


A Vision for Sustainable and Resilient Floodplains

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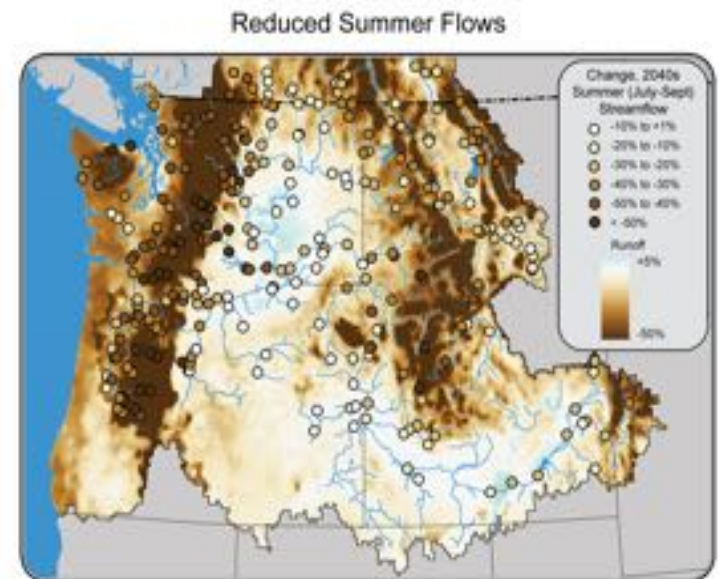
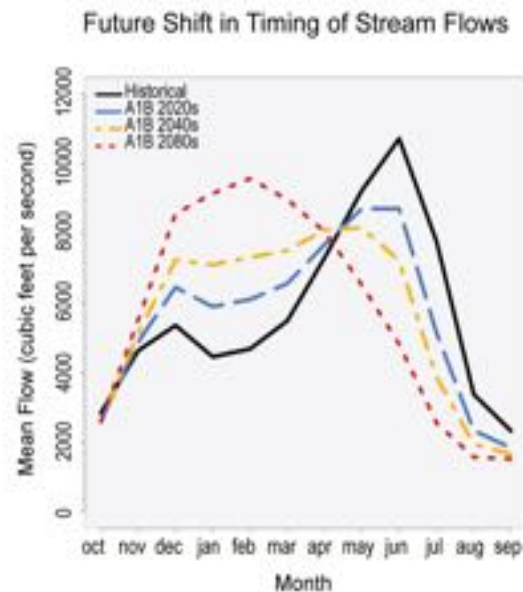


Gilbert White - Father of Floodplain Management

- ▶ 1936 - As a part of the federal government response to the Mississippi River flooding, Gilbert White said “land use planning was an effective alternative to reduce flood damages.”
- ▶ 1938 - He suggested that federal funds for constructing flood control dams in CA should not be authorized unless the state enacted legislation to control further encroachments on floodplains. The projects were built and Gilbert White was investigated as being “anti-American.”

