

## Notes on Applegate channel widths

### Key findings:

- Widths reflect periods of flooding and low peak flows
- 1991 and 1939 proceeding 10+ years of relatively dry seasons: 1991 increase in width due to removal of functioning side channels and wetlands \* May indicate current minimum achievable width
- Expect future widths to be dependent on time proximity to flooding – Hardwoods colonize during dry periods and scoured during floods
- Channel relocation – changes in sinuosity and positioning

### Mechanisms keeping system unstable

- Dam altering annual peak flows - Bankfull event from 5750 to 2260 cfs; Number of bankfull days increased. \*\* Reducing bankfull discharge reduces water conveyance capacity of channel as bankfull channel cross sectional area drops, leading to large adjustments during flood years.
- Loss of sloughs, side channels and floodplain connectivity
- Mining and AG management

### Distribution of reaches

- Identified adjustable non- adjustable reaches. Primarily based on confinement. Labeled as Rosgen B and C. The delineation closely tracks where the AG degraded or incised and aggraded.
- Reaches identified as confined or B channel types - current widths can be expected to remain relatively static. Could use these as targets.
- Unconfined reaches: Channel widths variable, channel location variable

### Model notes:

- Suspect water temps always warm in mainstem; summer flows were much less than today. Model 1940 widths see how temp comes out.
- Although historically water warm, cold water refugia existed in and around log jams, wetlands, side channels. Only way to improve cold-water habitat – create functioning floodplains and associated features.