

Kootenai County Water & Land: The Surf and Turf of Sealing the Deal June 14, 2022



Introduction Part I

Kristin Lowell

Idaho Department of Environmental Quality

Some slides compliments of River Design Group



Idaho's Water Resources are the Lifeblood of Our Quality of Life and Economy



People Want to Live and Play Here!



- Kootenai County is one of the fastest growing counties in Idaho
- There are over 12,000 acres of private waterfront property
- Kootenai County is the #1 boating destination in Idaho
- Power boat spending alone brings approximately \$335 million annually to Kootenai County



All of the earth's water



97.5% salt water



2.5% fresh water



2.475% frozen in glaciers



0.025% useable to humans

Idaho Is So Fly

Panhandle Region: 5,414 miles of fishing

Anglers annually generate approximately:
\$548,000,000 in statewide retail sales
\$15,000,000 for fishing licenses



N. Idaho Cold Water Aquatic Life (trout and salmon)

- Aquatic Life in N. Idaho depends on **cold water, clean substrate, and complex habitat.**
- Sustainability of these conditions is directly related to what we do on the landscape.



Stream/River Erosion: A Natural Process

- Streams are in a balance between flow and sediment transport.
 - A change in one will affect the other
- An imbalance will lead to:
 - Excessive flow = cutting down and/or excessive lateral erosion.
 - Excessive sediment = building up or deposition.



Importance of Stream Meandering

- Natural form of unconfined rivers.
- Allows for erosive energy to be dissipated.
- The fastest water is on the outside of the bend.
- Slope increases energy.



Importance of a Healthy Riparian Area

The vegetated ecosystem immediately adjacent to streams, rivers, and lakes that are essential to maintaining:

- cold, clean, clear water
- bank stability
- energy dissipation
- shade, cooler temperatures
- habitat for fish



Riparian Area Removal

- Excessive lateral erosion/property loss
- Increased water temperature
- Lack of cover/habitat for fish
- Pollution from runoff



Cold, Clean, Clear?



Cold, Clean, Clear?

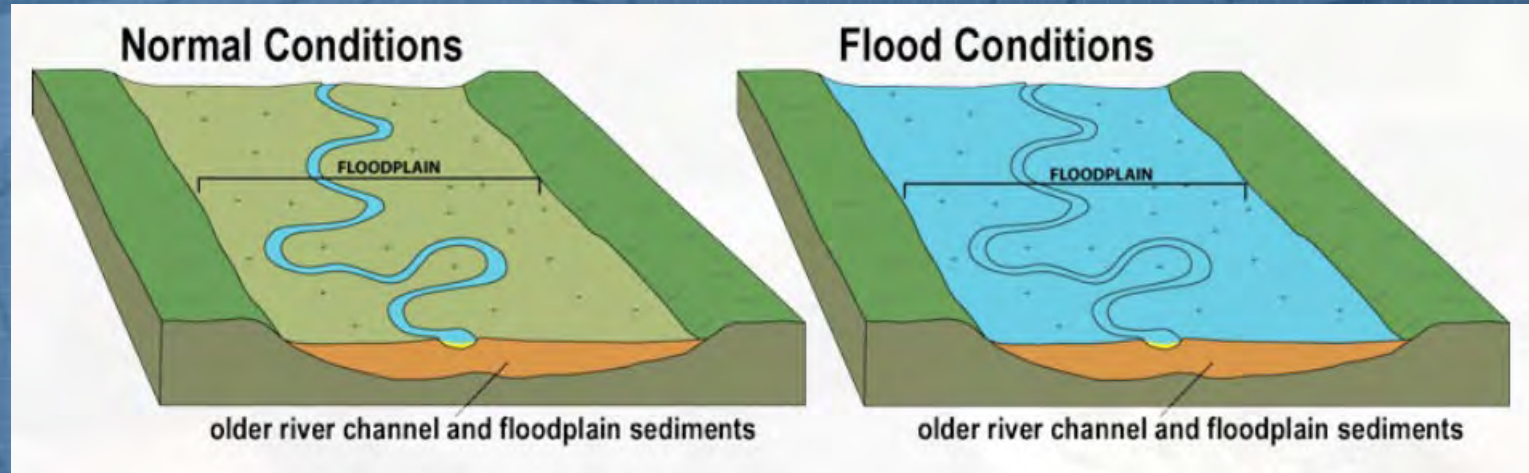


Cold, Clean, Clear?



