Youth Riparian Education Initiative

Tool Kit Survey Results

The following pages contain the results of the Youth Riparian Education Initiative Tool Kit Survey conducted on January 25 and 26 at the Riparian Coordination Network Workshop 2000, for federal agency land managers. Over 100 participants reviewed the survey. The numbers are the percent of respondents who marked each category. For instance: question 1 - Hydrology-48 people answered this question; 0 said hydrology is not important; 2 (3%) said it is somewhat important; 9 (19%) said it is important and 38 (79%) said it is very important.

General summary of results:

1. Topics considered **very important** by greater than 50% of the respondents:

Physical indicators (question 1):

- •• hydrology (79%)
- >• vegetative community (88%)
- •• soil characteristics (57%)

Ecosystem functions (question 2):

- >• dissipation of stream energy/flood control
- >• ground water recharge and discharge
- >• sediment filtration
- »• bank stabilization
- > pollution filtration
- * wildlife and aquatic habitat
- f biological diversity

Riparian Ecosystem condition (question 4)

- * bank stability (51%)

Socioeconomic activities

- > drinking water source.. (59%)

Issues and /or conflicts (question 8)

- > economic issues or conflicts (50%)

Management and protection strategies (question 10) .-

BMPs (58%) > development of land use policies (50%)

- > citizen involvement (63%)
- •• lifestyle impacts (51 %)
- »• remediation and/or restoration.. (58%)

2. Topics which 80% or more of the respondents thought were **very important or important**

Physical Indicators (question 1)

- •> Hydrology (98%)
- >• vegetative community (98%)
- »• soil characteristics (85%)

Ecosystem functions (question 2)

- • dissipation of stream energy (98%)
- »• ground water recharge and discharge (96%)
- •• sediment filtration (94%)
- » bank stabilization (96%)
- >• pollution filtration (87%)
- >• wildlife and aquatic habitat (87%)

Ecosystem condition (question 4)

- •> terrestrial, aquatic, macroinvert etc presence/absence (89%)* > bank stability (91%)

Socioeconomic activities (question 6)

- •• forest management (85%)*
- > recreational/aesthetic factors (80%)*
- > energy production (80%)*
- > drinking water source (85%)
- »• wastewater disposal (80%)*
- > transportation (89%)*

Issues or conflicts (question 8) »•

economic issues (87%)

- *• environmental issues or conflicts (81%)*

Management and protection strategies (question 10)

- > BMPs(94%)
- > development of land use policies (82%)
- - >• wildlife habitat improvement (82%)*
- >• citizen involvement (96%)
- * lifestyle impacts (87%)
- > remediation and/or restoration (81 %)

* topics which were considered very important by less than 50% of respondents

3. Topics which were considered **not important** by at least 1 respondent

Ecosystem functions (question 2) >• sediment filtration (2%)

- *• thermal regulation (2%)
- >- wildlife and aquatic habitat (2%)
- »• wildlife food source (2%)

Condition (question 4)

- >• visual assessment of water quality (13%)

Socioeconomic activities (question 6)

- *• energy production (4%)
- *• industrial uses (6%)
- *• drinking water source,... (2%)
- *• wastewater disposal (4%)
- >• crop production (9%)
- >• animal feedlot operations (7%)
- »• livestock grazing (4%)
- >• cultural/historical heritage...(11 %)
- * transportation (2%)

Issues or conflicts (question 7)

- >• social issues or conflicts (3%)

Management and protection strategies (question 10) >•

BMPs (2%) > Development of land use policies (9%)

1. A definition of riparian areas will be included in the tool kit How important is each of the following PHYSICAL INDICATORS when defining a riparian area?

Physical Indicators	not important	somewhat important	important	very important
Hydrology	0	3	19	79
Vegetative community	0	2	10	88
Soil characteristics	0	15	28	57

Other (please state)

- »• biological/wildlife communities
- > floodplain/channel form
- «• physical & social interactions
- >• geomorphology landforms, bedrock structure/stability
- »• landforms
- *• ecosystem/watershed
- »• wildlife
- > age class of vegetative community
- »• land and aquatic interactions, i.e. LWD, erosion
- > grazing and recreation
- » geomorphology
- >• climate
- *• see RFC data sheet

2. How important is it to include the following riparian ecosystem FUNCTIONS in the tool kit?

Physical/hydrological functions	not important	somewhat important	important	very important
Dissipation of stream energy/flood control	0	2	9	89
Ground water recharge and discharge	0	4	17	79
Sediment filtration	2	4	24	70
Thermal regulation	2	20	43	35
Bank stabilization	0	4	26	70

