

**Final Minutes**

36<sup>th</sup> Meeting of the NECC  
September 5<sup>th</sup>, 2002  
Holiday Inn – Davenport, IA

Submitted  
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(CEMVR-PM-A)

## Navigational Environmental Coordination Committee (NECC)

September 5, 2002

Holiday Inn, Davenport, IA

**1. Welcome and Discussion of Minutes** The 36th meeting of the Upper Mississippi River-Illinois Waterway System Navigation Study Navigation Environmental Coordination Committee (NECC) was called to order by Ken Barr, Chairman. **Attachment 1** is an attendance list. The minutes from the 35th NECC meeting were presented for comment or correction. No comments or corrections were offered.

### 2. Study Status - Ken Barr

Ken noted that the Interim Report was sent out July 2002. He discussed the Tow Cost Model and mentioned that the without project model should be completed by early November and the with-project runs should be finished by the end of March, 2003. He also mentioned that the review of the Sparks report, being done by Harold Hommes (Iowa Dept. of Agriculture), Dr. Darryl Ray (Univ. of Tennessee) and Dr. John Urbanchuk (AUS Consultants), should be completed by the end of September, 2002. Ken displayed slides comparing this report with previous data. See **Attachment 2 (slide 1)**.

#### Questions/Comments:

**Steve Bartell** - How does the original model compare with this? It is reassuring that they are in the same ballpark.

**Ken Barr** - Yes, but Faucett was involved in both studies.

**Ken Lubinski** - Maximum tonnage was in the mid-80's (millions of tons)?

**Chuck Theiling** - The maximum tonnages are for the Middle Miss. See Page 34 of the Interim Report. Ken's slide is for total tons on the Mississippi.

Ken discussed previous meetings: On June 6<sup>th</sup> there was a meeting for the pool plans with attendees from FWS and the Corps. On August several people from FWS, CEMVP, CEMVR, CEMVS, ERDC as well as Steve Bartell to discuss the conceptual model to be used in the Environmental portion of the feasibility study. See **Attachment 2 (slide 2)**.

#### Questions/Comments:

**Gretchen Benjamin** We should have collaborative effort. Make sure everyone knows what is going on.

**Ken Barr** We have been sending monthly reports. I will try to send reports more often and send stuff directly to NECC.

Ken discussed upcoming meetings: Mid Nov Regional Workshops, NECC/ECC Apr 03, NECC Mitigation Planning, July 03. He stated that this looks like not

enough time, but will be using all of the work done on the Miss for the last 20 years. A slide showing the Feasibility Study Schedule was displayed. This is **Attachment 2 (slide 3)**.

### **3. Summary of Environmental Sustainability PMP – Hank DeHaan**

Hank DeHaan presented a PowerPoint presentation. The presentation discussed the study process as developed in the *Interim* Report. He focused on the 5 tasks for establishing environmental sustainability. He passed out handouts of the presentation. The presentation is **Attachment 3**.

#### **Questions/Comments for Tasks 1 and 2**

**Hank DeHaan** - The August PMP added two months, so Task 1's completion target is December 2002.

**Scott Whitney** – The management action database is in back of Interim Report

**Dan Wilcox**- Stakeholder Goal setting? I think combining 2 steps is inappropriate. Would like to discuss this more.

**Ken Lubinski** – What about things that can't be displayed on map?

**Hank DeHaan** – Will have tables and write-ups as well. They will be included in this effort.

**Gretchen Benjamin** – How is this different than the pool plan?

**Hank DeHaan** – Combining other efforts with the pool plans. Really trying to base this on the pool plans, but want to incorporate more ecosystem plans that have been developed by HNA and others.

**Dan Wilcox** – There are other measurable conditions aside from just habitat that Pool Plans have addressed. Several things that haven't been covered in Pool Plans will be covered here.

**Gretchen Benjamin** – Reason Pool Plans haven't been done in other places is lack of funding and manpower. Should supply help to these other efforts.

**Ken Barr** – That is our next step.

**Bob Clevestine**– What about the influence of other stressors such as floods, fire, etc?

**Dan Wilcox**– Need to talk about other things than plan form objectives. If you want prairie, what do you need to sustain prairie.

**Bob Clevestine** – Will get wrapped up in minutia. Don't care how often will have to burn.

**Dan Wilcox**– Want to catch 15 bluegill/hr. Need to have way to measure. Might not be realistic. We need to set up ways so measure.

**Ken Barr**– Objective setting will be from bluff to bluff so yes, this could be helpful. However, the management tools will still be for the Navigation system – this might be too detailed.

**Dan Wilcox** – High and low flow/stages. We have some control at low stages. We can create a disturbance regime to simulate drought. From the management

standpoint how often should this be done? Pre-project hydrologic regime or do it based upon management regime for targeted species.

**Bob Clevestine** - How much effort is this?

**Dan Wilcox** – Setting the objectives is really important.

**Chuck Theiling**– I Agree with discussion and conclusions. However, we can't get answers in this round. Can't get conceptual models to predictive models.

Don't be afraid to get "Swiss Cheese" answer.

**Bill Bertrand** – Focused on habitat reclamation and recreation. Second greatest threat to maintaining river biota is exotic species. Need to break Illinois/Lake Michigan connection.

**Ken Barr**– Need to recognize that for connectivity and fish passage connections.

**Steve Bartell** – Exotic species are included in the conceptual model.

### Questions/Comments for Task 3

**Chuck** – Will we be scared of costs?

**Ken** – It will be tied to something on the ground so that will take away fear.

**Dan Wilcox**- Need to do a combination of things. This process will allow us to apply good science in a systematic way.

**Ken Lubinski**- Cost to Congress – Want to try adaptive management. Requires iterative learning. Tell Congress what? Cost estimates for 10 years at a time?

**Ken Barr** – Need vision that goes beyond 10 years. Will recommend adaptive program. Reevaluate at 10 years. Will have to have periodic reports back, both for Navigation and Environment.

### Questions/Comments for Task 4

**Dan Wilcox** – How do we do incremental analysis for an entire river system? We do with projects using limited number of project features. Is it appropriate analysis?

**Ken Barr** – Look at naming conventions:

**Measure** – an action undertaken to achieve a desired effect

**Plan** – group of measures together for pool or reach

Federal measure of plans will be how they apply to objectives. Take a look at how an individual project contributes to federal objective. Incremental analysis will be for each individual project.

**Dan Wilcox** – This can be done for individual projects but won't really work for the entire river. Especially given geographic and temporal ranges.

**Chuck Theiling** - How do we get NED? What is the value of duck or fish? NED effects will always be in negative. However, could have positive for recreation.

**Ken Barr**– Don't see that we will be using NED to justify federal interest. Use objectives for that.

**Chuck Theiling**– Pool 8

**Ken Barr**– Compare cost of dredging vs. shutting the entire system down for 3 months.

**Rick Moore**- In cases where you can capture economic values will that be in NED?

**Ken Barr** – Don't think we can. This is a cry for help.

**Scott Whitney** – This is really state of the art.

**Ken Barr** – Don't see us in an area to capture this.

**Rick Moore** – All costs pertaining to environment will be negative?

**Richard Worthington**– Most of Environmental restoration won't have impact on navigation restoration cost because 2 separate things.

**Rick Moore** – 2 separate analysis that won't be talking to each other?

**Richard Worthington** – Navigation side will be able to have benefit cost ratio.

**Rick Moore** – Fed project spends \$5 mill you can calc benefit use days.

**Richard Worthington** – for a pure restoration you have costs and monazite what restoration you can and other stuff you can't... such as habitat units or amount of wetland. So no B/C ratio you have cost vs. monetary and non-monetary benefits. This project will have dual befits (Navigation and Environ)

**Ken Barr**– This will allow us to compare plans between each other. Some places will compliment others will rub.

**Rick Moore** – Tangible costs and benefits that will apply to navigation (B/C Ratio). Other than direct mitigation for navigation how will you do the environment?

**Ken Barr**– There will be a cost to do a restoration. However, it is difficult to put a dollar sign on benefits. Will have to fall back on habitat units. National Academy recommended using CVM (Contingent Valuation Method). Don't think we can.

**Rick Moore** – Others have been using CVM for years. Why can't we?

**Ken Barr** – The Corps' projects are based on Habitat units.

**Rick Moore**- Let's talk about Nav. Study. I don't see how you can do this?

**Dan Wilcox** – We can demonstrate a federal interest without monetary values. We can still do it. Have to follow existing guidelines.

**Ken Barr**– Don't think tools will be available by 2004

**Chuck Theiling**– Navigation is a National bonus, while environment is portrayed as a National burden. Might behoove us to monazite it.

**Steve Bartell** – Don't have to monazite. Come up with metric. What % of plan complete for certain \$'s.

**Summary:** \$ Costs /\$ Benefits of Nav.... \$ Costs/ \$ + non\$ Benefits of Environ

**Ken Lubinski** – Maybe revisit tools that are available with us. If we are going to achieve balance between Nav and environment... there may be some constraints placed on Nav.

**Scott Whitney** – This is step 5

**Gretchen Benjamin** – Locks will be built. Environmental will get some money up front but then will dry up. How do we get Congress to see how valuable the environment is and get them to guarantee that they will follow our recommendations?

**Dan Wilcox** – Questioning national commitment/ ethic. This Study can demonstrate economic and environmentally responsible approach and see what Congress does.

**Jon Duvejonck** – Once we do analyses, how will we take them and incorporate them? Will we try to sort out measures and pick out specific ones for Navigation (100%) others are cost sharing? Will we go through some process to sort everything else?

**Ken Barr** We have been tasked to look at existing authority and recommend new authorities. Priorities and sequence will be next the big hurdle.

#### **Questions/Comments for Task 5**

**Ken Lubinski**- Who will be doing this Trade off Analysis?

**Ken Barr** – Will get a whole bunch of metrics gathered and then go out to the NECC and Public for comment. Corps makes final recommendations.

**Ken Lubinski**- Give better example

**Ken Barr** – Don't know enough Everglades. More straightforward example Water level control – shut down system for 45 days every 4-5 years vs. cost for navigation. Not too many rubs out there. Increased traffic may erode islands, cause siltation, fish entrainment.

**Ken Lubinski** – Another rub: Ecological Value of Connectivity vs. Levees.

**Ken Barr** – That will be in Comp plan, but if it applies to navigation it is open to us.

#### **4. Pool Plans**

**St Louis - Tom Keevin**

Tom summarized study efforts that are ongoing in the St. Louis District.

Focus on Pallid Sturgeon and Least Tern.

1 – Gravel Bars: Flew Lower Miss in Helicopter when gage at St. Louis was at 5ft. Looked for gravel bars and entered into GIS.

2 – Looked at rockwork; specifically wing dams. Broke river into 20 reaches. Prioritized reaches. Identified rock work and determine what could be done. Look at micro model runs. All in GIS.

#### **Questions/Comments:**

**Chuck Theiling** – What about the dike restoration Plan?

**Tom Keevin** – Based on that document which listed what might be possible, they identified 2 reaches and are now doing micro models.

**Gretchen Benjamin** – Are gravel bars still available when flows are normal?

**Tom Keevin** – Yes they are available for Sturgeon.

3 - Side Channel Plan – Analyzed and prioritized side channels. Have done some HREP work.

