



Washington
State Department of
Agriculture

Agriculture in the Floodplain: Opportunities for Collaboration

2016 Future of Our Salmon Workshop: August 16-18
Northern Quest Casino & Resort

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Floodplain conflicts in Washington started long ago



- Federal Policy: Encourage settlement of west as a new agrarian society
- Donation Claim Act 1850-1854
- Homestead Act 1862
- Reclamation Act 1902



Floodplains Preferred Areas for Settlement



- Rivers served as highways
- Flat ground and good soils conducive to agriculture
- Rivers made irrigated agriculture possible



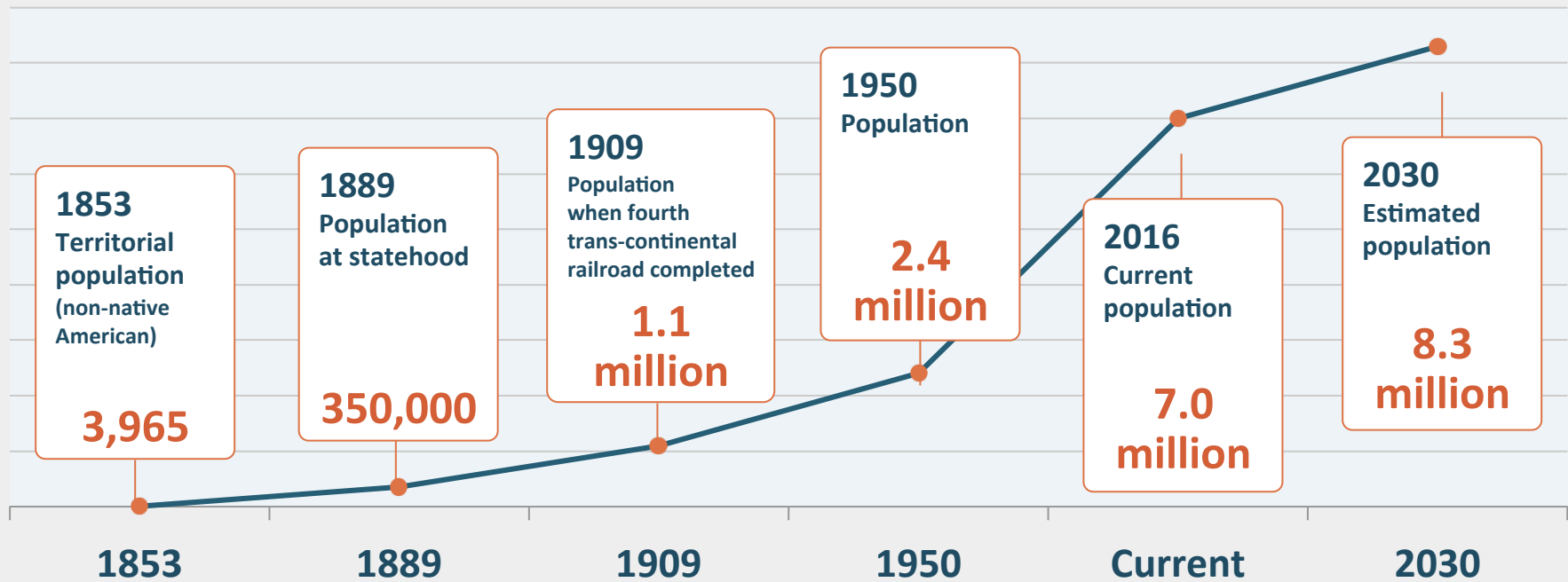
Influence of Railroads



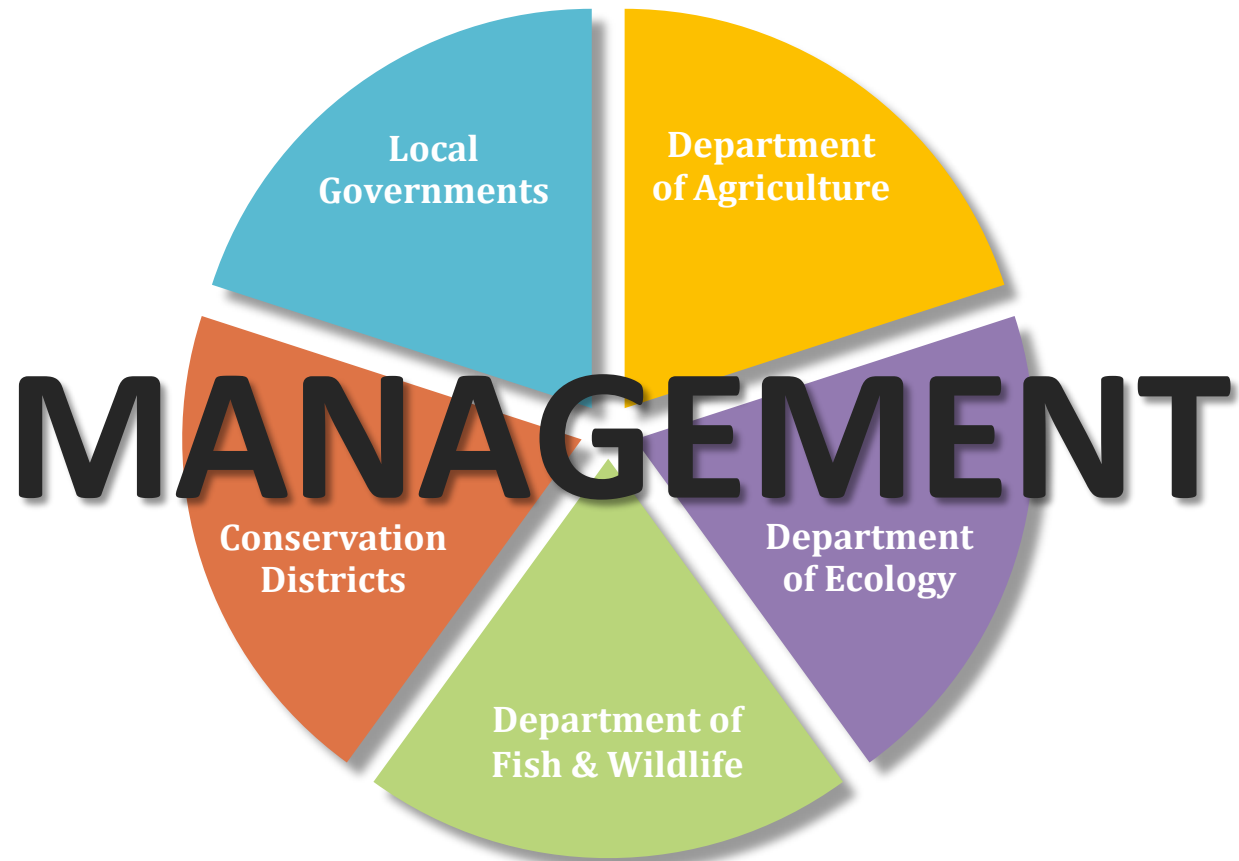
- Sought low-grade routes through floodplains
- Cities and towns grew around the rail lines
- Movement of goods and people made large scale agriculture possible
- Railroads sponsored land and irrigation development to build revenue
- Yakima Valley irrigated land \$40 to 50 per acre, dry land \$2.60 (1884)



Population Growth in Washington



Management of the Floodplain Fragmented



Washington Agriculture is not a Monolith



- Between 33,000 and 39,000 farms in Washington
- Over 300 commercially viable crops or commodities
- 21 state sponsored agricultural commodity commissions
- 40+ crop related organizations and 20+ livestock organizations
- Difficult to get consensus (groups/farmers) on measures to reduce the impacts of agriculture

Department of Agriculture Buffer Composition Pilot Program



- Collaborative effort in Whatcom County
- NOAA Fisheries, EPA, Whatcom Conservation District, Blueberry Commission, aerial pesticide applicators
- Compared sites with/without dense woody riparian vegetation
- Evaluated widths, plant height, species composition
- Looking for buffer configuration protective of salmon without creating economic hardship for farmers

Pilot Program Results



- Even small vegetated riparian zone (15 foot) drastically reduced water quality impacts from pesticide applications
- Resulted in lower water temperatures, reduced sedimentation, improved DO compared with non-vegetated buffers

Washington State's Voluntary Stewardship Program (VSP)



- Alternative approach for counties to address Growth Management Act requirements
- Involves a watershed-based, collaborative stewardship planning process
- Uses incentives-based practices for protecting critical areas and encouraging cooperation among diverse stakeholders
- First GMA program that involves performance monitoring and adaptive management

Yakima Basin Integrated Plan



Yakima Basin Integrated Water Resources Management Plan Initial Development Projects



Agricultural Conservation (2013-2017)

