Siuslaw Estuary Partnership

An Integrated Multiple Objective Approach To Watershed Protection and Restoration

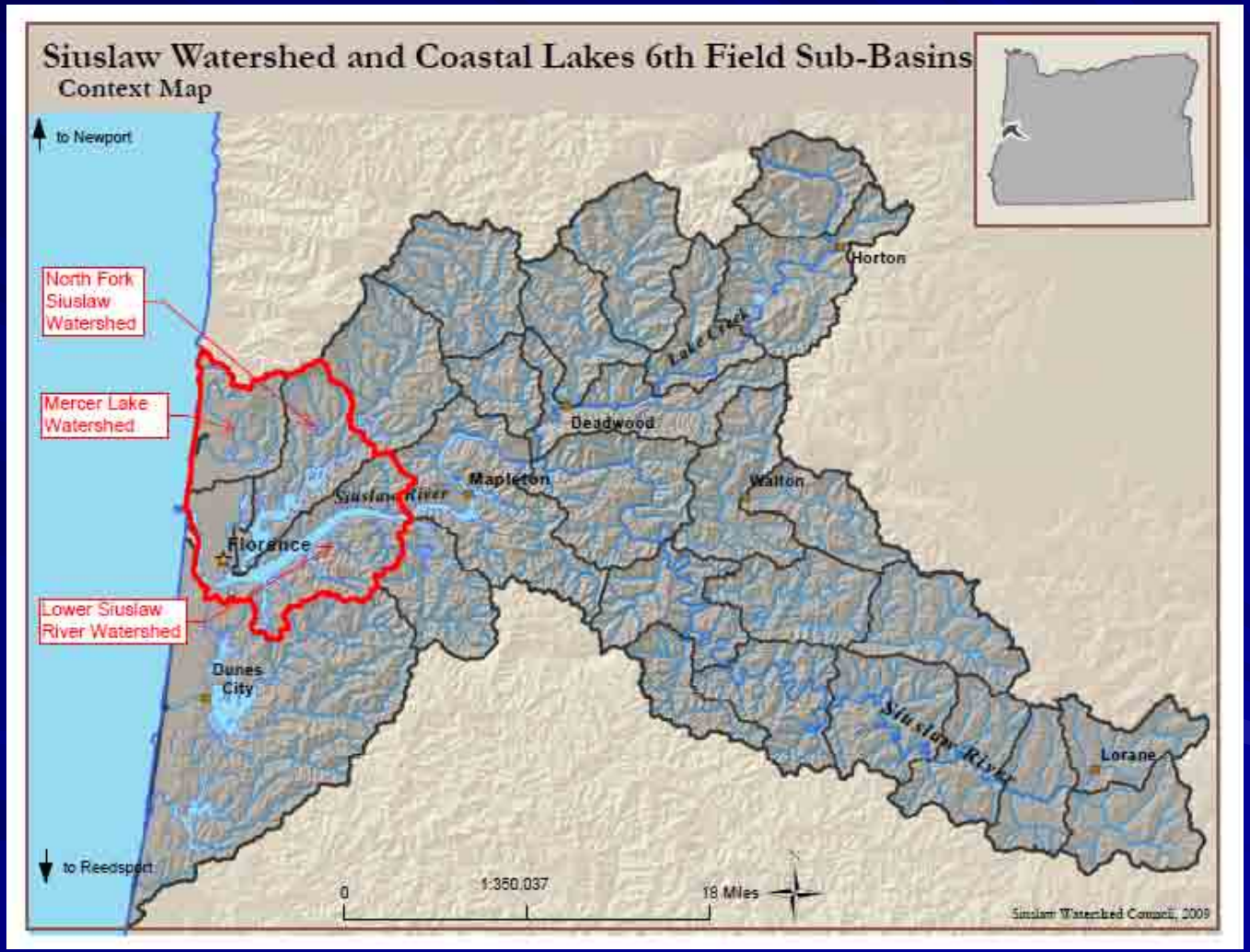
Open House

May 19, 2010

Project Mission

To protect and improve water quality and fish and wildlife habitat in the lower Siuslaw River Watershed.

