

Communicating Models to Stakeholders

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Communicating to Stakeholders

- Throughout the process, there is a continuous need to inform, engage, and motivate water quality managers, stakeholders, cooperating agencies, elected officials, and the public.
- Outreach campaigns can be powerful tools in this process.
- *Today's talk will provide examples on the process of bringing stakeholders to the table to understand the model, get consensus approval of inputs and presenting modeling results to engage stakeholders in implementation.*

Communication is needed for Multiple Phases

- First Phase: Awareness
- Second Phase: Education
- Third Phase: Action

GOAL: Engage, educate and facilitate stakeholders throughout the process

<http://cfpub.epa.gov/npstbx/getinstep.html>

First Phase: Awareness

- Prepare a map of the watershed with political boundaries overlaid.
- Prepare a 2-page background sheet on the issues and your project.
- Develop a list of media contacts.
- Assemble a media kit (including the map, a background sheet, a contact list, and three news articles with quotes).
- Submit articles to local media outlets (newspapers, TV, radio).
- Make presentations at local government meetings.

Who are your Stakeholders?

- Watershed residents
- Landowners and managers
- Business and industry representatives
- City/county officials
- Citizen groups
- Community service organizations
- Religious organizations
- Soil and water conservation districts
- Groundwater conservation districts
- River authorities
- Universities, colleges and schools
- Environmental and conservation groups

Partnership Building

Contact all of your stakeholders and explain the upcoming process and how they can play a role, describe how they can be affected either directly or indirectly by the issues.

Invite Stakeholders

- Send letters
- Send emails
- Telephone calls
- Present project information at public meetings and to local boards
- Ask for entity involvement in the process
- Invite participation through the media

Involving stakeholders

- Builds trust and support for the process and product
- Shares responsibility for decisions or actions
- Creates solutions more likely to be adopted
- Leads to better, more cost-effective solutions
- Forges stronger working relationships
- Enhances communication and coordination of resources

Communicating Models

- Bring Stakeholders to the table to participate
- Discuss and Explain Model(s)
- Discuss Model Inputs and obtain consensus
- Presenting Model Results to Engage Stakeholders in Implementation

Top 12 tips to move the process forward

1. **Involve stakeholders as soon as possible**
2. **Be honest.**
3. **Listen.**
4. **Communicate clearly and often**
5. **Recognize differences early on.**
6. **Don't leave out stakeholders because they're difficult.**
7. **Focus on their issues.**
8. **Establish mini-milestones.**
9. **Commit the resources needed to achieve your objectives.**
10. **Call a meeting only when it's absolutely necessary.**
11. **Give feedback and praise.**
12. **Make it fun.**

Pull Together Your Main Project Partners



Media Promotion for Project

- Get to know your local media, set up meetings, take them out to lunch.
- Include the media on your email list so they can help advertise upcoming events and issues.
- Develop and send news releases papers and media outlets.
- Ask your partners to also promote the project.

Websites and Brochures

- Created the Plum Creek Watershed Partnership Website <http://pcwp.tamu.edu> and informational brochure (fact sheet).
- Received contact information from
 - County Agents
 - NRCS
 - GBRA
- Mailed out over 700 brochures and invitations to the three Public Meetings and resent them after the first meeting.



Second Phase: Education

- Continue to submit articles to various media outlets on the issues of concern.
- Expand on the list of media contacts to include other venues of communication within the community (e.g., periodicals, cable television stations, community newsletters).
- Develop targeted outreach materials such as fact sheets or flyers that include messages relevant to specific audiences.
- Develop a general slide show on the project showing geographic scope, major issues of concern, and possible sources of pollutants. Include a script that the stakeholders can use to make presentations to their constituents.

Second Phase: Education

- Develop a speaker's bureau for the stakeholders so they can go out in the community to make presentations.
- Sponsor events such as a canoe trip, watershed festival, or city-farm tour.
- Develop news items that can be included in stakeholder related publications.
- Prepare a newsletter or listserve that can be used for communication within the stakeholder group and for distribution to the community.
- Develop a traveling tabletop display that can be used at libraries, fairs, schools, etc.