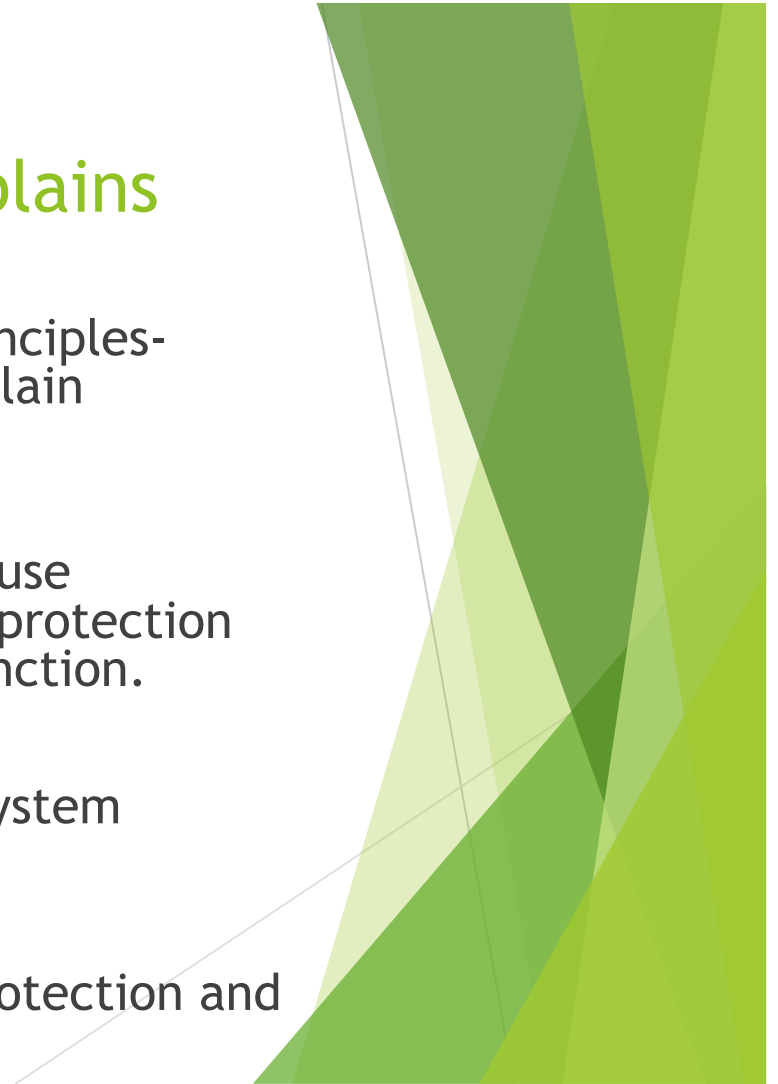
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- ▶ 1942 - Gilbert White's PhD dissertation - "Human Adjustment to Floods"
 - ▶ He characterized the prevailing national policy as *"essentially one of protecting the occupants of floodplains against floods, of aiding them when they suffer flood losses, and of encouraging more intensive use of floodplains."* He instead advocated *"adjusting human occupancy to the floodplain environment so as to utilize most effectively the natural resources of the floodplain, and at the same time, of applying feasible and practicable measure for minimizing the detrimental impacts of floods."*
 - ▶ 1966 - Requested to lead an Interagency Task Force by the Bureau of the Budget
 - ▶ *address dissatisfaction on the appropriations process related to flood control projects - he wanted the report to be focused on making the best use of floodplains, but that title was not acceptable, it became "Unified Program for Managing Flood Losses."*

Floodplain Management is not new.....but the time is now.... a healthy and resilient ecosystem has the ability to respond to the future and climate change.



4 Principles Sustainable and Resilient Floodplains

- ▶ Focus on Tribal First Foods/River Vision principles- provide a framework for a vision for floodplain management decisions.
- ▶ Improve land use planning and regulation; use incentives and opportunities for increased protection and restoration of floodplain ecosystem function.
- ▶ Modernize flood risk management for ecosystem functions.
- ▶ Design floodplains to address both flood protection and ecosystem services.



Tribal First Foods/River Vision Statement



“The Umatilla basin includes a healthy river capable of providing First Foods that sustain the continuity of the Tribe’s culture. This vision requires a river that is dynamic, and shaped not only by physical and biological processes, but the interactions and interconnections between those processes.”

First Foods



Improve Land Use Planning and Regulations; Use Incentives and Opportunities

- ▶ Avoid development of high risk areas
 - ▶ Use smarter planning and wise land use
 - ▶ Use high risk areas for open space
- ▶ Better/smarter regulations & land use
 - ▶ Map future, not Yesterday's flood - change mapping program!
 - ▶ Avoid cumulative flood rise—no floodway development
 - ▶ New buildings should be built well above flood level to compensate for higher flooding levels
 - ▶ Critical facilities must be accessible and operable during the 500 year flood event
- ▶ Provide incentives for locals who reduce flood risk - establish sliding cost share for disaster relief

Modernize flood risk management for ecosystem functions

- ▶ Halt or Minimize New Development in Floodplains and Wetlands
- ▶ Reconnect Streams with Floodplains
 - ▶ Identify locations to reclaim natural floodplain habitat and function.
 - ▶ Limit emphasis on structural flood plain controls; promote removal or set back of dikes and levees.
- ▶ Increase opportunities or incentives for development of conservation projects - irrigation efficiency, water transaction projects, shallow aquifer recharge (SAR) and restoration of natural floodplains.