Study Area


Siuslaw Watershed and Coastal Lakes 6th Field Sub-Basins
Context Map
to Newport
North Fork Siuslaw Watershed
Mercer Lake Watershed
Lower Siuslaw River Watershed
to Reedsport
Horton
Deadwood
Mapleton
Siuslaw River
Florence
Walton
Dunes City
Lorane
0
1:350,037
18 Miles
Siuslaw Watershed Council, 2009

Project Timeline

- **Project:**

  October 1, 2009 thru September 30, 2012

- **Phases:**
  - Phase I: Form Partnership and Integrated Approach
    Oct 1, 2009 thru Sept 30, 2010
  - Phase II: Alternatives Analysis
    Oct 1, 2010 thru Sept 30, 2011
  - Phase III: Propose Policies and Measures and Submit for Adoption
    Oct 1, 2011 thru Sept 30, 2012

Tonight's Presentation

- Guiding Principles and Project Elements
- Water Issues: Highlights
  - Estuary
  - Key Estuary Wetlands
  - Wetlands and Riparian Areas
  - Surface and Ground Water Quality and Quantity
- Community Involvement: What's Good for Fish is Good for Florence

Why we are here: Guiding Principles

- A vision statement for environmental protection in the study area that will guide local environmental policies and practices
- Shared values, beliefs, and philosophy
- Far-reaching and broad, intended to inspire rather than dictate
- Developed with input from Stakeholders and endorsed by the City of Florence and other entities, as desired
- **Please comment – tonight or via the web site: www.Siuslawwaters.com**

Project Elements: Visit with Staff

- Collaboration and Scientific Investigation
- Public Education and Stewardship
- Water Quality and Quantity
- Wetlands and Riparian Area Protection and Restoration
- Key Estuary Wetlands Protection and Restoration
- Ecological Growth Planning

Surface Water Issues: Estuaries

Estuaries are one of the most productive types of ecosystems on earth, providing:

- Erosion control and storm surge protection
- Water quality services
- Atmospheric gas regulation
- Nutrient cycling habitat for plants, shorebirds & other animals
- Education, recreation & tourism opportunities

