Estuary basics

- Particular mix of fresh and salt water
- Definite patterns of inflow for bays with specific shapes
- Result in classic, biological patterns
- And high values and uses

Historic conditions for Dona and Roberts bays

- Short streams in small watersheds
- Shallow streams
- Brackish water to Fox Creek
- Stable salinity zones: marine bays; estuarine creeks

Major causes of harm

- Habitat loss
- Contamination
- Overuse

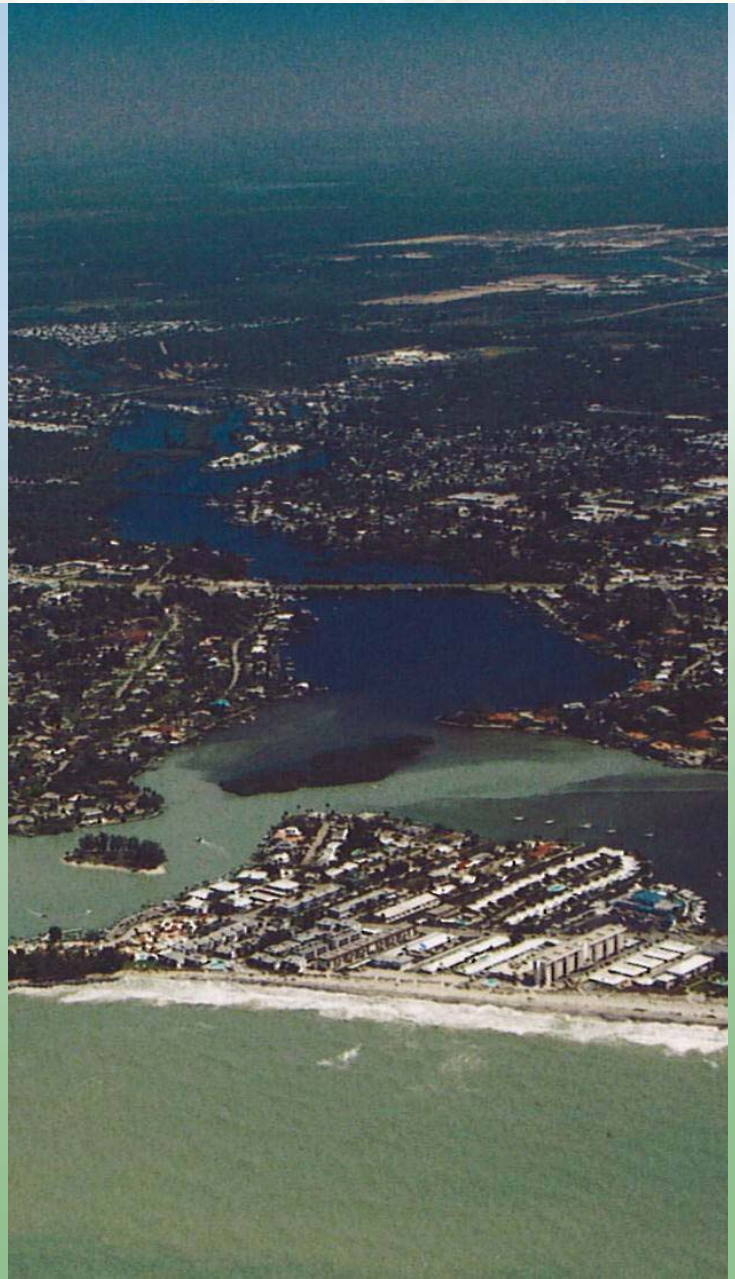
- **Improper freshwater inflow**

How are inflows changed?