Use Floodplains as Natural Systems to Reduce Flooding and Protect Natural Values

► Values of Floodplains

- Natural Flood and Erosion Control
- Surface Water Quality Maintenance
- Biological Productivity
- Groundwater Recharge
- Harvest of Wild and Cultivated Products
- Cultural, Aesthetic and Recreational Use Values

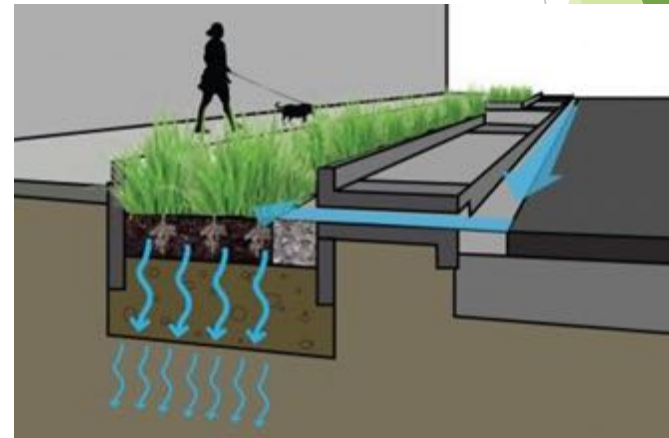
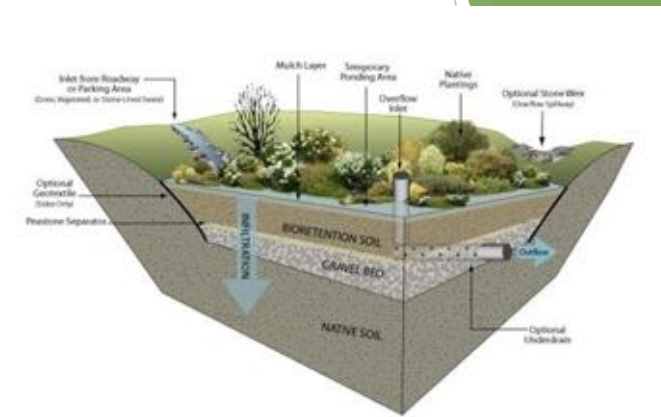


Use Floodplains as Natural Systems to Reduce Flooding and Protect Natural Values

- ▶ Manage resources and plan on a watershed basis
- ▶ Permanently restore and preserve flood-prone areas as open space, through land acquisition;
- ▶ Living next to open space demands a premium
- ▶ Development plans with ecological benefits gain stronger community support
- ▶ Green infrastructure provides great benefits

Green Infrastructure

In addition, provide benefits to urban floodplains, toxics reduction and human health



Confluence of Opportunities Right Now..... Let's All Work Together

- ▶ Columbia River Treaty
 - ▶ National Flood Insurance Oregon Biological Opinion
 - ▶ Columbia River Basin Leadership Tribal Leadership in Habitat Restoration (Columbia River Basin Accords)
 - ▶ Principles and Requirements for Federal Investments in Water Resources - White House
 - ▶ Focus on healthy resilient ecosystems and floodplains
- https://www.whitehouse.gov/sites/default/files/final_principles_and_requirements_march_2013.pdf

PSA - EPA Tools

- ▶ EPA Technical Assistance on Green Infrastructure
 - ▶ <https://www.epa.gov/green-infrastructure>
- ▶ EPA Smart Growth Program
 - ▶ Tools for disaster planning and community resilience
 - ▶ <https://www.epa.gov/smartgrowth>
- ▶ EPA Climate Change Tools and Adaptation Strategies
 - ▶ <https://www.epa.gov/climatechange>



**“Floods are Acts of Nature;
But Flood Losses Are Largely Acts of Man”**

Dr. Gilbert White