Communicating environmental conditions—

- Linking indicators to water quality and habitat condition further aids this effort and is an important consideration in any assessment and monitoring program.
- **Make the science understandable to the public by using examples or linkages that they can relate to.**
- Explain as much as you can with colors and text on graphs, maps, etc.

Discuss the Goals of the Program

1. Clearly explain the water quality issue & data
2. Discuss all of the potential sources
3. Explain what modeling approach will be used to determine load reductions
4. Explain results of load reduction estimates
5. Discuss appropriate management measures
6. Discuss appropriate Outreach & Education
7. Discuss technical and financial assistance needed
8. Discuss implementation schedule, set of criteria for load reductions, an interim & measurable milestones
9. Finally discuss monitoring component to determine effectiveness of the plan

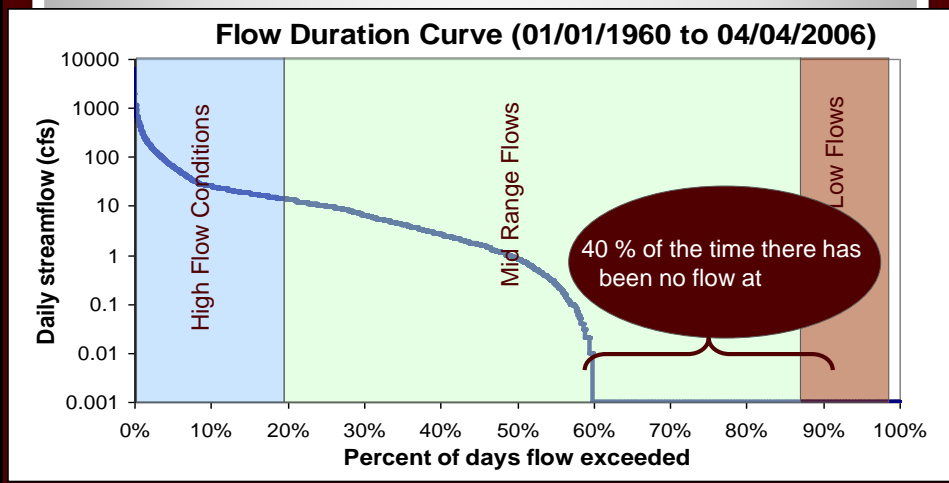
Load Duration Curve Examples

Pollutant Load Duration Curves

- Show water quality based on the **actual measured bacteria** at a given location
- Show water quality over time, across flow conditions (high and low)
- Help identify potential contributors as nonpoint or point sources
- Relatively easy to develop and understand

Flow Duration Curve

Shows the percentage of time the flow in a stream is likely to equal or exceed a given level.