4 - Endangered Species Consultation. Created Habitat map. Complete Bathymetric survey of each main stem and side channel (2000). **Attachment 4** is a PowerPoint presentation that Tom showed here. The presentation displayed stage models based on current bathymetry. Can look at any area and determine what elevation is needed for connectivity. Also have this with a 66-year hydrograph so can find out whether or not there was complete connectivity for any day or how long of duration there was connectivity. (However, uses current bathymetry... so historic water levels with current bathymetry). Have also turned this into bathymetric habitat covers.

**Questions/Comments:**

**Dan Wilcox** – Has Endangered Species Committee determined how much gravel bar or connectivity is needed?

**Tom Keevin** – Not yet. This will be next step.

Other Efforts: Look at historic islands and compare with current islands.

Look at creation of islands to determine how high to support certain species (Least Terns). Looking at 10-mile intervals.

**Questions/Comments:**

**Ken Barr**- Most efforts are based for 1 bird and fish species. How will this help with setting objectives for determining habitat needs of all?

**Tom Keevin**- Two things obtainable for the river connectivity and islands. These species are good ones to look at that.

**Bob Clevestine** – Why aren't you looking at floodplain habitat?

**Tom Keevin**- Just haven't done that yet.

**Ken Barr** - Best thing we have for bluff-to-bluff is HNA.

**Bill Bertrand** - There are some places where levees are ½ mile from river. These are a good area to work on.

**Dan Wilcox** – Set objectives first and determine how to accomplish later. Some managers have put forth ideas back in HNA.

**Bob Clevestine** – Comp Plan goes to Thebes.

**Ken Brummett – St. Louis Pool Plans**

Ken is the St. Louis POC for the Pool plans. He provided the following summary: Pool 25 is not done. First ½ is done. Then we will do 24 and 26.

**Bob Clevestine and Chuck Theiling– Rock Island Pool Plans**

Displayed Arc View map of Pool Plan.

Pool maps for 11-22 are done. Contractor will supply by Oct 16.

**Questions/Comments:**

**Ken Barr** Not as much edge area as St. Paul.

**Bob Clevestine** - Decided not to develop 'cartoon' of our area. Lack of bathymetry has caused some issue.

**Dan Wilcox** – First drew map that showed changed patterns of habitat. Worked off of that.

**Chuck Theiling** – We can apply very complex legends. Do we need to? That's what's nice about GIS; we can get everything together in one visual style. Bring it all together.

**Dan Wilcox** – Conditions for river ecosystem need to be set and tie that to habitat so we can make a good case to Congress.

**Rich Fristik**- Will there be public open houses for St. Louis pool plans?

**Ken Brummett** – Yes

**Gretchen Benjamin** – On the upper river we held several different public meetings. Wrote a response for every single comment received from the public. Pools 1&2 will go out for public comment later this month.

**Chuck Theiling – Illinois River**

Products are from the HNA. Goals only established for inside of the levees because managers were hesitant to identify areas where they didn't think they could get a hold of land.

Talked about Illinois River Ecosystem. Mentioned the 8 goals and objectives.

**Questions/Comments:**

**Dan Wilcox** – Set measurable objectives for what tributaries are inputting into the mainstem.

**Chuck Theiling** – Many things going on in the Illinois. Also, 60,000 hunting clubs on the IL.

## **5. Regional Workshops (11:10 DeHaan)**

Hank showed PowerPoint slides from the Aug 1-2 second meeting. This is **Attachment 5**. Discussed definition of model, reasons for model, showed outline of model and one detailed example.

**Questions/Comments:**

**Dan Wilcox** – We've talked for years about conceptual models. Focus first on setting objectives making good use of models. Getting measurable objectives quite clear. Focus first day on doing that. Second day come up with array of management and restoration actions we can use.

**Bill Bertrand** – When will we know dates and locations?

**Ken Barr**- Lets try and do that today. Get it out soon.

**Steve Johnson** – Combine GLC and Regional meeting...held at same location.

Consensus: **Nov 6-7 Peoria**  
**Nov 13-14 St. Louis**

**Nov 18-19 La Crosse**  
**Nov 20-21 Davenport**

**Ken Barr** – We will work on specific locations later

**Ken Lubinski** – We need to not do this like we usually do. We need to specifically call people and invite them.

**Ken Barr** – Agrees. Need to use all tools to get message out and engage others.

**Rick Moore** – I can get message out quickly to members.

**Ken Barr** – Need to get our Channel Maintenance and O&M folks involved in this.

**Hank DeHann** – We will get read ahead materials at least 2 weeks ahead of time.

**Ken Lubinski** – Establish how this is going to be signed off on.

**Ken Barr** – Importance of engaging at Governor's level for the report. Also, may have different Governors by the time 2004 comes around.

**Hank DeHaan** – Read ahead will be maps, write-ups, pool plans.... But will limit so not overwhelming. Distributed by mail. Atlases

**Scott Whitney** – We need to get lists so we know who to mail to.

**Gretchen Benjamin** – You are asking us to help write report. You should consider paying people to come to table.

**Jeff DeZellar** – Can I give my operations folks these dates?

**Ken Barr** – I don't know who would change these dates. We will get out dates and 1-paragraph explanations of these meetings as soon as we get back to the meetings.

Location Breaks... **Pool 12, Pool 22, Alton included with Illinois**

**Lunch**

#### **6. Draft Conceptual Model - Bartell/DeHaan**

**Steve Bartell** reviewed a PowerPoint presentation that is **Attachment 6**

##### **Questions/Comments:**

**Dan Wilcox** – We should be careful as to what we define as a stressor. Some things are natural. We need to focus on stressors specific to navigation.

**Ken Lubinski** – What does alternate transportation include?

**Steve Bartell** – Allows us to compare more cars on rails or road. Also includes barges.

**Ken Barr** - Barges under transportation but dams under H&H.

**Scott Whitney** – What is the difference between conceptual vs. predictive models? We need to define this.

**Steve Bartell** – Conceptual models help organize information in regards to a question. It doesn't tell nature of relationships nor specific examples numbers. Focuses your thinking.

Predictive models tell how a certain measure provides a specific outcome.

**Dan Wilcox** – Use HEP models to set objectives that are realistic. This is a very simple model for a very complex system. In Nov we will have meetings to set objectives. We will only have 1 day in those workshops to address this model. Don't expect this model to be the “be all and end all” of a model. It is just a start of the collaboration.

**Ken Lubinski** – How were groupings distinguished among the big diamonds?

**Steve Bartell** – Geomorphology – Broad bathymetry, broad reaches of the systems.

**Chuck Theiling** – Where do we start?

**Steve Bartell** – If using the model to guide planning and restoration then start at endpoints. If using the model for Impact and Risk assessment then look at stressors first.

**Chuck Theiling** – Do we need to have functions defined?

**Steve Bartell** – I hope that stakeholders will come in with that defined

**Ken Lubinski** – Water quantity as a major diamond. What about quantity and juxtaposition of water? Should those also be large diamonds?

**Ken Barr** – Can that be included in Water Quality?

**Steve Bartell** – **(To All)** Will this conceptual model be useful?

**Ken Barr** - This can help to facilitate dialogue with participants at workshops and to stakeholders.

**Bernie Schonoff** – It needs some kind of relative strength.

**Dan Wilcox** – Nakato model. It is really important to put human activities on this model.

**Ken Barr** – Help us to figure out what things we want to monitor for adaptive management.

**Steve Bartell** – Helps us to determine if measure is attainable. Biggest challenge is to assign degree of sustainability.

**Chuck Theiling** – For workshops.... Let's say I want to see 3 feet through the water column in St. Louis... Do I set up sediment delivery all the way up stream or do I look locally to reduce resuspension or both?

**Steve Bartell** – Work the way back up to determine what your stressors are. Then you can determine if when you do something locally are you constrained by what is happening outside of your area.

**Ken Lubinski** – Have some of Harwell's stuff as examples that are put in the read ahead materials. Identify central ecosystem characteristics before the meeting. Helps both public and scientists discuss items.

How does the information in the bottom hexagons that we already have work into this?

**Steve Bartell** – Helps us to look at other management options. There is a lot of data out there. We need to use it the old fashion way, but the data has been gathered.

**Ken Barr** – **(To All)** Are these tools going to be useful or just add to the confusion?

**Bernie Schonhoff** – You are going to have to define why the boxes are where they are. Make a point that there is no right answer.

**Rick Moore** – This presentation is going to be very intimidating to many stakeholders. Several don't have scientific background. Give some thought as to how to ease people into this. Start with Great Blue Heron example and then work out.

**Steve Bartell** – Hank DeHaan and I are already working on something.

**Rick Moore** – Somehow we are going to have to settle on something that we can all agree upon.

**Dan Wilcox** – Still a wiring diagram. Are we laying out CADD drawings for untrained eyes? Let's make it clearer and tailor it to the level of scientific understanding as well as interests. Consider your audience.

**Rick Moore** – Agrees with considering your audience. However, this is an educational experience. Tunes people into processes that are not obvious.

**Cynthia Drew** – The PowerPoint may be a little too intimidating. Use paper flipcharts and put up the rows vertically. (Basically she described how we originally developed the models).

**Bill Bertrand** – Emphasize that this is a structure for organizing. There are many other structures that would do. Get past arguing. Emphasize that you are taking into account other workshops. But now there is new information and new tools to apply to old information.

**Dan Wilcox** – Agrees with Cynthia. What we are doing is not very interactive and collaborative. However, because of constraints we can't be as collaborative as we would like. The purpose of the workshop to identify attributes that we would like to set objectives for. Set levels of those things. Are they realistic and attainable levels?

**Rick Moore** – Need to come to meeting with basis of understanding already established. Based on when we want product completed. Use this diagram for crowd control

**Jon Duyvejonck** – This document is very stiff. What about aesthetics and recreation? What about non-scientific things that public cares about?

**Gretchen Benjamin** – All of the other reports and this model will be thrown together? What is the point of this meeting?

**Ken Barr** – Threefold:

Shared understanding and dialogue

Goes forward and gets at O&M effects

Get at strategies to get at goals and objectives

**Ken Lubinski** – Use Gail Carmody's model, it was much more complex.

**Al Fenedick** – Articulate Goals and objectives of the workshop otherwise people will want to dissect

Know your audience. Maybe make broader categories.

List the 3 reasons why we have the flow chart.

**Chuck Theiling** – Who is our audience? Scientific or stakeholders.

**Ken Barr** – Stakeholders.

## 7. Expert Panel 2:20 DeHaan

Hank showed PowerPoint slides describing Expert Panel. This is **Attachment 7**. Stated that cutoff for nominations to the expert panel is Sept 13.

### Questions/Comments:

**Steve Johnson** – Looking for national folks or someone with local knowledge?

**Ken Barr** – Get national level expert but then assign mentor to bring data to them.

**Gretchen Benjamin** – Additional category is “River Rat”. Will these folks present to NECC directly?

**Ken Barr** – Don’t think they’ll have any findings. Mostly just help to refine our understanding of the objectives.

**Jon Duyvejonck** – Review current info and make sure we didn’t miss anything. We’ve already established goals and objectives. Wants someone to review them and tell us if we are right and wrong.

**Rick Moore** – We would like to have them present to the NECC and hear what they have to say. Not only about this but also about goals and objectives.