Importance of Floodplains

- Dissipates stream energy
 - Reduces bank erosion
- Storage of floodwaters
 - Groundwater recharge
- Storage of Sediment
 - Introduces nutrients and topsoil to the floodplain
- Without proper floodplain connectivity, flow is forced to stay in the channel causing more erosive flow.



Effects of Channel Straightening

- Increased velocity of water in the stream channel.
 - Steeper slopes will increase velocity more.
- Faster water erodes the stream vertically (downcutting).
- Loss of floodplain connectivity
 - Lack of flooding = water table drops which is necessary for streambank plant survival.



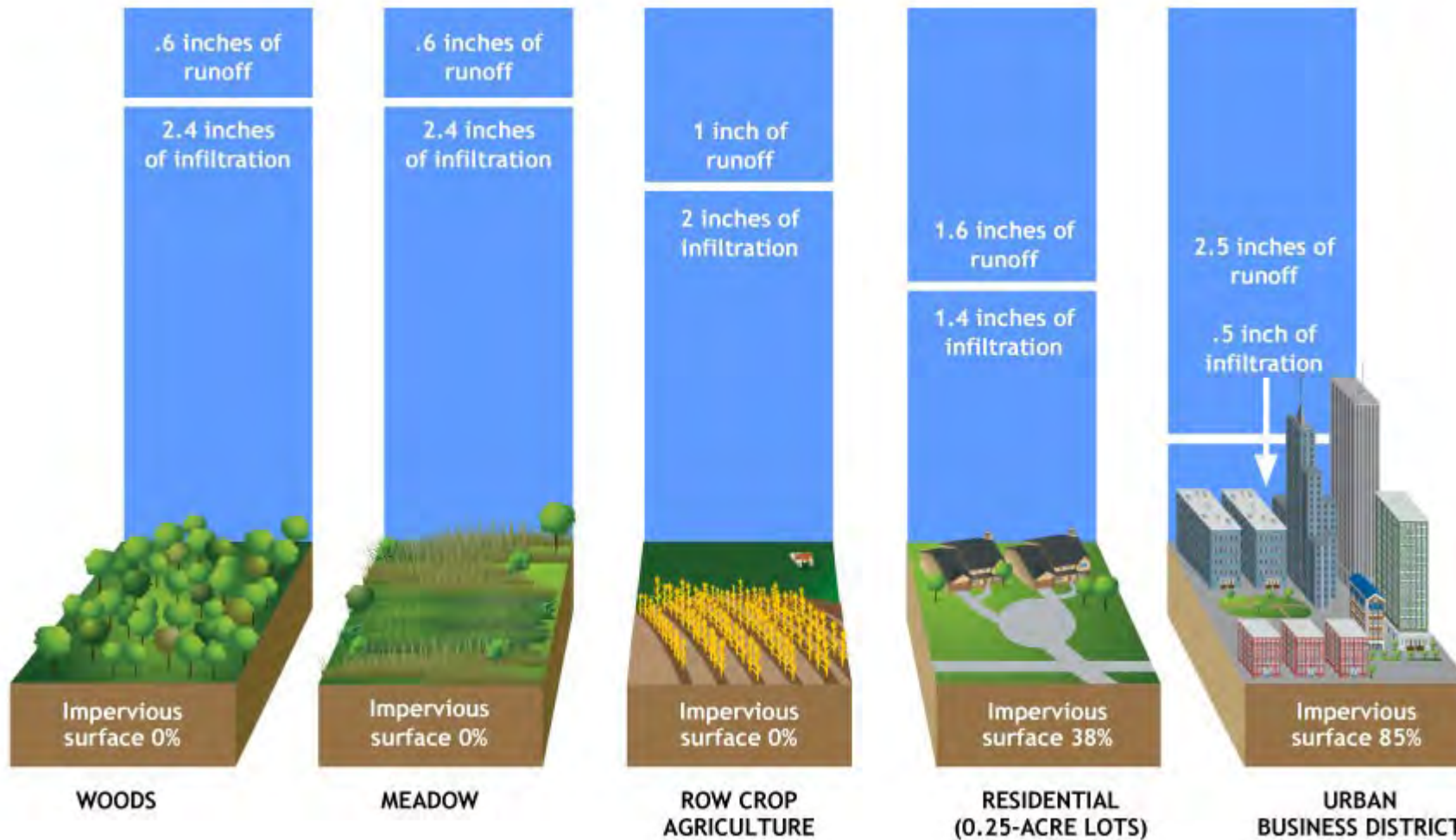


Common Opinion = Flooding is bad

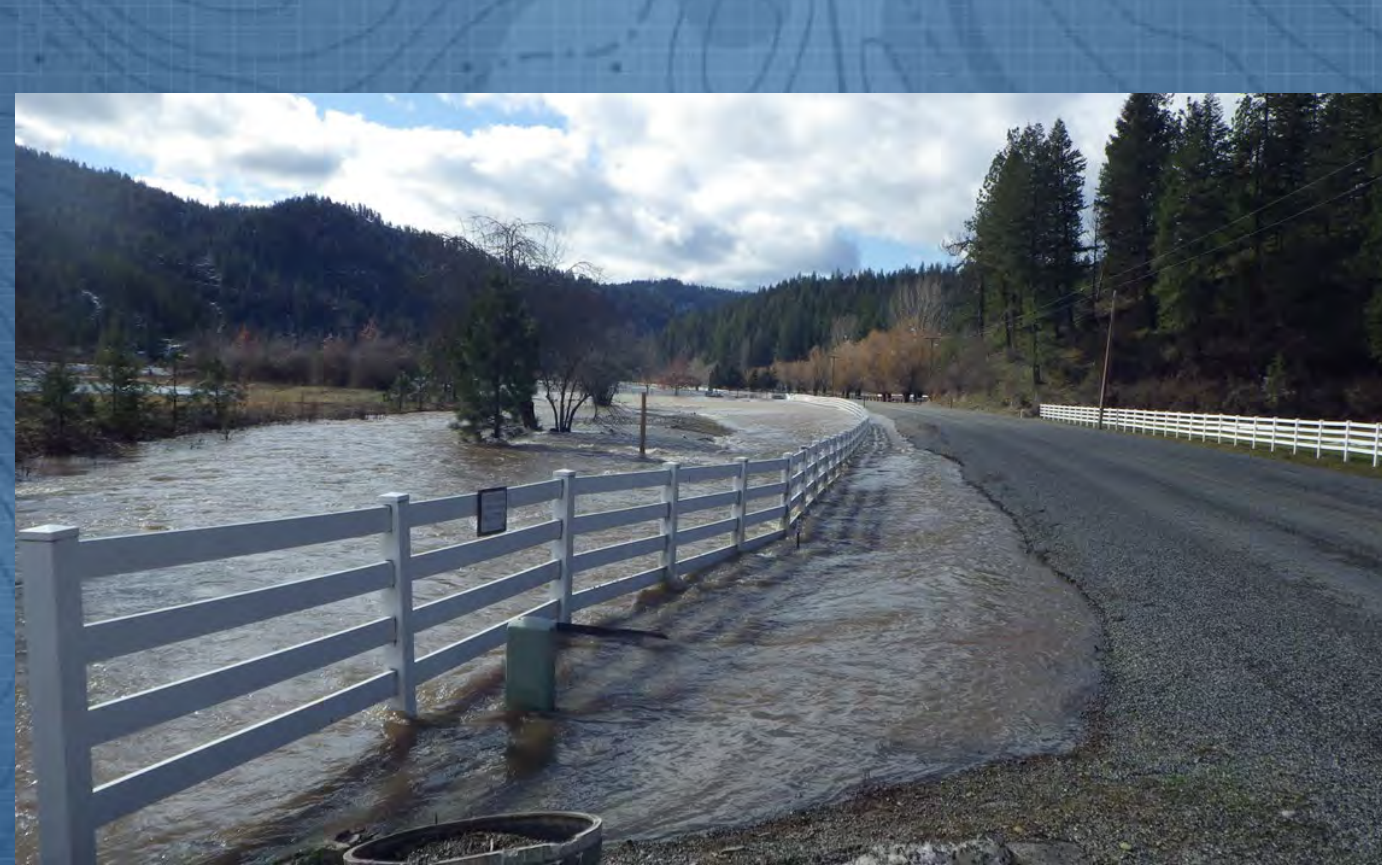




Effects of Development: Increased Runoff/Peak Flow