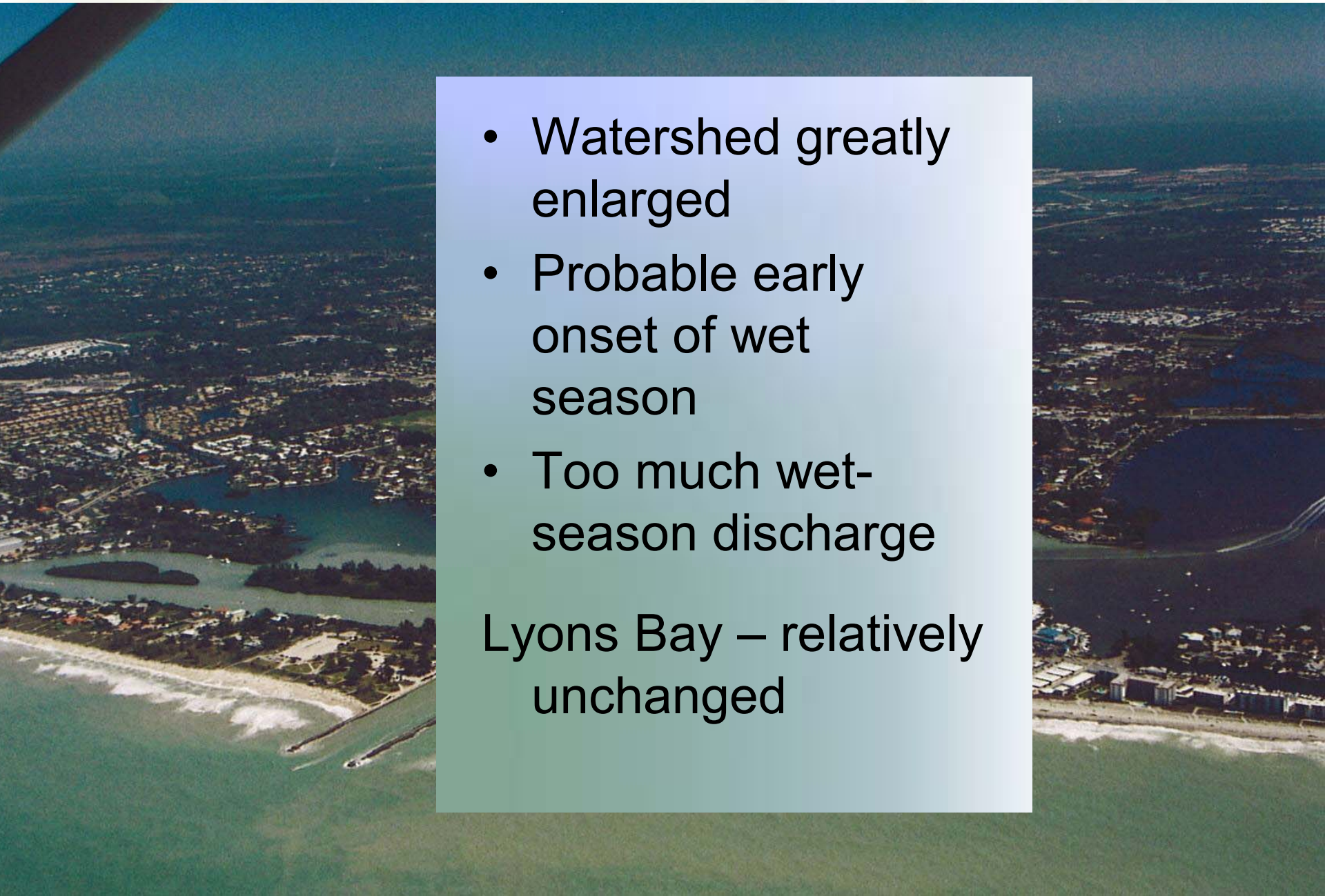
- Quantity
- Timing
- Location

Major issues affecting quality of Dona Bay

- Watershed greatly enlarged
- In-stream structure regulates flow, creates barrier effect
- Too little dry-season discharge
- Early onset of wet season
- Too much wet-season discharge



Major issues affecting quality of Roberts Bay



- Watershed greatly enlarged
- Probable early onset of wet season
- Too much wet-season discharge