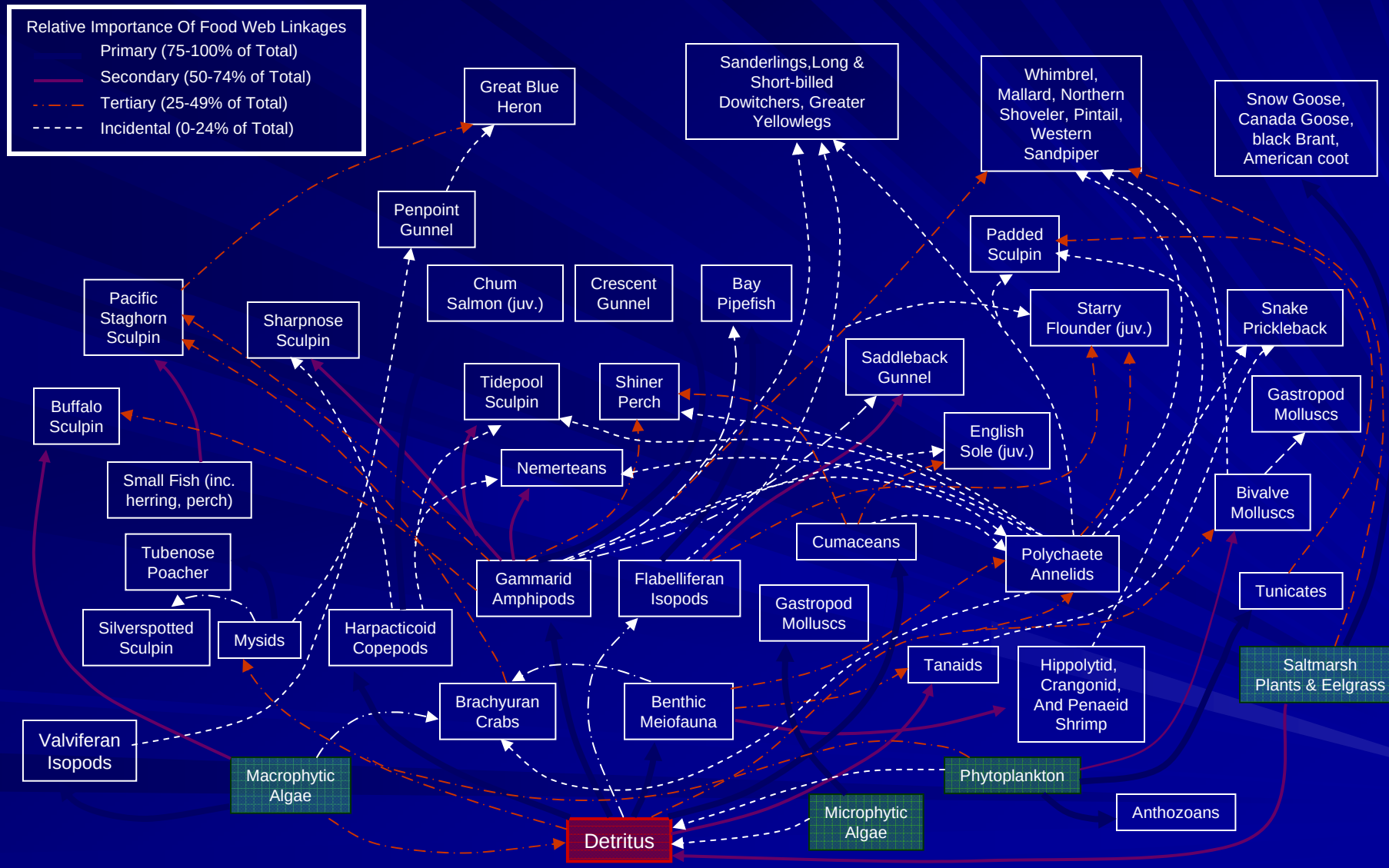
Why are estuaries important?

Estuaries have been called the “nurseries of the sea” for their important role in providing sheltered habitat and food for juvenile fish such as salmon, sea-run Cutthroat Trout and herring. In these protected environments, young fish can quickly grow and gradually become accustomed to salt water.

These organisms are only some of the many that live, feed or develop in estuaries:

- **Aquatic plants** such as eelgrass and sedges; terrestrial plants such as dunegrass and salt grass;
- **Microorganisms** including fungi, bacteria and protozoa; shellfish such as mussels, clams, snails, limpets and native oysters; segmented worms, ribbon worms, flatworms, and bristleworms;
- **Crustaceans** such as shrimp, crabs, copepods, amphipods;
- **Fish** such as Pacific salmon, herring, cutthroat trout, stickleback and sculpins
- **Mammals** such as bears, cougars, river otters, harbor seals, sea lions, mink and raccoons;
- **Birds** such as Great Blue Herons, plovers, Black Oystercatchers, killdeers, sandpipers, mergansers, kingfishers, widgeons, pintails, Canada Geese, Black Brant Geese, Mallards, Surf Scoters, cormorants, eagles, ospreys and owls

A simplified Estuarine food web



From Simenstad et al. 1979

Estuary Ecosystem Services

Erosion control and storm surge protection

Vegetation in estuaries helps to anchor sediment and soil along river banks and shorelines. This prevents stream flows, rainwater and waves from scouring away the land. Estuaries also build up deposits of mud, silt and sand. This natural barrier helps to dissipate the energy of large waves that can otherwise inflict serious damage on human life and property.

