

Gulf sturgeon from the Escambia River and Yellow River subpopulations. Sturgeon movement through this area is generally along the shoreline area of Pensacola Bay. Gulf sturgeon showed a preference for several areas in the bay, including Redfish Point, Fort Pickens, and Escibano Point, near Catfish Basin (FWS, 1998; and Craft *et al.*, 2001). Sandy shoal areas, located along the south and east side of Garcon Point, south shore of East Bay (Redfish Point area) and near Fair Point, appear to be commonly used, especially in the fall and early spring. During midwinter, sturgeon are commonly found in deep holes located north of the barrier island at Ft. Pickens, south of the Pensacola Naval Air Station, and at the entrance of Pensacola Pass. The depth in these areas ranges from 6 to 12.1 m (20 to 40 ft). Other areas where tagged fish were frequently located include Escibano Point, near Catfish Basin, and the mouth of the Yellow River. Previous incidental captures of Gulf sturgeon have been recorded in Pensacola Bay, Big Lagoon, and Bayou Grande (Reynolds, 1993; and Lorio, 2000).

In sum, the Services believe that a critical habitat designation for the Gulf sturgeon would provide a relatively low level of additional regulatory conservation benefit to the species.

(2) Benefits of Exclusion

A major economic impact identified in the draft economic analysis was on dredging projects of the USACE. USACE plans the location and timing of dredging projects to ensure that channel reliability is always maintained. Frequency of dredging varies widely, from almost annual maintenance dredging to once every ten or twenty years, depending on the level of use of the waterway for shipping and the natural rate of sediment deposition. The major navigation channels must be maintained to Congressionally authorized depths and widths to allow shippers to enter ports. Failure to maintain the navigation channels accordingly greatly affects shippers who may be forced to use smaller vessels, light load (*i.e.*, remove shipped goods to reduce weight and therefore the depth of the barge), use alternative modes of transport, such as rail or truck transport, or travel on to another port. All of these alternatives increase the cost of transporting goods. In extreme cases, commercial facilities may close and economic activities may transfer to other locations.

The major risks of dredging projects to sturgeon are entrainment in dredges, prevention of migratory passage through channels and inlets due to blockage by

large dredges, elevated turbidity causing increased siltation on feeding or spawning areas, and possible removal of food prey. Numerous formal and informal consultations on dredging activities are anticipated in the proposed critical habitat units over the next ten years.

Potential project modifications specific to dredging and disposal projects, and for which we have concerns regarding their potential implications, include:

- *Minimize extent of dredging activity.* In past consultations, FWS has requested that proposed dredging projects be limited to proposed depths only. Less likely, USACE could avoid dredging in deeper portions of the channel for riverine dredging projects, limit dredging of navigation channels to the minimum dimensions necessary, avoid performing advanced maintenance activities, or use silt curtains to enclose dredging sites when dredging in shallow water. For hydraulic dredging, USACE may raise the cutter head above the bottom during pipeline clearing and keep it as close to the surface as practicable while water is being pumped from the pipeline.

- *Sequence dredging.* For example, if a dredging project includes both a river mouth and a channel into a bay, USACE may arrange the project to dredge the estuary first and dredge the river second so that areas more sensitive to turbidity and hypoxia are dredged during a cooler time frame.

- *Dredging windows.* USACE has expressed concern about the effect of dredging windows on its operations. In past informal consultations, dredging windows have been recommended to avoid entrainment in the dredge or the preclusion of movement past the dredge during migratory periods, since avoiding work during times when sturgeon are known to be in the direct vicinity of the project is the most effective way to avoid harm to the species. If USACE cannot avoid dredging within the time frames suggested in an informal consultation, USACE will likely need to initiate a formal consultation with the Services during which modifications to the project other than dredging windows would be considered.

It is possible that critical habitat could influence the Services to be more likely to impose one or more of these measures to prevent habitat modification.

If dredging windows and other measures are required in consultation, the present value of expected direct costs of implementation of section 7 for these activities that may affect the sturgeon or its habitat over the next ten

years would exceed the projected \$22.7 million cost of consultations on operation and maintenance of navigation projects set forth in the final economic analysis. This section 4(b)(2) analysis also considered the possibility that the greater costs projected in the draft economic analysis may be incurred. Forecast costs are associated with expected administrative requirements and project modifications that may be recommended by the Services during the consultation process. To the extent that project modifications due to a critical habitat designation may result in delays or a reduction in channel capacity, the secondary economic effects may be high.

(3) The Benefits of Exclusion Outweigh the Benefits of Inclusion

Based on the above considerations, and consistent with the direction provided in section 4(b)(2) of the Act, we have determined that the benefits of excluding major shipping channels as critical habitat outweigh the benefits of including them as critical habitat for the Gulf sturgeon. This conclusion is based on the following factors: The benefits of designating critical habitat in the major shipping channels of these units is low because the areal extent of the shipping channels is a very small proportion of the entire unit. In addition the frequently maintained portions of the major shipping channels are altered to an extent that any primary constituent elements for sturgeon that are still present in the channels are unlikely to be appreciably diminished from their current baseline by Federal actions in the channels. The benefits of excluding these areas may be high if critical habitat designation were to increase the frequency of modifications to dredging practices or result in delays in maintaining channel depth. Therefore, the Services believe that the benefits of exclusion outweigh the benefits of including these areas as critical habitat.

(4) Exclusions Within These Units Will Not Cause Extinction of the Species

These exclusions will not cause the extinction of the Gulf sturgeon. Although the shipping channels may provide food resources needed in the winter months, other large areas of prey and corridors for migration are available in the remainder of the units to prevent the extinction of the species.

Economic Analysis

Section 4(b)(2) of the Act requires us to designate critical habitat on the basis of the best scientific information available, and to consider the economic