**Ken Barr** – OK.

## 8. Study Status Reports

### Barge Avoidance Study -Keevin

Tom Keevin showed slides of the sampling runs. This is **Attachment 8**. Tom said that the sampling was just done but the analysis hasn’t been completed. The study basically uses hydroacoustics to determine if fish move out of the way of an approaching tow. Tom noted it was very exciting to see the river “come alive” at night, in that there was a large amount of fish activity in the main channel. The hydroacoustic traces can distinguish fish from other objects, and can also tell direction of fish movement. The focus is on what fish right in front of the tow are doing. The investigators will also be able to tell what size fish they are looking at.

Tom added that a related study would seek to determine what cues fish use if they are found to move out of the main channel. It is thought they may be responding to certain low frequency noises generated by towboats. The study will analyze the type of noise that tows generate.

### Lock Mortality Study -Keevin

Tom Keevin showed slides of the sampling study. This is **Attachment 9**. The objective is to determine if fish are being entrained by towboats as they idle in lock chambers. They performed surface collections (fresh dead fish tend to float), and bottom collections.

Hydro-acoustic devices were used to see how many fish were in the lock.

**Questions/Comments:**

**Bill Bertrand** – Raised the possibility of fish being decapitated due to sheer stress. Could that be why you aren't finding any behind tows? Would sink to bottom so might not be found.

**Larval Fish Sampling \_Fristik**

Rich summarized a contract effort this year to get additional samples earlier in the season. Work took place in Pools 16, 20, and 22, between April and July. The sampling approach utilized two transects in each pool and 3 sample points along each transect. About 146 samples were collected. A final report is expected in January 2003.

**Aquatic Plants -Wilcox**

Dan said that two growth and reproduction models have been developed, simulating resuspension of sediments by tows and their effects on aquatic plants. Elly Best and Steve Bartell developed the models. This year's efforts focused on wild celery growth and current velocity; experiments have already been done for sago pondweed. Test plots were set out on the Red Cedar River. The work is about done and being worked up. These experiments were looking at light attenuation effects on plants covered with algae and bacteria.

A survey of submersed aquatic plant spatial dispersion was also conducted in Pools 14-19, and found more than expected. The study will be expanding the geographic extent on where we look for effects of Navigation on plants.

Yao Yin's (USGS\_UMESC) report on plant occurrence in Pools 14-19 will be out in Oct.

**Back Water/Side Channel Data Collection – Fristik**

The initial impact assessment identified approximately 35 backwaters that have high/med risk of having tow-induced movement of sediment into backwaters and side channels. Currently, additional data is being collected to verify the model results. The researchers, from the Corps' Waterways Experiment Station, intended to get out in spring, but were delayed due to high water. Got out in June at 10 sites (these were identified in initial study). From these ten sites, 2 sites from Mississippi and 1 from the Illinois would be selected to do more detailed study by monitoring the sites with instrumentation as tows pass. Current status: Completed initial data collection; analyzing sediment samples; model verification will go into winter. The three detailed sites will be determined this fall.

**9. Next Meeting**

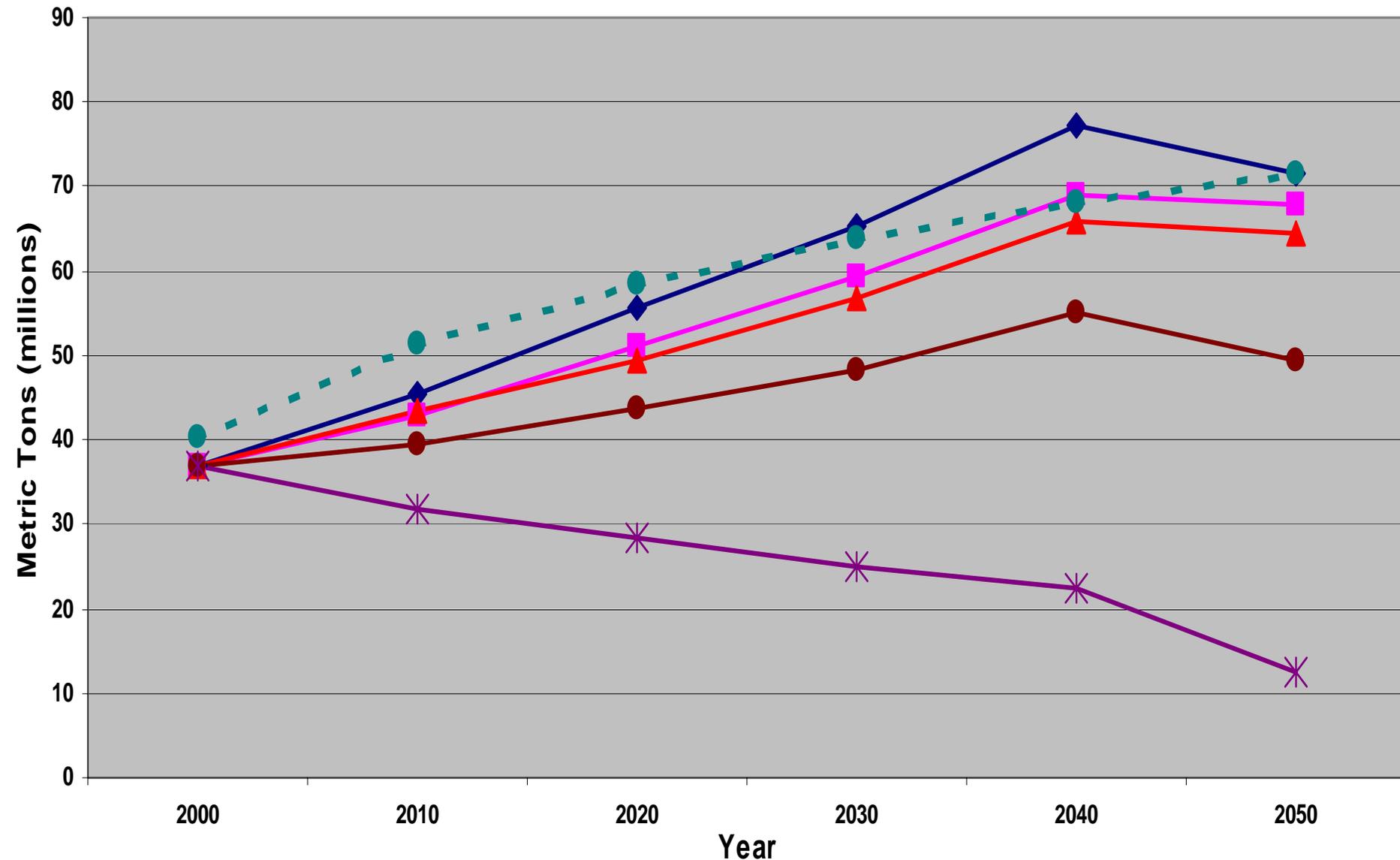
Tuesday Dec 10<sup>th</sup> in Davenport

# Attachment 1

**Attendance List**  
 NECC Meeting 5 Sept 2002  
 Holiday Inn, Moline, IL

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Catherine McCalvin	TNC	PO Box 305 Trempealeau, WI 54661-0305	608.534.6514	<a href="mailto:CMcCalvin@tnc.org">CMcCalvin@tnc.org</a>
Rick Moore	IWL	1619 Dayton Ave., Suite 202 St Paul, MN 55104-6206	651.649.1446	<a href="mailto:rxmoore@iwla.org">rxmoore@iwla.org</a>
Barb Naramore	UMRBA		651.224.2880	<a href="mailto:Bnaramore@umrba.org">Bnaramore@umrba.org</a>
Bernard Schonoff	IA DNR	3390 Hwy. 22 Muscatine, IA 52761	563.263.5062	<a href="mailto:fishiowa@muscanet.com">fishiowa@muscanet.com</a>
Holly Stoerker	UMRBA	415 Hamm Building 408 St. Peter Street St Paul MN 55102		<a href="mailto:hstoerker@umrba.org">hstoerker@umrba.org</a>
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### UMRS Total Grain Forecasts by Scenario



# Attachment 2

# ENVIRONMENTAL

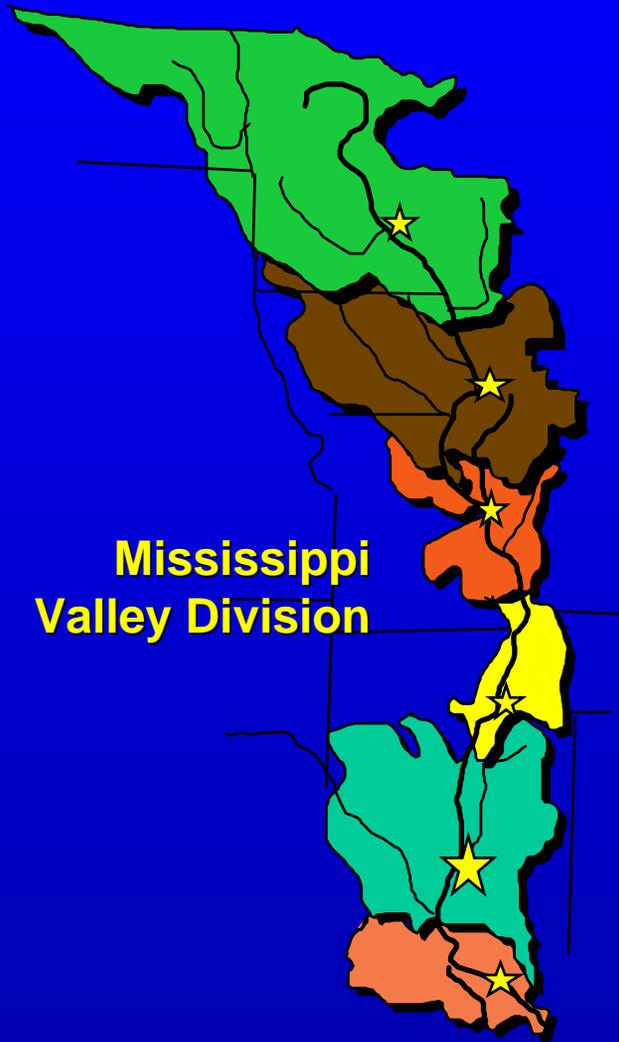
- Where have we been?
  - Interim Report
  - June 7 workshop Corps plus FWS
  - Aug 1&2 Conceptual Models and other tools
- Where are we going?
  - NECC 5 Sept 02
  - Mid Nov Regional workshops
  - NECC/ECC Apr 03
  - NECC Mitigation Planning July 03
- Not Enough Time!