Physical/hydrological functions	**not important**	**somewhat important**	**important**	**very important**

Other (please state)

* turbidity
> stream flow dynamics
> hydro geomorphology (e.g., with depth, sinuosity, valley slope, gradient
*• dams and impoundments

Chemical functions				
Pollution filtration, transformation and sink	0	13	36	51

Other (please state)

*• nutrient cycling
>• health and human interactions
«• pollution sources
> chemical pollution-somewhat important must be related to function
>• ability to fix N2, C, etc
> pollution filtration - must be related to function
*• pollution reduction: denitrification in wooded riparian areas

Biological functions				
Wildlife and aquatic habitat	2	11	36	51
Wildlife food source	2	41	24	33
Biological diversity	0	21	28	51

Other (please state)

*• landscape scale, habitat diversity
»• vegetation and soils as a base
> diversity in landscape-linkage between elevational communities
» must be tied to foundation of physical function
•> Habitat
> Role in recovery of listed threatened and endangered species
>• bugs on trees in riparian area-fish food
> sediment transport, good and bad

3. Should the riparian tool kit contain a section on assessing riparian ecosystem CONDITION? Indicators could include: chemical water quality indicators, macro-invertebrate and vegetative species, bank stability, etc.

Q YES 96% a NO 4%

If you answered Yes, please continue with question 4

If you answered no, please go to question 5

COMMENTS:

>• Condition? need to define condition carefully. This would be a big section

» Yes, but not potential (too confusing-even for me)

>• Yes the most important thing is to build the relationship of the various indicators using physical function as the basis

> Values/functions need to be stressed before assessed >• Yes, to some extent. We underestimate their ability to understand. >• No, unless it's leading to actions

4. How important is it to assess the following indicators of the condition of the riparian ecosystem?

Condition indicators	not important	somewhat important	important	very important
Terrestrial, aquatic, macro-invertebrate and vegetative species - their presence or absence, quantity, and diversity " easiest (macroinvertebrate-fun too) •• very important, less critical on macroinvertebrate, more critical in vegetative > most revealing and easy to do		13	40	49

Condition indicators	not important	somewhat	important	very important
Chemical water quality indicators > depends on the pollution problems in area		43	39	17
Bed structure and stability	0	24	35	41
Bank stability	0	9	40	51
Visual assessment of water quality	13	33	40	13

>• not very instructional -too much can't be seen

Other assessment indicators (please state) >

PFC (floodplain function)

Somewhat important-because it's fun-can be misleading if standard answers suggest uniform potential

> physical balance between stream and stream environment »•

hydrologic/vegetative/soils then biologic

*• redoximophic feature i.e. color and depths linked to vegetation

*• water temperature

> presence or absence of non-native, noxious plants- big issue in southern California water courses

>• these are all important...the key to success is putting them in an order like building blocks that really teach the relationships and what functions support what values relative to the indicators. Critical to impact concepts of capability potential and the idea of building accurate expectations for desired conditions >•

human uses

*• weeds or exotic plants >•

flooding

*• width/depth ratio and sinuosity

> access to floodplain

> best to remain general

»• amount/types of sediments/deposits

> area uses

> soil types

5. Do you think it is important to use the tool kit to address SOCIOECONOMIC ACTIVITIES that may impact riparian ecosystems? These could include forestry, recreation and livestock . grazing, and wastewater disposal.

DYES 96% NO 4%

If you answered Yes, please continue with question 6 If you answered no, please go to question 7

COMMENTS:

- •> Yes, another topic or tool kit
- > Yes, use functionally as the first step and then tie that to the values possible
- •• Yes, Especially if working with older youth (ages 12-18)
- > Yes!! Land development, activities at home
- > Yes. We must not give the anti-commodity that industry, particularly agriculture perceives (?)
- •• Yes, all of these (sdcioeconomic activities) have potential to positively or negatively effect riparian and aquatic habitats.
- > Yes, but capability vs. constraint
- > Yes, nearly all activities in our riparian areas which constitute only 2% of our land base (?)
- > Yes, importance of each of the factors below depends on where you are in the country
- >• Yes, but need to define carefully. A broad area with lots of subjectivity.
- »• No, unless this is tied to enough understanding to not learn simple but wrong (too easy) messages.
- •• No, not this age group

6. How important is it to include the following SOCIOECONOMIC ACTIVITIES in the riparian tool kit?

Socioeconomic Activities	not important	somewhat	important	very important
Forest management including its effects on vegetative, aquatic, terrestrial and bird species •> -important, unless the message becomes never cut trees-this is not black and white		15	50	35