Lyons Bay – relatively unchanged

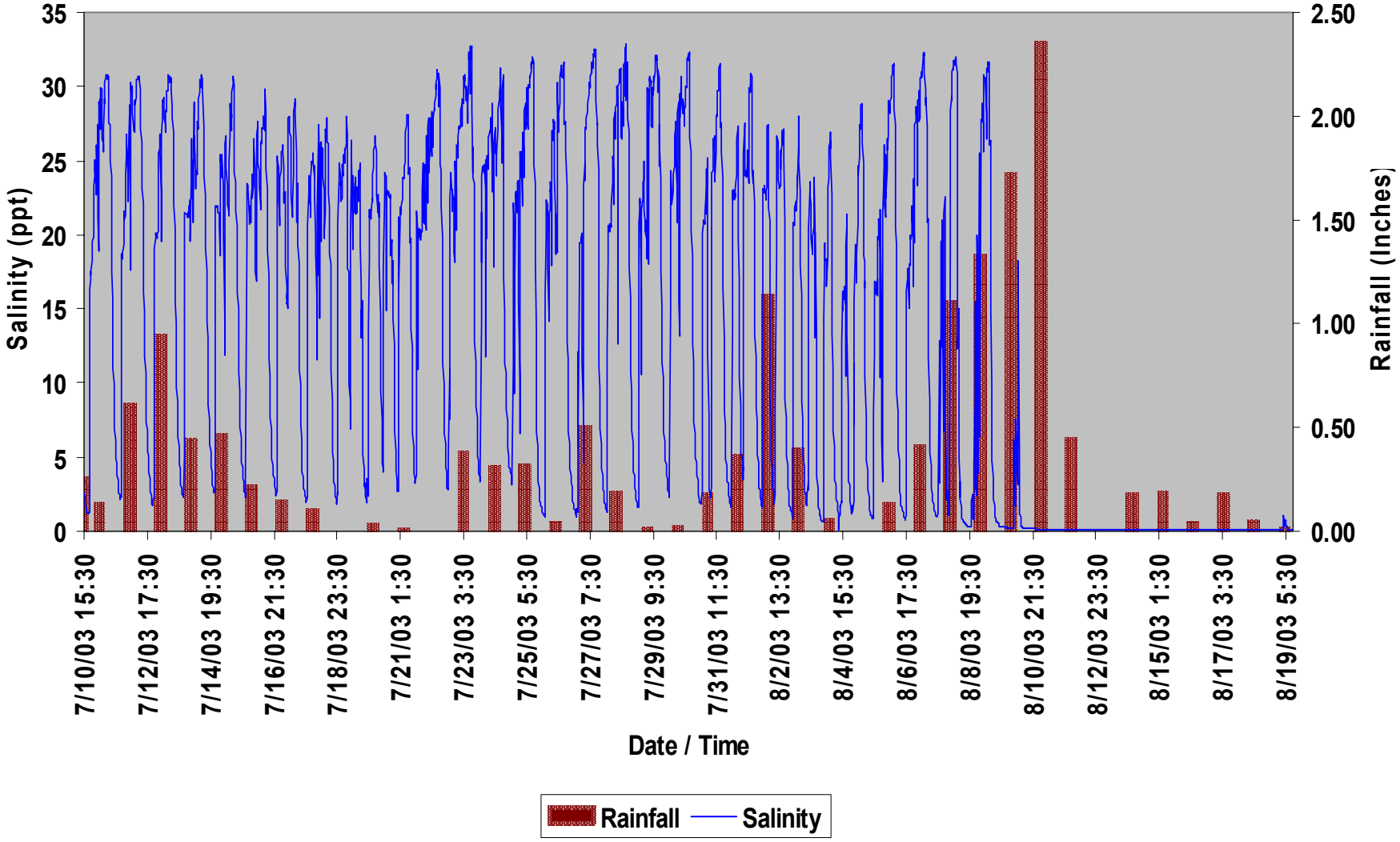
Expected effects

- More saltwater farther up creeks
- More freshwater in the bays
- Greater variation in salinities
- Altered seasonality of flows