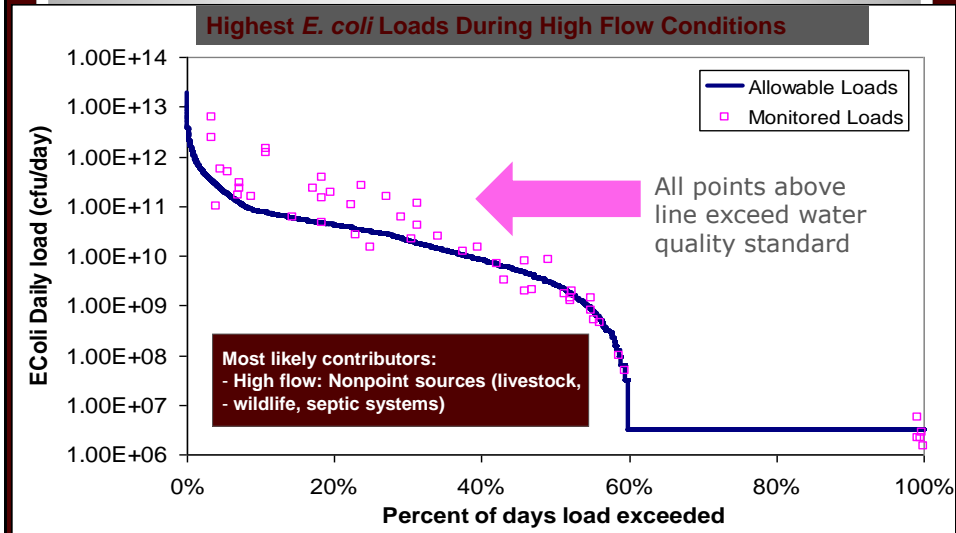


Load Duration Curves

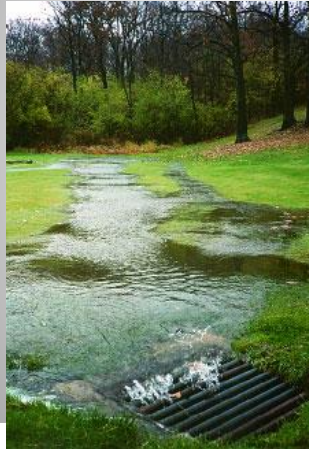
- Link stream flow with actual monitored bacterial concentrations
- Flow conditions multiplied by bacteria standard indicate maximum limit of stream loading
- Interpretation of impairment based on knowledge of hydrological processes and patterns

Load Duration Curve

Created by multiplying the flow values by the pollutant concentration.

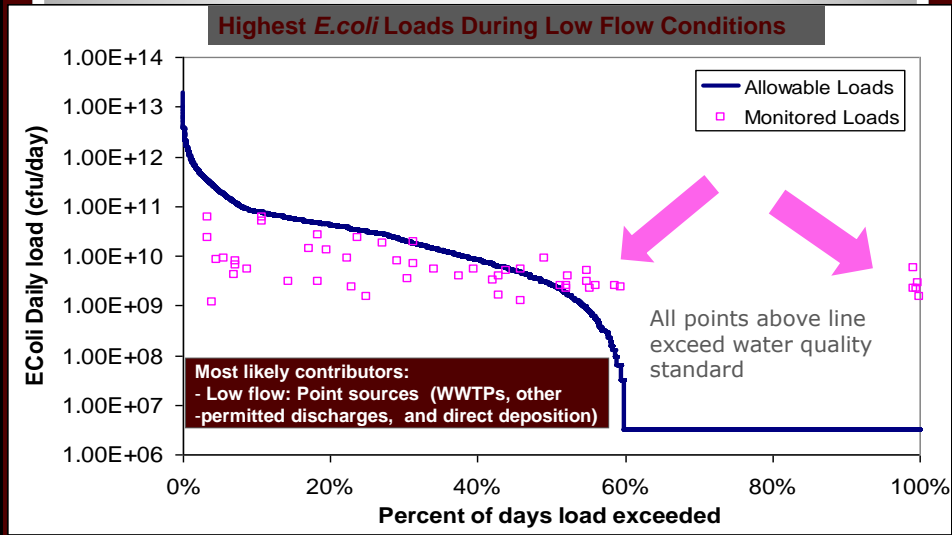


Examples of High Flow Sources



Load Duration Curve

Created by multiplying the flow values by the pollutant concentration.



