

*al.*, 2000). The estimated discharge corresponding to 1.4 m (4.6 ft) inundation of the bottom of the limestone shelf was 424 cms (14,970 cfs), and 612 cms (21,610 cfs) for the top of the shelf. During the March 15 to May 15 timeframe, when sturgeon spawning most likely occurs, daily average flow rates have exceeded 424 cms (14,970 cfs) and 612 cms (21,610 cfs) 87 percent and 63 percent of the time, respectively, in the 1929 to 2002 flow record of the Chattahoochee gage. March 15 to May 15 average discharge exceeds these flow rates in 97 percent and 77 percent of the years, respectively.

If flow rates between 424 cms (14,970 cfs) and 612 cms (21,610 cfs) are sufficient for successful sturgeon spawning on the Apalachicola River, any adjustments to reservoir operations that appear reasonable and prudent for sturgeon conservation would occur relatively infrequently, during the occasional years when spring-time hydrologic conditions and operations for other project purposes do not provide flows in this range. However, this flow range is based on one set of measurements at one site and relies upon the minimum depth at which eggs have been previously collected (4.6 feet); other sites with different hydrologic characteristics may support spawning and depths less than 4.6 feet may allow for successful spawning. Annual monitoring of the Apalachicola sturgeon population by net sampling shows year classes represented for all years from 1986 to 1998. In none of these years were all days in the March 15 to May 15 time frame greater than 612 cms (21,610 cfs), but all of these years had at least 11 days greater than 612 cms (21,610 cfs). In 2002, no days from March 15 to May 15 had flow greater than 612 cms (21,610 cfs). We will not know for 3 years, when year class 2002 individuals would become large enough to sample with the nets used in annual monitoring, whether the unusually low spring flows of 2002 resulted in a lost year class.

The USACE and FWS have initiated a study of sturgeon spawning habitat in the Apalachicola River that will provide a more complete relationship between flow and habitat availability than the single site measured by FWS in May 2002. The USACE will use the results of this study and other information in a biological assessment of the effects of its current operations on the sturgeon, its proposed critical habitat, and other federally-protected species. This assessment will determine whether current operations may adversely affect federally-protected species and their habitats and if so, serve to initiate

formal consultation with the FWS. Until this consultation is completed, it is premature to make estimates of its economic impact, which is dependent on the results of studies that are still underway and on USACE decisions relative to reservoir operations that will weigh its responsibilities under the Act with other statutory responsibilities.

*Comment 42:* One commenter stated that the economic analysis does not provide sufficient information to determine if the benefits of exclusion outweigh the benefits of inclusion of individual critical habitat units. The comment goes on to ask whether inclusion of any unit would materially affect the recovery of the Gulf Sturgeon, and requests that the Services provide a metric by which to determine whether inclusion of any unit is economically warranted.

*Our Response:* Section 4(b)(2) of the Act directs that critical habitat, areas containing biological and physical features essential to the conservation of the species, shall be designated after taking into account the economic impacts and other relevant impacts of such designation. The Secretaries of the Interior and Commerce have the discretion to exclude areas from such designation if the benefits of exclusion outweigh the benefits of inclusion, unless failure to designate such areas will result in the extinction of the species concerned. This language does not establish a test of whether inclusion is "economically warranted."

*Comment 43:* One commenter suggested that uncertainty over the spatial and temporal scale that would be involved in future application of the destruction or adverse modification standard should be acknowledged, that costs could depend upon whether that standard is applied to the designated critical habitat as a whole, within individual units, or some other scale, and whether the standard would be triggered by temporary or long term impacts.

*Our Response:* The Gulf sturgeon's affinity for natal river systems and the importance of every breeding unit of the species suggests that individual units or groups of units that are used by stocks or subpopulations which fulfill essential geographic distribution requirements are the appropriate scale for the analysis. The outcome of each destruction or adverse modification analysis is highly fact specific, dependent not only upon the species and designated critical habitat at issue, but also upon the particular project and its impact upon the primary constituent elements of the critical habitat. The economic analysis for this rule

estimated costs of consultations on projects that the consulting Federal agencies advised were likely to be implemented in the next 10 years. Thus, the uncertainty in the analysis would be attributable to unforeseen or uncertain projects and their impacts, as well as a lack of detail about each projected project, and there is no way to address this uncertainty in any non-speculative manner.

*Comment 44:* The Mobile and New Orleans Districts of the USACE raised questions regarding the economic analysis' incorporation of dredging windows as potential project modifications.

*Our Response:* Based on comments received from the USACE and further analysis by the Services, the economic analysis has been modified by removing dredging windows as potential project modifications that would be included in each formal consultation and omitting estimated costs of such. These changes reflect the extreme improbability that dredging windows would be recommended or adopted as a project modification to reduce impacts to critical habitat (as opposed to preventing take), given the availability of other means of protecting sturgeon or its habitat with adequate coordination and planning between the USACE and us.

*Comment 45:* Several commenters expressed concerns over the potential effects of critical habitat designation on water flow regimes in the Apalachicola River, and whether needs to alter flow regimes to protect sturgeon or its habitat might impose costs by impacting hydropower or businesses and recreation dependent on existing reservoirs (e.g., Lake Sidney Lanier).

*Our Response:* Section 3.4 of the economic analysis has been revised to more fully discuss the factors associated with estimating economic impacts related to flow regime modifications that may emerge from consultation with the USACE as reasonable and prudent for the sturgeon and its habitat in the Apalachicola River. Conservation of listed species is one of many responsibilities the USACE must consider in operating the Apalachicola Basin reservoir projects, which are variously authorized for the purposes of flood control, hydropower, navigation, recreation, water quality, water supply, and fish and wildlife. Changing reservoir operations for sturgeon conservation could affect the degree to which the USACE is able to fulfill other project purposes; however, under normal and wet rainfall conditions, existing operations appear adequate to protect the sturgeon and its habitat. If