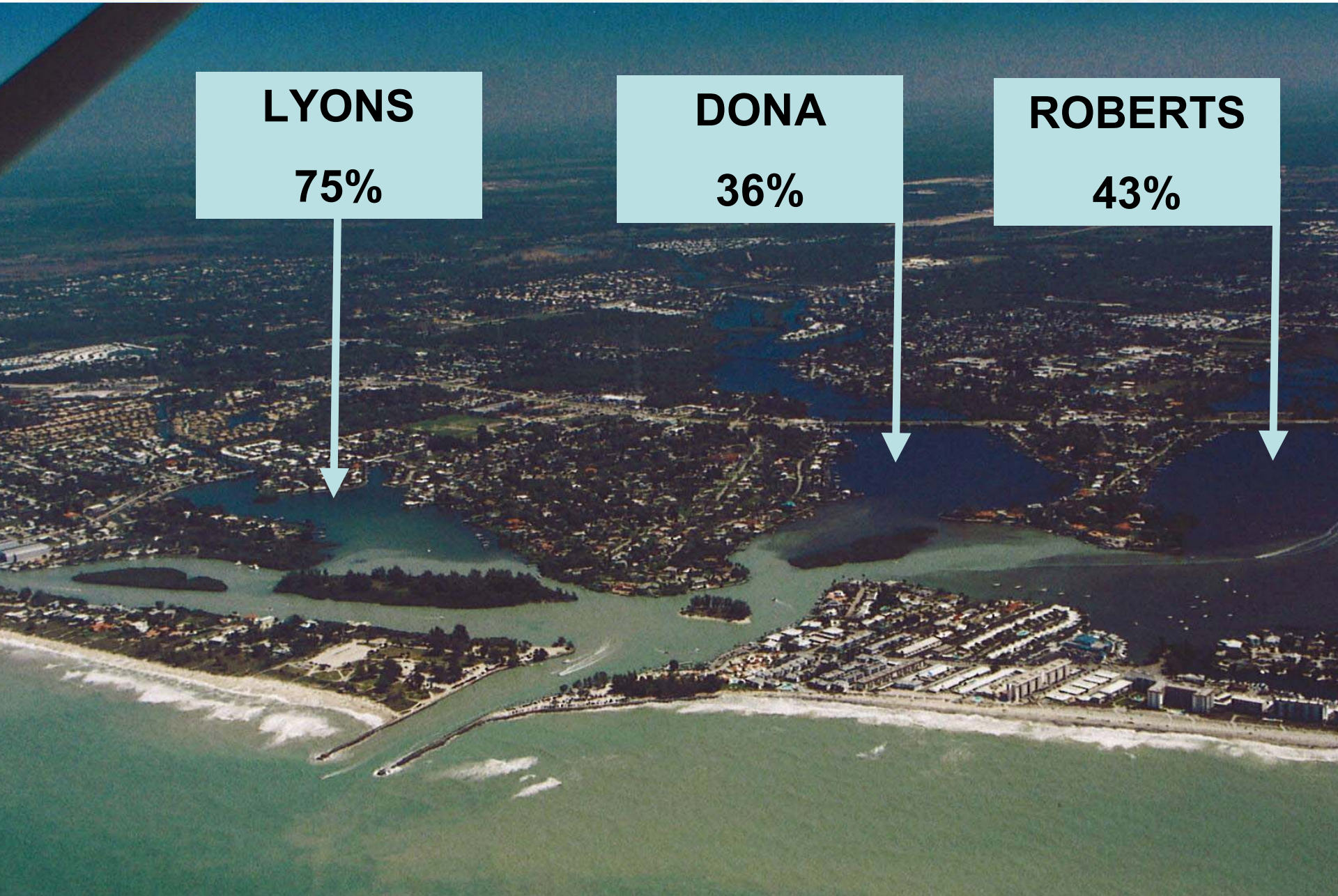
Expected impacts

- Water stress in mangroves
- Loss of seagrass
- Loss of hard clams in bays
- Loss of oysters