Estuary Ecosystem Services

Water Quality

Estuaries function as natural water purification systems. Vegetation and fine sediments in estuaries filter water as it flows from the land to the ocean. Bacteria living in the sediments of estuaries can also help to break down certain pollutants.

Estuary Ecosystem Services

Atmospheric Gas Regulation

Estuaries tend to be “carbon sinks,” since carbon dioxide is absorbed in the photosynthesis carried out by the prolific plant growth. Carbon dioxide is released when wood or fossil fuel is burned, or when estuaries are filled in. It is one of the greenhouse gases that are thought to be at least partly responsible for climate change.

Estuary Ecosystem Services

Nutrient Cycling

Estuaries help to regulate concentrations of nutrients such as nitrogen and phosphorous in the marine environment. These nutrients are needed for plant growth but in excess can cause harmful algae blooms and rob the water of oxygen.

Estuary Ecosystem Services

Habitat for Plants, Shorebirds and Other Animals

Many species of animals spend all or a portion of their lives in estuaries. Some of these species, such as Pacific Salmon, have direct commercial value. Others are important as part of the overall function of many ecosystems. Estuaries contribute greatly to the biodiversity of the marine environment.

Estuary Ecosystem Services

Education, Recreation and Tourism Opportunities

Estuaries are peaceful, beautiful landscapes. Artists, canoeists, bird/wildlife watchers, hunters, fishers, photographers, scientists, children and teachers are all attracted to estuaries. The special qualities of estuaries make them ideal study and teaching environments.

Estuaries are not only one of the most biologically productive types of ecosystems, they are also one of the most valuable. It is difficult to attach monetary worth to these ecosystem services, especially since most are needed for life on earth and are not replaceable with human-made systems, at any cost.

Source: http://www.crd.bc.ca/watersheds/ecosystems/estuaries.htm

Surface Water Issues: Siuslaw Estuary

- Home to 23 species of fish, almost 200 species of birds, and numerous marine mammals
- A significant natural area and important bird area
- Provides habitat to several endangered and threatened species

Surface Water Issues: Siuslaw Estuary

- Siuslaw River was once the Oregon Coast's second largest coho-producing system
- Salmon production is significantly diminished
- "Water Quality Limited" for temperature, dissolved oxygen, fecal coliform, and sediment
- On DEQ's list of Impaired Water Bodies

Water Issues: Key Estuary Wetlands

- The Siuslaw Watershed Council, McKenzie River Trust, and other partners are working with state, federal, and private funding sources and partners to protect/restore high priority tidally influenced wetlands.

- These tidally influenced wetlands may provide:
  - Nesting, feeding, and nursery areas for the native assemblage of fish and wildlife species, such as ESA listed coastal coho salmon, Chinook salmon, searun cutthroat trout, Pacific lamprey, green sturgeon, and bald eagle
  - Habitat connectivity
  - Water quality protection

Water Issues:
Key Estuary Wetlands

- Site A:
  - Phase I: Property acquisition; Preliminary site assessment
  - Phase II: Site analysis, restoration feasibility, planning, design & environmental permitting
  - Phase III: Levee and tidegate removal implementation (construction)
  - Phase IV: Post-construction monitoring and research

Water Issues: Key Estuary Wetlands

- Site B: North Fork Marsh
  - 2009: McKenzie River Trust Acquired
  - 2010:
    - Baseline Inventories
    - Develop Management Plan

Water Issues:
Wetlands and Riparian Areas:

- Current inventory done in 1996
  - Expanded Study Area
  - Will use more advanced ORWAP Assessment tool
- Identify locally significant wetlands & adopt local protections
  - Protection measures will include publicly owned sites

