

The Evaluation of the
South Florida
Restoration Science Forum

May 17-19, 1999

Embassy Suites

Boca Raton, Florida

Held by

The Science Coordination Team of the Working Group for the
South Florida Ecosystem Restoration Task Force

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August 26, 1999

Col. Terrence (Rock) Salt
Executive Director, South Florida Ecosystem Restoration Task Force
Florida International University
OE Building, Room 148
Miami, FL 33199

Dear Rock,

Enclosed is the evaluation of the South Florida Restoration Science Forum held May 17-19, 1999 in Boca Raton, Florida. I hope this evaluation serves to reconfirm that the forum was an innovative and valuable source of information exchange between participants; that the efforts of those staff persons who worked so hard on the project should be recognized and commended; and that the forum has provided us with a baseline of information, technological tools and subject areas from which further exchanges (both large and small) should emanate.

For the record, I am attaching the numerous assessments and products from the forum at the close of the evaluation: These include the "Best Ideas" list generated from the breakout sessions; the tabulations of the evaluation survey I sent out; the summary table of the "touchscreen" surveys; an excellent critique by Mr. Ressegieu of the Museum of Science and Discovery (MODS); web site materials including comments by "honored guests" at the forum, recognition of support, and the web site itself; a summary of "findings" by Dr. Len Berry; a "Lessons Learned" list by Dr. Stu Langton; and a summary of the evaluation forms filled out at the forum.

Sincerely,

Bonnie Kranzer, Ph.D., AICP, Executive Director
Governor's Commission for the Everglades

Enclosures

cc's: Nick Aumen
Len Berry, CES
Julio Calle, DERM
Kathy Copeland, SFWMD
Linda Dahl, NPS
Tom Fontaine, SFWMD
Linda Friar, SFERTF
Sally Garson, SFERTF
Aaron Higer, USGS
Bob Jones, FCRC
Stuart Langton, CES
Greg Diehl, Gov's Commission
Allison DeFoor, Gov's Office
John Marshall, Marshal Foundation
Mellisa Meeker, EPA
Chip Merriam, SFWMD
Bob Mooney, USGS
John Outland, DEP
Mary Plumb, SFERTF
Jim Ressegieu, MODS
Peter Rosendahl, Flo-Sun, Inc.
Ray Scott, Florida House of Representatives
Rick Smith, Gov's Office
Bill Hinsley, Gov's Commission

South Florida Restoration Science Forum Evaluation

Introduction - Overview of Evaluation Materials

The South Florida Restoration Science Forum was held May 17-19, 1999 in Boca Raton, Florida. Over 500 individuals participated. The main goal of the forum was to highlight the connection between science and the restoration and management process of the South Florida ecosystem. Seeking to promote this linkage between scientists and management, the forum brought together scientists and decision-makers to mutually inform and discuss each other's needs in the overall restoration efforts.

The Florida Department of Environmental Protection provided many contributions to the forum including one of special note - the provision of two interactive "touchscreen" survey monitors for use at the forum. Though seldom used (N=23) because of their location, this survey mechanism should be considered for evaluating future events. In addition, evaluation forms were also provided to participants as part of their registration packets. Few were returned however (N=14) because of the "open" nature of the event and the failure of facilitators to remind participants to complete them.

Immediately following the forum, a review and follow-up team met to formalize an evaluation. The team met with the purpose of evaluating the forum in two ways. First, to summarize the lessons learned based upon observations and comments received from those who participated and second, to propose the next steps, context for, and content of, future symposiums and the use of such activities for the POSST, SCT, WG, and Task Force.

To accomplish this evaluation task, a survey package was devised by the evaluation team and sent to the WG, POSST, SCT, and Evaluation Team. This package contained a cover letter, the survey form, the forum "Best Ideas" list compiled from the breakout sessions, and summary of the "touchscreen evaluations" obtained during the forum. The survey was divided into four subject areas: 1) Program Design and Content, 2) Forum Logistics, 3) Lessons Learned and 4) Future Symposiums/Forums. It was made up of 33 questions, 17 general opinion questions requiring circling an answer and 16 questions requiring short answers.

The survey package was electronically mailed to potential responders (evaluation team, WG members, SCT and POSST members) June 25, 1999 (over 1 month past the forum). Due to a low response rate, a reminder e-mail was sent out July 20, 1999. In all, eight (8) surveys were completed and returned (a poor response rate). This evaluation summary utilizes those responses (N=8), the "touchscreen" survey (N=23) administered at the forum, a summary of "findings" by Len Berry, "Lessons Learned" from Stu Langton, an overview of surveys filled out at the forum (N=14), a critique by the MODS, and the "Best Ideas" list (all attached). In addition comments and commentaries found on the forum web site: <http://sofia.usgs.gov/sfrsf/supporters.html> , <http://sofia.usgs.gov/sfrsf/evaluations.html> (N=9), and <http://sofia.usgs.gov/sfrsf/presentations/berry.html> were also considered in this evaluation.

In retrospect, the evaluation component of the forum was sporadic at best, poorly planned, poorly executed and uncoordinated. Though well intended, it appeared that numerous survey tools were developed independently, administered during and after the forum, with only the post evaluation having been run through the evaluation committee process. Because the evaluation team was assigned the task of evaluation barely a week before the forum took place, there was no time to confer ahead of time and much of the resultant task has been a tedious, time consuming and frustrating exercise in trying to "discover" and collect the various evaluation fragments that exist, and to sift through these instruments to craft a fair and objective evaluation. The decision to do an evaluation so late in the process and the failure thus to appoint an evaluation team up front has greatly hindered this process. Readers should be cautioned that this evaluation is based therefore on a small sample size, numerous survey instruments with differing foci, and a modicum of subjectivity and reliance on other evaluation team members' perceptions and summaries.

Overall Response

A review of all evaluation materials points to a resounding success for the Science Forum. Highlights of "liked items" included the interaction with other scientists; the opportunity to gain, in one central location, a broad understanding of the many restoration projects; the quality of information from the poster sessions and panels; and the dynamic attributes and potential of the forum on a long-standing web site. The overall comments were positive, if not jubilant in some instances. Many persons I spoke to commented on the abundance of extremely positive comments by the participants. Indeed, review of the transcripts of the final closing session also reflects an extremely positive, well done attitude. Forum planners were commended for the breadth and depth of materials presented, the innovative web site approach, the blend of technical poster sessions intermixed with the panel discussions, and the unique display protocols - including the "intimate" nature of using each hotel room for single displays. Positive responses as to the forum's longevity on the web site, likelihood of revisiting the site and the need to continue a similar effort on a yearly basis were also well represented. Almost all respondents were in favor of promoting either a follow-up forum on issues identified at the Science Forum (some cited ASR, mercury, and phosphorus), or repeating a general informative event and targeting additional non-technical audiences.

Program Design and Content

The majority of respondents who filled out evaluations agreed that the forum's design and content contributed to the forum's effectiveness. Content items "most liked" were the poster sessions and the diversity of displays on South Florida restoration projects. A major product of the meeting was indeed the generation of a wealth of poster material, which dramatically illustrated the wide range of scientific work underway. The quality of information from the forum's expanded poster format provided a clear and consistent means of presentation for most participants. For the most part, the diversity of project displays contributed to the overall learning during the forum.

One suggestion was to house the poster session in one large room rather than separate small rooms and allow more time for poster viewing and interaction between participants.

"Least liked" forum content items were the "insufficient involvement by managers and target audience" and the complexity of displays for non-scientists. With the broad range of participants being scientists, managers, and the public, there was some confusion as to the intended audience of the forum. Audience targeting is an area that may need further refining in future forums. This process could involve more clearly defining the target audience and specifically targeting content and format to this group. One suggestion was to get more involvement from schools and the general public or having different themes for different forums.

One of the primary purposes of the forum was explore and improve the science/management linkages in S. Florida restoration initiatives. Toward this end, the break out sessions contributed a wide range of recommendations. In reviewing those recommendations, Dr. Len Berry characterized seven as particularly noteworthy (see <http://sofia.usgs.gov/sfrsf/presentations/berry.html>)

Utilization of Forum Web site

Prior to, during, and after the forum, a web site had been created <http://sofia.usgs.gov/sfrsf> to continuously inform and provide a site for dialogue on all aspects of the Science Forum. The creation of this site and its potential for long-term information dissemination, dialogue, data storage and retrieval and communication herald a valuable and potent parallel track embarked upon by this Science Forum.

The South Florida Restoration Science Forum web site, provided a solid foundation for the forum. Before the forum, it provided guidance to display developers and registration information to those wanting to participate. After the forum, it continues to display and disseminate the information that was collaboratively created. The creation of the web site was instrumental to the forum's success and to the forum's continued role in the restoration effort. This is one of many aspects of the forum that will be transferable to future events both here and elsewhere.

Forum Planning and Organization

The planning and organization of a forum such as this required an extensive workload. A forum steering committee was formulated just a few months prior to the forum, to provide guidance and support. Through that effort a number of tasks were assigned to numerous individuals. In retrospect, a small handful of individuals assumed the lion's share of the responsibility to see that things got done. Recognition of these individual's extraordinary efforts should not go unnoticed. Overall the effort resulted in a magnificent job given the limited time and manpower available. There are a number of "lessons learned" and "observations" some explicitly provided by members of the evaluation team (Langton and Ressegieu (attached)), which point directly to having more time, and more systematic planning, organization, and clarity of individual roles and assignments, clarity of objectives and evaluation measures, increased focus on funding,

scheduling, and public outreach/advertising activities-particularly targeted audiences. Improved orientation and grouping of subject matter in the poster displays also requires further delineation in the future.

