Watershed Assessment, River Restoration, and the Geoscience Profession in Oregon

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• Introduction
• Oregon Geologist Licensure
• Watershed Projects and Licensure
• Conclusion
Introduction
Geoscience in the U.S.

Scientific history rooted in the study of rivers

John Wesley Powell: 1869 tour of Grand Canyon

- 1881 appointed second director of USGS
- Geologic studies and topographic mapping
- Investigations of rivers and water resources

Georef Citations: Keywords “river or fluvial”

>198,000 entries dating back to 1801 (AGI, 2007)
Oregon Plan (OWEB) Outcomes

- >90 assessments since 1999
- ~$180,000,000 in restoration
- 65 projects/1000 km river length

(K. Bierly, (OWEB); Bernhardt et al., 2005)
What are the licensing requirements for professional registration?

What is the role of geoscience in river restoration practice?
Oregon Geologist Licensure
Oregon Board of Geologist Examiners

- Licensing laws enacted in 1977 (ORS 672.505 to 672.991)
- Board mission: to “safeguard the health and welfare and property of the people of Oregon”
- “…safeguards are in the fields of geology as related to engineering, ground water, land use planning, mineral exploration, geologic hazards, and other matters of the state”
Who Are We?

- Semi-independent board / Governor-appointed
- Fee supported / self-sustaining
- 4 professional members, 1 community member, State Geologist serves ex officio
Organizational Functions

- License Registrants and Screen Applicants
  - Experience & Education
  - Standardized Examinations
- Compliance
- Interpret Statutes (ORS)
- Promulgate Rules (OAR)
- Consult with Attorney General’s Office
Certifications

- Geologist-in-Training (GIT)
- Registered Geologist (RG)
- Certified Engineering Geologist (CEG)
Licensing Requirements

University Study
- Geology-related degree or 45 quarter hrs of geoscience

Fundamental Geology Examination
- Minimum: 70% passing score on nationally standardized exam (ASBOG Exam)

Work Experience
- 5 years post-bac. experience

GIT
- Minimum: 70% passing score (ASBOG Exam)

Practice Geology Examination
- Engineering Geology Examination

RG

CEG
Standardized Testing
Association of State Boards of Geology

- 28 States and Puerto Rico
- Oregon founding member since 1990
- Council of Examiners meets twice annually to review Fundamental and Practice Exams
Compliance

- **Common Complaints**
  - Practice without a license
  - Unstamped work products
  - Poor quality workmanship
  - Fraud, negligence, deceit
  - Avg. ~8-10 cases/year

- **Enforcement Actions**
  - Letter of concern
  - Peer review and mentoring
  - Civil penalties (max $1,000 per violation)
  - License revocation
Exemptions from Oregon Geology Licensing Laws

- Individuals preparing reports of existing documents and acting as scriveners
- Federal employees working on employment-related projects
- University professors working on employment-related teaching and research
- Private citizens providing testimony at public hearings as part of their free-speech rights
Watershed Projects and Geology Licensure
Watershed Systems

- Characterized by geology, landforms, and climate
- Affected by local biotic and abiotic influences
- Comprised of multivariate subsystems with interdependent process-response mechanisms

Watershed Assessment Objectives

- Identify features and processes important to fish habitat
- Determine the influence of natural processes
- Understand human activities and evaluate effects of land management

River management projects require a multi-disciplinary team approach

Watershed Project Activities Involving the Practice of Geology

- Map / air photo interpretation of geologic features
- Geologic and geomorphic mapping
- Geomorphic analysis (processes and landforms)
- Interpretation of the geologic record
- Hydrogeology and aquifer characterization
- Engineering geology (erosion and slope stability)
- Evaluation of geologic hazards
Conclusion

• River management projects require a multi-disciplinary team approach with a diverse array of specialists (represented here today)

• Under Oregon state law, geologic components of watershed projects require a registered geologist or engineering geologist

• Given the inherent overlap between natural resource disciplines, OSBGE recognizes the need for professional alliances to ensure public welfare … outreach and discussion is a key component
Contact OSBGE

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