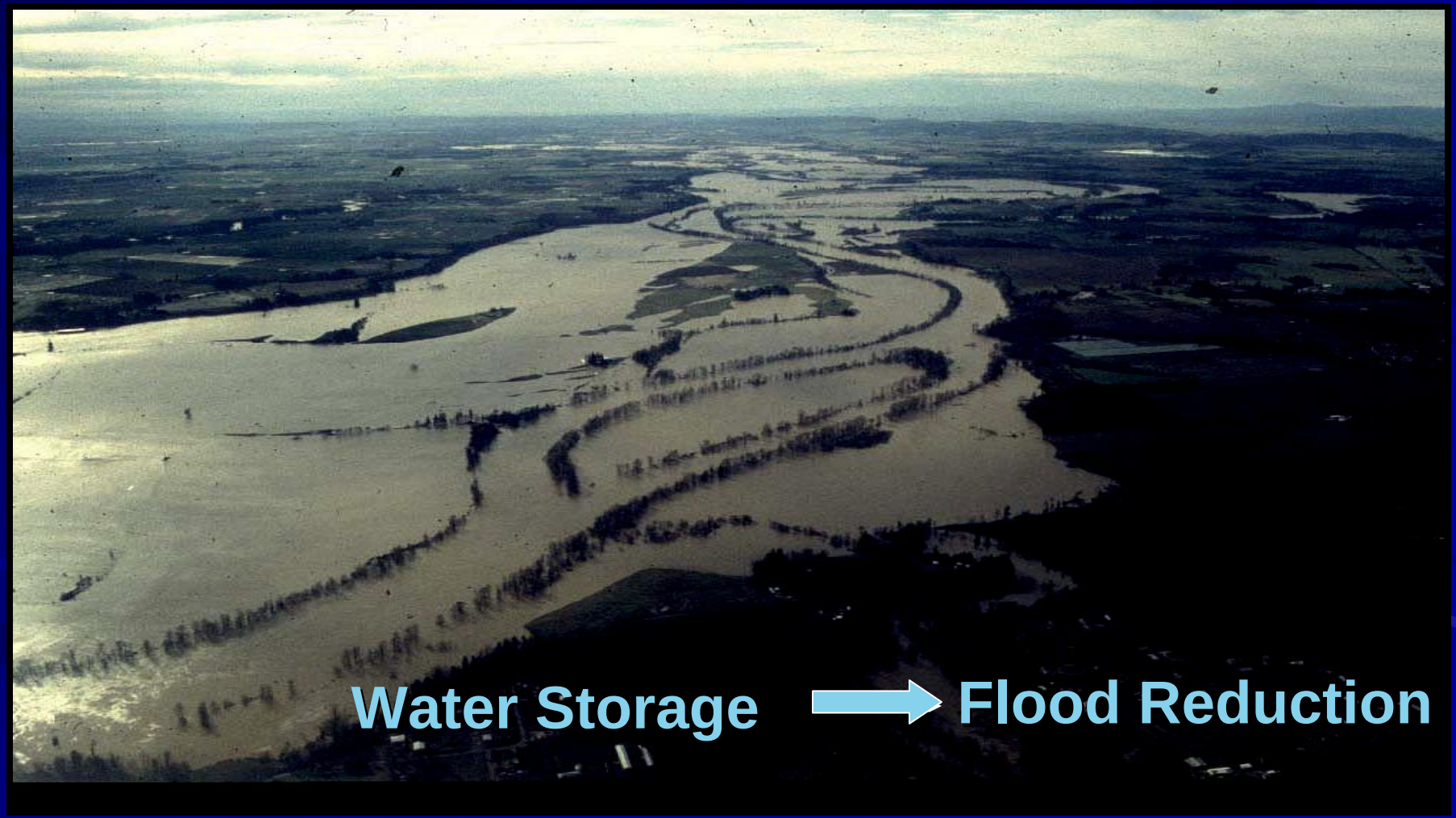
Water Issues:
Wetland Functions and Values

- **Wetland Functions** are the things that wetlands do

- **Wetland Values** are the social and economic importance of the wetland functions