Forum Logistics

Overall, forum participants felt that logistics were handled well. Aside from minor hotel staff confusion and last minute arrangement changes, the logistics of putting on a first year forum were handled with remarkable ability. Respondents agreed that registration was easy and simple to understand, registration materials gave a good overview, the organization/agenda followed an informative sequence, and the forum was well organized. While there was some confusion about the web site, most respondents agreed or strongly agreed that the web site assisted in registration or learning about the forum. As well, most respondents were indifferent as to how well the forum was advertised. One logistical comment that could aid in fostering communication during the forum was to make names on nametags larger.

The use of the "living room" sections of the guest suites for exhibition purposes provided significant cost savings to the event since the rooms were already being used for individual lodging needs. This also allowed the organizations to contribute in relation to their size: smaller agencies paid for only several display rooms while the USGS and others had numerous rooms. We can approximate that the facility costs for this forum were only one third of what the costs would have been, especially with the need for numerous electrical and data lines wired into a large display area. This "sleeping above the shop" approach to display areas is worthy of consideration in planning future events.

Logistical planning at the forum could be improved. Comments sent in by Mr. Ressegieu outline a tactical approach that can assist the viewer, get oriented, organize, approach, enter and understand each particular exhibit (see Ressegieu - attached) and provide a means of later communication between viewer and exhibitor. Attention to these details will enhance future events of this kind.

Future Symposiums/Forums

In reviewing ideas for future forums, participants agreed that the forum should be continued perhaps on a yearly basis. A common idea was to give the forum a more specific goal. Taking this into account, several respondents gave ideas for redesigning or expanding the forum's organization. Ideas for future forum themes included peer review of the Restudy, public outreach, strategic planning, science/manager communication, technical subjects such as ASR, mercury, etc., and dealing with other issues that arose from the initial forum. Specific attention could be paid to using the forum as a means of public outreach and education about the restoration process. Inclusion of more NGO's, more emphasis on communication, and attendance by more people from both the local government and general public were suggested to help this process. It was also suggested that the forum could be a tool to inform people at all interest levels of the need for ecosystem restoration by reformatting presentations to address managers and policy-

makers one day and the general public the next. Respondents noted that an additional and increased leadership role upon the part of the WG, SCT, and POSST would enable the forum to be used as a powerful public outreach tool for these groups while addressing the desired content, themes and target audience.

Overall Findings and Recommendations

The South Florida Restoration Science Forum brought together an amazing amount of scientific and ecosystem management information. The transfer of this information through a dynamic web site, poster sessions and panel presentations provided even the most educated participants with additional insight into on-going restoration efforts in South Florida. Most participants agreed that this forum served its purpose of highlighting the connection between science and management. While everyone did not agree that the format, content or means of creating this forum were perfect, many participants learned what a vital role communication plays in both scientific and management restoration roles. Although the forum was unable to address all the issues between scientists and management; as suggested by participants, the creation of specific follow up sessions and workshops addressing the needs and issues arising from this type of forum may serve useful in continuing two-way communication between managers and scientists. Expanding the role of the social scientist needs to be an important part of this on-going discussion.

The next step in making this forum a success is to capitalize on what we learn from this year's proceedings and design future forums to continue the interaction between scientists, managers, and the public. Continuation of the web site as a communication tool and hosting a conference on a yearly basis was a prime expectation and desire of participants. Developing specific themes that address desired linkages and critical issues would be helpful. In this regard future forums will be judged successful if they foster an open exchange of ideas and result in improved communication linkages between scientists, managers, and the people of South Florida.

Recommendations for Future Endeavors

The following recommendations are provided to assist the Working Group and Task Force in following up on the Science Forum and to assist those entities in devising, developing, implementing, and maximizing the benefits from future symposiums/forums.

1. Graciously thank the individuals responsible for the success of the forum, namely: Aaron Higer, Bob Mooney, Nick Aumen, the Center for Environmental Studies (Len Berry and Doreen DiCarlo) and Heather Henkel (web site assistance and developer of web sites).
2. Disseminate and/or post all products from the forum for utilization by interested organizations. In particular "best ideas" list should be elevated, since it lists the specific suggestions of both managers and scientists.

3. Ensure longevity and utilization of the web site as an informative and valuable tool for information dissemination, dialogue, communication and technical expertise.
4. "Maintain the Momentum" by hosting a forum or symposium on an annual or two-year basis - the subject or objectives of which should go through intensive development and review by all Working Group and Task Force members.
5. Utilize at least a 9-month planning cycle prior to the next symposium "event". Planning and organization with a lesser time allotment should be highly discouraged. Given the need for such a long planning period, we may want to re-think an "annual" theme and focus on a more realistic 2-year time frame.
6. Organize and solidify funding for future events within the first month of planning. Certainty of funding, both sources and amounts, can add variability to the planning and organization phases, if contract dollars can substitute for volunteer man-power on behalf of Working Group members and their related organizations. This flexibility should be explored.
7. Utilize a "steering committee" approach to planning future forums/symposiums. The steering committee must at minimum, address clarity of charges and event objectives, specific responsibilities, funding strategy, logistics, staffing issues, and evaluation responsibilities.
8. Continue to utilize and explore creative use of location and space for hosting future events. The example of using participant hotel rooms depicts a creative, cost-effective means of cost-savings and overall efficiency.
9. The steering committee responsible for the planning and organization of future events should ensure that tools and products resulting from future events can be rapidly assimilated into on-going SCT, POSST or other Working Group/Task Force activities. The intent here is to aim for a multi fold benefit: accomplish the informational/communication needs as identified as event objectives and devise means of accomplishing tasks of the Working Group through the implementation of the actual event. (Example, the Integrated Strategic Plan is an on-going activity. A potential future event should follow-through needs identified from the Science Forum, should move the ISP forward, and should benefit on-going projects of the SCT and/or POSST). We can no longer afford uni-dimensional planning.

10. Future events, through the planning and organizational activities, must identify the intended audiences up front and make a concerted effort to ensure that these intended audiences are contacted. The identification of the intended audience must be carefully devised in concert with, and consistent with, the development of the objectives for the future event. They must always be tied at the hip.
11. The organization and planning for future events should address improvements in on-site logistics and think through the holistic experience of the event so that participants can maximize information flow and comprehension. Comments provided to the author by Mr. Ressegieu (attached) detail these opportunities for improvement.

Attachments:

Web site locations:

Web site - <http://sofia.usgs.gov/sfrsf>

Web site - <http://sofia.usgs.gov/sfrsf/evaluations.html>

Web site - <http://sofia.usgs.gov/sfrsf/supporters.html>

Web site - <http://sofia.usgs.gov/sfrsf/presentations/berry.html>

Ressegieu -eval

Best ideas list

Langton - lessonslearned

Survey - touchscreen

Survey - forum.eval.sum

Survey - postforum.narrative

Survey - postforum.tab

List - forum.eval.team

South Florida Ecosystem Restoration Science Forum

Review and Follow-up Team Membership List

Len Berry, Florida Center for Environmental Studies
Julio Calle, Miami - Dade County, Dept. of Environmental Resources Management
Kathy Copeland, South Florida Water Management District
Linda Dahl, National Park Service
Tom Fontaine, South Florida Water Management District
Linda Friar, S. Florida Ecosystem Restoration Task Force, Executive Director's Office
Sally Garson, S. Florida Ecosystem Restoration Task Force, Executive Director's Office
Aaron Higer, U.S. Geological Survey
Bob Jones, Florida Conflict Resolution Consortium
Bonnie Kranzer *, Governor's Commission for the Everglades
Stuart Langton, Florida Center for Environmental Studies
John Marshall, Arthur R. Marshal Foundation
Mellisa Meeker, U.S. Environmental Protection Agency
John Outland, Florida Department of Environment Protection
Mary Plumb, S. Florida Ecosystem Restoration Task Force, Executive Director's Office
Jim Ressegieu, Museum of Discovery and Science
Peter Rosendahl, Flo-Sun, Inc.
Ray Scott, Florida House of Representatives

* denotes chair

Comments Provided by Honored Guest (<http://sofia.usgs.gov/sfrsf/evaluations.html>)

South Florida Restoration Science Forum

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Embassy Suites Boca Raton

"The material presented in this forum should go a long way to demonstrate that the coordination team and integration of the science supporting South Florida Ecosystem Restoration and its links to managers and policy makers is unprecedented. Nevertheless it is still a half-full glass and much remains to be done."

Bradford E. Brown

Director

Southeast Fisheries Science Center

National Marine Fisheries Service

NOAA

(Working Group Member)

"The South Florida Restoration Science Forum was an overwhelming success! The South Florida ecosystem that runs from the Kissimmee River to the coral reefs off the Florida Keys is one of the most complex systems in the world, but as a result of the science forum I understand more about how it functions. If there was ever any question about the connectivity of the ecology, hydrology, and geology of the ecosystem let it suffice to say, the forum provided the answers to many of the complex questions in my mind.

As a resource manager, I now feel more fully equipped to make sound management decisions based upon the available science as it was presented at the 1999 forum."

Billy D. Causey,

Sanctuary Superintendent

Florida Keys National Marine Sanctuary

NOAA

(Working Group Member)

"The forum was very well put together. For those of you who were not there, please allow me to describe it. It was held at the Embassy Suites Hotel in Boca Raton. The entire lobby and first three floors (including guest rooms) were filled with exhibits. Each room had a research theme. You could visit and learn about nearly every facet of scientific research (from Panther tracking to looking at Periphyton algae through a microscope). Actual researchers were on hand in each room to answer questions of the managers. In my opinion, the very fact that the researchers were able to directly interface

with the managers (one on one) accomplished the goal of improving the linkage between science and resource management."