Socioeconomic Activities	not important	somewhat important	important	very important
Recreational/aesthetic factors including economic benefits of income from hunting permits »• sounds balanced already		20	51	29
Energy production - its effects on steam/river flow and seasonal variability; water temperature; movement and diversity of aquatic species; aesthetic and recreational uses >• important if treated non-superficially > -more a biological chemical attribute		16	47	33
Industrial uses - effects of tailings, warm water discharge and pollutants »• somewhat important, mostly these problems have been fixed but future support for this will need understanding public		15	48	30

Socioeconomic Activities	not important	somewhat important	important	very important
Drinking water source, including the direct access of the water or the indirect access of the water, i.e., groundwater recharge and discharge * vast majority of water uses are other than this »• Why does it taste different wherever you go? Can you drink water in the woods? What's with bottled water?		13	26	59
Wastewater disposal - including its effects on species composition and diversity, and water quality		15	41	39
Crop production		20	46	26
Animal Feedlot Operations * depends on local condition and water uses		31	40	**22**

Socioeconomic Activities	not important	somewhat	important	very important
Livestock grazing, including the economic benefits of permit sales > important unless message is never graze in riparian areas »• on public or private land * in the west yes » important for plains and west »• federal permits are not brought and sold if that is what you are referring to »• varies by area of country		18	49	29
Cultural/historical heritage and archaeological sites >• very important, people have long lived in or near riparian areas	11	37	41	11
Transportation, including road construction and surface runoff >• important, common problem, hits people where they live >• sedimentation from roads and their construction also a physical attribute			49	40

Socioeconomic Activities	not important	somewhat important	very important

Other socioeconomic factors (please state)

»• development on floodplains

»• recreational impacts often directly impact riparian. Need to recognize that we can love them to death.

> manufacturing, > drinking water > sewage disposal »• cost of cleaning water and natures water cleaning

*• water storage and delivery

*• impacts of dams, diversions, recharge spreading grounds

>• These are important as modules built on functionality

> Things people do at home: car washing/detergents; paint/chemical disposal; litter/waste reduction; understanding the "water costs" of consumerism/activities >• Sewage treatment or nontreatment?? i.e. Yellowstone failure of sewage systems effects on Yellowstone lake/river >• cost/benefit of exploitive uses and the difference between these uses on private lands vs public lands

*• flood control (i.e. dams, levees, flood plain development)

>• channeling etc. for flood control

>• recreation, impacts often directly impact riparian. Need to recognize that we can love them to death.

»• In stream structure, dams, diversions, stream control structures

>• General-Importance of each of the factors below depends on where you are in the country. >• Emphasis would depend on where in country and local things children could relate to >• recreational impacts

7. Should the riparian tool kit contain a section on ISSUES OR CONFLICTS between riparian area user groups? Topics would include: public vs. private ownership, economic issues, political issues, etc.

Q YES 79% Q NO 21% If

you answered Yes, please continue with question 8

If you answered no, please go to question 9

COMMENTS:

> should also emphasize the positive aspects of fed/state/local/private partnerships, as well as possible conflicts

•• No, unless they first have enough understanding to find non simple solutions to complex problems »•

Yes, if youth are >12 years old

8. How important is it to include the following topics in the riparian tool kit when discussing ISSUES AND/OR CONFLICTS between riparian area user groups?

Issue/Conflict	not important	somewhat important	important	very important
Public vs. private ownership of the riparian areas, including permitting *• this may be benign, simply the way it is »• abstract for middle school		19	32	43
Economic issues or conflicts, e.g., dams, industrial use/discharge, agricultural use of riparian areas > also water rights		13	37	50
Political issues or conflicts, e.g., land use ordinances		21	34	1345

Issue/Conflict	not important	somewhat important	important	very important
Social issues or conflicts, i.e., historical and cultural uses	**3**	**29**	**26**	**42**
Environmental issues or conflicts, i.e., regulations, biodiversity, user groups	0	18	39	42

Other issues or conflicts (please state)

*• CWA & multi-use

> riparian and flood compatible land uses

> keep it general

We need your help with this area. Please help us identify additional examples of each of these issues/conflicts.

>• instream flows, dewatering streams/rivers

* Irrigation is a biggy in the west. Results in high amounts of nutrients and sediment in receiving waters

* expectation of what is possible to be produced from riparian areas. Also include conflict resolution and collaboration concepts »• many threatened & endangered species, aquatic especially, require "healthy" riparian areas including fresh water mussels, crayfish, native fish species. Riparian areas are critical habitat for many of these threatened and endangered species. »• Solutions to resolving issues and conflicts: partnerships, dialogue, etc »• Public needs to be aware of regulatory actions (404 CWA, ESA, etc) >• controversies of land use »• controversies of cultural land management practices and land access issues.

*• Tradeoffs between all of above uses

*• Future/present use conflicts-if we do this now, how will this change what we can do here later? > grazing vs. non-grazing - too important to lump into economic issues/conflicts. Probably the most controversial issue in the country. >• Too much of the regulatory issues and conflicts may cloud what your are trying to accomplish.

These are important topics but may be a little dry for middle school aged kids.

Should the riparian tool kit contain a section on riparian ecosystem MANAGEMENT AND PROTECTION STRATEGIES? For example Best Management Practices (BMPs), wildlife habitat improvement, and development of land use policies.

a YES 96% Q NO 4 One person answered no but put in answers anyway

If you answered Yes, please continue with question 10
If you answered no, skip question 10 and go to the next page
COMMENTS:

- Yes but this may too advanced tor a kids riparian kit
- No, too complex?
- Also watershed restoration
- Yes, if youth are >12 years old
- This ties to socieoeconomics

10. How important is it to include the following topics in a riparian tool kit when discussing riparian ecosystem MANAGEMENT AND PROTECTION STRATEGIES?

Strategy	not important	somewhat important	important	very important
BMPs (agricultural, forestry and grazing) • not important, too complex prescribed burning			36	58
Development of land use policies • not important, too complex			32	50
Wildlife habitat improvement		18	48	34
Citizen involvement			33	63
Lifestyle impacts (including rubbish dumping)		13	36	51

Strategy	not important	somewhat important	important	very important
Remediation and/or restoration of riparian areas	**0**	**19**	**23**	**58**

Other management and protection strategies (please list)

- >• Off road use-"whose truck can make it" especially older kids in WY
- »• who controls local private land use i.e. "government" class
- > include a section which outlines how the students role plays into keeping water clean
- »• depends on local conditions
- »• western public land management. As with Socio, may have to keep it general
- >• teach public trust doctrine
- f watershed restoration including uplands (uplands impact riparian areas)
- >• management of recreational use
- •> zoning and planning, avoiding mountain open spaces and floodplain development, etc.
- •> Riparian areas are water dependent. How do we provide adequate water to sustain riparian ecosystems and values while meeting other society needs?? The issue is diversion of water off stream to meet agriculture, municipal, industry and hydro power needs
- •• Local indigenous BMPs (maybe historic)
- •• conservation
- > factors for prioritization - we can't take it all on at one time!
- »• urbanization

OTHER COMMENTS:

There needs to be a balance between the kid's energy and the need to understand what is going on. A stream table is a useful tool. It allows for the explanation of many water related principles and experimentation of actions. It allows kids to ask "what if questions and see the results in what to them is a short amount of time. It also allows planning of actions on real streams. The kit needs to be adaptable to local conditions

In your kit you could move us away from watersheds, that is land that shed water for erosion for catchments, which are land the catch water for plant growth and water recharge.

If this tool kit and subject has the potential, in any way, take time out of a teachers reading, writing and math work time, I don not recommend that it be used in the classroom. If this topic can be included in the 3 Ys"; then ok. This really belong in Science curriculum, might supplement if school system allow it. Some school have set curriculum that teachers have to follow.

Please attend a 2-day RFC session (the core development group). Contact the NRST to try to set this up. A great service to our youth would be to help them be comfortable with the complexity of natural systems and to value the process of understanding and finding a range of answers in developing resolutions.

Everything on your survey is important and we need to impress on kids that life is very complex. We can't break it into bits and pieces and just learn a little but here and a little bit there and expect to make wise decisions about how to use our water resources. We need to impress on people that every decision we make in life (what car we drive, what food we eat, etc.) affects the use of our limited resources

The students need to learn that as citizens they will have the power to influence decisions on how their watersheds will be managed. The management will affect the values they want. They need to know they don't have to be scientists to get what they want. They just need to know enough to be able to say what they want

Emphasize hands on, games, Native American Indian attitudes. Also check Project Wildlife Manuals. Utilize mini modules, each with a simple theme and only a few primary points to convey.

Possible central concept of riparian area - land next to water. Land immediately affected by the water body or land that can immediately affect the water body.

I think you're trying to do too much in one kit. Should break it down to sections, such as "introductory" including basic biological chemical physical attributes and functions; ecosystem function, the (2) intermediate; some of the socioeconomic and management strategies, the (3) advances-advanced management practices and conflicts among uses and positive aspects of partnership to achieve riparian protection and restoration