Wetland Functions and Values: Water Quality Support

Wetland Functions & Values: Water Storage & Delay



Wetland Functions & Values: Fish & Wildlife Habitat

Rearing habitat for young salmon

Waterfowl habitat

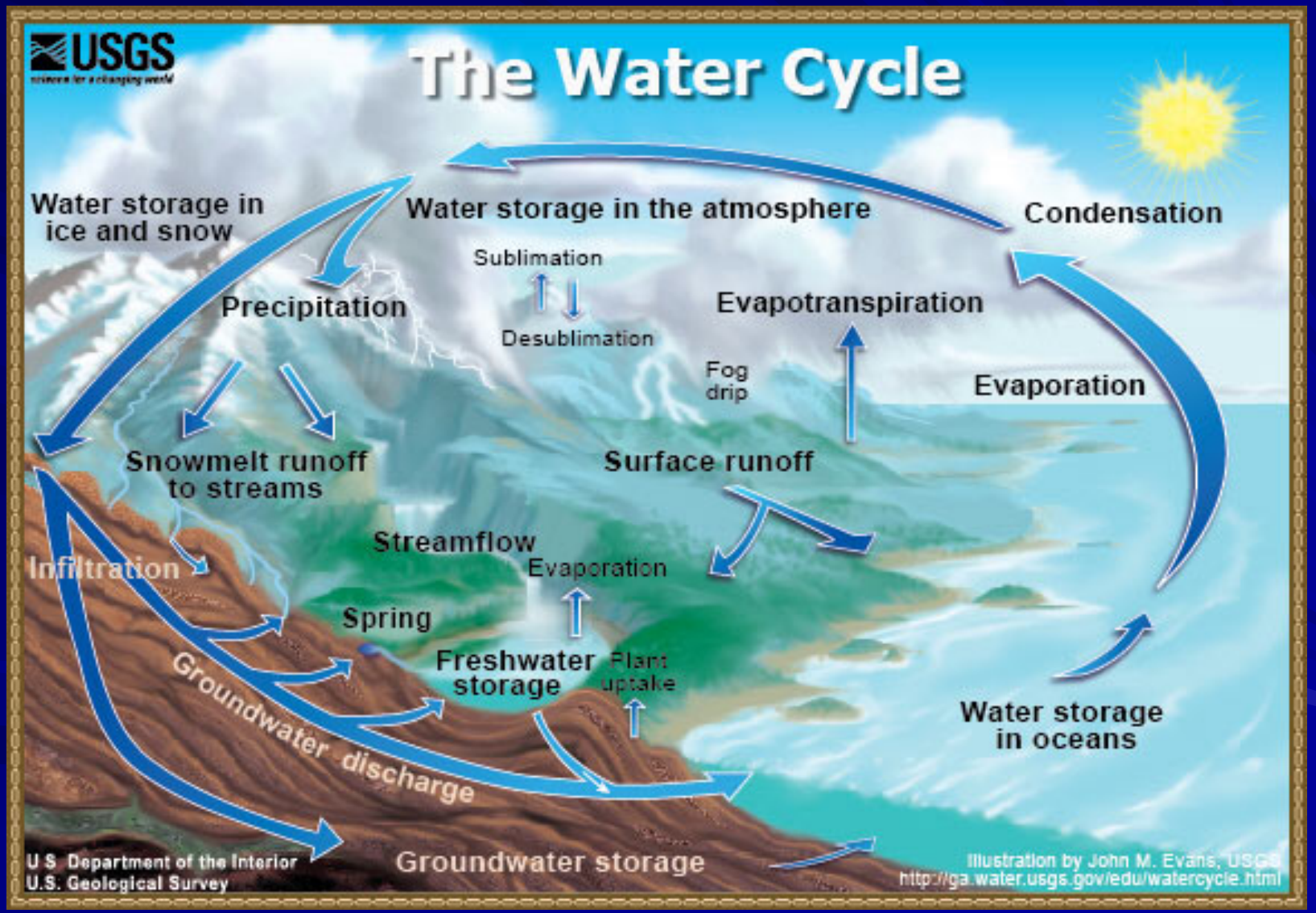
Habitat for threatened & endangered species