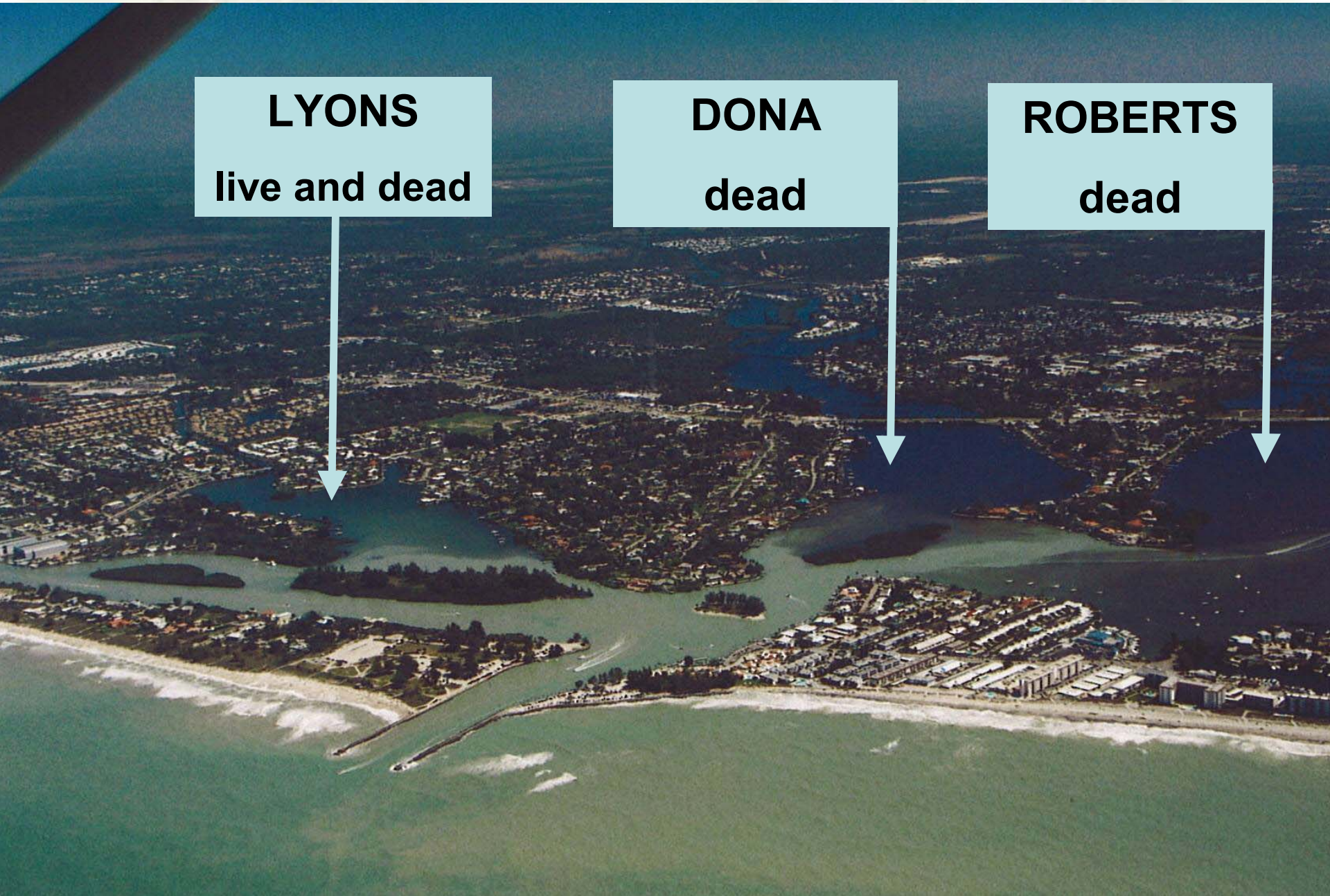
Salinity at Curry Creek / U.S. 41 compared to rainfall in the Myakka River basin 7/10/2003 – 8/18/2003



Percent of seagrass coverage

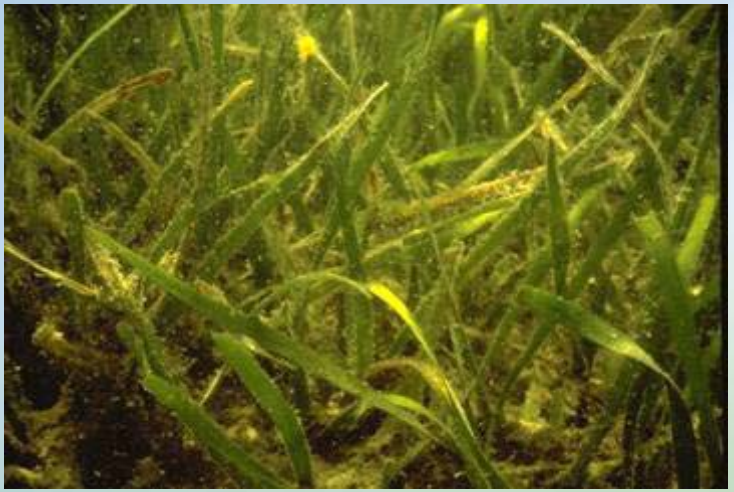


Hard clams



Benefits of improved watershed management

- Improved mangrove habitat in creeks
- More seagrass beds in Dona and Roberts bays
- More clams
- More living oysters



Benefits of improved watershed management

- Clearer, cleaner water
- More shellfish, fish, wildlife
- Better recreational opportunities