Truman Eugene (Gene) Duncan
Water Resources Director
Miccosukee Tribe of Indians of Florida
(Working Group Member)

"It is with great pleasure that we express our congratulations for a job well done. Our members who attended this activity were most impressed with the amount and quality of the work demonstrated by the various groups and individuals doing research on Everglades Restoration. We do wish that more people had taken advantage of this excellent event. Again, congratulations for a job well done."

Manley Fuller
President
Florida Wildlife Federation

"My girl scouts all agreed that two hours just wasn't enough time to see the exhibits. The forum had lots of information concerning the environment and environmental issues that they were concerned about. They were pleasantly surprised to see so many women exhibitors. It is very important for the girls to be exposed to women in careers. This was an excellent opportunity for them to be able to interact with professional scientists who were also women.

The girl scouts enjoyed all the exhibits. They especially enjoyed the exhibits where they:

- heard the invasive history of the exotic Asian Swamp Eel and were able to see and touch live eels;

- saw computer tracking images of the panther and learned how important the public lands and green belt policies are for preserving the panthers and other endangered species; and

- built a park and created a forest fire by using a computer model and discovered that that there are many factors are involved managing and protecting natural resources.

I commend all the exhibitors for their patience and their willingness to share their scientific knowledge in a way that teenagers and non-scientists were able to understand and get a lot out of it. My girl scouts took a lot away with them.

They all would like the opportunity to attend another forum. The Palm Glades Girl Scout Council also asks that IT be informed of such forums so that others can gain from such valuable developmental opportunities."

Girl Scouts
Marilyn Thayer
Leader, Cadet Troop 891,
Palm Glades Girl Scout Council

"The Forum underscores the commitment of the USGS to provide integrated, high-quality scientific information to resource managers who are working to resolve the complex problems of the Everglades. Scientific information has a vital role in restoration. It is the foundation of understanding upon which management decisions are based. Scientific understanding enables managers to predict the response of the system to management alternatives. The foundation of scientific understanding also provides the basis for decisions on performance standards which are the yardstick for measuring restoration success.

As important as science is to the restoration, science that isn't communicated to decision-makers has limited usefulness. The forum helped to transmit and communicate the science that has resulted from the efforts of all of the science activities to managers. It was a manifestation of the close collaboration that exists among the many agencies of the South Florida Restoration Task Force, Working Group and Science Coordination Team. The success of interagency efforts like this takes the dedication of many individuals and organizations. Cooperation and collaboration among agencies and between scientists and managers were readily apparent in the poster rooms, the selection of topics, and in the panel discussions. The USGS was grateful for the presence of members of the South Florida resource management community. Their feedback to scientists about the uncertainties that confront them everyday, and the special problems they face in restoring south Florida over the long term is important in determining the scientific program for the future."

Dr. Bonnie A. McGregor
Associate Director for Programs
U. S. Geological Survey

"The format of the meeting, while certainly unique, provided the participants an opportunity to gain considerable insight into the scientific as well as the management aspects of the entire South Florida restoration effort. Such a dual approach lays the foundation for enhanced communication among all those involved in the monumental effort and should generate continued dialogue and a better approach toward meeting the challenges that lie ahead in South Florida. It was a pleasure to observe scientists and managers in such good communication."

Wanda C Meeks
Regional Hydrologist
U. S. Geological Survey
South Region, Norcross, Georgia

"The conference was the best three days I've spent in South Florida in along time. The discussions were productive, educational and informative and will assist me greatly in performing my duties as the Jacksonville District Engineer.

Additionally, being able to talk directly with the scientists about issues and challenges that confront all of us was worth every penny spent. Next time, I will have more of my staff present and I will encourage scientists and engineers from around the entire Corps of Engineers to participate. It was a great forum (much better than I expected) and one that should be repeated annually. Hopefully some doors were opened here between the managers and the scientists that again will never close again."

COL Joe R. Miller
District Engineer
Jacksonville District
Corps of Engineers
U.S. Department of the Army
(Working Group Member)

"It was impressive to see the magnitude of studies and research going on within the Everglades Ecosystem and having all that information located at the Embassy Suites for three days. Although some of the exhibits were in separate rooms I would hope that there are no walls restricting communication between all the efforts. All the science needs to be heard."

Fred Rapach
Palm Beach County Water Utilities Department
(Working Group Member)

"Forums such as this are vital communication mechanisms, not just for keeping managers and scientists informed of each others projects and progress, but also for getting (and keeping) the public sector involved. Schools, universities, museums and science centers can be major assets in helping to spread the news of a project as massive as restoration of the Everglades and the science involved.

As we stated in our evaluation report - hat's off and salutes to the organizers of the conference for a job very well done and thanks for allowing us to be a part of it."

Jim Ressegieu
Collections Management Coordinator
Museum of Discovery and Science

"This type of a forum has never been done down here before on this scale. I think it has been an outstanding effort. I am amazed and excited, not only about the information being boiled down into the posters, but that the posters are now going to be on the Internet and the posters will be continuously available and able to be kept current. We should keep it going if not every year then every other year because we need this."

Richard G. (Dick) Ring
Superintendent
Everglades National Park
(Working Group Member)

Perspectives on the First South Florida Restoration Science Forum

(<http://sofia.usgs.gov/sfrsf/presentations/berry.html>)

South Florida Restoration Science Forum

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Embassy Suites Boca Raton

Dr. Leonard Berry

Director

Florida Center for Environmental Studies

State University System

The prime purpose of the forum was to explore the linkages between science and management in the restoration of the South Florida ecosystem and to formulate processes which might improve the effective use of science in management and the effective contribution of science to management. A major product of the meeting was the generation of a wealth of poster material, which dramatically illustrated the wide range of scientific work under way. The discussions took this work into account but explored ways in which the integration of science and management could be improved. Seven major recommendations came from the breakout group discussions and they are worth restating here.

1. Most effective progress is made when scientists and managers jointly set visions, goals, objectives, timetables and financial plans and work together through this agenda
2. Communications between scientists and managers and equally between scientists is vital and time for the effective communication needs to be built into the timetable
3. Scientists need to allocate time to synthesize scientific data in ways that can be effectively used by managers. Some communication specialists could be helpful here.
4. Science plans should link together in a spatial context
5. Managers needs and wants for specific scientific data should be articulated and advertised widely. Annual planning and problem solving workshops for scientists and managers are necessary to synthesize and identify major gaps in science to meet management needs
6. Managers in many cases need to put more effort into understanding science
7. Managers need to continue to communicate to law makers, policy makers and the public with regard to the need to support science to provide effective management decisions.

The meeting was regarded by most as a good start, but that the process of two-way communication between managers and scientists needs to be continued in these kinds of sessions and in more specialized workshops. The role of the social scientist needs to be an important part of the on-going discussion.

South Florida Restoration Science Forum
May 17-19, 1999
Embassy Suites Boca Raton, Florida

Wednesday, May 19

Perspectives on the Forum

By Dr. Leonard Berry
Director
Florida Center for Environmental Studies
State Universities System

Edited transcript

[Stuart Langton] "I want to introduce a colleague. Len Berry is the Director for the Florida Center for Environmental Studies where I am involved as a senior fellow to interact with the Task Force and to try to build connections with the state university system. Len has been a great person to work with, and he's a well-known Geographer in his field. We were colleagues that never quite connected in Boston, but we've connected here. Len has been observing the forum as we've gone forward. He has some comments for us on his observations."

[Len Berry] "Well thank you Stu for giving me a task that's almost impossible. I went back and looked at the purpose of this meeting and it said strategies for successful linking of science management, I think we've talked a lot, but we haven't quite got to strategies. We've got thoughts and ideas, we've got pieces, but someone somewhere is going to have to turn around and say how do we really put these together into strategies?"

"As I wandered around the rooms upstairs Monday and yesterday, I put my academic hat on. I thought, What kind of degree would you give for all this information? I'm sure you could get a degree if you took all that displayed information and put it into various academic formats. Of course, it had to be a degree in environmental sciences; a broad based degree that covered most of the biological, chemical, and physical sciences; and you'd be a very well qualified person. What I'd like to see next year is some additional sets of materials that would qualify you to be an MBA - a master's degree in business administration. (At Florida Atlantic University we're just beginning such a program in environmental management.)"

"Next year I'd like to see some posters that managers devised showing what their management job was and how they fitted science into it. Because then I think we'd begin to get some iterations of scientist's view of management and manager's view of science. When I talked to people in some of these rooms, where the arrows between the science and management action were very clear, and I asked them how does this work? One person said I wish I knew; another said we're beginning the science that's going to get there. So a lot of things work, but there's a lot that we still need to be working on, and we need those strategies and ideas."

"Listening to the various contributions here, I began to think a little about the different kinds of science we're engaged in and some of the kinds of science we should be in but are not."

"It's pretty obvious that if we think we have a phosphorus problem and we think that it's just that problem, there's a fairly straight line of looking at the problem, examining when the cattails started to grow then fixing it or thinking we're fixing it. It's a little more complicated with mercury, but the kind of thing. You've got what you think is a chemical problem, It's in the water and you can do some science that's partly experimental, partly field testing, and, afterwards, you hope to come up with solutions. If you're working for the Water Management District or the Corps or if you have contracts with them, the fit between what you find and what you put in action isn't so difficult. Though, obviously it is not as simple as that and we've made tremendous strides in being able to fit the science, management, and the action together."

"It's not a hugely complex process, but when you look at some of the other bits of science, some of which we do and some of which we haven't yet done, we're beginning to look at ecosystems structures and how ecosystems work."

