

*Assigned readings, 8th Edition pp. 1260-1263
7th Edition pp. 1224-1229

San Francisco Bay

Outline of Lecture 11

- A. San Francisco Bay**
- B. Biological Resources of Bay**
- C. Physical influences on habitats**
- D. Current problems**

A. San Francisco Bay

- Estuary: a point at which the river meets the sea, with a mixture of saline and freshwater conditions, tidal mud flats and salt marshes, and a characteristic and unique fauna.

- Population change (pre- 1769: 10-20,000 native Americans; after 1848 San Francisco grew from 400 to >25,000.
- Legacy of gold mining activities still affects the Bay.

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B. Biological Resources of Bay

1. Commercial fisheries (decline of salmon, sturgeon, and striped bass began about 1900; only herring and anchovies fished commercially today).

2. Dungeness crab (in 1880 commercial fisheries left Bay; 1960 off-shore fishing collapsed). Increased ocean temperature, predation by hatchery-reared salmon, and pollution caused decline.

3. Introduced species (oyster drill and shipworm; 20 out of 42 Suisun marsh fish are introduced). Success of introduced species resulted from lack of a diverse natural fauna, and opportunistic traits.

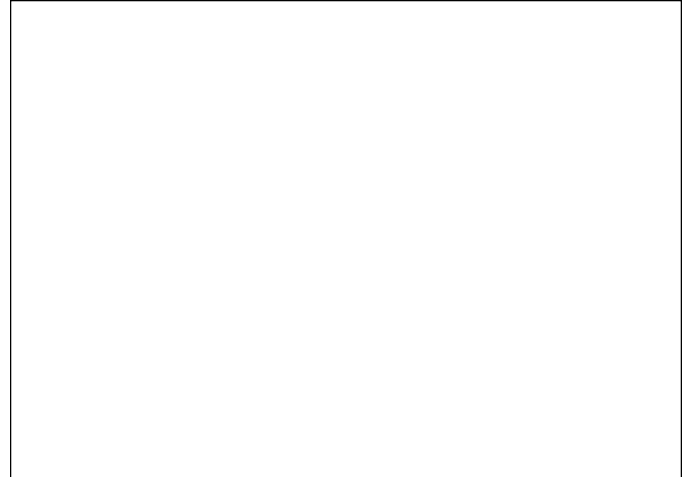
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San Francisco Bay

B. Physical influences on habitats

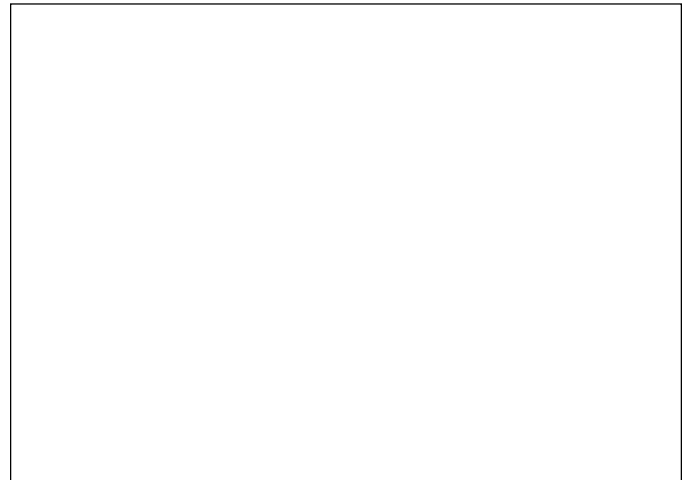
1. hydraulic mining
2. land reclamation – 1400 km² of freshwater marsh, 800 km² salt marsh reclaimed, with 125 km² remaining today
3. water diversion –pre-1850, 34 km³/year; now 40% removed for local consumption, 24% for Southern California

Biological response (lost of migratory fish, loss of ability to dilute contaminants.



C. Current problems (agricultural wastewater, domestic and industrial wastes).

1. San Francisco Bay problems are not unique but problems are less obvious because urbanization is directly on estuary mouth, water quality has improved, and most changes occurred long ago.
2. What is the effect on further reductions on inflow?



D. San Francisco Bay is a model of grassroots environmental activism.

E. San Francisco Bay is an important case history of anthropogenic change. Discuss other examples with your study group.

