

^b Note that wetlands values presented here are WTP for all wetland services, not just fish habitat services. The adjustment for fish habitat values appears below.

^c Values shown are WTP per household per additional (*i.e.*, marginal) acre per year.

^d Nonusers are defined as respondents who neither fish nor shellfish.

Because coastal wetlands provide a number of services (*e.g.*, habitat, water purification, storm buffering, and aesthetics), EPA attempted to separate values for fish habitat from values for other wetland services. Given survey data available from the Peconic Study, however, there is no direct means to estimate the proportion of total wetland value associated with fish and shellfish habitat services alone. EPA therefore used a stated preference study from Narragansett Bay, Rhode Island to adjust wetland values to reflect fish and shellfish habitat services (Johnston *et al.*, 2002, (DCN 5–1273). Based on the Johnston *et al.* (2002) study, the proportion of saltwater wetland value associated with fish habitat is 0.2564; and the proportion of value associated with shellfish habitat is 0.2778. For detail on estimating the proportion of wetland value associated with fish and shellfish habitat services see Estimating Nonuse Values for Fish Based on Habitat Values for Coastal Wetlands and Eelgrass (SAV), provided in DCN 5–1010.

Briefly, the Johnston *et al.* study asked survey respondents to choose among different hypothetical restoration

projects based on attributes of these projects. Attributes of hypothetical restoration plans characterized relative statewide improvement in bird populations, fish populations, shellfish populations, and mosquito control. On average these attributes received roughly equal weight in the valuations (with bird populations being weighted a little less heavily, and mosquito control a little more heavily than the other two). Based on model results, the authors concluded that roughly one-fourth of the value derived from each project was attributable to each type of services.

The Peconic survey described eelgrass specifically as fish and shellfish habitat. EPA is not aware of other direct uses of eelgrass. Based on focus groups during survey development and pretesting, the authors concluded that individuals were aware of eelgrass and its importance for fish and shellfish production. Thus, EPA assigned all of the estimated WTP for SAV restoration to fish and shellfish production services. Based on these same focus groups and pretests the authors also concluded that, individuals were aware of and valued a number of functions of wetlands, including fish and other wildlife habitat, storm

buffering, and aesthetics. Therefore, EPA assigned only a portion of the estimated WTP for wetlands restoration to fish habitat services, based on results from the Johnston *et al.* study described above. EPA requests comment on its methodology for assigning a share of WTP to “fish production services” for each habitat type.

EPA estimated the value of saltwater wetlands associated with fish and shellfish habitat services by multiplying the proportions presented above by the total wetland values from the Peconic Estuary study. Table X–35 presents the final per household values for an acre of wetlands that were ascribed to fish and shellfish habitat services. Because the overall values of Peconic Estuary residents for eelgrass and wetlands are similar, once adjustments are made to wetlands values to ascribe a portion to fish habitat services, the values for fish and shellfish habitat of eelgrass are estimated as four times higher than those for fish habitat only for wetlands. EPA requests comments on whether such adjustments are appropriate and whether further adjustments are needed for eelgrass values.

TABLE X–35.—ESTIMATED WTP VALUES PER HOUSEHOLD FOR FISH AND SHELLFISH HABITAT SERVICES OF WETLANDS (2002\$) FROM THE PECONIC STUDY

	\$/HH/ Acre/ Year ^a	Fish habi- tat %	\$/HH/ Acre/ Year for fish habitat ^b	Shellfish habitat %	\$/HH/ Acre/Year for shell- fish habitat ^c
All Residents	0.056	25.64	0.014	27.78	0.016
Users	0.057	25.64	0.015	27.78	0.016
Nonusers ^d	0.054	25.64	0.014	27.78	0.015

^a Values shown are WTP per household per additional (*i.e.*, marginal) acre per year.

^b Total value per acre per year times 25.64 percent.

^c Total value per acre per year times 27.78 percent.

^d Note that wetland values for fish and shellfish services are not linearly additive within the same acreage, due to the functional form use in Johnston *et al.* (2002).

c. Estimating Total and Nonuse Values for Fish Production Services Provided by Submerged Aquatic Vegetation and Wetlands in the North Atlantic Region

The SAV and wetland values from the Peconic study presented in Table X–34 and Table X–35 are per household values for individuals residing in towns bordering the Peconic Estuary. Estimating the total value per acre of SAV and wetlands requires defining and using the affected population for the study area. The Peconic study defined the affected population as the total

number of households (both year-round and seasonal) in the towns bordering the Peconic Estuary. Similarly, EPA defines the affected population as households residing in the counties that abut the water bodies in the North Atlantic Region. These households are likely to value gains of fish or shellfish in the nearby water body due to their close proximity to the affected resource.

Analysis of data from the Rhode Island Salt Marsh Restoration Survey (Johnston *et al.* 2002) reveals that values were ascribed to even relatively small-

scale salt marsh restoration actions (*i.e.*, 3–12 acres) were stated by respondents from various parts of the state. EPA thus assumed for the current analysis that residents within a similar distance from the coast as residents in the Johnston *et al.* (2002) study would have positive values for improving fish habitat. EPA calculated the average distance from Johnston’s studied locations to the farthest edges of Rhode Island, which totaled 32.43 miles. The Agency then assumed that all households living within the same distance of the affected