Water Issues:
Wetland Functions & Values

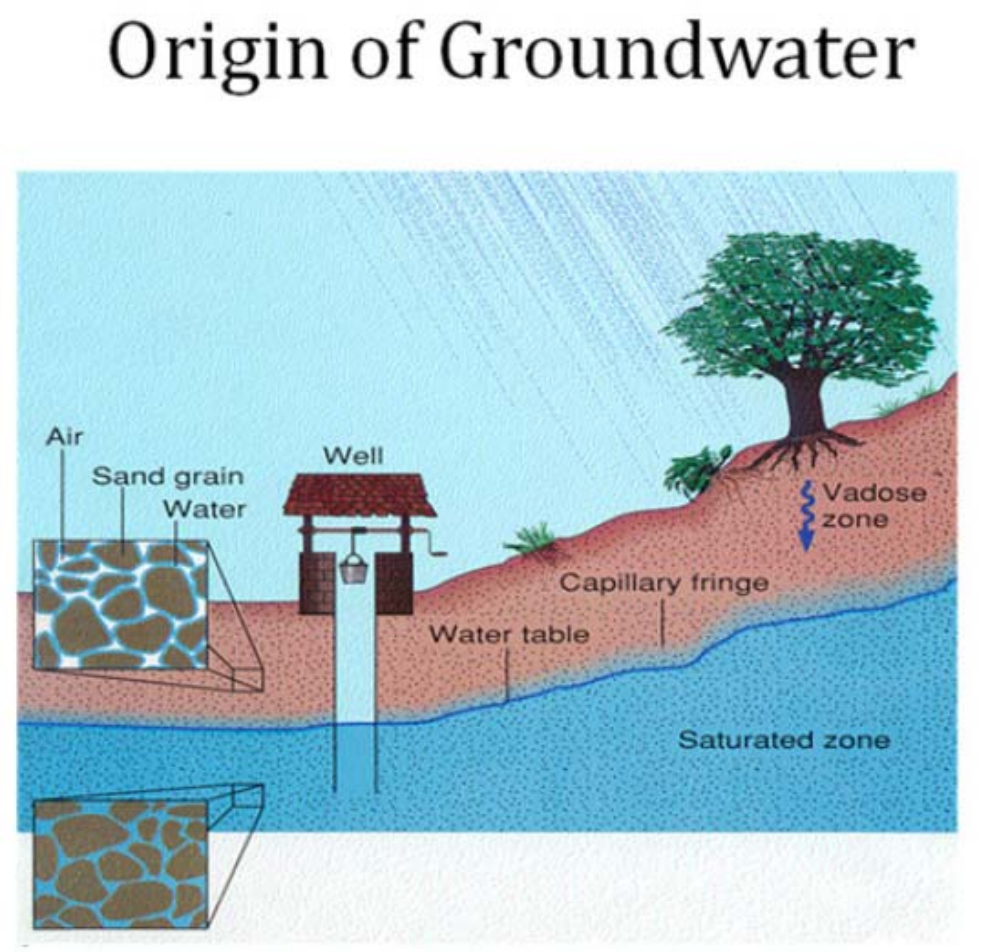
Water Issues:
Surface and Ground Water Quality and Quantity

- Water is Interconnected
- Surface Water: Siuslaw Estuary; Munsel and Ackerley Creeks; Marine
- Ground Water: the North Florence Sole Source Dunal Aquifer and Clear Lake