# Feasibility Study Schedule

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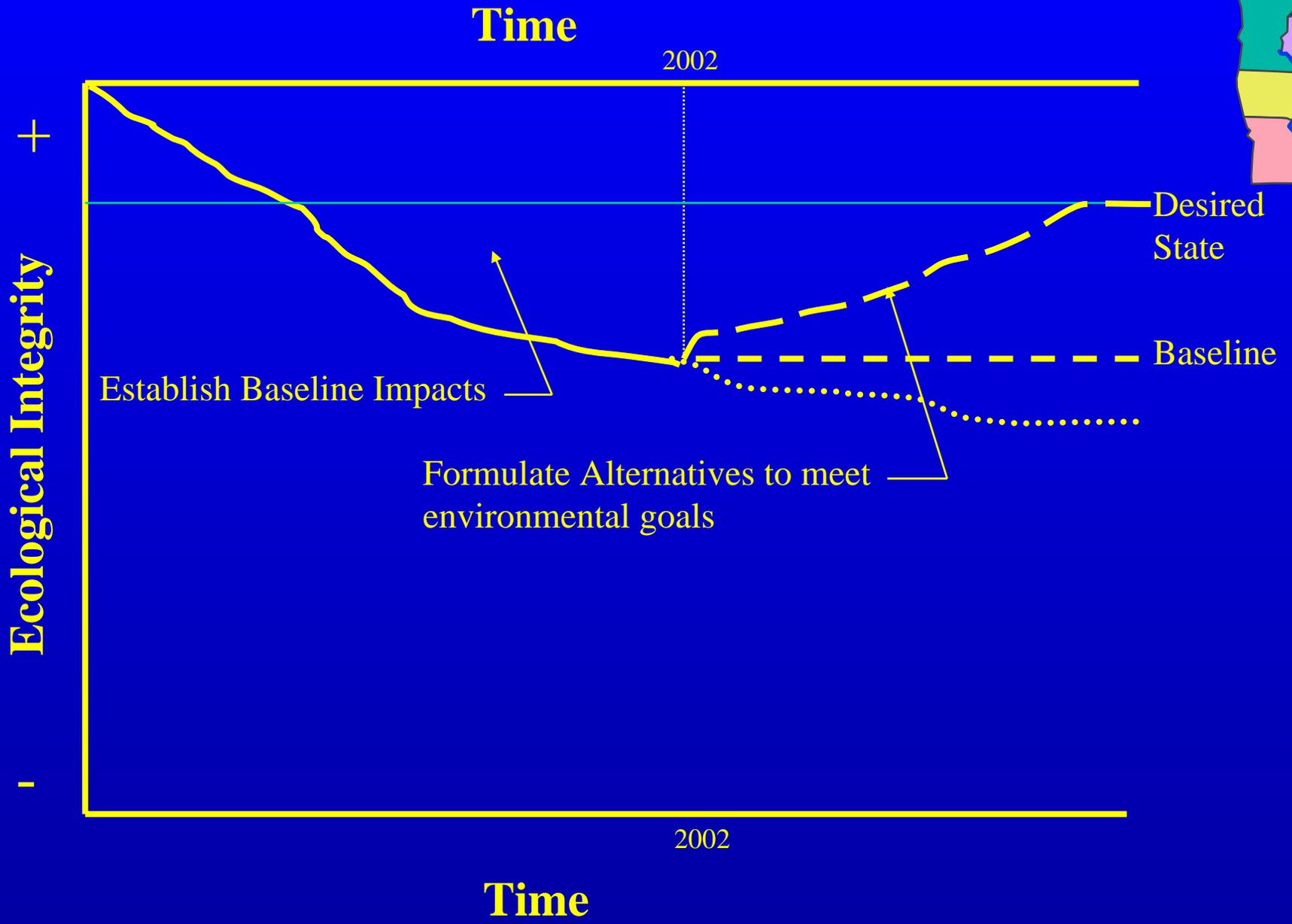
- **Alternative Evaluation** Aug 02-Sep 03
- **Tentative Integrated Plans w/BCR's** Oct 03
- **Public Meetings** Oct 03
- **Alternative Formulation Briefing** Nov 03
- **Draft Feasibility Report** Apr 04
- **90 day Public Review** Apr-Jun 04
- **Public Meetings** May 04
- **Final Feasibility Report w/EIS** Aug 04
- **Chiefs Report** Nov 04

# Attachment 3



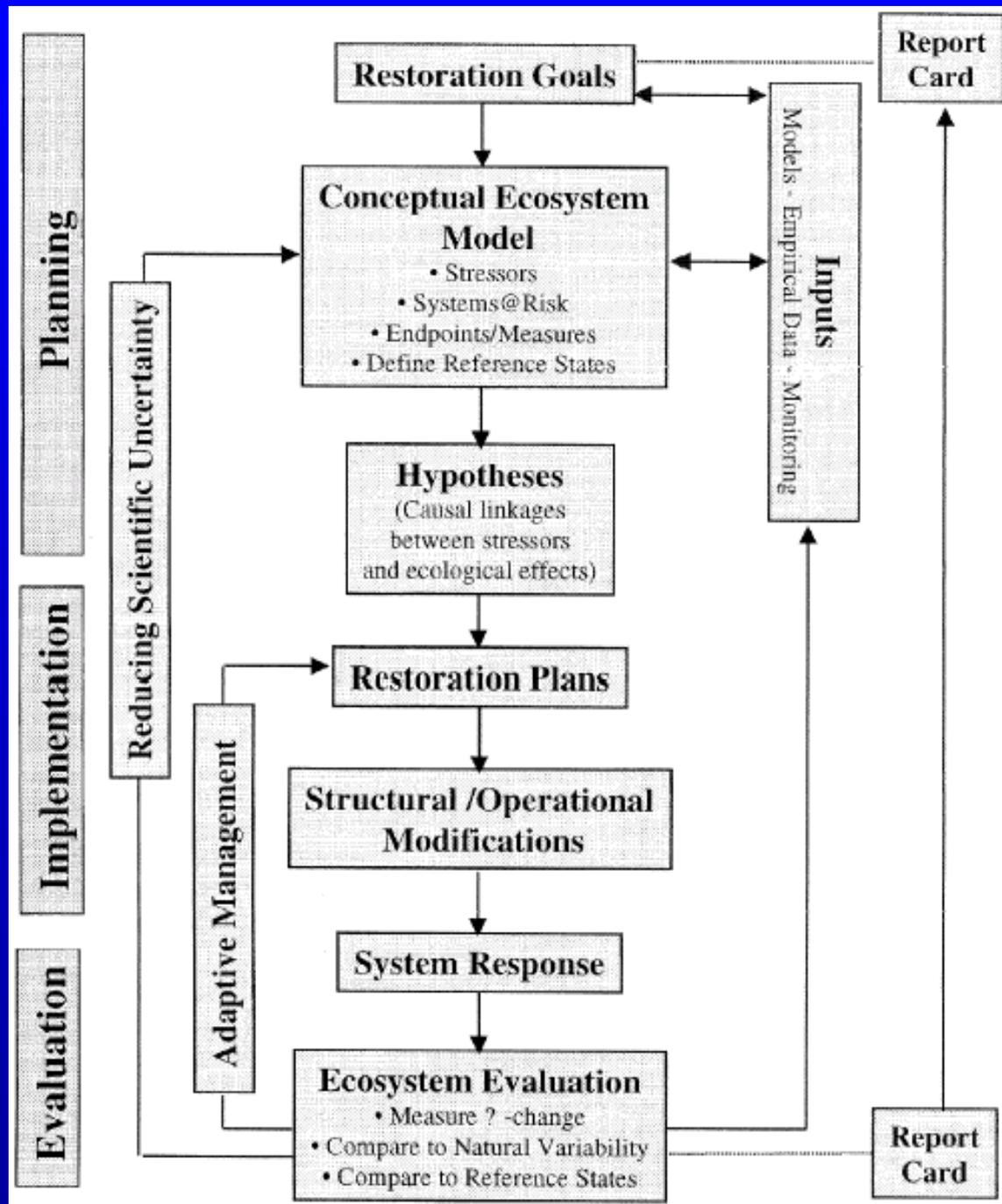
# Upper Mississippi River - Illinois Waterway System Navigation Feasibility Study

## Process for Establishing Environmental Sustainability Alternatives



**Not to Scale**

# Linking Science and Environmental Decision Making



# **Process for Establishing UMR-IWW Environmental Sustainability Alternatives**

---



- 1. Establish Goals and Objectives**
- 2. Determine Management Actions**
- 3. Establish Costs and Expected Outcomes**
- 4. Perform Incremental Analysis (NED/NER)**
- 5. Perform Integrated Alternatives and Tradeoff Analysis**

# 1. Establish Goals and Objectives

---



1. Compile existing stakeholder G&O data.
2. Standardize data / develop G&O GIS database.
3. Conduct technical expert panel review.
4. Distribute G&O to stakeholders for review.
5. Conduct stakeholder workshops.
6. Use stakeholder comments to generate final G&O GIS database.

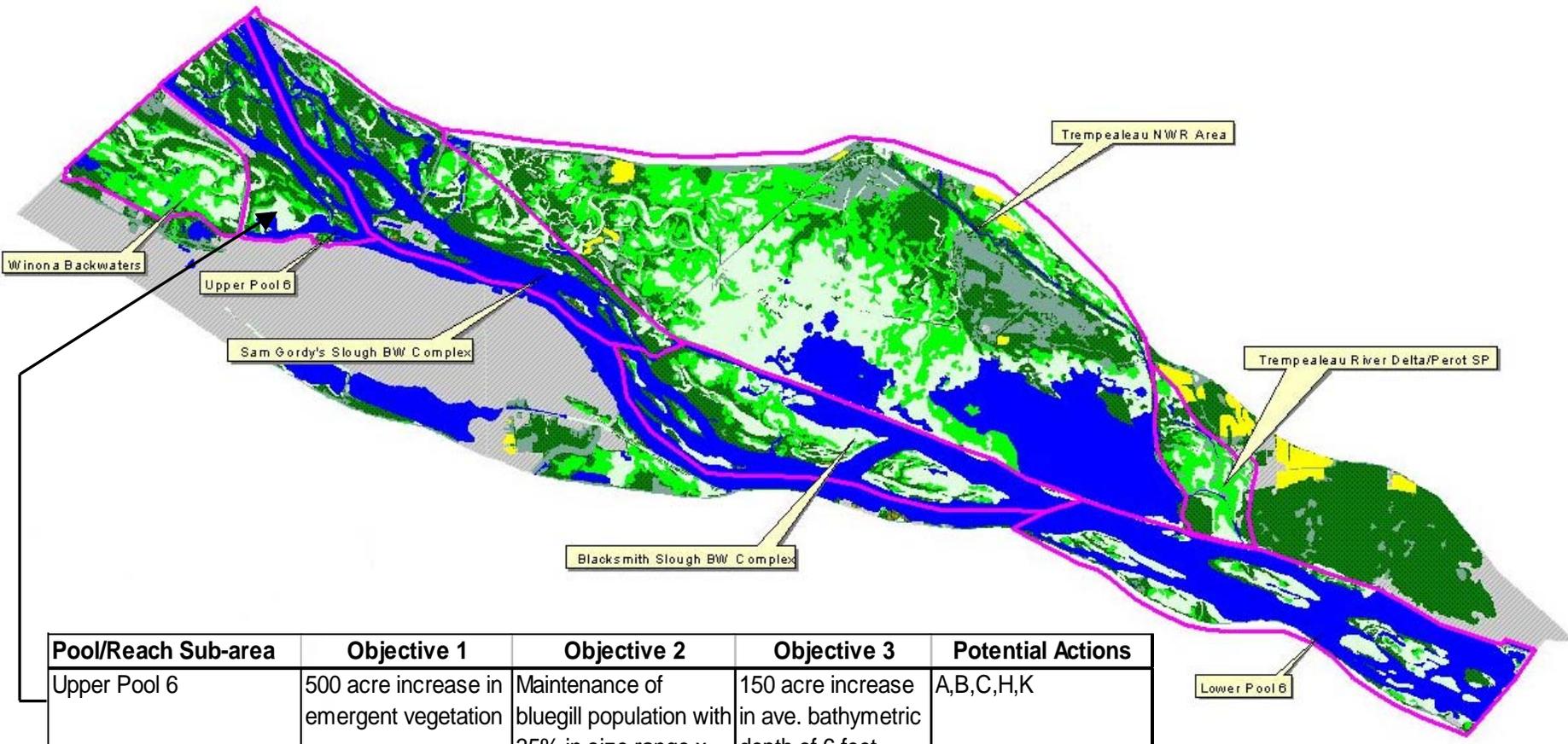
# Tiered Goals for Integrated River Planning

