

ES407 Seminar Outline

Title: Geomorphic Effects of Dams on Rivers in the Pacific Northwest: Implications for Environmental Management

I. Day I

- a. Introduction (Jessica / Chandra 10-15 minutes)
 - i. Purpose of Dams
 - ii. Types of Dams
 - iii. Dam Construction History in US
 - iv. Overview of Environmental / Social Issues
 1. Relicensing / FERC
 2. Management / Decommissioning / Removal
 3. Social / Environmental Costs
 - v. Sources of Info for Introduction
 1. Jessica's Workshop Powerpoint
 2. Graf (1999) Dams in US
 3. Martin et al., 2003 (EOS)
 4. Grant (2001) – Hydrological Processes
 5. Heinz Center (2002) – Dam Removal Book
- b. Geomorphic Effects of Dams and Controlling Variables (35-40 minutes total)
 - i. Discharge and Sedimentation (Budnick)
 1. Water Discharge / Hydrograph effects
 2. Sediment discharge effects
 3. Erosion / sedimentation
 4. Sources:
 - a. Brandt, 2000
 - b. Grant et al., Dam Workshop materials
 - c. Grant et al. (2003) paper
 - ii. Climate and Geology (Jamie / Josh)
 1. Geomorphic Variables
 - a. Bedrock geology/ tectonics
 - b. Channel type (bedrock vs. alluvial)
 - c. Slope/gradient
 - d. Drainage network / drainage density
 - e. Groundwater / surface water influence
 2. Climate Variables
 3. Sources:
 - a. Dam workshop materials
 - iii. Biologic Response (Chandra)
 1. Riparian plants
 2. Fish
 3. Sources
 - a. Dam workshop materials
 - b. Heinz Center (2002) Dam Removal Study

- II. Day II
 - a. Case Study Examples (Andy, Mark; 20 minutes total)
 - i. Deschutes River
 - ii. Clackamas River
 - iii. White River
 - iv. Sources
 - 1. Wampler / Dam Workshop Materials
 - 2. Fassnacht (2003)
 - 3. Other ???
 - b. Dam Removal Issues / Overview of Environmental Problem (Jessica: 15-20 min)
 - i. Sources
 - 1. Heinz Center (2002) Study
 - c. Conclusion / Synthesis (Taylor, 10 minutes)