

Informed Consent
Stream Restoration Education and Professional Development
Practitioners Survey
Distributed by the Colorado Riparian Association
April 5, 2010

This survey is intended for those in the Stream Restoration community. Other professionals with knowledge of stream restoration practice are welcome to participate. Thanks in advance!

The goal of the survey is to evaluate the knowledge appropriate for the *practice* of stream restoration. The survey also asks your opinion on related issues such as the educational location and format and the role of professional certification. We hope that the survey will better inform discussion and planning of stream restoration training.

The survey results will be made available on the web, submitted for publication, and presented at conferences (e.g., American Society of Civil Engineers World Water and Environmental Resources Congress, American Society for Engineering Education Annual Meeting, Regional Stream Restoration conferences). Your assistance is greatly appreciated.

Directions:

Should you agree to participate please:

1. Remove the **top copy** of this cover letter/consent form and keep for your records.
2. Sign the **second copy** of the cover letter/consent form and submit with completed survey.
3. Complete the survey and fax or email to Sue Niezgoda Ph.D., P.E., Assistant Professor of Civil Engineering at Rose-Hulman Institute of Technology. The fax number is (FAX: 812-877-8440) and the email address is (EMAIL: niezgoda@rose-hulman.edu).
4. Deadline for this round of the survey is **Friday, May 14, 2010**

The risks associated with your participation are minimal. The benefits of your participation are an increased understanding of the current and future state of stream restoration education and professional development. You are under no obligation to participate. If you agree to participate, you should skip any items that you cannot comfortably answer. You may also discontinue your participation at any time, and you will suffer no penalty for doing so.

If you have any further questions about this study and your participation, you may contact Sue Niezgoda, office phone: (812) 877-8814. If you have any questions about your rights as a research subject, contact Rose-Hulman Institute of Technology's Institutional Review Board, (812) 877-8414, throne@rose-hulman.edu.

Please note, if you have already received and taken this survey in a different form (hardcopy or online), please do not complete a second time.

Your signature below indicates (a) that you have read the above information describing your rights and responsibilities as a participant, (b) that you are at least 18 and have freely chosen to participate in this project, (c) that you have been given a copy of this consent form to keep, and (d) that all questions have been answered to your satisfaction.

(top copy)

Signature of Participant

Date

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DEMOGRAPHIC INFORMATION

We first want to collect some information about your background:

- 1) Please indicate the stream restoration discipline that **best** characterizes your area of expertise (we realize that restoration is multi-disciplinary, and that it may be difficult for you to chose just one area below, but we would appreciate it if you could just identify the **one** area that most represents your area of expertise)?

Fisheries Biology	_____
Construction Management	_____
Ecology	_____
Engineering	_____
Environmental Science	_____
Fluvial Geomorphology	_____
Forestry	_____
Hydrology	_____
Landscape Architecture	_____
Project Management	_____
Other	_____

If you chose "other" above, please specify: _____

- 2) What category would you say **best** describes your level of expertise in your area of stream restoration practice?

Expert - 8+ years of experience	_____
Expert - 4 to 8 years of experience	_____
Mid-level - 2-4 years of experience	_____
Entry-level - less than two years of experience	_____

- 3) What sector **best** represents your primary work area?

Academia	_____
Federal Government	_____
Not-for-Profit	_____
Private Consulting	_____
State, Local, or Tribal Government	_____
Other	_____

If you chose "other" above, please specify: _____

- 4) What category **best** describes your professional responsibilities in stream restoration?
 (we realize that your work is multi-faceted, and that it may be difficult for you to chose just one category below, but we would appreciate it if you could just identify the **one** professional category that **best** represents your responsibilities)?

Design _____
 Implementation _____
 Monitoring/Assessment _____
 Operations/Maintenance _____
 Project Management _____
 Regulatory Review _____
 Research _____
 Teaching _____
 Other _____

If you chose "other" above, please specify: _____

- 5) In what region of the U.S. is **most** of your work conducted?