"How will the ecosystem of the Kissimmee River respond to the new meanders that are being put back in is not a one-on-one relationship thing; it's a very complex set of interactions and which also involves a very complex set of managers. I think

that in most of our minds here, the managers are you – the district, the Corps, the park, and so on. However, I know we've got farmers out there thinking they're managers, and we have county commissioners out there that think they're managers. I think we have some environmental activists out there that think they're managers, and the Avon Bombing Range is managed by the Air Force. We've got lots of managers out there, more than the ones we normally think of. We've also have lots very complex systems out there other than the ones that make it easy, or relatively easy, to put science into action."

"I think part of our long-range strategies to deal with this set of communication issues includes how are we really making sure that the broader group of managers with its different levels of managers will get the right kind of information. This probably needs more than Nick [Aumen] putting some of his time into this exercise. It needs a process. One that we need to invent and deal with if it's not there. We need to think about the broader range of science that we need to be engaging in this process. There's a lot of university conducted science going on that's not directly funded by any of the agencies represented in this room, or even directly applicable to the South Florida Restoration. Some of it is, but somehow there needs to be a distillation process that will bring that science into a forum like this one. The Center for Environmental Studies can be part of that effort."

"There is another area of science that has not been mentioned much here that I'd like to make a point for. As we begin the restoration, there is a huge experiment that is taking place which we have touched on it, but I want to make it explicit. This experiment is a very complex one. Take the Kissimmee watershed: How does that ecosystem respond to what we're doing to it? What do we need to measure to make sure we've got the essence of that response? I think there's just a little danger that having done the science up to this point, we think the monitoring is rather a outline task, and we don't give it the right emphasis. As several people just said, including Col. Miller in particular, we need to learn from what we're doing so that 10 years from now we're not doing the same thing. Having very active feedback that is a very important part of science, and although it may not be an exciting part of science, it is critical."

"I know there are some gaps in what we're doing. Some gaps exist just because there isn't the funding, and we need to address these gaps in funding for science issues up front. I think some science gaps are there because we're not focusing on them yet. There are two science gaps that I'll mention now, but I know that everyone has their candidates. One gap pertains to what I'd call the Landscape Level of analysis. We do a lot of very specific detail and in hydrology we can put models together, and we can put data together to give us a real good sense of what's happening right now. We can look at the chemical and physical flows through a hydrological system pretty well, but when we're looking at the biological system and the ecological system and the hydrology all together, I think we don't really have good patterns of analysis yet. The other science gap is one that some of us have discussed before, but we haven't yet seriously addressed. It's the role of the behavioral sciences in the restoration work. Some people get very shy about work on the behavioral science because that can be very fuzzy. On the other hand we are not only restoring the ecosystem for itself, but also for ourselves. Understanding peoples' reactions to the restoration and to the impact of the growth of Florida on the restoration is going to be critical. I am pleading for there to be a better focus on that kind of research as we proceed and to treat it as scientific research because that's the way it has to be done' and it needs to be part of this forum."

"In conclusion, I want to say three or four things that are pretty obvious. Research is going to continue to increase in importance. It's really a key component of everything we do over the next 20 years. Planning that research and getting a vision for it is very important. Research will be done very differently in 10 or 15 years from now. Some from this group need to be creating a vision of a research agenda as differing stages of the restoration occur. The whole cyclic process of monitoring and feedback is critical. There needs to be deliberate structures created for that to happen. It won't happen automatically. Structures must enable a variety of pieces of that monitoring to get shared between scientists, managers, and policymakers and such communication is critical."

"This has been a wonderful forum for communication; not all of the people who need this communication were here, and we need to continue to work on getting those people included. I could talk for days about the importance of this kind of meeting. The information that is shared both here and soon on the Internet is important. The translation of that information for the different audiences is something deserving exploration. One of the best outputs of this meeting is that what's here will not disappear when the meeting ends. It will continue as an ongoing process that will be added to and built upon."

"That's all I'm going to say, but I want to make a couple of acknowledgments. The graphics that were displayed upstairs and that will be displayed on the Internet are world class quality, and the science behind them is world class quality. I want to thank particularly all of the scientists and graphic artists. There has been a lot of thanks for the panelists and for everyone else, but we also owe thanks to the facilitators who did a tremendous job of pulling this information together: some through

the Center for Environmental Studies and the rest from South Florida Water Management District. There's been a lot of leg work getting this stuff done -- more than most conferences -- and the people that did it are very deserving of lots of thanks. Thank you."

[Stuart Langton] "Thank you Len for very thoughtful comments. This has been a great journey and we're now bringing the boat back to the captain, Richard Harvey, who is the chairman of the working group to provide the closing remarks for the forum."

SOUTH FLORIDA RESTORATION SCIENCE FORUM

Symposium Evaluation

Submitted by
Jim Ressegieu,
Collections Mgmt. Coordinator,
Museum of Discovery & Science
5/24/99

Museum of Discovery & Science staff were invited to the first South Florida Restoration Science Forum held from May 17-19, 1999 to evaluate the forum based on observations and comments from participants. Museum staff in attendance were as follows:

Sherwood “Woody” Wilkes, Director of Science & Technology
Dr. Jody Berman, Biological Scientist
Melody Bell-Wilkes, Life Sciences Manager
Jim Ressegieu, Collections Management Coordinator / exhibit evaluator

After the conference the above Museum staff met to discuss their findings. The following is a summary of our observations and recommendations. There is no order of preference with regard to the way the observations or recommendations are stated.

- Considering that the Forum was put together in a very short timeframe, it was a tremendous success. Hats are off to the organizers for a job well done. It is hoped that this will be a regular event and with that in mind, planning for the next forum, including a comprehensive marketing plan, should start now.
- Schedules and event agendas need to be confirmed as far in advance as possible. Last minute changes can play havoc with busy schedules and the result could affect participation.
- Orientation signage needs to be improved. Touch screen computers were supposed to be used for evaluation, but they weren't in evidence.
 - Orientation (knowing where things are and when things will happen) is critical to visitor comfort. In the museum field, visitor comfort equates to better learning potential. As far as the conference is concerned, visitor comfort equates to better participation.
 - One example was with the “SOFIA” presentations. Their first session had maybe 10 viewers. With something as important and so useful as the South Florida Information Access, everyone should be aware of its presence.

Observations Based on the Science Poster Exhibits

- A general observation was that a number of agencies were involved in similar research. For future forums, an interesting tactic might be to group similar areas of endeavor (ex. All research on mercury) together into slightly larger areas instead of separating each poster display into separate rooms.
 - May foster better communication among agencies and possibly encourage or enhance pre-conference collaboration among those present.
 - In addition to grouping similar research into one area, there should be other opportunities for the scientists to meet one another and to get to know each other's research better. Perhaps some sort of evening reception or informal function associated with the Forum.
- Each project having its own room did add a sense of intimacy which may have helped some scientists open up more when discussing their research. This may very well have a positive effect with regard to strengthening ties between managers and scientists, but we're not sure it would be as effective with the public.
- Several middle school teachers, a few university professors as well as members of the public present at the Forum. It is fair to assume that in the future, others will follow. With this in mind, each agency should prepare an information piece about who it is and what its role is in the restoration process. There are a lot of agencies involved with a project of this magnitude and an overview of who the players are will help put things in perspective for the public. In addition, each scientist and/or presenter should prepare a one or two page synthesis, **in layman terms**, of their research and its relevance to the restoration project that can be given out to visitors.
- Each scientist and/or presenter should have a way for the visitor to request information: some place to leave a business card or sign up to have information forwarded. Some scientists did this, but not all. Communication is the key and the more people that know what research is going on, the better.
 - Each exhibit room should have a list of relevant web sites and contact information.
 - If all of the relevant web sites could be centralized or catalogued then a sense of cooperation could be fostered. In addition, checking through this master list might allow for elimination of some of the redundant information and possibly coordinate joint research efforts.

- The “question” posted on the door to each poster session, that gave the visitor an introduction to what that scientist’s research entailed was engaging. It proved very helpful and effective with the small room format. It could probably be adapted for use in a larger room format.
- The poster and exhibit graphics were professional and consistent. The choice of graphs that the scientists used was also quite good. From a display or exhibit standpoint, however, there was too much verbiage which will quickly lose even the technically inclined. Using the logic behind the cliché “a picture is worth a thousand words,” the modeling examples as well as the composite graphics were outstanding and did more to highlight the research/poster projects than words ever could.
- Use the right-hand bias to your advantage.
 - Generally speaking, people have a tendency to turn to their right when confronted with a choice of directions in which to turn. To maximize the effectiveness of the science poster exhibits, one might want to position an “overview” room adjacent to the entrance to the exhibits: making it the first thing the visitor sees. From there, place the exhibits such that the visitor is automatically sequenced to take advantage of this natural bias. The group on the third floor that did panther research overcame the right-hand bias by laying down panther tracks on the floor. This caused people to go left, thus benefiting all of the exhibitors at that end of the hall.
- The constant use of acronyms (ASR, STA, etc.) became confusing. Its alright for those in the know who use the terms everyday, but as the public becomes more and more involved with the process, these terms will have to be defined. One might want to consider publishing or supplying a vocabulary sheet as part of the registration package.
- The “Participant List” included with the registration packet should include addresses along with the agency or institution affiliation.

Observations Based on the Questionnaire

- All terms in a question need to be defined. That said, when “rating” anything, be conscious of the wording and try to stay away from words like “average.” It is a relative term: what is average to one person may not be average to someone else.
- Balance the degrees of separation in a response. Leave at least 5 degrees of separation (in this case between “below average” to “above average”) so as not to place too much of a bias one way or the other.