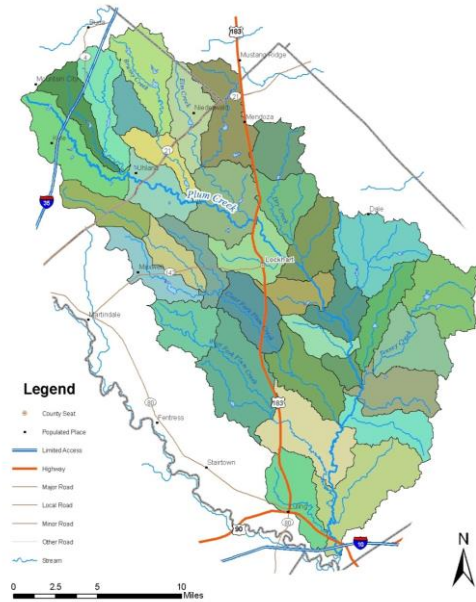
Examples of Low Flow Sources



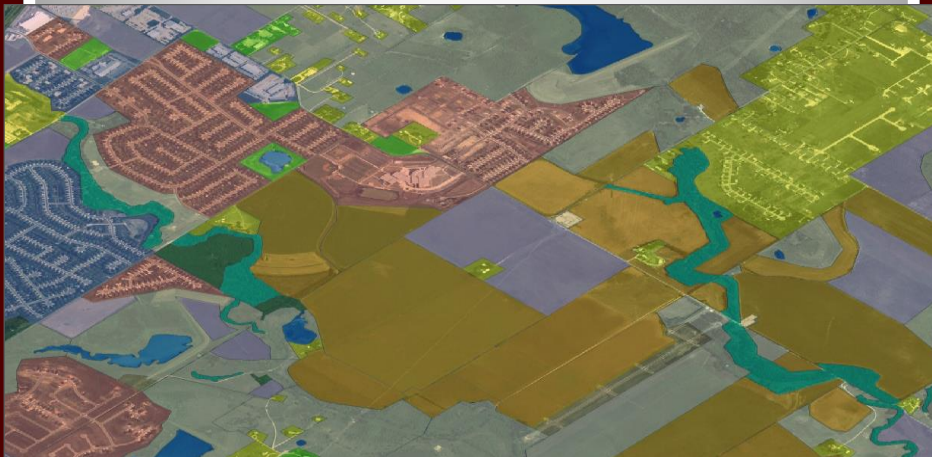
Load Duration Curve Limitations

- Cannot separate individual sources (for example, cattle vs. septic), only point vs. nonpoint
- Cannot determine exactly when all high pollutant levels occur
- Do not allow comparison of different BMPs that might be used to improve water quality, but other models like Soil and Water Assessment Tool (SWAT) and Hydrologic Simulation Program - FORTRAN (HSPF) can.
- Not a model, simply a data assessment