Increased Peak Flow= Increased Channel Erosion and/or Increased Flooding



Increased peak flow may lead to road and culvert failure



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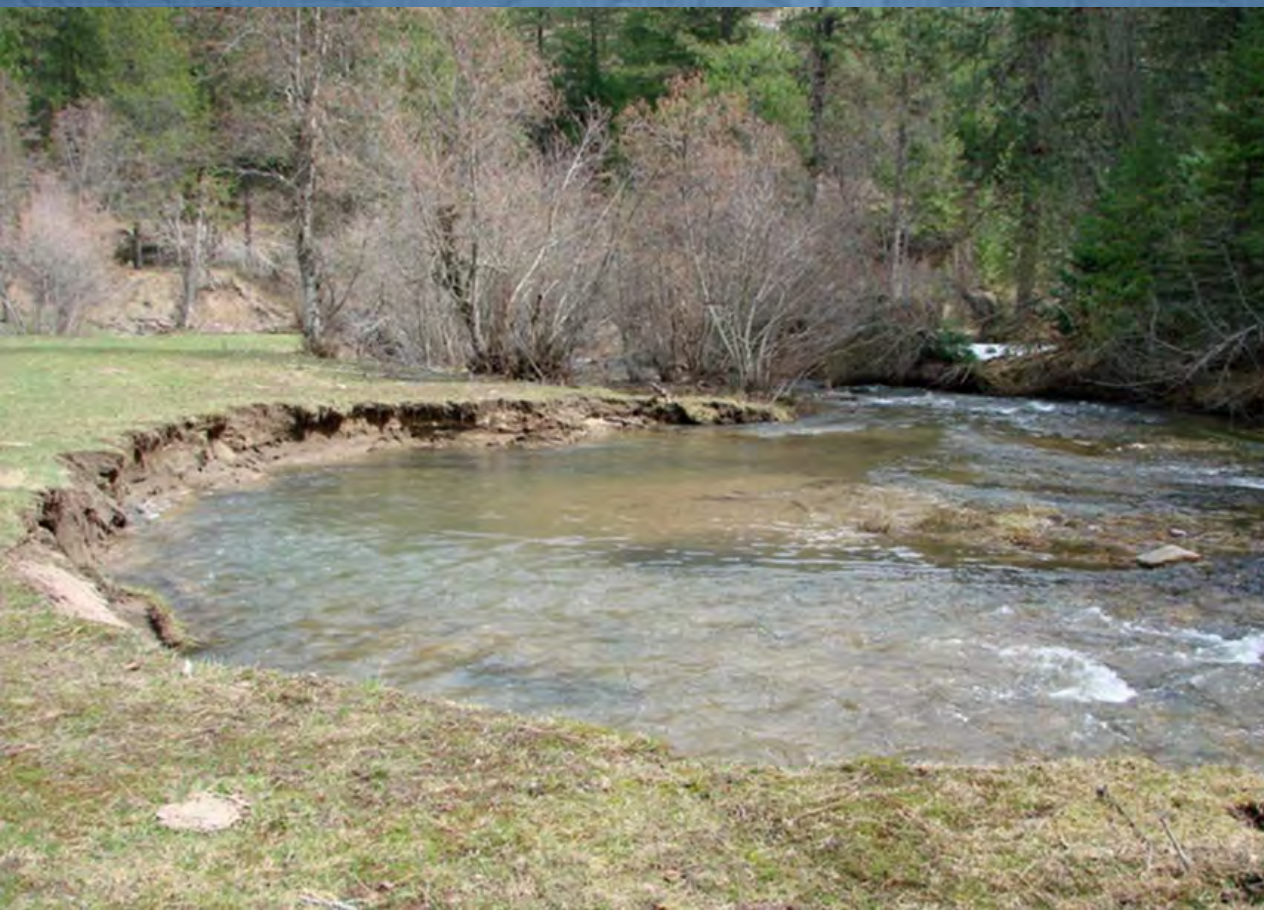
Cold, Clean, Clear?





Stream Restoration
is Expensive!

Stream Restoration is Expensive!



More about lakes . . .



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Lakes and Wave Action

- Lake shorelines receive a tremendous amount of wave action from wind and boat wakes.
- The shoreline's defense against the force of waves is stability provided by plants.
 - The deeper the root system the better the stability
- Lakeshore homeowners are replacing native plants with turfgrass which has short root system and provides poor stability against wave action



Michigan State University



Lake Shoreline Development



Harmful Algal Blooms

CAUTION **Harmful Algal Bloom**

Do not go in or near water with:

- an unusual color
- a scummy, thick mat
- an unpleasant odor or stench
- the appearance of paint spilled on it



AVOID WATER CONTACT

Keep pets and livestock away
Clean fish well and discard guts

**In case of algae contact, call
your doctor if you have:**

- skin rash
- vomiting
- eye irritation
- diarrhea
- nausea
- numbness



For more information:
scan this code

For health questions contact:

Panhandle Health District
(208) 415-5200

For water quality information contact:

 Idaho Department of Environmental Quality
(208) 769-1422
www.deq.idaho.gov (Search harmful algal bloom)

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