

Growing a Restoration Workforce:

A Workshop on Education and Training for the Restoration Economy

Notes from Roundtable Feedback on Restoration Workforce Needs:

Prepared by the Clark Fork Watershed Education Program

Montana Tech Student Union Building – Copper Lounge – October 2, 2008

Workshop attendees were asked to discuss the following three questions with others at their table. Comments received from the roundtable session are listed below, by question. Comments are grouped by each individual roundtable, with line breaks separating the tables.

Question #1: What are the restoration needs in Montana?

- Prior to restoration projects, develop a Federal or State standard which implements collaborations among various workforces
- Assessing the problem has been done in most cases, i.e. rehab, remediation, restoration needs to be a continued effort
- Develop a concrete framework for restoration that the workforce can follow

- Surface mines – terrestrial and aquatic issues
- Stream restoration
- Highways and road construction, road construction related to development
- Abandoned mines – surface and underground
- Wetlands restoration
- Landfills
- Sewage treatment
- Forestry sustainability
- Noxious weed infested lands

- Mine dumps – need for heavy equip. operators
- Restoring structures
- On the ground application of restoration
- Hazmat/Hazardous waste removal

- Mining clean-up areas
- Central and eastern MT – next generation of farmers will have to deal with reoccurrence of saline seep crop land
- Zortman/Landusky mine clean up
- Water and wastewater systems, forestry projects, wetland restoration
- Dams, future planning and land use – ex: failing septic, wells

- Outreach
- Tell the story of why we do restoration
- Different aspects not talked about much, e.g. forestry, fire
- Monitoring – teach statistics
- Critical thinking skills – be able to balance up and downsides of restoration. Teach history of human mistakes and successes

- Mining
- Forestry

- Streams/Wetlands
- Range

- Initiatives regarding prevention and maintenance
- Natural problems such as pine beetle
- More information on who is involved
- Where to go for training?
- Who is hiring?
- Reporting on maintenance (who's minding the Berkeley Pit?)

- Road decommissioning/stabilization – Federal
- Improved communication/facilitation/mediation
- Stakeholder engagement
- Transfer existing skills

- Communicate with public
- Sustainable job force embedded in a sound economic plan
- Plan for what “we” Montanans want Montana to look like in next 100 years
- Rest. Workforce must be deeply embedded in our economic/public life to be sustainable
- Connections across urban/rural communication
- A restoration plan that encompasses both and envisions the future
- As currently envisioned, restoration is an end point (job ends) while sustainability is in theory forever
- Clear pathway to entry level jobs

- Money needs to get to projects, not tied up in government agencies
- Impacted sites need to be abated, reclaimed and restored, mines, roads, forest

- Identify environmental threats – old mines, tailings ponds, etc.
- Develop required clean up and restore
- Benefit vs cost analysis
- Prioritize; put into action
- Lessons learned

- Better awareness – conference for youth
- Interspace communication, ability to understand cultural personality and communicate effectively
- Understanding of public admin
- Interns and mentors
- Stream restoration, road decommissioning, mine cleanup, wetlands

- Grassland
- Forest
- Riparian – fisheries
- Butte – mine waste
- Habitat
- Community revitalization - Brownfields

Question #2: What are the restoration jobs Montana needs?

- Env. Engineers
- Landscape Ecologists
- Heavy Equip. Operators
- If the funding is available have a restoration dept. that houses the above

- County restoration positions
- Sustainable jobs w/ benefits

- Urban renewal
- Environmental renewal (river engineering, restoration engineering)

- Land use planning – septic/wells
Leadership to keep the state as “Montana”
- Ag restoration, ag technology, technicians
- Contractors who can relate why they are working – what is this project about?
- Water quality technicians
- Teacher training
- Every level – masters to labor
- Water quality and environmental health
- Realtors need training, too

- Job skills need to be thought of as a portfolio of skills
- Need assurance of long term funding
- State preference for program grads
- Certification programs for restoration – machine operators, others
- Longer term, more diverse projects
- Montana Restoration Corp – more focused on restoration than MCC

- Heavy equip. operators with specialized skills
- Technicians – technical skills, soil specialists, testing abilities, contaminants
- Understanding of regulations –administrative skills, accountants
- Landscape/rangeland reclamation specialists
- Transportation engineers
- Ecological economy, focus on ecosystem service

- Transferable skills – life after restoration?
- Marketing to make this popular, workers will come with popularity.

- Everything, on the ground to the court
- Funding mechanisms – private, state, fed, non-profit
- Incorporate into existing jobs and departments/transitioning

- Rural forest and stream contractors – able to do both, plus maybe wetlands/roads
- Urban restoration specialists – do stormwater, groundwater, urban forestry and parks, Brownfield, housing projects, landscape ecology

- Technicians – fisheries, soils, autocad, GPS/GIS, surveying
- Generalists
- Who is hiring whom?
- We have no idea what open positions exist

- All those needed to accomplish the above (question 1)!

- Engineers
- Tech. specialist
- Skilled laborers
- Public relations / communication specialists

- Regional restoration coordinators
- MT restoration agency
- All natural resource jobs
- Legal support – litigation
- Restoration outreach – organizers
- Labor organization – continuity of benefits

Question #3: What knowledge and skills are needed for the current and future restoration workforce?

- Communication skills
- Specialty, but also broad knowledge of the big picture
- On the job experience
- Computer skills
- Understanding of hydrologic processes
- Engineering

- Communications
- Computer/web applications
- Integrated approach to education
- World of Work curriculum in jr high/high schools
- Stream morphology
- Ecology
- Real world experience / integrated ed / problem solving

- Certification process
- Training labor force to understand the restoration process
- Set up some sort of service program to encourage people to get involved sooner

- Grassroots orgs can get things done
- Leadership in legislature and in schools that focuses in on environment. MT has a culture of respect for our environment, needs to continue to education and reach people that aren't necessarily of the same mind = stewardship
- Mentors and training while in school to keep you in MT
- Nurturing the culture of MT
- Marketing of the jobs that are available to be able to provide career counseling
- Networking programs to coordinate

- On the ground training
- Contracting offices – 1) understanding liability, 2) negotiation

- GIS/GPS
- Hydrologist/geomorphology emphasis
- Survey skills
- Communications
- On-the-job apprenticeships

- Communication skills: we want to care about this, if only we knew what you were saying. Relate to younger people to relay importance and potential.
- Relocation

- More general skills- cross training across fields
- Practical and applied experience from early education
- Tie into technology – transfer knowledge across fields/incorporate tech interests
- Interdisciplinary educational approaches

- Transfer current roles toward restoration – no need for new workforce
- Interdisciplinary projects – no more piecemeal, more collaborative approach beyond just reading one another’s documents and powerpoints.
- Teach courses in projects in high school/college
- Problem-solving
- Interdisciplinary classes – policy/law, economics, to provide a framework
- Broad “liberal science” education
- “Americorps Environmental Stewards” project around the state
- Creativity, flexibility, grant writing
- Trades, equip operators, electricians, plumbers, mechanics
- Technicians and professionals, soils, hydrologists, biologists, ecologists, surveyors, GPS/GIS, autocad
- Technical worker, both vocational and professional, through skilled and semi-skilled construction workers
- Better awareness
- Interspace communications
- Understanding of public admin.
- Internships and mentors
- Trade skills
- Communication skills
- White collar education
- Educators
- Coordinators
- Contracting administration and enforcement