

Chapter 17 - Human Impacts and Management of Wetlands

Chapter 18 - Wetland Laws and Protection

"For most of recorded history, wetlands were regarded as wastelands if not bogs of treachery, mires of despair home of pests, and refuges for outlaw and rebel. A good wetland was a drained wetland free of this mixture of dubious social factors." Larson and Kusler, 1979

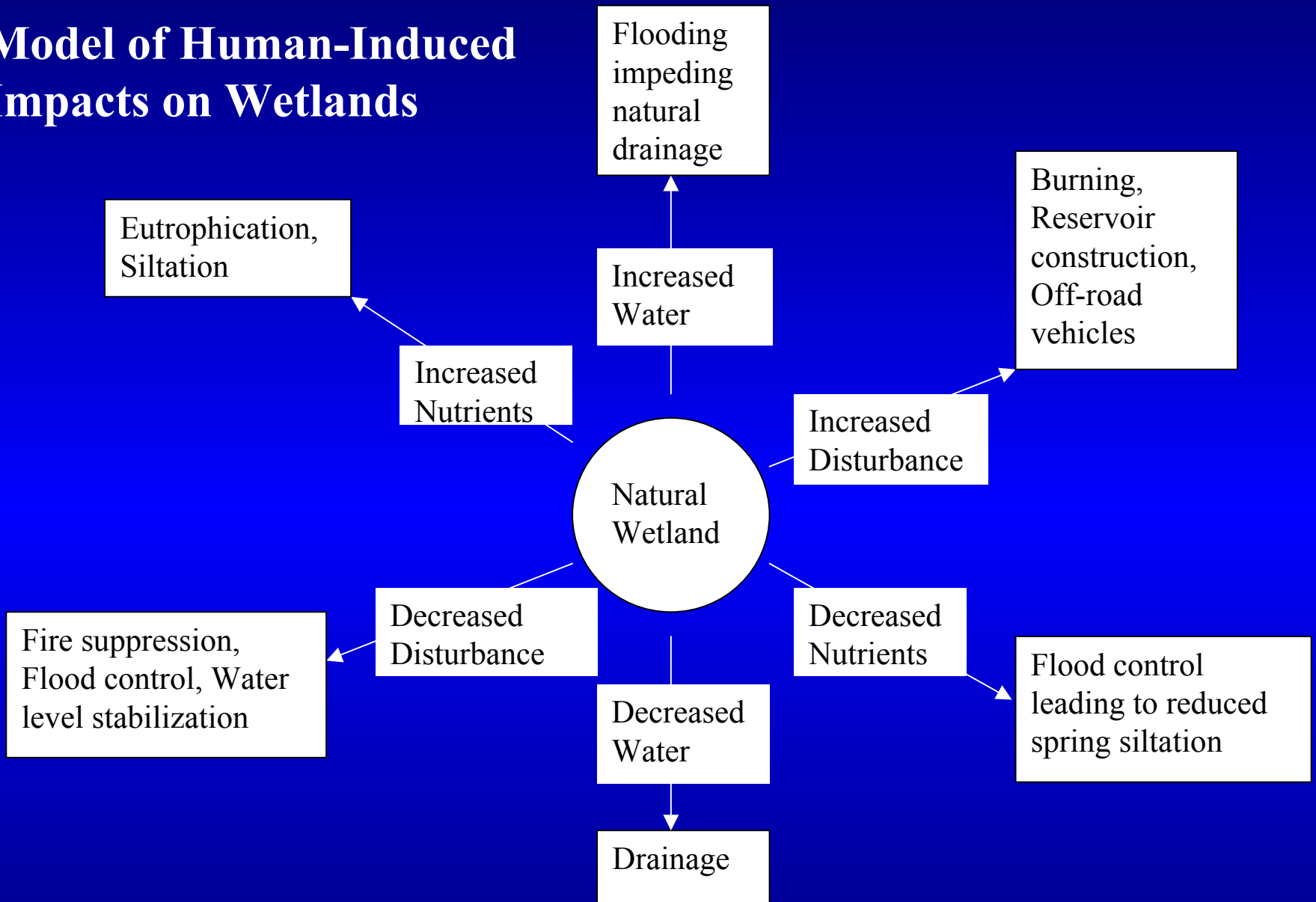
Swamp Land Act of 1849-1860

- Federal government gave states control of "reclaiming" wetlands
- States sold land for cheap, owners lobbied feds for flood protection, now government is paying lots to get land back for conservation

Alterations to wetlands

- Draining, dredging and filling
- Hydrological modifications
 - Flood control, navigation, industry
- Highway construction
- Mining and mineral extraction
- Water pollution

Model of Human-Induced Impacts on Wetlands



Estimated US coastal wetland loss due to sea-level rise

| | 0.5 m | 1 m | 2 m |
|---|---------------|---------------|---------------|
| If no shores are protected | 17-43% | 26-66% | 29-76% |
| If densely developed dry land is protected | 20-45% | 29-69% | 32-80% |
| If all dry land is protected | 38-61% | 50-82% | 66-90% |

Wetland Laws and Protection

1. There is no specific national wetland law.
2. Wetlands have been managed under regulations related to both land use and water quality.

Presidential Orders

- Executive Order 11990, Protection of Wetlands, Jimmy Carter, 1977

No Net Loss – 1987, National Wetlands Policy Forum

- “to achieve no overall net loss of the nation’s remaining wetlands base and to create and restore wetlands where possible, to increase the quality and quantity of the nation’s wetland resource base”
- Shifted to national focus by President Bush, 1990

Section 404 of the Federal Water Pollution Act amendments of 1972 (Clean Water Act)

- Anyone dredging or filling waters of the United States must request a permit from the US Corps of Engineers, extension from 1899 Rivers and Harbors Act, upheld in multiple court cases
- [An overview](#)
- <http://www.epa.gov/owow/wetlands/regs/sec404.html>

Section 404

- Permits complex, projects evaluated for:
 - Avoidance
 - Minimization
 - Mitigation

404 Permit Process

- Applicant submits Engineer Form 4345 to District Office
- Application received, acknowledged and processed
- Public notice issued
- Normal 30 comment period
- Application reviewed by Corps and other interested agencies, organizations and individuals

404 Permit Process

- Public hearing may be held
- Evaluation factors
 - Conservation, economics, aesthetics, environmental concerns, fish and wildlife values, flood damage prevention, water supply, water quality
- Application approved/denied
- Applicant signs and returns with fee
- Permit issued

The Public Notice Process

- [New England COE](#)
- [Arizona Public Notice](#)
- [Missouri Public Comment](#)
- [Vernal Pools Protection](#)

1985 Food Security Act, “swampbuster” provisions

- Denied federal subsidies to any farm owner who knowingly converted wetlands to farmlands

NPDES

- Region 9

Delineation

- 1987 Wetlands Delineation Manual – Corps of Engineers – hydrology, soils, vegetation
- 1989 Federal Manual for Identifying and Delineating Jurisdictional Wetlands

“Takings”

- laws protect wetlands, deny individual owner’s rights to property use
- regulations denying “economically viable use of land” requires compensation to owner

International Wetland Conservation

- **The Ramsar Convention** – Convention on Wetlands of International Importance, Ramsar, Iran, 1971
- Framework for wetlands conservation for migratory fauna and people dependent upon wetlands
 - In 2000, 117 countries, 1,021 wetland sites, 74.8 million ha
- **North American Waterfowl Management Plan**
 - US/Canada, 1986