- Don't ask two questions in one (ex. The first question in the questionnaire asks one to rate courtesy and helpfulness which are two entirely different things. If necessary, ask a question about each).
- Designing a questionnaire is not as easy as it looks. It's very important to "wordsmith" questions so that it is perfectly clear to the respondent what information is being sought. One way to help with that process is to make sure all who are interested in the results are part of the design process (buy-in). Evaluation results are not always positive. Thus, it is often hard to get support or effect change unless this group "ownership" stage has been established. No one person can design a truly valid questionnaire. Reasons for all questions must be established.
 - All of these questions need to reflect answers that can be measured or give substantial information to direct some sort of change or action.
 - Using question #9 in the program content section as an example: **Opportunities for informal interactions with participants.** The way it is set up now the question is asking the respondent to rate the opportunities with "average" being the qualifier. The problem here is we don't know what, in this case, average means: average relative to what? What is the question really trying to address? Is it trying to find out if the respondent thought (a) there were an average number of opportunities for informal meetings or (b) if they thought the quality of the opportunities was average?

Suggestions for Future Forums

- From the science point of view, three issues seemed to really stand out at this year's forum: (1) phosphorous, (2) mercury, and (3) Aquifer Storage and Recovery.
 - Perhaps a colloquium with project related or issue related workshops for scientists and managers. These could be set up on a pre or post conference basis, bringing scientists and managers together to work jointly on a subject from start to finish. Foster decision making based on sound science and help bridge professional culture gaps.
- A possible subject or sub-theme for a future forum might be "Strategies for Reaching the Public."
- Marathon working group meetings at the end of a conference can be exhausting. For example, in the museum field, working and sub-committee sessions are scheduled before, during and after the conferences in order to try to accommodate as many of the participants as possible.
- The science needs to reach special targeted audiences.

- Encourage more Universities to attend. The students are our future scientists and policy makers. This forum would be perfect for many university professors and their students. In addition, it might encourage universities to see the merit of adding business and political science courses to their environmental science degrees.
- Schedule future Forums to occur around the same time as the Everglades Coalition meetings. This may encourage Forum attendance by other interested parties with a stake in the project and may foster better communication among all stake holders.
- Ultimately, the public as well as other local and regional stake holders need to become informed. As this happens, all of the work going on by both scientists and managers will have to be brought from the highly technical “science-speak” level to a level that is both understandable and made relevant to everyone’s daily lives.
- As the attendance becomes more diverse, Forum organizers might want to consider structuring the Forum to include one day devoted to the scientists, one or two days devoted to the scientists and the managers, and one or two days set aside for the public.

LESSONS LEARNED from Stuart Langton, May 23, 1999

South Florida Restoration Science Forum

May 17-19, 1999

Embassy Suites

Boca Raton, Florida

In sum, I thought the Forum was good. In no particular order of priority, the lessons I learned are as follows:

1. Make sure who is in charge of what at outset
2. Start planning at least 9 months in advance
3. Clarify purpose, goals, desired outcomes and audiences first
4. Get early buy in from Working Group
5. Appoint planning committee, clarify their role, clarify what they are willing to do early.
6. Select skilled group, like CES, to manage all logistics and help with planning. Involve them very early in planning.
7. Design program to match objectives, then prepare budget – early.
8. Get budget support, commitment, etc., early.
9. Select meeting place to suit objectives and budget.
10. Use the internet to advertise, but use other outreach methods as well such as mailings, telephoning, ads in newsletters, etc.
11. Charge a registration fee to cover some costs and to assure people are serious about attending.
12. On registration form have people indicate sessions they plan to attend.
13. Determine public relations approach early and appoint coordinator.
14. Recruit volunteers, in addition to planning committee and contracted help, for specific task.
15. Develop clear plan and task descriptions (same should be done for committee and contractor).
16. Give detailed instructions to exhibitors re times to put up and take down exhibits.
17. Clarify who introduces whom and who starts and closes each session.
18. Organize thoroughly, but be prepared to be adaptive and flexible.
19. Make sure to appoint staff willing to work as hard as Bob Mooney and Doreen DiCarlo did.

1999 South Florida Restoration Science Forum
May 17-19, 1999
Embassy Suites, Boca Raton, Florida

Interactive Touchscreen Participant Survey
Provided by Willie Puz, Florida Department of Environmental Protection

Each of the following questions appeared one at a time on the screen.

1. The EXPO display ROOMS are very informative, well prepared and well presented.

Strongly Agree
Somewhat Agree
Neutral
Somewhat Disagree
Strongly Disagree
Don't Know

2. The ENTRANCE EXHIBITS are very informative and well prepared.

Strongly Agree
Somewhat Agree
Neutral
Somewhat Disagree
Strongly Disagree
Don't Know

3. The PRESENTATION/PANEL DISCUSSIONS are pertinent, well developed and well presented.

Strongly Agree
Somewhat Agree
Neutral
Somewhat Disagree
Strongly Disagree
Don't Know

4. THE FACILITATED CONSENSUS BUILDING AND ROUNDTABLE DISCUSSIONS ARE pertinent, well developed and well presented.

Strongly Agree
Somewhat Agree
Neutral
Somewhat Disagree
Strongly Disagree
Don't Know

5. Please rate the forum registration and set up.

Excellent
Good
Average
Poor
Very Poor
Don't Know

6. You are a:

Scientist
Manager
Interested Citizen
Other

7. How often should the forum be held?

Annually
Biennially
Less Often
Never

8. Will you visit the forum site on the Internet to keep abreast of information on the science work being done?

Yes
Not Sure

9. What is your OVERALL SATISFACTION with the Science Forum?

Very Satisfied
Somewhat Satisfied
Neutral
Somewhat Dissatisfied
Very Dissatisfied

(Note: In retrospect, the questions should have been numbered 1 of 9, 2 of 9... since some of the respondents quit and others chose not to start because the length of the survey was not shown.)

Participant Surveys (on interactive touch screens at the forum)

South Florida Restoration Science Forum
May 17 - 19, 1999
Embassy Suites
Boca Raton, Florida

Equipment and results provided by:
Willie Puz
Florida Department of Environmental Protection

1. The EXPO display ROOMS are very informative, well prepared and well presented.

	Count	Percentage
Strongly Agree	18	78.26%
Somewhat Agree	4	17.39%
Neutral	0	0%
Somewhat Disagree	0	0%
Strongly Disagree	1	4.35%
Don't Know	0	0%
TOTALS	23	100%

2. The ENTRANCE EXHIBITS are very informative and well prepared

	Count	Percentage
Strongly Agree	14	66.67%
Somewhat Agree	6	28.57%
Neutral	0	0%
Somewhat Disagree	0	0%
Strongly Disagree	1	4.76%
Don't Know	0	0%
TOTALS	21	100%

3. The PRESENTATION/PANEL DISCUSSIONS are pertinent, well developed and well presented

	Count	Percentage
Strongly Agree	12	57.14%
Somewhat Agree	0	0%
Neutral	2	9.52%
Somewhat Disagree	1	4.76%
Strongly Disagree	1	4.76%
Don't Know	5	23.81%
TOTALS	21	100%

4. THE FACILITATED CONSENSUS BUILDING AND ROUNDTABLE DISCUSSIONS ARE pertinent, well developed and well presented.

	Count	Percentage
Strongly Agree	7	35.00%
Somewhat Agree	5	25.00%
Neutral	0	0%
Somewhat Disagree	0	0%
Strongly Disagree	0	0%
Don't Know	8	40.00%
TOTALS	20	100%

5. Please rate the forum registration and set up.

	Count	Percentage
Excellent	12	63.16%
Good	3	15.79%
Average	3	15.79%
Poor	1	5.26%
Very Poor	0	0%
Don't Know	0	0%
TOTALS	19	100%

6. You are a:

	Count	Percentage
Scientist	6	31.58%
Manager	3	15.79%
Interested Citizen	2	10.53%
Other	8	42.11%
TOTAL	19	100%

7. How often should the forum be held?

	Count	Percentage
Annually	11	61.11%
Biennially	6	33.33%
Less Often	1	5.56%
Never	0	0%
TOTAL	18	100%

8. Will you visit the forum site on the Internet to keep abreast of information on the science work being done?

	Count	Percentage
Yes	17	94.44%
Not Sure	1	5.56%
Not Sure	0	0%
TOTAL	18	100%

9. What is your OVERALL SATISFACTION with the Science Forum?

	Count	Percentage
Very Satisfied	12	66.67%
Somewhat Satisfied	5	27.78%
Neutral	0	0%
Somewhat Dissatisfied	1	5.56%
Very Dissatisfied	0	0%
TOTALS	18	100%

**The South Florida Restoration Science Forum
May 17 – 19, 1999, Embassy Suites in Boca Raton**

From: _____

Please help us improve future events by taking a few minutes to complete this questionnaire. Thank you!

