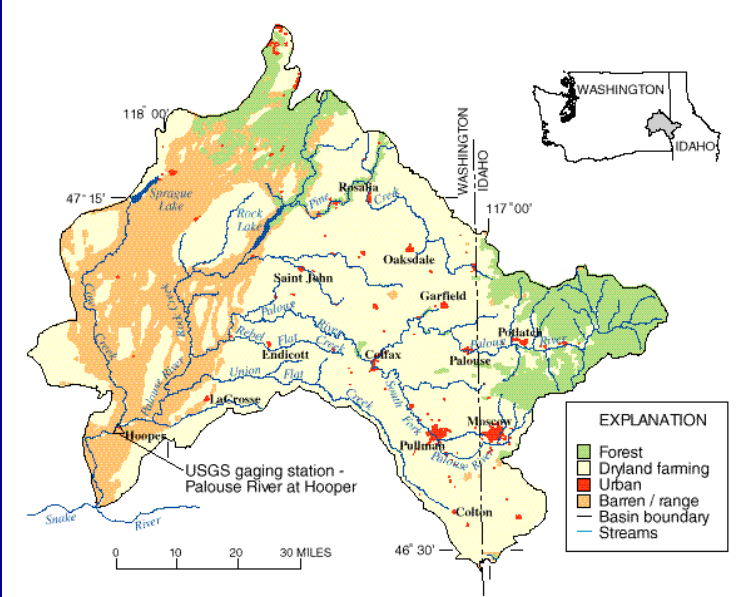


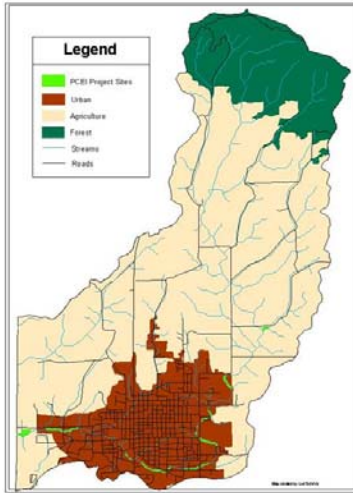
Planform and Restoration Design on Paradise Creek

Erik Ryan
TerraGraphics Environmental
Engineering
Moscow, ID

Project Location



Paradise Creek Watershed



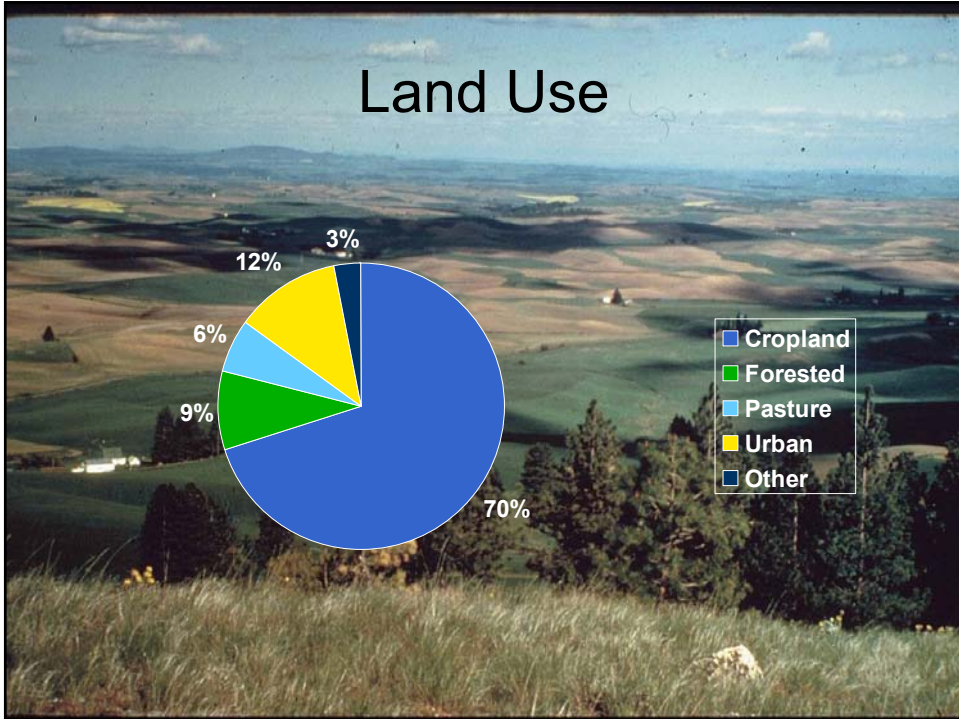
- 34.5 square miles
- 19 linear miles
- Mean Annual Precipitation – 24 in
- Mean Annual Evaporation – 37 in
- Six Fish Species

Threatened and Endangered Species

- Animals
 - Peregrine Falcon
 - Ferruginous Hawk
 - Swainson's Hawk
- Plants
 - Palouse Golden Rod
 - Spalding's Silene
 - Broad-Fruit Mariposa