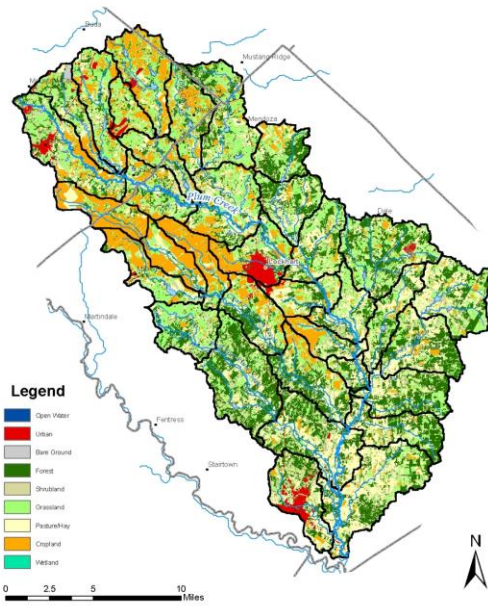
Plum Creek Watershed



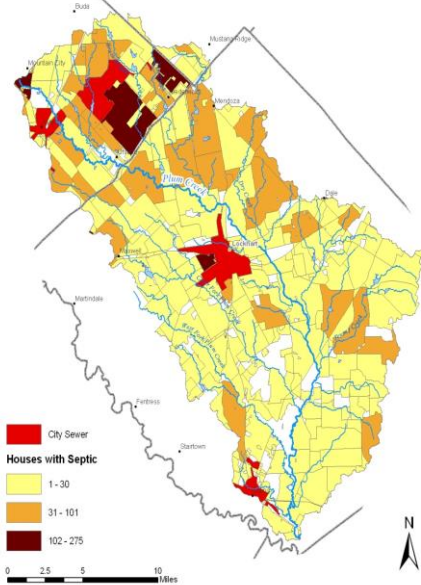
Land Use Classification



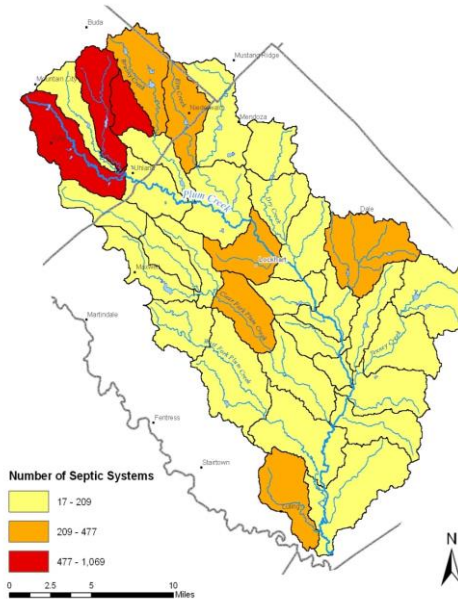
Plum Creek Land Use



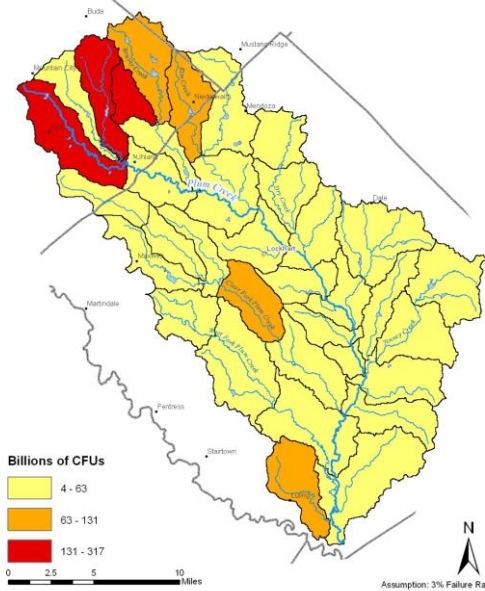
Septic System Distribution



Septic System Use



Average Daily Potential E. coli Load from Septic Systems



Water Quality Assessment for Lockhart Station

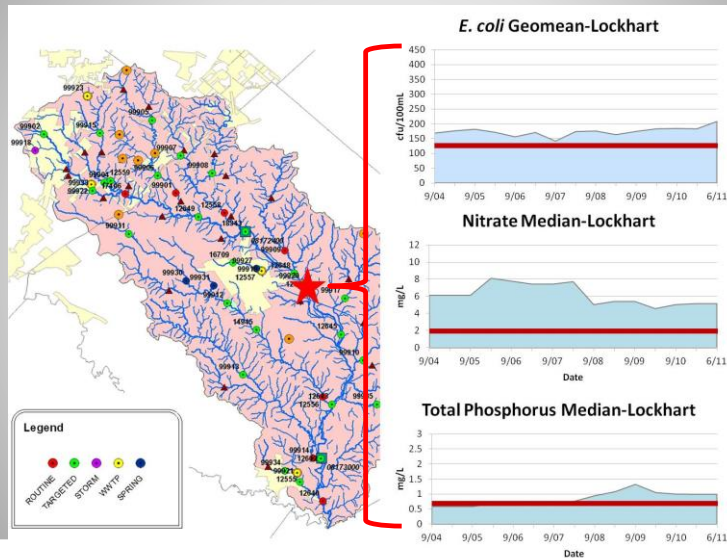
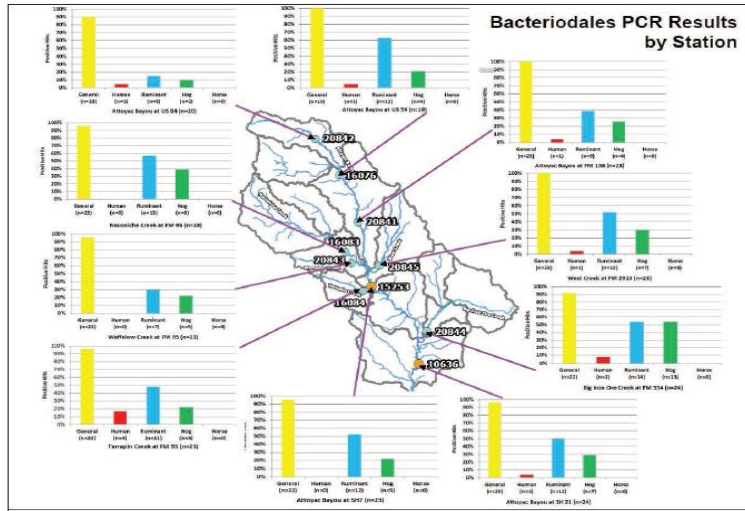


Figure 7.12. Bacteroides PCR results at each water quality monitoring station in the Attoyac Bayou watershed



BST for Attoyac Bayou

Water quality monitoring results for *E. coli* at routine stations

Site	No. of Samples	Median Flow-Dry	E. coli Geometric Mean - Dry	Range-Dry	No. of Samples	Median Flow-Wet	E. coli Geometric Mean - Wet	Range-Wet	% Change btwn Dry and Wet *
Plum Creek at Plum Creek Road	30	1.5	320	36-2420	17	4.45	797	73-24000	149.06
Plum Creek at CR 202	27	3.2	155	46-550	19	13	389	16->24200	150.97
Plum Creek at CR 135	31	5	112	9-1200	17	27.5	418	56-9800	273.21
Clear Fork Plum Creek at Salt Flat Road	25	0.13	54	3-3150	14	5.25	534	41-12030	888.89
West Fork Plum Creek at Biggs Road	24	dry w pools	24	1-240	14	0.01	276	10-2500	1050.00
Elm Creek at CR 233	12	0	26	4-300	8	0.6	423	10-17330	1526.92
Dry Creek at CR 672	4	0	231	48-700	5	0.2	1142	330-4160	394.37
Brushy Creek at Rocky Road	15	<0.01	44	5-260	8	3.6	732	43-5480	1563.64

* Positive change indicates an increase in pollutant load with rainfall. Negative change indicates that rainfall is diluting the base flow pollutant concentration.

Stations highlighted have a base flow geometric mean greater than the water quality standard of 126 organisms/100 mL under dry conditions.

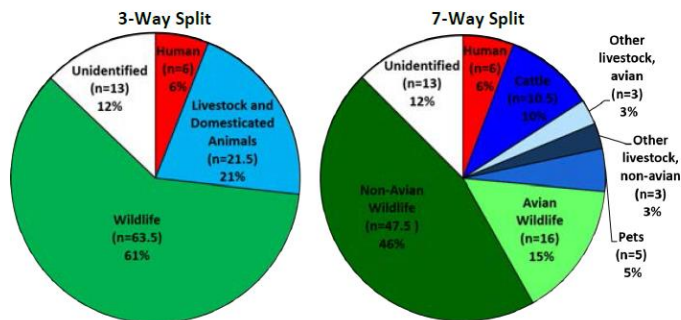


Figure 3. Identification of *E. coli* isolates (n=104) from stream samples (base and storm flow) using a 3-way split for source classification (L) and a 7-way split for source classification (R).

BST for Attoyac Bayou

Third Phase: Action

- Conduct demonstration projects in the watershed.
- Initiate a volunteer monitoring program.
- Conduct a storm-drain stenciling program.
- Continue generating media coverage (e.g., feature articles on BMP implementation, program activities, etc.).
- Hold events to showcase successes and motivate the community on additional efforts that need to be taken.