Please rate the following areas by completely filling in the appropriate circle or responding to the question:

LOGISTICS	BELOW AVERAGE	AVERAGE	ABOVE AVERAGE	N/A
1) Courtesy and helpfulness of forum staff:				
a) Pre-forum assistance:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) On-site registration:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PROGRAM CONTENT

	BELOW AVERAGE	AVERAGE	ABOVE AVERAGE	N/A
1. This forum met my expectations for learning:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Insights gained were applicable to my situation:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Quality of session content:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Sessions addressed practical solutions to common problems.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Formats of session presentations:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Meeting facility's audio visual equipment:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Meeting facility's sound system:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Opportunities for informal interactions with speakers:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Opportunities for informal interactions with participants:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Length of sessions:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Extent of topic coverage:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Which session was most beneficial? _____				
13. Which session was least beneficial? _____				
14. What format do you prefer for displays?				
<input type="checkbox"/> Individual suites used for displays <input type="checkbox"/> Multiple displays in one area				
Comments on exhibit displays and formats _____				

HOTEL ACCOMMODATIONS – Embassy Suites

	BELOW AVERAGE	AVERAGE	ABOVE AVERAGE	N/A
16) Overall Hotel Rating				
a) Hotel restaurant:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Hotel lounge:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Recreation facilities:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Guest room accommodations:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Check-in/check-out at front desk:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Affordability of room rate:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

17) Other hotel used? Please state: _____

18) How many nights? 1 2 3

	BELOW AVERAGE	AVERAGE	ABOVE AVERAGE	N/A
19) Overall rating of group meal functions				
a) Breakfast:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Refreshment Breaks:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Lunches:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

MISCELLANEOUS

23) Did any of your family or friends accompany you? Yes No If yes, how many? _____

24) What is your affiliation? Federal Agency State Agency County/City Agency
 Business University Other: _____

SUGGESTIONS

25) Was the forum an acceptable traveling distance? • Yes • No

26) Which location would you prefer?
 Florida Keys Central Florida Gainesville West Coast
 South Florida Northern Florida East Coast Panhandle

27) How did you travel to this forum? Fly Drive Other: _____

28) This forum should be:
 Re-designed Continued as is Expanded

29) If this forum is held again, will you attend? Yes No Undecided

If there is anything we have not covered that you would like to comment on, please do so in the space below.

32) Additional comments/suggestions: _____

***Please Return This Form to the Registration Desk or mail it to:
Doreen DiCarlo, Center for Environmental Studies
Florida Atlantic University 3970 RCA Boulevard Suite 7401
Palm Beach Gardens, Florida 33410***

We appreciate your participation in our survey.



Participant Surveys (turned in at the forum)
Review by the Center for Environmental Studies

August 4, 1999 (Email message)

To: Leonard Berry, Ph.D., Director
From: J. Ross Wilcox, Ph.D., Certified Senior Ecologist, ESA

Subject: Summary of questionnaires from South Florida Restoration Science Forum

As you requested, I have reviewed the questionnaires returned from participants of the South Florida Restoration Science Forum conducted May 17-19 at the Embassy Suites in Boca Raton, FL. This summary is based on 14 responses.

The respondents were happy with the hotel, the surroundings, and the food. When another forum such as this is planned, a hotel similar in quality and accessibility needs to be selected.

The respondents had strong opinions that there is a continuing need for information exchange on Everglades issues. However, opinions diverged widely as to how best to disseminate this information. Many felt that the poster board session on Monday was very valuable, but the effectiveness was lost by each exhibit being housed in a small suite on multiple floors. Many thought that a large exhibit room with all exhibits was a better venue. Some thought that the plenary sessions were too large and formal for good information exchange.

Several respondents said there were too many submeetings of managers going so that they could not attend the main meetings. One person suggested more free time for people to talk and to have these submeetings.

The whole format of the workshop needs to be rethought. The suggestion at this time is to meet with the sponsors (i.e. the "customer") and to determine what their needs and wants are for the next meeting. Then the workshop can be designed to meet these needs and wants.

Working Group - Related Survey

MEMORANDUM

TO: South Florida Ecosystem Restoration Working Group Members
Science Coordination Team Members
Public Outreach and Steering Support Team Members
South Florida Ecosystem Restoration Science Forum Evaluation Members

FROM: Bonnie Kranzer, Executive Director
Governor's Commission for a Sustainable South Florida

DATE: June 22, 1999

SUBJECT: South Florida Ecosystem Restoration Science Forum Evaluation Form

Enclosed please find an evaluation form for the South Florida Ecosystem Restoration Science Forum held in Boca Raton May 17-19, 1999. The evaluation was created by a Science Forum Review and Follow-up Team chaired by myself and comprised of 18 individuals (See attached membership list). This team will compile completed evaluation forms and review them with a focus on two objectives: (1) summarize the lessons learned (extent to which the forum did/didn't accomplish its mission), and (2) ascertain the current and future roles of such forums for Task Force, Working Group, SCT, and POSST needs.

We would particularly like your comments and ideas to assist the Evaluation Team in this mission. Output from this and future forums should provide useful tools, assessment techniques, and information for the Task Force, Working Group, SCT, POSST and the public. It is our hope that this evaluation will serve as a tool in planning future forum/symposiums content, context and audience.

To aid in filling out the evaluation form, also enclosed is a tabulation of evaluation surveys from forum participants and presenters and a copy of the "Best Ideas" list compiled from comments received during the Forum. Please read these attachments since they summarize the participant's views of the Science Forum.

Completed evaluations should be faxed to the Governors Commission for a Sustainable South Florida, attention Bill Hinsley; or e-mailed to whinsley@sfwmd.gov. In order to complete our compilation of these evaluation forms, we ask that you return your completed survey no later than July 2, 1999.

Thanks in advance for your timely response and assistance.

Attachments

1999 Science Forum Evaluation Form

Name (optional) _____ Organization (optional) _____

Phone or e-mail (optional) _____

*Rank of 1 - 5; 1 - strongly disagree, 2-disagree, 3- indifferent, 4-agree, 5-strongly agree.
N/A for no experience/contact with the item or "not applicable". Please circle one.*

E. Program Design and Content

1. The forum's organization (poster sessions, speakers, panel discussions, etc.)
contributed to content assimilation. 1 2
3 4 5 N/A
2. The poster sessions overall, were useful and informative. 1 2
3 4 5 N/A
3. Poster session information was relevant, applicable and timely for my needs. 1 2
3 4 5 N/A
4. Poster session information was thorough, accurate, reliable and valid. 1 2
3 4 5 N/A
5. Poster session info was presented in ways that enhanced comprehension. 1 2
3 4 5 N/A
6. The speakers and panelists overall, were useful and informative. 1 2
3 4 5 N/A
7. Speaker and panelist info was relevant, applicable and timely for my needs. 1 2
3 4 5 N/A
8. Speaker and panelist info was thorough, accurate, reliable and valid. 1 2
3 4 5 N/A
9. Speaker and panelist info was presented in ways that enhanced comprehension. 1 2
3 4 5 N/A
10. Poster session formats (exhibits/handouts/briefings) were informative overall. 1 2
3 4 5 N/A
11. What did you like best about the "content" of the forum? _____

12. What did you like least about the forum "content"? _____

13. The manager-scientist theme was useful for learning. 1 2
3 4 5 N/A
14. What is the most significant thing(s) you learned at the forum? _____

15. Comments pertaining to forum content: _____

II. Forum Logistics

16. The forum was well advertised. 1 2
3 4 5 N/A
17. The forum's registration process was easy and simple to understand. 1 2
3 4 5 N/A
18. The registration materials provided a good overview of what to expect. 1 2
3 4 5 N/A
19. Forum organization/agenda followed a logical/informative sequence. 1 2
3 4 5 N/A
20. Forum planning was well organized. 1 2
3 4 5 N/A
21. Use of web site assisted in registration/learning about forum. 1 2
3 4 5 N/A
22. Comments pertaining to forum logistics: _____

III. Lessons Learned

23. Is there anything that should have been done differently at the forum?
24. Is there anything that should be done differently in future symposiums?
25. What did you like best about the forum?
26. What did you like least about the forum?

IV. Future Symposiums/forums

27. Should this forum be repeated? If so, (1) re-designed, (2) continued as is, or (3) expanded.
(circle one)
28. What are your suggestions about future forums/symposiums?

29. How and for what purposes should the Working Group sponsor future symposiums?

30. What role(s) should future symposiums play for the Working Group or its Issue groups or Teams (POSST, SCT, etc.).

31. What linkage, if any, should future symposiums have to the Science Forum?

32. Can you suggest a sequence of themes or functions future symposiums could address?

33. Miscellaneous Comments/Suggestions:

**E-mail or fax responses to: Bonnie Kranzer c/o Bill Hinsley, Gov's Commission
At: 305-669-6974 (fax), 305-669-6975 (phone), e-mail c/o whinsley@sfwmd.gov.**

Attachments: (1) tabulation of evaluation surveys from participants
(2) List of "Best Ideas" from facilitated sessions.

1999 South Florida Restoration Science Forum
 Post Forum Surveys from Selected Evaluators - Results
 Survey Compiled by Bill Hinsley (Updated 08/05/99)

(Note: The responses were only to Questions 1 through 10, 13, and 16 through 21.)

1. The forum's organization (poster sessions, speakers, panel discussions, etc.) contributed to content assimilation.

	Count	Percentage
Strongly Disagree	0	0.00%
Disagree	0	0.00%
Indifferent	0	0.00%
Agree	5	62.50%
Strongly Agree	3	37.50%
No Experience/Not Appl.	0	0.00%
TOTALS	8	100%

2. The poster sessions overall, were useful and informative.

	Count	Percentage
Strongly Disagree	0	0.00%
Disagree	0	0.00%
Indifferent	1	12.50%
Agree	3	37.50%
Strongly Agree	4	50.00%
No Experience/Not Appl.	0	0.00%
TOTALS	8	100%

3. Poster session information was relevant, applicable and timely for my needs.

	Count	Percentage
Strongly Disagree	0	0.00%
Disagree	0	0.00%
Indifferent	0	0.00%
Agree	3	37.50%
Strongly Agree	4	50.00%
No Experience/Not Appl.	1	12.50%
TOTALS	8	100%

4. Poster session information was thorough, accurate, reliable and valid.

	Count	Percentage
Strongly Disagree	0	0.00%
Disagree	0	0.00%
Indifferent	1	12.50%
Agree	4	50.00%
Strongly Agree	2	25.00%
No Experience/ Not Appl.	1	12.50%

TOTALS 8 100%

5. Poster session info was presented in ways that enhanced comprehension.

	Count	Percentage
Strongly Disagree	0	0.00%
Disagree	1	12.50%
Indifferent	0	0.00%
Agree	5	62.50%
Strongly Agree	2	25.00%
No Experience/Not Appl.	0	0.00%
TOTALS	8	100%