Land Use



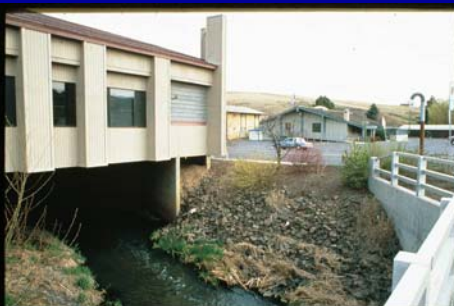
Agricultural Lands



Urban Areas

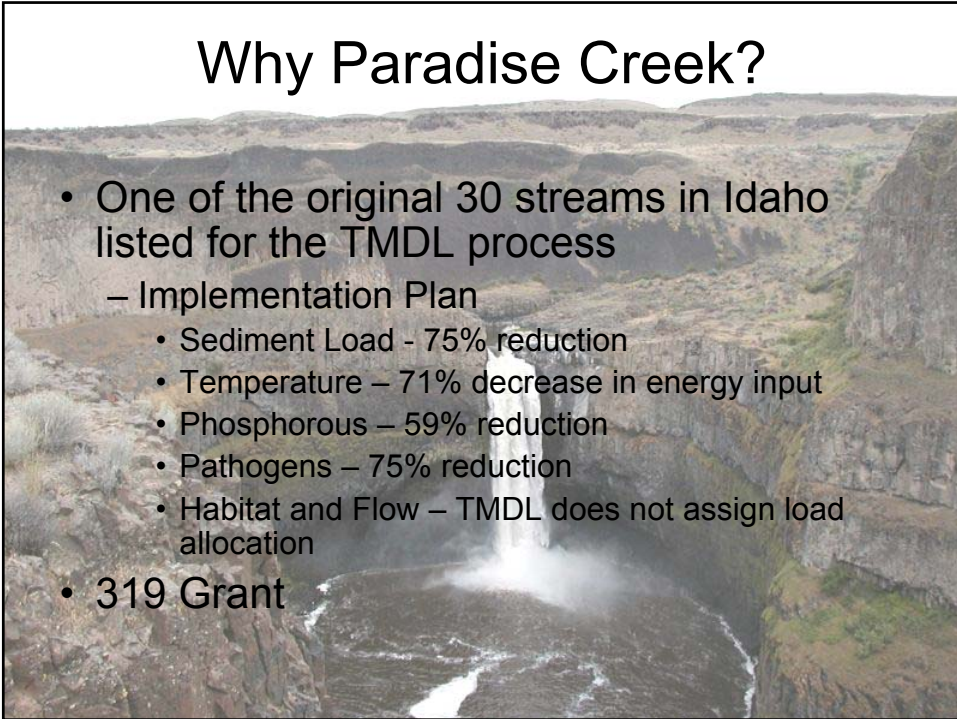


Urban Areas



Why Paradise Creek?

- One of the original 30 streams in Idaho listed for the TMDL process
 - Implementation Plan
 - Sediment Load - 75% reduction
 - Temperature – 71% decrease in energy input
 - Phosphorous – 59% reduction
 - Pathogens – 75% reduction
 - Habitat and Flow – TMDL does not assign load allocation
- 319 Grant



Typical Stream Conditions

- Cohesive soils with clay subgrade
- 2 year return interval – 200-300 cfs
- Baseflow <5 cfs
- Velocity – 3-4 ft/s
- Shear < 1 lb/sq ft
- Slopes <1%





Carol Ririe Brink Park

- Remeandered stream through city property
- Lowered floodplain
- Installed habitat/bank structures



Permitting

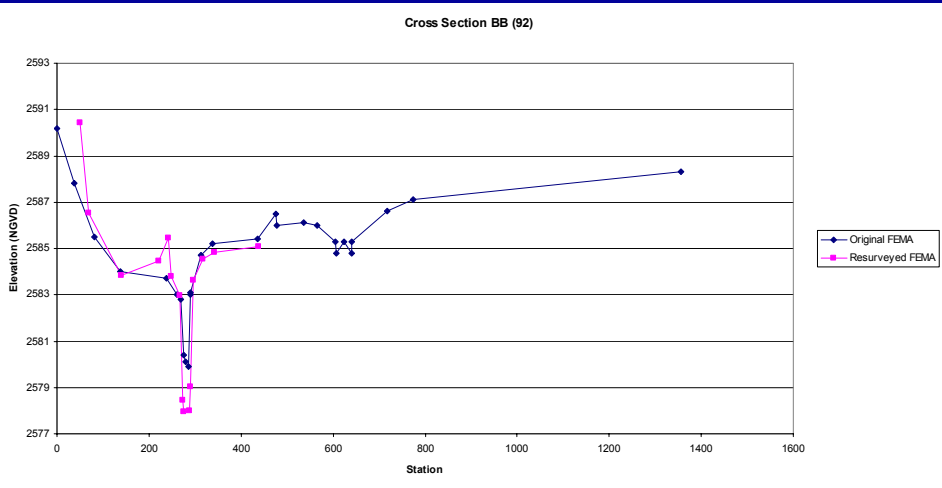
- 404

- ID Stream Alteration



Permitting

- FEMA No Rise



Wetlands



Construction



Volunteers

