**Appendix. Table A1. Data Sources for Ecosystem Service Values.**

|  |  |
| --- | --- |
| **Land Cover Types** | **Data Sources** |
| NWI Marine Wetlands | Kocian et al. 2015; de Groot et al. 2012 |
| Salt Marsh | Kocian et al. 2015; de Groot et al. 2012 |
| Freshwater Wetland | Kocian et al. 2015 |
| City Parks | Harnik and Welle 2009; David Evans and Associates and ECONorthwest 2004 |
| Beach | Kocian et al. 2015\* |
| Freshwater | Kocian et al. 2015 |
| Oyster Bed | Grabowski et al. 2012 |
| Estuary | Kocian et al. 2015; Martínez et al. 2007 |
| Tidal Flat | Martínez et al. 2007\*\* |
| Forest | Wolf et al. 2015\*\*\* |
| Grassland/Openland | de Groot et al. 2012 |
| Core Habitats | David Evans and Associates and ECONorthwest. 2004 |
| Coastal Waters | Kocian et al. 2015 |

Adjustments:

\* Add city park values.

\*\* 60% of the value for swamps-floodplains.

\*\*\* Include health benefits based on US national per capita average value.

**Table A2. GIS Data Sources and Descriptions.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Land Cover Types** | **Comments** | **Data Source** | **Source Dataset** | **Feature Class(es) and/or Features Selected** | **Priority** |
| NWI Marine Wetlands | Vegetated and non-vegetated brackish and saltwater marsh, shrubs, beach, bar, shoal or flat | MassGIS | National Wetlands Inventory (NWI) | NWI\_POLY.shp\* where WET\_TYPE = "Estuarine and Marine Wetland" | 1 |
| Salt Marsh | Transitional salt marsh (estuarine intertidal scrub-shrub broad-leaved deciduous), regularly flooded marsh (salt marsh, estuarine intertidal emergent) and irregularly flooded marsh (irregularly flooded estuarine intertidal emergent) | WHG / CZM | SLAMM\*\*  | GRIDCODE\*\*\* = 8 OR GRIDCODE = 20 | 2 |
| Freshwater Wetland | Riverine tidal emergent | WHG/ CZM | SLAMM  | GRIDCODE = 6 | 3 |
| City Parks | This database contains outdoor facilities such as town parks, playing fields and conserved land. Studies indicate that value depends on size of park and visitor counts. | MassGIS | Land Use 2005 | LANDUSE2005\_POLY\_SUFF.shp where LU05\_DESC = "Participation Recreation" | 4 |
| Beach | This shapefile contains both estuarine beach (estuarine intertidal unconsolidated shore sand or beach-bar) data and ocean beach (Marine intertidal unconsolidated shore sand) data. Estuarine beaches convert to estuarine open water if inundated or eroded. | WHG/ CZM |  SLAMM | GRIDCODE = 10 or GRIDCODE = 12 | 5 |
| Freshwater | Inland Open Water (Riverine, Lacustrine, and Palustrine open water) | WHG/ CZM |  SLAMM | GRIDCODE = 6 | 6 |
| Oyster Bed | The American and European Oysters were located in greater harbor barrier project area. | MassGIS | Shellfish Suitability Areas (did not analyze Designated Shellfish Growing Areas) | SHELLFISHSUIT\_POLY.shp where COM\_NAME= "American or European Oyster" | 7 |
| Estuary | Estuarine Water (Estuarine subtidal) | WHG/ CZM | SLAMM  | GRIDCODE = 17 | 8 |
| Tidal Flat | Tidal Flat (estuarine intertidal unconsolidated shore mud/organic or flat) | WHG/ CZM | SLAMM  | GRIDCODE = 11 | 9 |
| Forest | If designated by the National Forest Agency.  | MassGIS | Prime Forest Land | PRIMEFOREST\_POLY\_NORTHEAST.shp where PRIME= "1, 2 ,3" | 10 |
| Grassland/ Openland | Features shown as pastures or brushland. | MassGIS | Land Use 2005 | LANDUSE2005\_POLY\_SUFF.shp where LU05\_DESC = "Open Land" | 11 |
| Core Habitats | No specific data set for birds. This Core habitat identifies specific areas necessary to promote the long-term persistence of Species of Conservation Concern. | MassGIS | Bio Map 2 | BM2\_CORE\_HABITAT.shp | 12 |
| Coastal Waters |  Saltwater portion of watershed | MassGIS / UMass Boston  | Major Watersheds  | See discussion in Section 3 (Methods)  | 13 |

\* This data set represents the extent, approximate location and types of wetlands and deepwater habitats in the Commonwealth of Massachusetts. The data set was created by the National Wetlands Inventory program within the U.S. Fish & Wildlife Service. For details, see <https://docs.digital.mass.gov/dataset/massgis-data-national-wetlands-inventory>.

\*\* This raster dataset was developed for Massachusetts Coastal Zone Management (CZM) by the Woods Hole Group, Inc. (WHG) using the SLAMM (Sea Level Affecting Marshes Model) developed by the Warren Pinnacle Consulting, Inc. (Clough et al. 2012).

\*\*\* The raster GRIDCODE value corresponds to the SLAMM Category (see Clough et al. 2012, for Category descriptions).