

## Wetland Types and Status

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### Types:

Coastal Wetlands	Inland Wetlands
-tidal salt marshes	-freshwater marshes
-tidal freshwater marshes	-northern peatlands
-mangrove	-riparian wetlands

### Amount:

#### Coastal

11 million hectares in the U.S.

63% are the wooded types (forests)

16% are the salt marshes: .2 million hectares, mostly dominated by *Spartina*

17% are freshwater marshes

Mangroves - 300,000 hectares (too small to give a percent), will not grow above mean 20 degree C isotherm

- mostly in the Everglades and Mississippi Delta

Notes: steepness of land on east coast is less than on the west coast, and the tides are diurnal here. This is easier on the vegetation. East coast marshes can be several miles, creates bigger intertidal zone, where the marshes develop. West coast, the intertidal zone is comparably smaller, not very much area for marshes to develop.

#### Inland

32 million hectares altogether in U.S.

7 million hectares of freshwater marshes, shallow water body that is completely choked in emergent vegetation

- ( Everglades dominated by reeds, cattails, and sedges)

10 million hectares of northern peatlands, mostly in Great Lakes area (111 million hectares in Canada)

22.3 million hectares of southern swamps and riparian areas

- southern swamps are deepwater swamps with trees in them, most ecologically important, but it has suffered the most from deforestation

- woody wetlands dominated by Cypress (*Taxodium*) and Gum (*Nyssa*) trees

- In Arizona, there is about 100,000 hectares of river riparian areas

#### Status

Review of original wetland definition: shallow water or saturated soil unique hydric soil hydrophytic vegetation

There are several fuzzy areas in this definition. 1) Variability in flooding conditions within a year, and from year to year. Similarly, fluctuating of water levels in ground water. 2) All three characteristics may not be met (i.e. boundaries of three are not the same). 3) Different kinds of wetlands may not fit criteria.

Two types of definitions can be found. 1) one is scientific - involving classification, inventory, and research 2) one for managers and regulators - control wetland modification and changes in water quality.

The most widely accepted technical description is the 1979 Scientific Description put out by the USFWS.

A legal or jurisdictional definition was developed by the Corps of Engineers in 1984 in the Clean Water Act.

The Corps of Engineers responsibility was determined before the Clean Water Act by a court case in 1972 Zabel v. Tabb. (Could deny permit for filling mangroves in Florida)

In 1975 in Natural Resources Defense Council v. Calloway, wetlands were included in waters of the US. Before this, the Corps was concerned with only navigable waters.

In 1985 in US v. Riverside Bayview Homes Inc., the Supreme Court upheld the new Corps argument.

Since 1989 jurisdictional wetlands describe those areas that meet the definition.

The wetland definition only requires that under normal circumstances vegetation is typically adapted for survival in a saturated area. This is needed for practical limitations of rapid evaluations and reasonable amounts of effort. It is not possible to wait several years to test soil saturation levels, looking at plant life is a good enough evaluation.

Federal regulations regarding wetlands are an overlapping patchwork. There is no specific wetland law. 1) Clean Water Act - dredge and fill permits (sec. 404 Corps of Engineers), water quality (sec. 303 EPA), National Pollutant Discharge Elimination System (sec.402 EPA). This is administered in AZ by DEQ. 2) Fish and Wildlife Service - Migratory Birds, Wildlife Restoration Act, Endangered Species Act, National Wildlife Refuge. 3) Swampbuster - part of 1985 Food Security Act, Farm Bill. 4) 1972 Coastal Zone Management Act - Dept. of Commerce, Federal government provides an 80% match to a state developing coastal zone management plans.

1987 National Wetlands Policy Forum - advisory board to EPA formulated one major objective - the nation should strive for no net loss of wetlands. The US should create and restore to replace wetlands lost to further development.

No net loss was adopted as policy by Bush and Clinton and agencies have been told this as executive direction.

Takings issue - Issue is whether regulations that deny an owner from making economically viable use of land require compensation to the landowner. Remember that the constitution protects from unreasonable seizure and requires just compensation for property which is taken.

Issue is zoning and rezoning.

In June 1992 Lucas v. South Carolina, Supreme Court ruled that the state did have to pay after property was rezoned.

404 Dredge and Fill is still the most important wetland regulation. States must meet for construction, utilities, developers, etc.

Wetland delineation - obviously need to determine if land is a wetland.

In 1987 the Army Corps of Engineers published tech manual for delineation followed by the EPA, SCS, and USFWS.

In 1989, these groups got together and published one manual called the Federal Manual for Identifying and Delineating Jurisdictional wetlands. This is often used by developers and regulators to support their arguments. Modifications to the manual were proposed in 1991 to loosen regulations, but there were a lot of complaints and the effort to alter the manual was dropped.

What's all the fuss about?

Table 3.3 in book

Presettlement 1700's	60-75 million hectares
1906-1987 (8 estimates)	30-40 million hectares left
How much has been lost?	35-50%
The best current estimate is	42 million hectares.

Concern is over conversion of wetland types:

- cutting down forested wetland trees turns to freshwater marshes
- "created" wetlands does not equal natural wetlands
  - constructed wetlands, artificial wetlands

Case Study with Joy Zedler in San Diego: studying wetlands to see if they can recreate habitats for animals

- research shows it does not

Big Problem

- loss of hardwood swamps or river bottoms
- conversion of shrub wetlands (bushes); clearing of shrubs; conversion to freshwater marsh; conversion to farmland or urban land

-converted immediately to agriculture land and urban land, but could become non-vegetative wetlands (ponds)

-convert farmland to non-vegetative wetland pond with government money

Example: Mississippi Marsh Land has gone from 8.5 million hectares to 2 million hectares

Note: "No Net Loss" does not make any sense because there hasn't been any loss, only conversion!