6. The speakers and panelists overall, were useful and informative.

	Count	Percentage
Strongly Disagree	0	0.00%
Disagree	0	0.00%
Indifferent	2	25.00%
Agree	5	62.50%
Strongly Agree	1	12.50%
No Experience/Not Appl.	0	0.00%
TOTAL	8	100%

7. Speaker and panelist info was relevant, applicable and timely for my needs.

	Count	Percentage
Strongly Disagree	0	0.00%
Disagree	0	0.00%
Indifferent	1	11.11%
Agree	6	66.67%
Strongly Agree	1	11.11%
No Experience/Not Appl.	1	11.11%
TOTAL	9	100%

8. Speaker and panelist info was thorough, accurate, reliable and valid.

	Count	Percentage
Strongly Disagree	0	0.00%
Disagree	0	0.00%
Indifferent	1	12.50%
Agree	6	75.00%
Strongly Agree	0	0.00%
No Experience/Not Appl.	1	12.50%
TOTAL	8	100%

9. Speaker and panelist info was presented in ways that enhanced comprehension.

	Count	Percentage
Strongly Disagree	0	0.00%
Disagree	1	12.50%
Indifferent	3	37.50%
Agree	3	37.50%
Strongly Agree	1	12.50%
No Experience/ Not Appl.	0	0.00%
TOTALS	8	100%

10. Poster session formats (exhibits/handouts/briefings) were informative overall.

	Count	Percentage
Strongly Disagree	0	0.00%
Disagree	0	0.00%
Indifferent	1	14.29%
Agree	4	57.14%
Strongly Agree	2	28.57%
No Experience/Not Appl.	0	0.00%
TOTALS	7	100%

13. The manager-scientist theme was useful for learning.

	Count	Percentage
Strongly Disagree	0	0.00%
Disagree	0	0.00%
Indifferent	2	25.00%
Agree	3	37.50%
Strongly Agree	3	37.50%
No Experience/ Not Appl.	0	0.00%
TOTALS	8	100%

16. The forum was well advertised.

	Count	Percentage
Strongly Disagree	0	0.00%
Disagree	1	12.50%
Indifferent	4	50.00%
Agree	1	12.50%
Strongly Agree	1	12.50%
No Experience/Not Appl.	1	12.50%
TOTALS	8	100%

17. The forum's registration process was easy and simple to understand.

	Count	Percentage
Strongly Disagree	0	0.00%
Disagree	0	0.00%
Indifferent	1	12.50%
Agree	6	75.00%
Strongly Agree	1	12.50%
No Experience/Not Appl.	0	0.00%
TOTALS	8	100%

18. The registration materials provided a good overview of what to expect.

	Count	Percentage
Strongly Disagree	0	0.00%
Disagree	1	12.50%
Indifferent	3	37.50%
Agree	4	50.00%
Strongly Agree	0	0.00%
No Experience/ Not Appl.	0	0.00%
TOTALS	8	100%

19. Forum organization/agenda followed a logical/informative sequence.

	Count	Percentage
Strongly Disagree	0	0.00%
Disagree	1	12.50%
Indifferent	2	25.00%
Agree	4	50.00%
Strongly Agree	1	12.50%
No Experience/Not Appl.	0	0.00%
TOTALS	8	100%

20. Forum planning was well organized.

	Count	Percentage
Strongly Disagree	0	0.00%
Disagree	0	0.00%
Indifferent	2	22.22%
Agree	5	55.56%
Strongly Agree	1	11.11%
No Experience/Not Appl.	1	11.11%
TOTALS	9	100%

21. Use of web site assisted in registration/learning about forum.

	Count	Percentage
Strongly Disagree	0	0.00%
Disagree	0	0.00%
Indifferent	0	0.00%
Agree	3	37.50%
Strongly Agree	3	37.50%
No Experience/Not Appl.	2	25.00%
TOTALS	8	100%

1999 South Florida Restoration Science Forum

Forum Evaluation Results

Short Answer Responses

Survey Compiled by Bill Hinsley (Updated 08/06/99)

I. Program Design and Content

11. What did you like best about the "content" of the forum?

- Displays & handouts available; scientists there to answer questions
- I most appreciated the diversity of displays on various south Florida restoration projects. The layout which utilized major topic areas with more specific sub-topics under each was very understandable. I found the "overview" rooms (9 topic rooms) most helpful for a broad, general understanding of restoration issues.
- Quality of information.
- The large number of display themes presented in the hotel rooms and on the first floor.
- Inclusive of many organizations/agencies.
- The expanded poster format.
- Wide variety of organizations participating; clear, consistent presentation format.

12. What did you like least about the forum "content"?

- Insufficient involvement by managers, the target audience.
- The content of several of the posters in the "overview" rooms was too complex for the non-scientist. It would've been more helpful if these rooms really stuck to the basics, and followed a very similar format/layout (I know this was the intention).
- There is not any item I liked the least about the forum. An area of improvement would be to get a larger number of people to attend especially local government and the general public.
- Too "heady" for the general public.
- Too much politics/government backstabbing on the second morning.
- Mostly an insiders meeting, "preaching to the choir."

14. What is the most significant thing(s) you learned at the forum?

- Secretary Babbitt's view of where the Restudy was going (into controversy for six months); Secretary of the Interior Babbitt's view that the Science Forum was a good thing. Rock Salt's accolades for the Science Sub-group work plan back in 1993, and other independent remarks in this regard.
- The most significant thing I learned was about the huge diversity of projects which all contribute to the overall restoration effort. I also learned some interesting details about phosphorus and other nutrients that I did not know before.
- I was able to increase my knowledge on many science-related topics relative to ecosystem restoration.
- That communication was such a major problem.
- Managers don't really understand the science underpinnings. They don't realize how strong they are.
- So many details we can't believe we didn't know before; how little communication has occurred before this.

15. Comments pertaining to forum content:

- Not enough NGO's participating, to tell the world what things they were doing and where their investments were headed relative to science activities.
- None other than to keep content even MORE basic and general if your audience is truly the lay person and manager.
- Need more linkages.
- Outstanding.
- Wasted time on second morning.
- Needed more scientific and/or academic presentations.

Forum Logistics

22. Comments pertaining to forum logistics

- Make names on nametags bigger.
- From an outsider's perspective, the forum appeared to be well orchestrated. I did not notice any major problems or issues, other than some confusion with hotel staff about assigned rooms.
- Need more targeting to get desired attendees.
- Well coordinated effort.

- Need to set agendas early and stick to them.
- I am easily confused by the web and was perpetually confused about Bob Mooney's instruction about how to get into, how to register, etc. It may on the other-hand, been great for everyone else.
- A lot of last minute arrangements but it ran quite well.

II. Lessons Learned

23. Is there anything that should have been done differently at the forum?

- It's hard to train managers to be scientists; that's why they are managers.
- I think the audience for the forum could have been more broadly defined. This may have allowed advertising and promoting the wonderful information contained in the forum to more people. For a first attempt, however, the forum was excellent overall. I do not think the first floor displays (general agency displays) contributed to the Forum. In fact, several people commented to me that they thought these displays constituted the entire forum! The agency displays, though glossy and interesting, often did not directly state how they connected to the restoration effort. Even the USACE Restudy display needed to make the connection between the Restudy and the overall restoration effort. In the future, I would suggest using this area to highlight very specific projects and events, and leave the more generic agency displays to another floor.
- Longer lead-time. Broader involvement in planning.
- We could have done a better job on the media relations in advance of the forum including press packages etc.
- We should not have scrapped the original second morning session for what we got.
- Have management present displays.

24 Is there anything that should be done differently in future symposiums?

- Get more schools involved. Also the public.
- Again, I would encourage clearly defining the audience and specifically targeting content and format for this group. I do think the general public could learn a lot from this type of event in the future. The time that presenters were expected to be present in their individual rooms was too long.
- More targeting.
- Allow more time for display rooms to be open with the scientists available for interaction with attendees.
- Better up front organization & PR.
- Each forum will have a different theme – so many things will be different.
- Make palatable to scientists in academia; bring management and elected officials.

25 What did you like best about the forum?

- Interaction with other scientists.
- I most liked the opportunity to gain a broad-brush understanding of many restoration projects in one central location, and in lay person's terms (most of the time).
- Quality of information.
- The large number of scientific exhibits and the use of separate hotel rooms for the displays.
- Poster sessions.
- The poster format.
- Opportunity to network and exchange ideas with other scientists.

26. What did you like least about the forum?

- Managers would give a speech in prep for a panel, then disappear, and were to wrapped up in crisis management as usual, due to insufficient use of science for "out of the crisis."
- The individual rooms format was intimidating to me, personally. I would much prefer to approach a poster or exhibit display contained in a large room, and engage the presenter in that forum, versus entering a small room and potentially being the only person present.
- Too long.
- Need for more time to view displays.
- Schedule changes.
- Few visitors considering time invested.

III. Future Symposiums/forums

27. Should this forum be repeated? If so, (1) re-designed, (2) continued as is, or (3) expanded. (circle one)

- Redesigned (2)
- Continued as is (2)
- Expanded (3)
- YES, absolutely. In a slightly re-designed format.

