, swimming, diving (including skin and scuba diving), snorkeling, water skiing, surfing, fishing, the use of water vehicles, and dredge and fill activities.

Relationship to Manatee Lawsuit

On January 13, 2000, several organizations and individuals filed suit against the Service and the U.S. Army

Corps of Engineers alleging violations of the ESA, the MMPA, the National Environmental Policy Act, and the Administrative Procedure Act. Four groups representing development and boating interests intervened. Following extensive negotiations, the suit was resolved by a Settlement Agreement dated January 5, 2001. On October 24, 2001, the plaintiffs filed a Formal Notice of Controversy alleging that the Service had violated provisions of the Settlement Agreement. On April 17, 2002, the plaintiffs filed an Expedited Motion to enforce the Settlement Agreement, and on July 9, 2002, the Court found that the Service had not fulfilled its settlement requirements to designate refuges and sanctuaries throughout peninsular Florida. On August 1, 2002, and November 7, 2002, the Court ordered the Federal defendants to show cause why they should not be held in contempt for violating the Court's orders of January 5, 2002, January 17, 2002, and August 1, 2002. To resolve these controversies, the plaintiffs and Federal defendants entered into a Stipulated Order wherein we agreed to submit to the **Federal Register** for publication a proposed rule for the designation of the additional manatee protection areas in the Caloosahatchee River in Lee County; the lower St. Johns River in Duval, St. Johns, and Clay Counties; and the Halifax and Tomoka Rivers in Volusia County, on or before March 31, 2003, and a final decision on the proposed rule on or before July 31, 2003. The proposed rule was submitted to the **Federal Register** on March 31, 2003, and published on April 4, 2003 (68 FR 16602). This notice constitutes the final rule and was submitted to the **Federal Register** on July 31, 2003.

Site Selection Process and Criteria

In order to establish a site as a manatee protection area, we must determine that substantial evidence shows such establishment is necessary to prevent the take of one or more manatees. We reviewed the sites referenced in the Stipulated Order and determined that the proposed sites met this test. This was based on aerial survey and telemetry data, mortality (carcass recovery) data, additional information from FMRI and the U.S. Geological Survey's Sirenia Project, manatee experts, and our best professional judgment. The areas designated in this final rulemaking are those that we have determined, based on the best currently available data and the public comments received, should be designated as manatee refuges. Where the final designations differ from