---



<b>Level of Goal</b>	<b>Scale</b>
First Tier Goals	Sustainability of System Components
Second Tier Goals	Broad Qualitative Integrated and Adaptable
Third Tier Goals	Quantitative Local to Regional Component Specific

# Goals and Objectives GIS Database



Pool/Reach Sub-area	Objective 1	Objective 2	Objective 3	Potential Actions
Upper Pool 6	500 acre increase in emergent vegetation	Maintenance of bluegill population with 35% in size range x	150 acre increase in ave. bathymetric depth of 6 feet	A,B,C,H,K
Winona Backwaters				
Trempealeau NWR area				

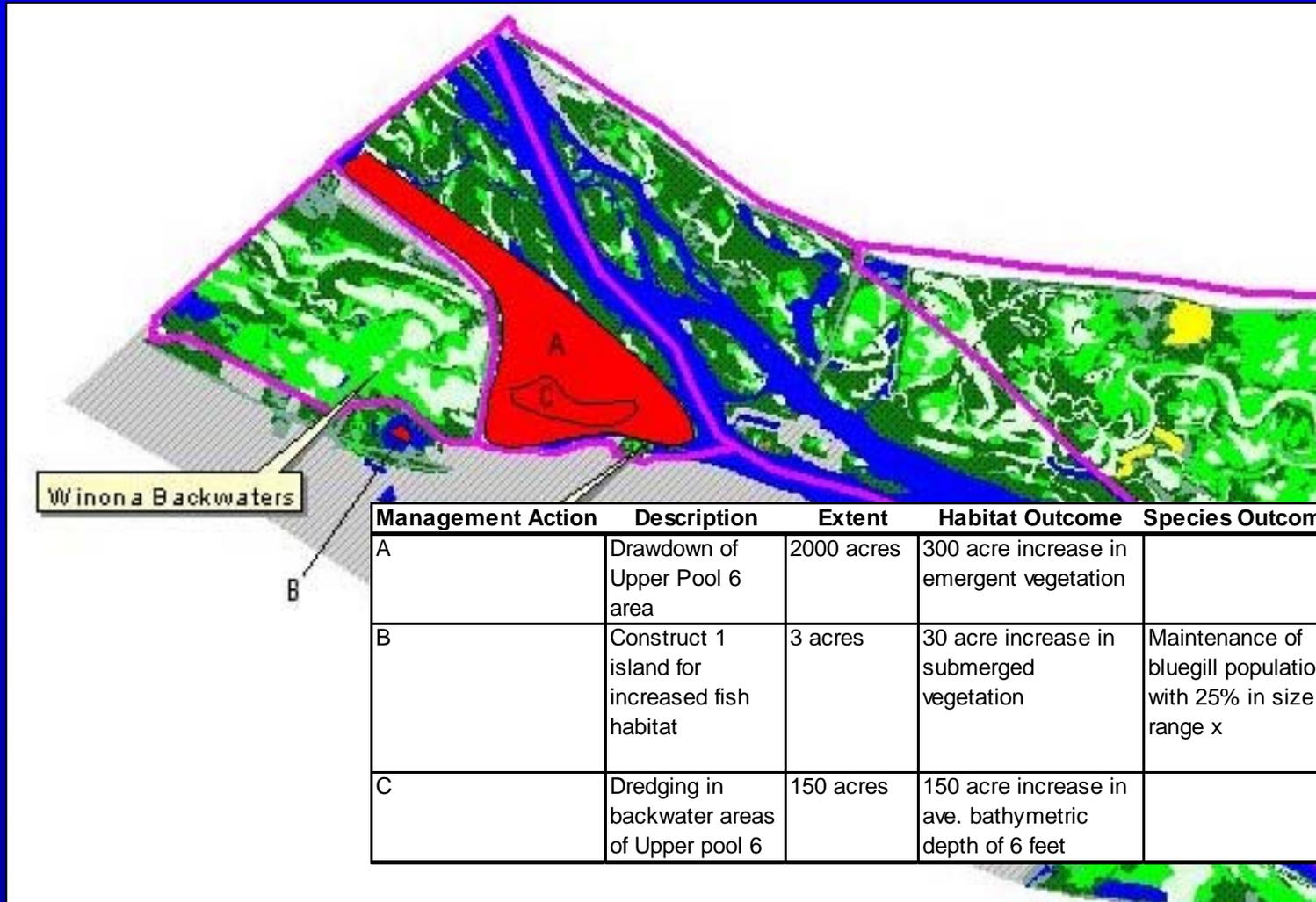
## **2. Determine Management Actions**

---



- 1. Compile management actions database.**
- 2. Link this to the G&O GIS database.**
- 3. Distribute the linked databases for review.**
- 4. Conduct stakeholder workshops.**
- 5. Use stakeholder comments to generate the final management actions database.**

# Management Actions GIS Database



### **3. Establish Costs and Expected Outcomes**

---



- 1. Identify potential costs of management actions.**
- 2. Estimate potential outcomes.**
- 3. Distribute the results to stakeholders for review.**
- 4. Use stakeholder comments to generate the final management actions/expected outcomes/costs database.**

# Management Actions and Anticipated Costs



		UNITS		COST/UNIT	TOTAL
<b>Structural</b>					
	Large Woody Debris	115 ea		\$1,000	\$115,000
	Chevron	15 ea		\$100,000	\$1,500,000
	Gravel Bars (2 acres ea)	7 ea		\$10,000	\$70,000
	Bullnose	7 ea		\$190,000	\$1,330,000
	Off Bank Reventments (linear Feet)	45000 feet		\$100	\$4,500,000
	Roundpoints	4 ea		\$52,000	\$208,000
	Notched Wing Dams	20 ea		\$10,000	\$200,000
	Side Channels (/1000 feet)	62		\$100,000	\$6,200,000
	Backwater	12		\$1,000,000	\$12,000,000
	Fish Nursery Areas (/ acre)	220		\$20,000	\$4,400,000
				<b>Structural Investment</b>	<b>\$30,523,000</b>
<b>Functional</b>					
	Fish Passage: Planning & Prioritization	1		\$250,000	\$250,000
	Fish Passage: Implementation	1		\$45,000,000	\$45,000,000
	Water Level Mngt.: Planning & Prioritization	1		\$250,000	\$250,000
	Water Level Mngt.: Implementation	1		\$9,000,000	\$9,000,000
	Sedimentation: Planning and Priortization	1		\$250,000	\$250,000
	Sedimentation: Implementation	1		\$4,500,000	\$4,500,000
				<b>Functional Investment</b>	<b>\$59,250,000</b>
				<b>TOTAL UMR</b>	<b>\$89,773,000</b>

## **4. Perform Incremental Analysis (NED/NER)**

---



- 1. Develop environmental alternative plans with stakeholder input.**
- 2. Perform incremental analysis.**
- 3. Conduct NED/NER analysis.**
- 4. Compare costs, outputs and NED/NER benefits.**
- 5. Distribute the results to stakeholders for review.**
- 6. Rank the environmental alternative plans.**

## **5. Perform Integrated Alternatives and Tradeoff Analysis**

---



- 1. Develop integrated alternative plans.**
- 2. Perform tradeoff analysis.**
- 3. Hold public alternative plan meetings.**
- 4. Conduct alternative formulation briefings.**
- 5. Use stakeholder comments to assist in collaboratively selecting the “best” comprehensive plan.**