Alaska (AK) _____
 Mid-Atlantic (DE, MD, NJ, PA, VA, WV) _____
 Northeast (CT, MA, ME, NH, NY, RI, VT) _____
 Northwest (ID, MT, OR, WA, WY) _____
 Southeast (AL, AR, FL, GA, KY, LA, MS, NC, SC, TN, VA) _____
 Southwest (AZ, CA, CO, KS, NM, NV, OK, TX, UT) _____
 Upper Mid-West (IA, IL, IN, MI, MN, MO, OH, ND, NE, SD, WI, WV) _____
 Hawaii (HI) _____
 Other _____

If you chose "other" above, please specify: _____

- 6) Please estimate the percentage of your academic training in stream restoration that was completed in the following settings (total should equal 100%):

College/university courses (part of a B.S., M.S., or Ph.D. curriculum) _____
 College/university courses (part of continuing education) _____
 Conference or professional society seminars/presentations _____
 Half-day to two-day short courses _____
 Three-day to week-long (or longer) short courses or institutes _____
 Other _____

If you chose "other" above, please specify: _____

STREAM RESTORATION BODY OF KNOWLEDGE

Stream restoration is multi-disciplinary in nature, and as a result a suggested body of knowledge has been broken down into the five general areas below. Prior to this survey, stream restoration experts in private practice, federal government, and academia were asked to identify what they felt were essential topics in each of the five areas. Most agreed that a core of topics typical of the following is essential for stream restoration practitioner with a minimum level of competence to assess, plan, regulate, design, or build restoration projects.

Physical Processes (Fundamentals)

- Watershed Processes/Hydrology
- Open Channel Hydraulics
- Geomorphology
- Sediment Transport

1) To what extent do you agree with the above list of physical processes topics? (circle response)

Strongly Agree *Agree* *Disagree* *Strongly Disagree*

Ecological and Biological Processes (Fundamentals)

- Stream Ecology
- Habitat Structure and Function
- Fish and Wildlife Biology
- Botany/Riparian Vegetation Dynamics

2) To what extent do you agree with the above list of ecological and biological processes topics? (circle response)

Strongly Agree *Agree* *Disagree* *Strongly Disagree*

Stream Restoration Assessment and Monitoring

- Surveying
- Watershed Analysis
- Geomorphic/Habitat Assessment
- Biomonitoring/Bioassessment

3) To what extent do you agree with the above list of assessment and monitoring topics? (circle response)

Strongly Agree *Agree* *Disagree* *Strongly Disagree*

Restoration Design

Design Approaches/Fundamentals
Alternatives Development and Analysis
Analytical Techniques (e.g., hydraulic/sediment transport modeling, bank mechanics/erosion)
Ecohydraulics

4) To what extent do you agree with the above list of design topics? (circle your response)

Strongly Agree *Agree* *Disagree* *Strongly Disagree*

Restoration Project Management

Project Development
Risk and Uncertainty
Communication
Construction Management/Implementation

5) To what extent do you agree with the above list of management topics? (circle your response)

Strongly Agree *Agree* *Disagree* *Strongly Disagree*

6) If you feel strongly that core topic areas are missing from the above proposed body of knowledge, please list in order of importance up to five additional topics that you feel are essential for a minimum level of competence for a practice-oriented stream restoration professional.

- (1) _____
- (2) _____
- (3) _____
- (4) _____
- (5) _____

7) To help us further identify the type of course that should be offered, please indicate the minimum level of learning for a stream restoration professional taking a course in the given topic. Please use the scale below to indicate your response.