Meet with Key Stakeholders that can assist with implementing the plan including: City Council, County Commissioners Court, and Local Boards

- Project Updates
- Discussion of Proposed Management Measures
- Discussion of how to implement the management measures
- Answer any Questions
- Request a Letter of Support

Urban Stormwater and NPS - Management Strategy

Pets and Urban Wildlife

- Require pet waste collection in public areas.
- Pet waste stations in community parks.
- Prohibit feeding of urban wildlife.
- Limit numbers of domestic waterfowl in parks.

Urban Development

- Maximum limits on impervious cover for new development.
- Structural stormwater management measures in conjunction with urban development.
- Wetland systems in place of dry detention basins to improve runoff water quality.
- Street sweeping programs
- Lawn and landscape soil testing programs.

Other

- Annual volunteer trash clean-up days.
- Annual household hazardous waste collection programs.

Agriculture NPS – Management Strategy

- Develop and Implement TSSWCB Water Quality Management Plans for producers.

Livestock

- Prescribed grazing management (incl. rotational grazing).
- Alternative watering sources.
- Establish alternative shade structures as cost-shared BMPs.
- Protect existing riparian vegetation and establish additional riparian buffers.
- Grassed waterways.
- Brush management to relieve grazing pressure.
- Promote fencing of critical stream areas.

Cropland

- Soil-testing campaigns.
- Conservation tillage.
- Filter strips/buffer zones.

Outreach and Education Strategy

- Develop a marketing plan to distribute materials and notify stakeholders of trainings and assistance.

Education/Training

- Texas Watershed Steward program.
- Online wastewater treatment and septic system trainings.
- Online stormwater management training for municipal operations and employees.
- Nonpoint Education for Municipal Officials Workshops.
- Workshops on reducing fats, oils, and grease and household chemical wastewater discharges.
- Training for septic system owners; and inspectors, installers, and maintenance providers.
- Nutrient management education for landscapers, golf courses, athletic fields, and schools.
- Education for Ag Producers (grazing management, soil testing, etc.)
- Rainwater harvesting education.

Dealing with negative people

One of the challenges watershed programs face in developing a collaborative and open environment is dealing with negative people. This becomes an even larger issue in meetings. The following tips can help the leader and the group deal effectively with people who may become disillusioned or dissatisfied with group progress or otherwise create impediments to reaching consensus and implementing selected water quality improvement strategies:

- ✓ Make sure participants have a vested interest in the meeting topic and understand their role. They are more likely to be active and cooperative
- ✓ Communicate the scope of the meeting clearly, to set expectations at the appropriate level
- ✓ Establish the process to be followed at the beginning of the meeting and stick with it
- ✓ Model a positive and receptive attitude, whether you're the facilitator, meeting leader, or participant
- ✓ Address objections or concerns directly and involve the group in dealing with them
- ✓ Seek to understand all participant points of view by asking probing questions like "How do you see this problem? What do you think is happening? How is the situation affecting your group?"

Source: Interaction Associates

Top 5 Reasons that Teams Fail

Top 5 reasons that teams fail

- 1. Team members don't influence and get support from key external stakeholders.***
- 2. Team members don't set appropriate goals for the team and then build and implement a plan for reaching them.***
- 3. Team members don't spend enough time planning how they will work together.***
- 4. Team members don't know how to reconcile differences or resolve interpersonal conflict.***
- 5. Team members don't conduct efficient meetings that produce results.***

Source: Interaction Associates

Involving stakeholders

- Builds trust and support for the process and product
- Shares responsibility for decisions or actions
- Creates solutions more likely to be adopted
- Leads to better, more cost-effective solutions
- Forges stronger working relationships
- Enhances communication and coordination of resources

**Thanks!
Questions?**

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