1. Kennewick Irrigation District (KID) Division IV Lining
2. Wapato Irrigation Project (WIP) Piping Lateral 4-414C
3. WIP Piping Satus East Lateral E73
4. Manastash Creek, Anderson Diversion Irrigation Water Acquisition
5. Manastash Creek Sprinkler Conversions
6. Yakima-Teton Irrigation District (YTID) Feasibility Study - Teton to Altatum Exchange
7. Manastash - Consolidated Pipeline & Manastash Water Ditch Association (MWDNA) Pipeline Construction
8. Teton Canal Headworks Improvement and Cowichee Creek Water Exchange.
9. Roza Irrigation District Canal Lining
10. KID Reregulation Reservoir Design
11. KID North Branch Canal Lining
12. WIP Unit 2 Upper Dam Rebuild and Lower Dam Removal
13. WIP Piping of Unit 2 L672
14. WIP Water Conservation Plan
15. City of Yakima Xeriscape Demonstration Project
16. Reed Pipeline Design

Fish Passage

1. Cle Elum Dam
2. Teton (Blmrock) Dam

Groundwater Storage

1. Upper Kittitas Aquifer Storage and Recovery
- Yakima City Aquifer Storage and Recovery

Structural and Operational Changes

3. Cle Elum Pool Raise
4. Keechelus to Kachess Conveyance

Surface Water Storage

1. Kachess Crought Relief Pumping Plant

Water Bank/Exchange Programs

Basin Wide

Habitat Enhancement (2013-2017)

1. Teanaway Acquisition
2. Toppenish Fan Habitat Restoration
3. Batsman Island Causeway Modification Conceptual Design/Outreach/Permitting
4. Bull Trout Habitat Improvements
5. Gold Creek Habitat Assessment and Conceptual Design
6. Reed Diversion design Barrier Removal
7. Little Rattlesnake Road Decommissioning
8. Cle Elum River Side Channel Restoration Project, Phase 2
9. Gap-to-Gap Property Acquisitions
10. Upper Wapato Riparian Restoration
11. Ellensburg Water Company / Coleman Creek Restoration
12. Reed Diversion Barrier Removal
13. Trout Meadows Acquisition / Enhancement
14. Manastash/ Little Naches Land Acquisition
15. Gap-to-Gap Outfall Relocation, Land Acquisition and Levee Removal design and Restoration
16. Cowichee Easement/Design
17. South Fork Teton Bull Trout Passage Feasibility and Design
18. Rivermile 89.5 Levee Beach
19. Island Road Floodplain Reconnection - Toppenish Creek
20. Wapato Reach - 3-way Levee Setback
21. Teanaway/Indian Creek Restoration
22. Teanaway Habitat Restoration
23. Upper Yakima Floodplain Acquisition and Design Finger Loop Road



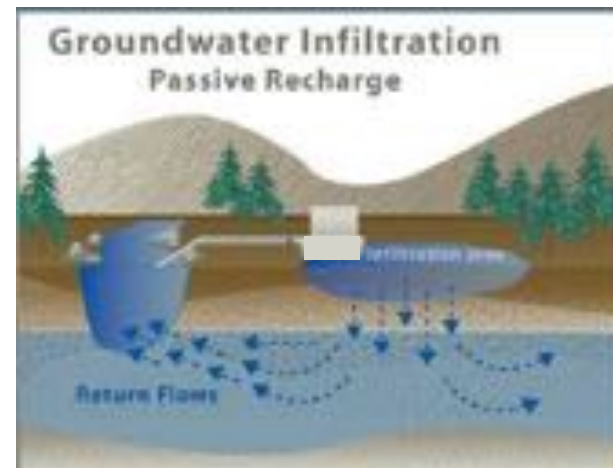
Integrated Plan, Short-Term Projects



Groundwater Storage Element



- Use surface water during periods of high runoff
- Recharge aquifers for later withdrawal
- Two distinct types



Recovery Concept



- Use water post-storage control in lieu of reservoir releases
- Recover by means of (as appropriate)
 - Wells
 - Drains
 - Passive recovery (let it discharge to streams)

Benefits



- Potential to increase carry-over storage
- Irrigation
 - Increased carry-over is hedge against drought the following year
- Aquatic resources
 - Increased carry-over increases effectiveness of juvenile passage out of reservoirs
 - Better spring outmigration conditions
 - Reduced high late summer flows
- Relatively low cost
 - Utilizes existing reservoir and conveyance facilities as much as possible

Conclusion



- Development of floodplains evolved over a long period of time, still evolving
- Consensus regarding solutions to floodplain problems can be hard to achieve
- Solutions can be difficult/expensive to implement
- To be successful, must foster leadership among stakeholders that makes collaborative, win/win scenarios possible
- Requires tenacity, willingness to understand all sides of an issue



Questions?

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