

Facilitated Discussion Notes 2006 Field School in Watershed Science for K-12 Educators

Friday, April 21, 2006

Prepared by Muriel Haverland
Edited by Charlie Schlinger

Need for information to take back to students: (Suggestions & Resources)

- Resource: Citizens Water Advocacy Group (CWAG) – Prescott-based citizens scientific and educational non-profit
<http://www.cwagaz.org>
928 443-5353
Muriel Haverland, President/facilitator
- Flagstaff Water Festival - recommended
- Invite Speakers (CWAG and others – Hydrology, geology, watershed)
- Chemical Testing information & kits
- Conservation – conservation resources, activities, action steps
- Curriculum: science, earth science, ecology, integrate into English (poetry, prose, math with measuring water levels, etc.) – collegial cooperation with other departments to include in curriculum; administrative processes to include in curriculum)
- www.epa.gov website for info - kids info & USGS reports
- Colorado River information
- Water Rights – Jurisdictions, Salt River Project (SRP) & Tribes
- Biological controversies and impact on humans, riparian areas
- “Rural Life Skills” – haul water, truck it in, conserve, drill wells, no running streams (at least not perennial) – Ashfork area

Program Materials

- Film from the Nature Conservancy (with SRP) on Verde
- SRP materials
- FOSS kit; Willow Bend Kit; water testing
- Wildlife info from US Forest Service; USGS – online

Equipment

- NAU could provide web links to all relevant sites

Impediments

- Some teachers don't have the freedom to choose curriculum, so must work with administrators and colleagues to improve dissemination
- To teach science requires certification and passing test or 24 credit hours
- NAU could offer a longer course with more credit hours

What NAU could do for Educators

- Watershed conference attended by a teacher and a companion student
Look at the issues
Address what they will do within their community
Each assigned Representative from the school would share info back at the school
Provide a research based experience
Provide hands-on (experiential) opportunities
Promote the conference well in advance to allow maximum attendance
Teachers and student participation
Cross learning – students teaching teachers
- NAU Resource room accessible to teachers after school hours (extended hours)
- Environmental Science Institute
Activity based
Design a web page
Work with mentor on environmental issues
1-2 weeks or 3-4 weeks
Designing & experimenting
Research paper as a team and present
Field Trips
Credit or N/C choice
Professional Development opportunity
SRP could offset some of the cost
Plan certain units for credit
- Create a lending library
Collect writings; poetry; essays
Huge amount of material exists

Suggested Improvements on Current Field School or 2nd Workshop follow-up

- Provide a roving program over the state
- Social activity on first night following long drives
Get to know each other better activities
- Have a full day on measurements and riparian areas
- Buddy programs
- Find evidence of animals
- Hands-on
- Change roles – practice teaching what we learned so we can teach our students
- Transect from upland to riparian as we explore and learn

- Have each teacher bring 20 copies of their favorite water activities to share with others
- Shoot video of the activities, e.g., to show others how things are done
- Networking – a list of participants with contact info (phone, email)

Pros/Cons Evaluation

- **Pros**
 - John was well prepared
 - All Speakers were great
 - The hands-on part
 - (Treacherous) learning experience
 - Concept of field school for teachers (want more)
 - Able to participate with other educators
 - Great time of year
 - Different riparian areas
 - Healing water experience – mind message – centering
 - Facility centrally located
 - Easy to get to facility
 - Well organized
- **Cons**
 - Not enough time to rest (nap)
 - First day too long and all lecture
 - Not enough measuring opportunities
 - Just explored one area in AZ, want to cover all AZ