# Study Milestone Schedule

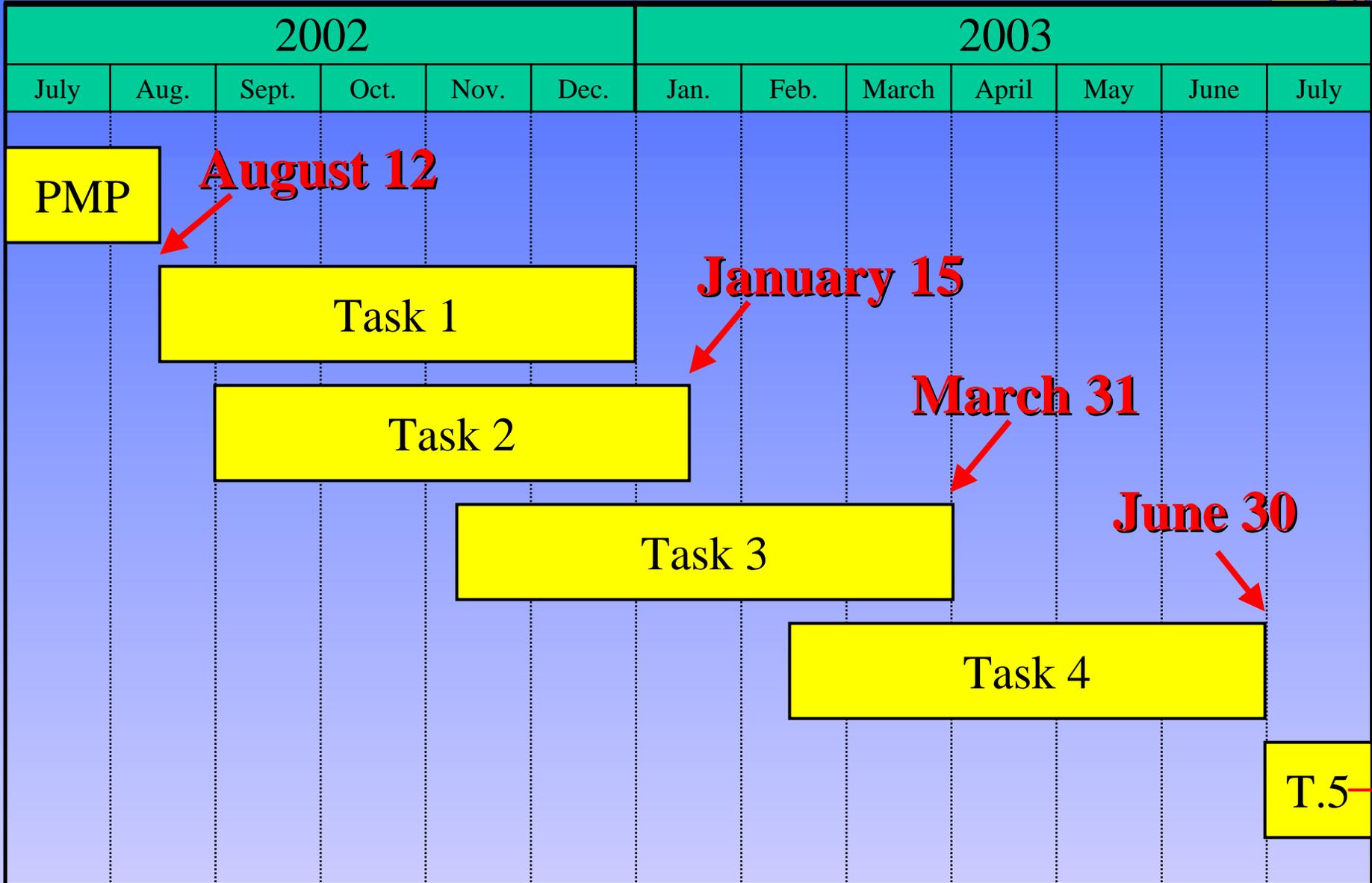


STUDY MILESTONES BY TASK	CURRENT SCHEDULE
<b>Task 1 - Establish Goals and Objectives for the Condition of the River Ecosystem</b>	
Draft GIS database of UMR-IWW third tier (i.e., measurable and defensible) goals and objectives	Oct. 2002
NECC nominated Expert Panel Review (review study plan and develop G&O evaluation process)	Oct. 2002
Maps and tables of Third tier G&O (distributed for review)	Oct. 2002
Stakeholder workshops on G&O (combined with Task 2 workshops)	Nov. 2002
Final GIS database of UMR-IWW third tier goals and objectives	Dec. 2002
<b>Task 2 - Determine Management Actions</b>	
Tabular database of UMR-IWW management actions	Oct. 2002
Maps and worksheets of G&O and potential Management actions (distributed for completion)	Oct. 2002
Stakeholder workshops for determining management actions	Nov. 2002
GIS database of UMR-IWW management actions	Jan. 2003
<b>Task 3 - Establish Costs and Expected Outcomes</b>	
Maps and summary tables of management actions, expected outcomes and costs (distributed for review)	Feb. 2003
GIS database of UMR-IWW management actions, expected outcomes and costs	Mar. 2003
<b>Task 4 - Perform Incremental Analysis (NED/NER Analysis of Environmental Alternatives)</b>	
Develop environmental alternative plans (with NECC & ECC input)	April 2003
Incremental and NED/NER analysis (results distributed for review)	May 2003
Final ranked environmental alternative plans	June 2003
<b>Task 5 - Perform Integrated Alternatives and Tradeoff Analysis</b>	
Integrated alternatives and tradeoffs analysis (results distributed for review)	Oct. 2003
Public alternative plan meetings	Oct. 2003
Alternative formulation briefing	Nov. 2003

# Study Schedule



## Process for Establishing Environmental Sustainability



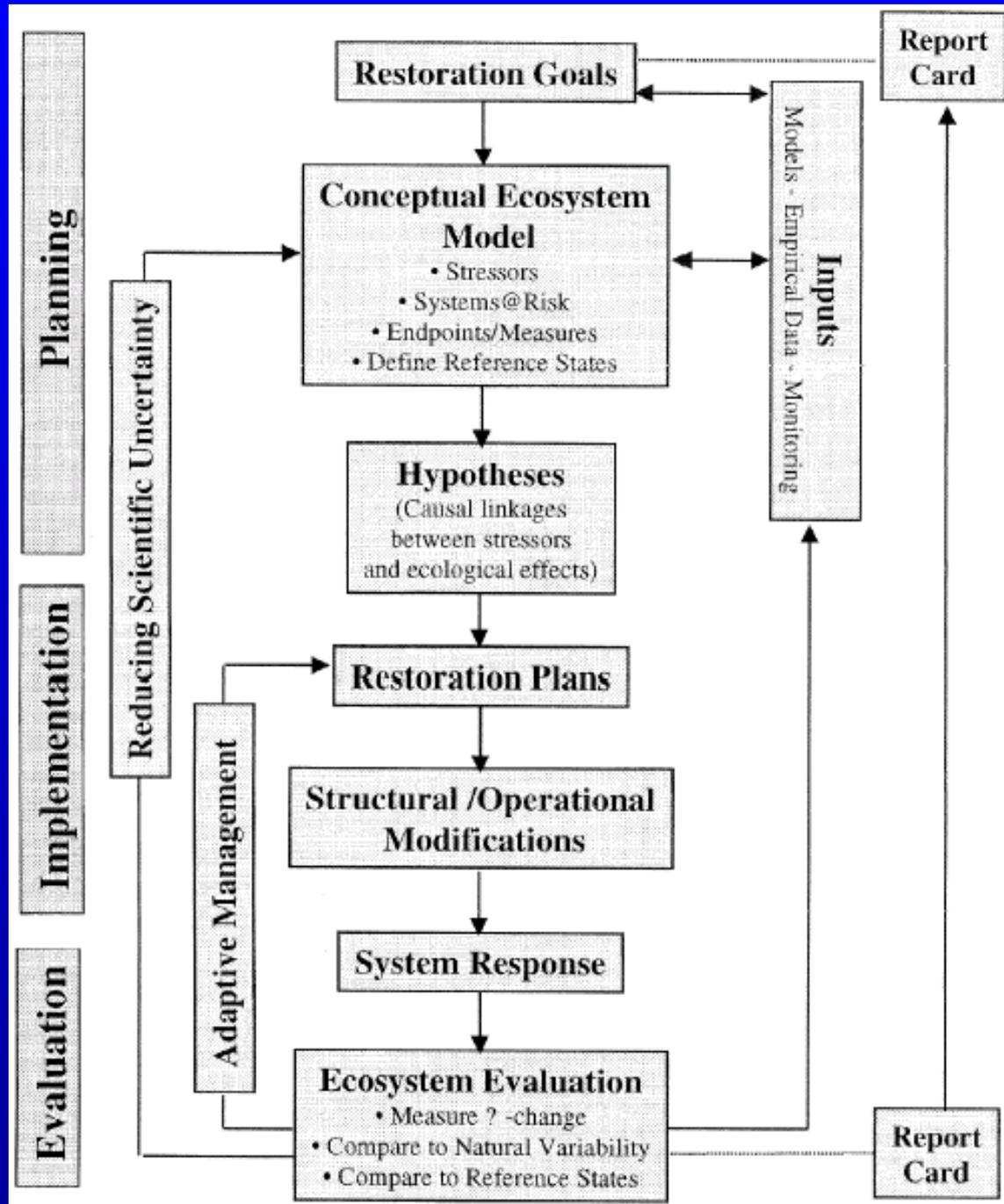
# **Process for Establishing UMR-IWW Environmental Sustainability Alternatives**

---



- 1. Establish Goals and Objectives**
- 2. Determine Management Actions**
- 3. Establish Costs and Expected Outcomes**
- 4. Perform Incremental Analysis (NED/NER)**
- 5. Perform Integrated Alternatives and Tradeoff Analysis**

# Linking Science and Environmental Decision Making





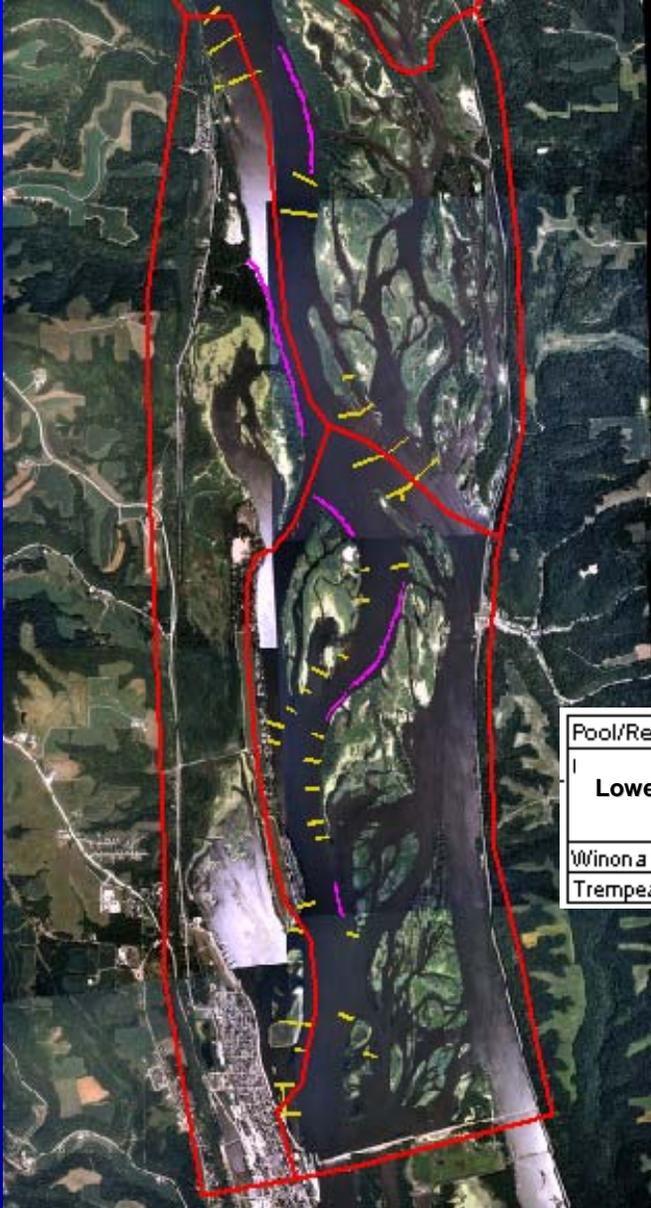
# Regional Stakeholder Workshops Structure

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- 1. Four regional two-day workshops in November.**
- 2. Distribution of standardized G&O, potential management actions, and read-ahead materials.**
- 3. Day 1 – Environmental G&O and management action databases.**
- 4. Day 2 – Regional conceptual models, evaluation data and tools.**



# Regional Stakeholder Workshops



Pool/Reach Sub-area	Objective 1	Objective 2	Objective 3	Potential Actions
<b>Lower Pool 10</b>	500 acre increase in emergent vegetation	Maintenance of bluegill population with 35% in size range x	150 acre increase in ave. bathymetric depth of 6 feet	A,B,C,H,K
Winona Backwaters				
Trempealeau NWR area				



# Regional Stakeholder Workshops





# **Regional Stakeholder Workshops Objectives**

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- 1. Final UMR-IWW environmental G&O**
- 2. Development of detailed management actions**
- 3. Refinement of regional ecosystem conceptual models**
- 4. Identification of regional evaluation data and tools**

# Attachment 5

# UMR-IWW Ecosystem Conceptual Models

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- Background
  - Conceptual models help to gain a better understanding of the linkages between:
    - Environmental Objectives
    - Management Actions
    - State of the Ecosystem
- Task
  - Discuss the utility of developing a UMR-IWW ecosystem conceptual model

# Purposes of a Conceptual Model for the UMR-IWW

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- To visually present a complex system
- Creates a framework for additional input
- Provides a basis for decision making in relation to the achievement of objectives
- Develops a structure for implementing adaptive management and restoration

Upper Mississippi River-  
Illinois Waterway System  
Navigation Feasibility Study

Draft Conceptual Model

August 1-2, 2002 Workshop  
Rock Island District

Develop limited and generalized conceptual model to assist in assessing impacts and evaluating restoration and planning alternatives in relation to revised Navigation Study.

## Definition: Conceptual model

A *conceptual model* identifies components of interest in a complex system and defines functional interrelationships among the components based on current knowledge and an understanding of the system.

# Attachment 6

## Previous UMR-IWW conceptual models:

- Lubinski 1993
- USGS 1999 (Status and trends...)
- WEST Consultants 2000 (Cumulative effects study...)
- USACE 2000 (Habitat needs assessment...)
- UMRCC 2000 (A river that works...)

...previous studies considered in derivation of the  
draft conceptual model...