- (1) Students should be able to **Define** key aspects of this topic area
- (2) Students should be able to **Explain** key concepts and problem solving processes in topic area
- (3) Students should be able to **Apply** knowledge **and Solve simple problems** in this topic area
- (4) Students should be able to **Analyze** complex systems or processes in this topic area
- (5) Students should be able to **Design** a complex system **or Create** new knowledge in topic area
- (6) Students should be able to **Evaluate** the design of a complex system or process in topic area

Physical Processes (Fundamentals)

Watershed Processes/Hydrology _____
Open Channel Hydraulics _____
Geomorphology _____
Sediment Transport _____

Ecological and Biological Processes (Fundamentals)

Stream Ecology _____
Habitat Structure and Function _____
Fish and Wildlife Biology _____
Botany/Riparian Vegetation Dynamics _____

Stream Restoration Assessment and Monitoring

Surveying _____
Watershed Analysis _____
Geomorphic/Habitat Assessment _____
Biomonitoring/Bioassessment _____

Restoration Design

Design Approaches/Fundamentals _____
Alternatives Development and Analysis _____
Analytical Techniques _____
Ecohydraulics _____

Restoration Project Management

Project Development _____
Risk and Uncertainty _____
Communication _____
Construction Management/Implementation _____

8) For each of the topics below, please identify who you feel would be appropriate for teaching the material to you or your employees (identify **ALL** you think would apply).

- (1) University Faculty
- (2) Researcher
- (3) Professional Practitioner
- (4) Government Regulator/Reviewer

Physical Processes (Fundamentals)

Watershed Processes/Hydrology _____
Open Channel Hydraulics _____
Geomorphology _____
Sediment Transport _____

Ecological and Biological Processes (Fundamentals)

Stream Ecology _____
Habitat Structure and Function _____
Fish and Wildlife Biology _____
Botany/Riparian Vegetation Dynamics _____

Stream Restoration Assessment and Monitoring

Surveying _____
Watershed Analysis _____
Geomorphic/Habitat Assessment _____
Biomonitoring/Bioassessment _____

Restoration Design

Design Approaches/Fundamentals _____
Alternatives Development and Analysis _____
Analytical Techniques _____
Ecohydraulics _____

Restoration Project Management

Project Development _____
Risk and Uncertainty _____
Communication _____
Construction Management/Implementation _____

Comments on Body of Knowledge:

PROFESSIONAL CERTIFICATION

The next three questions ask for your opinion regarding professional certification.

Please consider the following statement:

“The stream restoration profession would benefit from the establishment of a National River/Stream Restoration Certification Program (similar to that developed by the American Society of Floodplain Managers or the Association of State Wetland Managers). This certification would establish a minimum level of qualifications across disciplines for practicing stream restoration professionals. Certification would recognize continuing education and professional development that enhances the knowledge and performance of stream restoration professionals.”

1) To what extent do you agree with this statement? (circle your response)

Strongly Agree Agree Disagree Strongly Disagree

2) To earn a professional certification in stream restoration, a candidate will have to meet a set of requirements that identify if he/she has met the minimum level of competence for practice. Please rate the quality of the following as potential criteria for assessing the credentials of restoration certification candidates. Please use the scale given below each criteria (please circle a rating below each item):

a.) Completion of series of courses in an established curriculum

One of the Worst Below Average Average Above Average One of the Best

b.) Continuing education credits

One of the Worst Below Average Average Above Average One of the Best

c.) Passing a national exam

One of the Worst Below Average Average Above Average One of the Best

d.) Portfolio of projects completed under supervision of a mentor

One of the Worst Below Average Average Above Average One of the Best

e.) Professional experience

One of the Worst *Below Average* *Average* *Above Average* *One of the Best*

f.) Professional recommendations/endorsements

One of the Worst *Below Average* *Average* *Above Average* *One of the Best*

3) Please consider the following statement:

“States or Regions should develop their own professional certification in stream restoration (in addition to an established National Certification) to account for local and regional requirements or conditions.”

To what extent do you agree with this statement? (circle your response)

Strongly Agree *Agree* *Disagree* *Strongly Disagree*

Comments on Professional Certification for Stream Restoration: