OCTOBER 5, 2010

A PRESENTATION of the Regional Monitoring Program for Water Quality in the San Francisco Estuary

LINKAGES BETWEEN WATERSHEDS AND THE BAY: PAST, PRESENT, AND FUTURE

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Watershed Inputs to the Bay

- Water chemistry
  - OM, nutrients, contaminants, etc.
- Sediment
  - different geologic sources, coarse vs. fine
- Freshwater
  - volume, timing – hydrograph
- Biology
  - juvenile steelhead, wetland birds, etc.
What controls those inputs?

- Climate
- Geology and topography
- Drainage network
- Wetlands
- Land use
- Vegetation cover
What controls those inputs?

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Fluvial channel network change

Historical Coyote Creek Drainage Network

San Jose

1800:
“disconnected” system
Modern Coyote Creek Drainage Network

Fluvial channel network change

2005: “increased connectivity”
Miles of valley floor channel tributary to Coyote Creek

With storm drains

2005
unconsolidated groundwater recharge basin
Napa River hydrograph

Historical hydrograph is low and wide

Yr 2000 rain on Yr 1700 landscape

(SFEI 2010)
Napa River hydrograph

Present hydrograph is high and narrow
Flashy hydrograph (despite large dams)
- incision
- fine sediment/coarse sediment imbalance
- less dry-season flow
2050?
Redesign of the fluvial-tidal interface
Restoration of tidal marshlands
Increased runoff retention
-LID
-IRWMP
-urban forestry
-groundwater recharge
-floodplain and wetland restoration
Low Impact Design (LID)

- Intensive eco-roof
- Rain screen
- Permeable paving
- Downspout disconnect & cistern
- In-street planter

Courtesy SFPUC
Pacific pallid bat

Acorn woodpecker
SFEI LID Assessment
7 projects presently underway:

- **Green Infill-Clean Stormwater**
  (SFEP/Daly City)

- **El Cerrito Green Street Pilot**
  (SFEP/City of El Cerrito)

- **North Richmond Pump Station**
  (SFEP/Contra Costa County)

- **Newcomb Ave Model-Block**
  (SFEP/City of San Francisco)

- **Fitzgerald Mar. Res. LID Assessment**
  (County San Mateo/P84)

- **Statewide LID Monitoring Framework**
  (SCCWRP/State Board)

- **Regional Site Suitability for LID/Green Infrastructure**
  (SWRCB)
21st Century Watershed Design

- Delivering the right sediment to the right places: where? how? clean?
- Retaining runoff, recharging GW, reducing flood peaks: where? how? clean?
- How should strategies differ within very different small tributaries?
- What are the cumulative effects? How do we monitor them?
THANK YOU

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