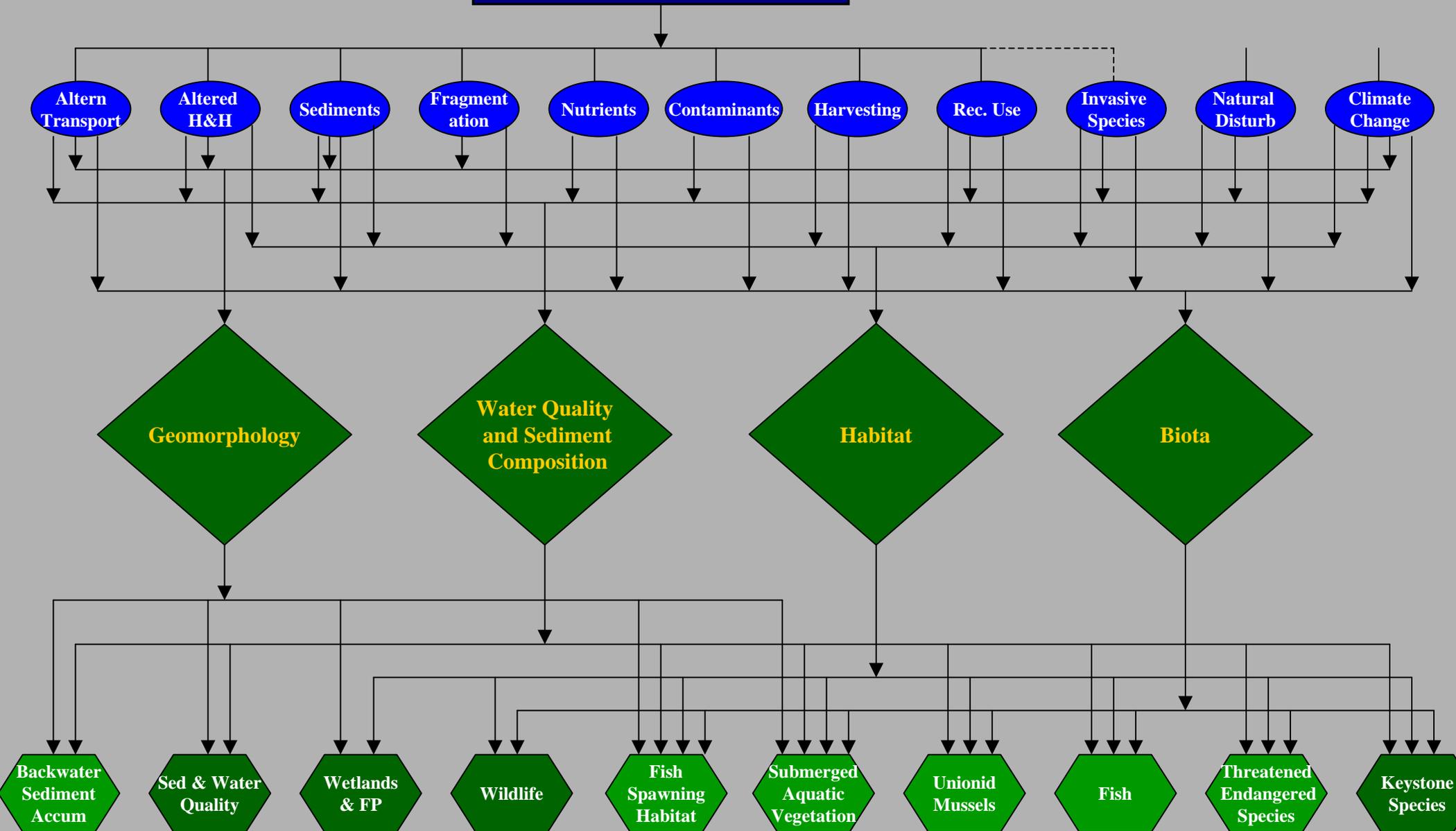
# Purposes of a conceptual model:

- Visually characterize a complex system
- Identify major drivers, stressors, and endpoints (attributes, performance measures)
- Identify major ecological effects of stressors
- Define functional relationships between stressors and endpoints
- Provide a framework for adaptive management and restoration
- Assist in decision on impact assessment, restoration, and management actions
- Provide a framework for input from stakeholders

## Process paralleled that of Harwell et al. 1999:

- Identify major stressors in UMR-IWW
- Specify general categories of ecological effects
- Define specific subsets of effects of concern
- Indicate functional connections between stressors and effects

# Land & Water Use



Larger scale stressor

**Land and Water Use**

Specific stressor

Altered  
H&H

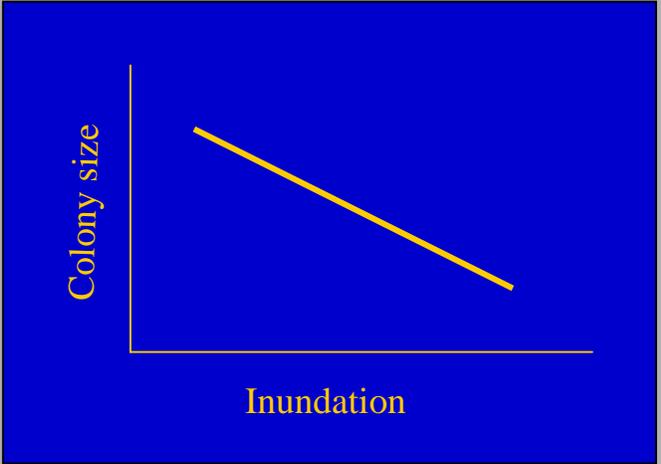
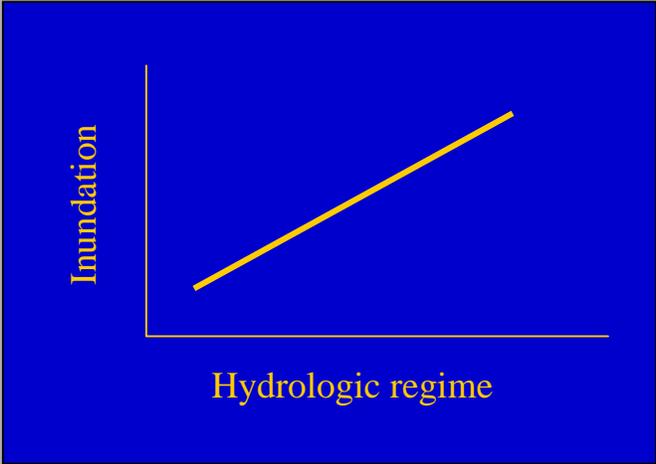
Inundation,  
Soil saturation

General ecological effect

**Habitat**

Specific effect

G.B. Heron  
# of colonies,  
Colony size



## Future model refinement:

Discussions with stakeholders and scientific community regarding modifications and applications to geomorphically distinct regions in the UMR-IWW:

- Upriver from the Quad Cities
- Downriver from the Quad Cities
- Open River
- Illinois River

## Products from stakeholder involvement:

- Add, delete, modify endpoints of concern for region
- Refine definition of desired conditions
- Identify existing data and tools, as well as critical gaps,
- Develop plans for adaptive management to achieve desired conditions

## Expectations from expert panel participation:

- Provide state-of-the-science input regarding large river systems
- Review and evaluate proposed conceptual model
- Guide selection and use of models, data, GIS, etc. to construct operational models based on conceptual models
- Assist in the development of functional relations between stressors and endpoints (performance measures)
- Identify major sources of uncertainty and determine implications for assessing impacts or planning/restoration
- Assist in design of adaptive management frameworks
- Evaluate desired conditions and planning alternatives from perspective of sustainability

## Overall objective of participation:

Finalization of the conceptual models used to guide the revised study and identification of existing (and needed) models, data, tools for implementation of the conceptual models.

Larger scale stressor



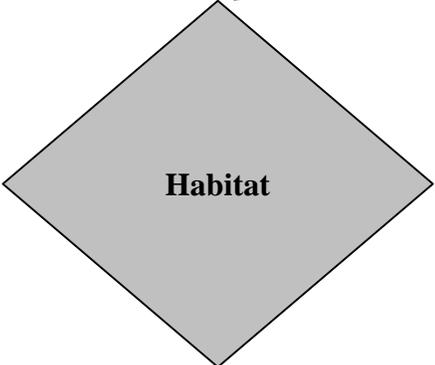
Specific stressor



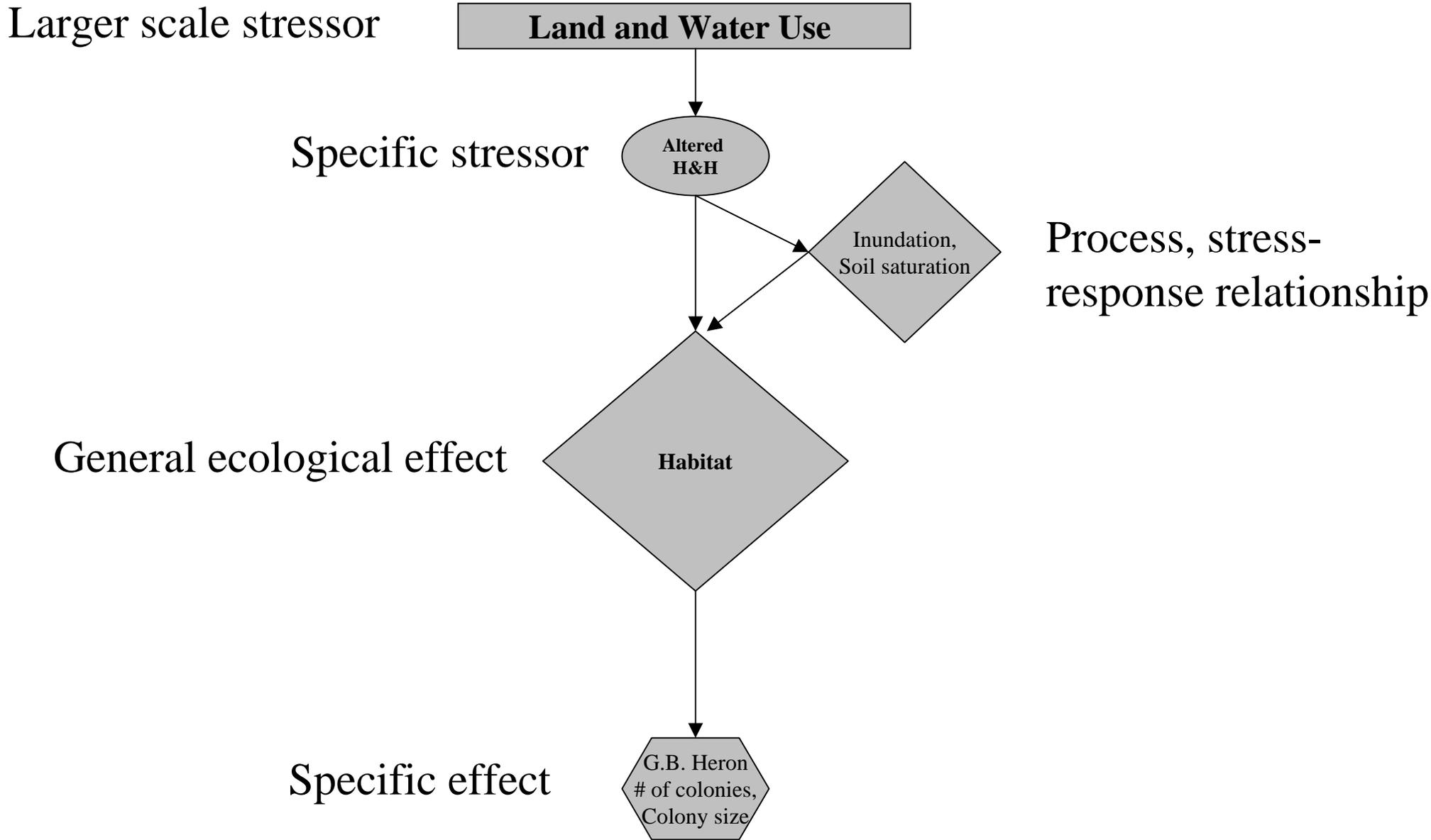
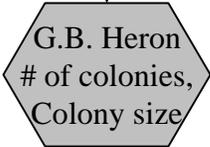
Inundation,  
Soil saturation