Water Issues: Water is Interconnected



Water Issues: Water is Interconnected



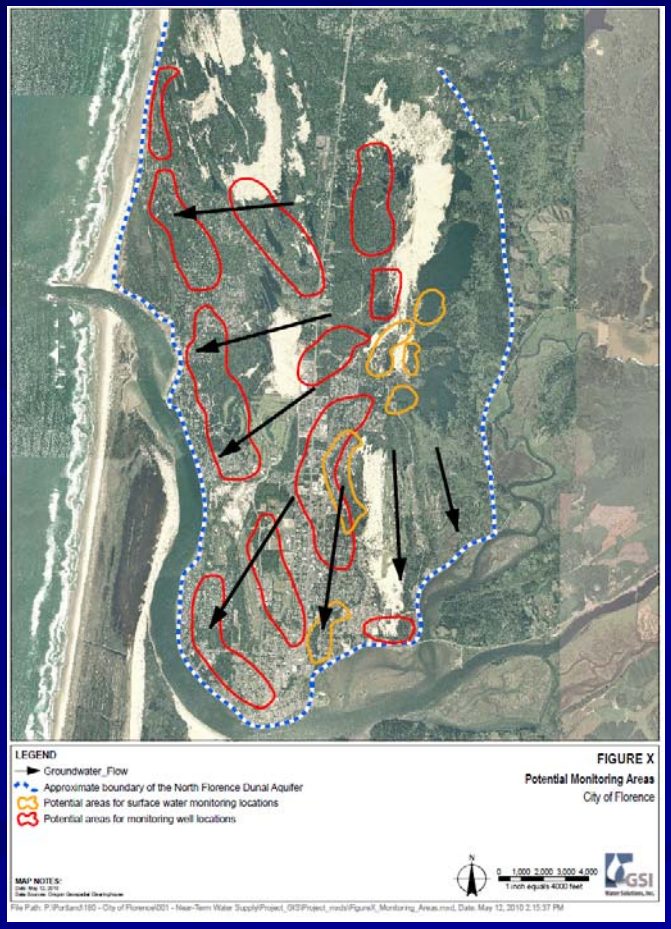
Surface and Groundwater Monitoring Program

- Monitoring protocols defined by EPA-approved “Quality Assurance Project Plan” (QAPP)
- Groundwater: 30 Monitoring Wells to be installed throughout aquifer (location to be determined with hydro-geologist); test for range of constituents and provide water level and flow data
- Surface water: monitoring wells around Clear Lake, stream flow gauges in Ackerley and Munsel Creeks, data loggers in creeks and estuary
- Compare to data collected by Confederated Tribes, Siuslaw Watershed Council, and Oregon Beach Monitoring Program

Ground Water Issues:
North Florence Dunal Aquifer

- Sole Source
- Highly susceptible to surface contamination:
  - shallow
  - highly permeable
- No comprehensive testing done in over 23 years (since 1987)

Surface and Groundwater Monitoring Program



Surface Water Issues: Munsel and Ackerley Creeks

- Provide habitat for fish and wildlife
- Highly vulnerable to development impacts
- No stream gauges to measure water levels, flow, and fluctuations
- No water quality data collected

Surface Water Issues: Stormwater Run-off

- Florence's high seasonal water table results in rainwater backing up to the land surface
- Storm runoff adds volume, velocity, and contaminants to surface waters
- Stream bank erosion and surface water pollution are possible outcomes, if not prevented by Best Management Practices (BMPs)

Surface Water Issues: Marine

- Heceta Beach contamination detected
  - Source of fecal contamination uncertain
- Water quality not currently monitored by the Oregon Beach Monitoring Program

Community Involvement

- Web Site: www.siuslawwaters.org
- Public Involvement Plan
- Stakeholder Groups and Interested Parties List
- Newsletters, Web Site, Targeted Outreach
- Public Open Houses
- Reports to Local Officials and Public Hearings
- Signs around Clear Lake
- Estuary Trail Vision

What's Good for Fish is Good for Florence

- Lane County Travel Generated Expenditures, 2008:
  - Shell fishing: $1,840,000
  - Fishing: $17,642,000
  - Hunting: $7,907,000
  - Wildlife viewing: $27,570,000
  - Combined: $54,959,000

Community Involvement

- Comment on the Guiding Principles by June 30, 2010
  - Tonight using Comment Forms
  - Via the web site Contact Us Page: www.siuslawwaters.org