Process, stress-  
response relationship

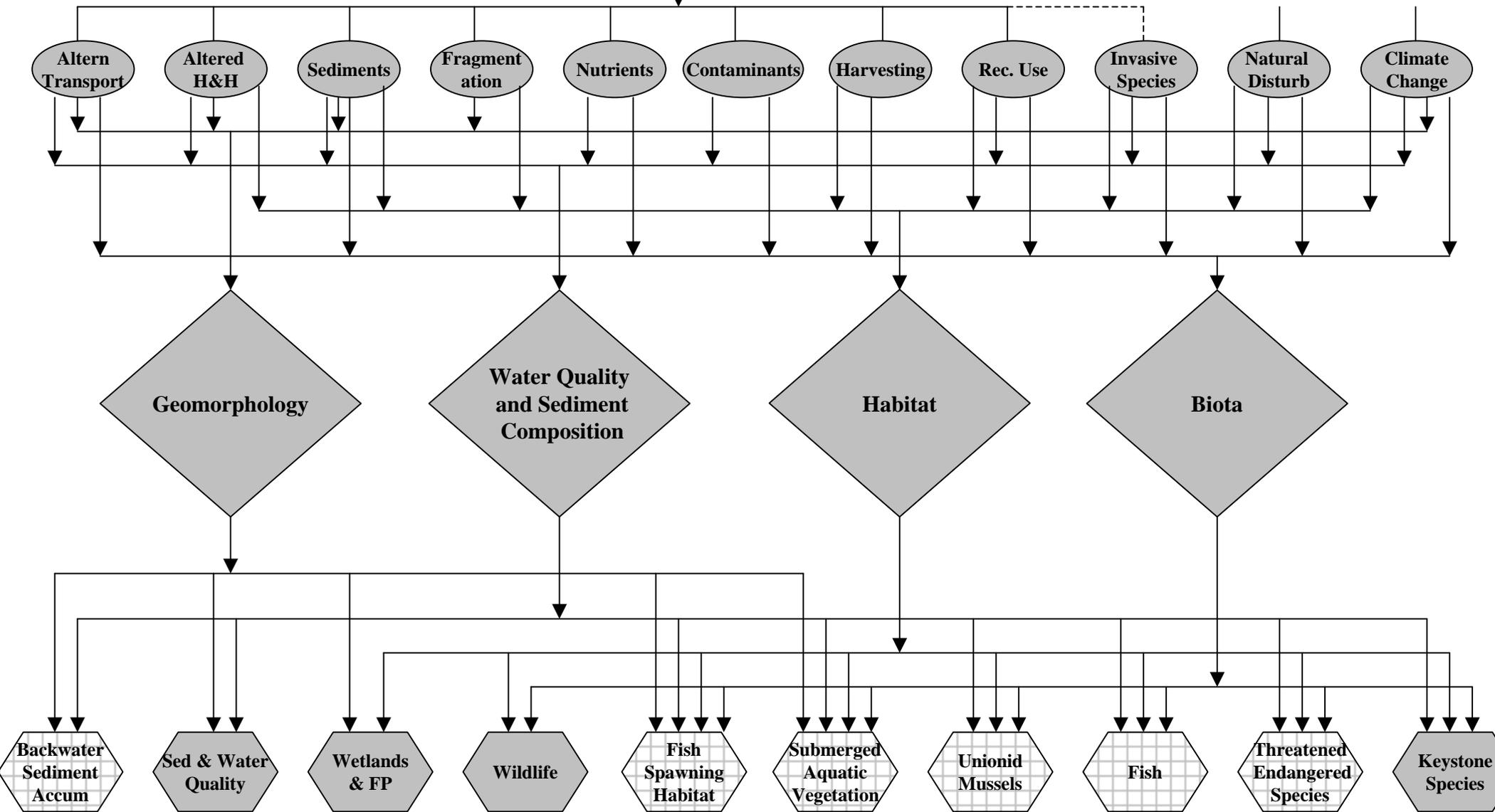
General ecological effect



Specific effect

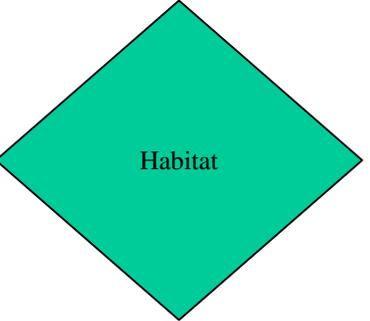
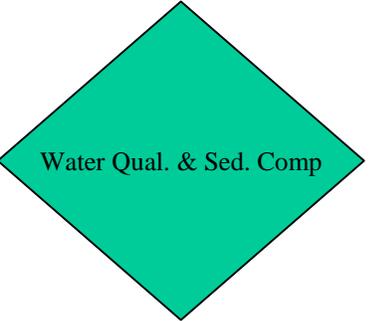
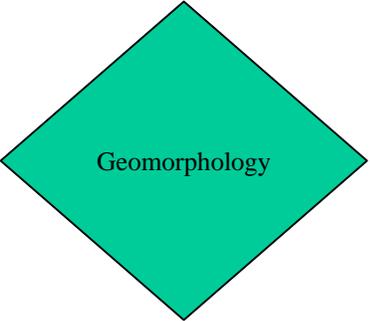
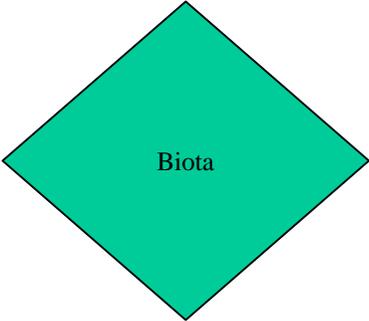


# Land & Water Use



# Land & Water Use

Alt. H&H    Climate Change    Sediments    Nutrient Load    Contaminants    Disconn.    Inv. Species    Rec. Use    Harvesting    Nat. Disturb    Alt. Transport



Larger scale stressor

**Land and Water Use**

Specific stressor

Altered  
H&H

Inundation,  
Soil saturation

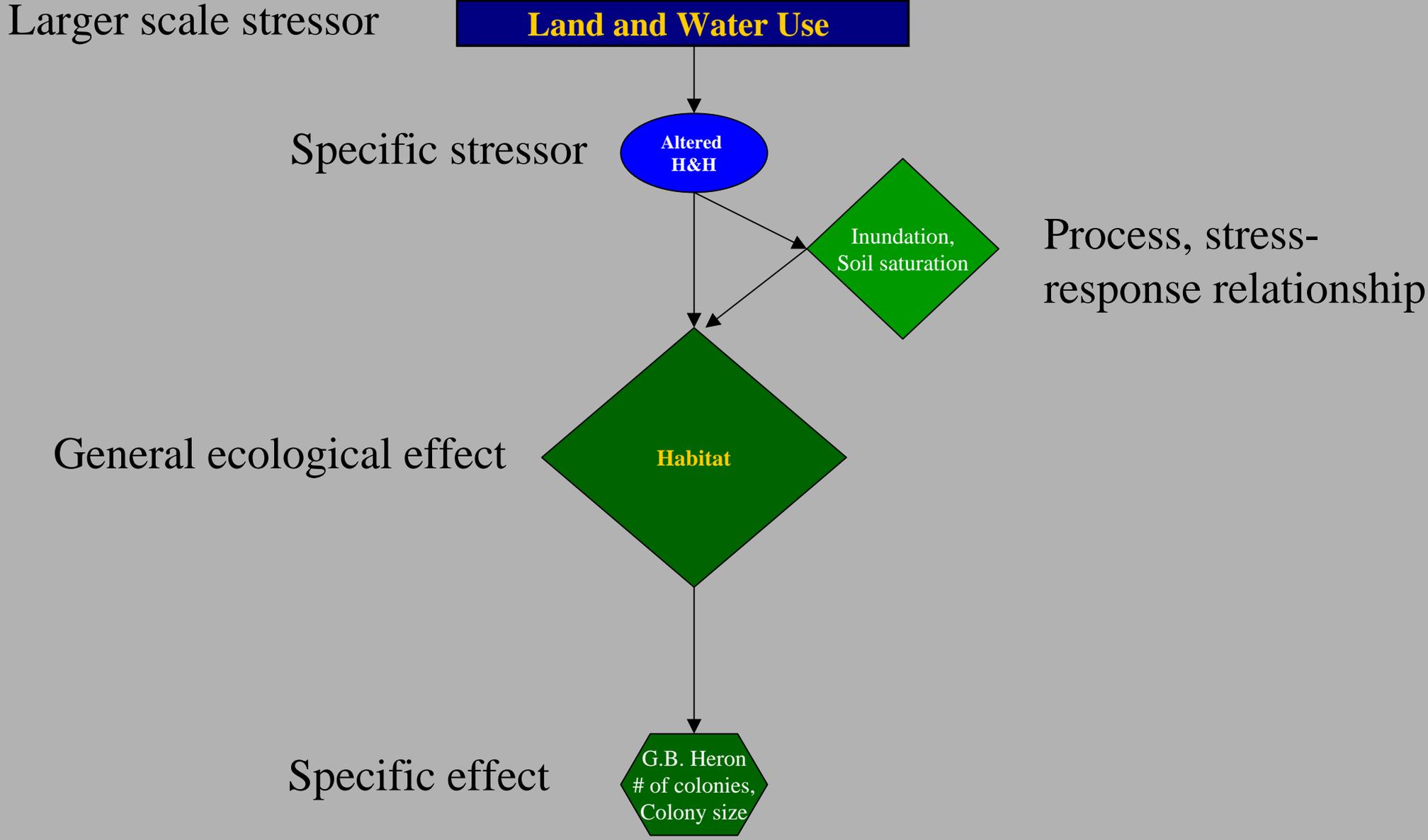
Process, stress-  
response relationship

General ecological effect

**Habitat**

Specific effect

G.B. Heron  
# of colonies,  
Colony size



# Technical Expert Review Panel Primary Duties

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- 1. Identify and refine conceptual UMR-IWW ecosystem models and evaluation tools.**
- 2. Provide guidance in developing a process to establish standardized goals and objectives.**
- 3. Assist in evaluating UMR-IWW alternative management actions.**

# Technical Expert Review Panel Areas of Expertise

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- 1. Terrestrial Ecology**
- 2. Aquatic Ecology**
- 3. Ecological Modeling**
- 4. Hydrology and Sediment**
- 5. Geomorphology**
- 6. Water Quality**