28. What are your suggestions about future forums/symposiums?
- Use volunteers effectively. Have a team evaluate the forum real-time. Schedule a “hot wash-up” at the end of the forum. One month (+) later...let’s see, what I have forgotten?
 - Each yearly one should have a specific goal.
 - A very valuable tool to educate managers, scientists and policy makers.
 - Deal with some of the major issues that came out of this forum.
 - Build a long-range approach – select themes for next several years.
 - Use a field site where the ecosystem is a tangible backdrop; add science to attract academics.
29. How and for what purposes should the Working Group sponsor future symposiums?
- Same Deal: Target management until they get it right.
 - I believe the WG should sponsor future forums for the primary purpose of public outreach and education on the restoration process. The WG is responsible for overseeing all aspects of Everglades restoration, and this includes informing and involving managers, decision-makers, politicians, and the general public.
 - There are numerous purposes that are laudable. Priorities should be set each year within strategic goals.
 - WG sponsored forums need to be held as a tool to inform people at all levels of interest on the need for ecosystem restoration.
 - Retreats on specific regional/conceptual issues.
30. What role(s) should future symposiums play for the Working Group or its Issue groups or Teams (POSST, SCT, etc.).
- Their mission role. Leadership is sorely needed. Someone needs to make a statement about free speech, and open debate in a “forum.”
 - Depending on the Forum content, target audiences, and format, any or all of the WG issue groups and subgroups should be involved in organizing and sponsoring such a forum. This past forum’s sponsorship by the SCT was appropriate given the forum content and audiences.
 - They can be excellent not need to be looked at as a whole.
 - POSST needs to take more of a lead in organizing the media relations with the lead agencies, get more involvement from principle players who have PR staff. Joint efforts similar to this forum of teams is a good approach, i.e. POSST and SCT working together.
 - Would bring out points that need to be put before the public and other large audiences – outreach if you will.
 - Should be part of our overall goal of informing WG and public about science base for restoration.
 - Send clear substantiation to management of divisions based on science.
31. What linkage, if any, should future symposiums have to the Science Forum?
- Again, before linkages are decided, the primary goals, audiences, and format of any symposia must be identified. Only then can the linkage to the Science Forum be determined. Perhaps the science forum could be re-formatted to address managers and policy-makers one day (as it did this year) and the general public the next.
 - Should be linked strategically.
 - Linkage may be a good idea, but needs to be thought through.
 - More linkage; better integration.
32. Can you suggest a sequence of themes or functions future symposiums could address?
- Peer Review of the Restudy, assuming it has gotten underway.
 - Requires a team approach.
 - Public Outreach (including public education, media involvement, etc.), Strategic Planning, Science/Manager.
 - Deal with some of the major issues that came out of this forum.
 - Needs to be a team effort.
33. Miscellaneous Comments/Suggestions
- How to get feedback to the breakout groups, on what was done with the discussion session ideas?
 - It would be very helpful for scientists to better understand which management decisions represent Critical Projects in the implementation process, and knowledge/data gaps potentially impacting those decision points & the timing thereof. Managers should address these matters at future meetings, e.g. ASR.
 - A very successful and beneficial forum. Many very positive comments from attendees
 - This forum established the fact that communication skills needed improving by everyone. Now its time to establish symposia that can put that into practice.

Supporter Acknowledgements by the Forum Developer / Coordinator

I want to extend a special thanks to everyone who participated in the South Florida Restoration Forum on May 17-19, 1999, at the Embassy Suites in Boca Raton, Florida. The event made it possible to set up this forum web site. In addition, I want to highlight the aspects of the event:

It was a massive, collaborative, first time effort by hundreds of scientific investigators to display their work in a format that was meaningful to both scientists and non-scientists. Both the event and the online forum have been developed mostly through electronic means with few meetings and minimal effort by all but a few of the individuals involved.

The effort that was put into developing the information and displays for the forum is continuing to provide further benefits through its ongoing display on this web site which is another rare accomplishment for an event anywhere. This is being done mostly through an extraordinary effort by webmaster Heather Henkel.

More than 500 scientists, resource managers, executives, and others participated in the forum by either displaying, exhibiting, presenting, discussing, and/or hosting displays in the front half of their guest suites for others who lived nearby. This provided a tremendous cost savings and provided recognition of the great team spirit. This is all part of the restoration effort.

The forum was greatly enhanced through last minute assistance from the Florida Center for Environmental Studies and its student workers from Florida Atlantic University, and by the onsite assistance of volunteers from the Loxahatchee Natural History Association as arranged by the Arthur R. Marshall Loxahatchee National Wildlife Refuge. This demonstrated the outstanding abilities of individuals in those organizations.

I want to give special recognition to: volunteers Dolores Tennant, Jay Litt, Jay Goldman, Bill Loery, Bert Zimmerman, Ruth Cogswell, Jerry Weiss, Bill Harms, Walter Goldstein and Serena Rinker for their invaluable services; student workers Anne Simons, Jenny Christopher, Dara Cole, Matthew Crane, Sophia Kokoros, Jordan Muss, Scott Park, Josh Patterson, Patricia Rieter, Ada Santamaria, Mandy Selix, Eric Tamila, and Louisa Kerwin for their truly amazing efforts; and Doreen DiCarlo of the Florida Center for Environmental Studies who did an outstanding job, especially with the informal evening reception.

Many thanks to all!

Bob Mooney

<http://sofia.usgs.gov/sfrsf/supporters.html>

THE SOUTH FLORIDA RESTORATION SCIENCE FORUM
ON THE POWERFUL LINKAGES BETWEEN SCIENCE AND MANAGEMENT
May 17-19,1999
Boca Raton, Florida

“BEST IDEAS”

HOW CAN MANAGERS AND SCIENTISTS BE MOST SUPPORTIVE OF EACH OTHERS NEEDS AND RESPONSIBILITIES AND WORK TOGETHER EFFECTIVELY?

At the conclusion of the second day of the Forum, participants completed a form which solicited their best ideas for managers, for scientists and for both which were stimulated by the day's panels and presentations. These were compiled and organized over night and presented on Wednesday morning as a handout and a basis for identifying in small group sessions the “best ideas” for Restoration managers and scientists to work together.

On the last morning of the South Florida Restoration Science Forum the participants heard an opening presentation by Rock Salt offering remarks on the historical and current context and importance of the dialogue among managers and scientists on working effectively together to advance the goals and vision of Everglades restoration and South Florida sustainability. Following this, the participants broke into six small discussion groups balanced with managers and scientists and were asked to identify the best ideas and strategies for how managers and scientists can work more effectively together. These ideas were then presented to a panel of scientists and managers for their review, comments and suggestions regarding how to implement these suggestions. The Science Coordinating Team of the Everglades Restoration Task Force and Working Group, which sponsored and help organize the forum, will review the Forum results with an eye towards implementing some of the best ideas identified.

Below are the lists of the highest ranked ideas generated by the six small groups and shared with and discussed by the panel in the Conference's final plenary session. Following these are each small break-out group's ranked list of “best ideas” culled from the participant “idea list” and from the group's own discussions.

“THE BEST IDEA LIST”

#1 RANKED IDEAS FROM SIX SMALL BREAK-OUT GROUPS

- Scientists and managers should jointly set vision, goals, objectives and financial plans
- Managers should communicate expectations and priorities with the public
- Develop region based science plans- roadmaps
- COMMUNICATION/COMMUNICATION COMMUNICATION-between and among scientists to identify clear objectives, goals, jointly evaluate and synthesize results.
- Synthesis--Scientists need to pull all the pieces together for the managers. There are many complex related issues being addressed by the scientists but not much synthesis of the data. Some one(s) need to draw the common thread through the issues, show how one management option may impact another etc. (e.g. hire writers, etc.)
- Centralize and identify manager needs/wants for specific scientific data and advertise these outside their agency, e.g. put needs onto a PMC or Restudy Web Page. Articulate research needs on an annual basis. Hold annual planning and problem solving workshops for manager and scientists to synthesize and identify major gaps in science (e.g. Restudy, SERA etc.)Share objectives with each other.
- Managers need to continue to (and more so) communicate to law makers, plus staff and policy makers to support \$\$ for research/ science to support management decisions.
- Managers need to put effort into understanding science

#2 RANKED IDEAS FROM SIX SMALL BREAK-OUT GROUPS

- Scientists need to pull all the pieces together for the managers. There are many complex related issues being addressed by the scientists but not much synthesis of the data. Some one(s) need to draw the common thread through the issues, show how one management option may impact another etc.*

- Scientists and managers need to work better together and separately to communicate with the public
- Identify ultimate goals and set clear objectives for all projects at all scales and provide consideration for alternative directions if answers are not as expected (This only works if managers are willing to accept negative information.)
- Use and fund information specialists (with new funds) to work with scientists in synthesizing results to benefit science, management and public awareness.
- Peer review for science research and peer review of management decisions.
- Establish scientific standards and protocols and performance measures for managers
- Managers need to understand that science provides answers in probabilities and risks not absolutes and research often generates new research. Scientists need to frame advice in a risk format, i.e. likelihood of success within specific timeframes

Break-Out Group #1 (Facilitator: Bonnie Kranzer / Sally Garson)

- 1) Centralize and identify manager needs/wants for specific scientific data and advertise these outside their agency, e.g. put needs onto a PMC or Restudy Web Page. Articulate research needs on an annual basis. Hold annual planning and problem solving workshops for manager and scientists to synthesize and identify major gaps in science (e.g. Restudy, SERA etc.) Share objectives with each other.**
- 2) Synthesis--Scientists need to pull all the pieces together for the managers. There are many complex related issues being addressed by the scientists but not much synthesis of the data. Some one(s) need to draw the common thread through the issues, show how one management option may impact another etc. (e.g. hire writers, etc.)**
- 3) Peer review for science research and peer review of management decisions.**
- 4) Establish scientific standards and protocols and performance measures for managers
- 5) Simplify funding and budget process and explore more connections between researchers and granting agencies. Granting agencies should become more aware of research issues and needs.

- 6) Making sure old information is not lost in bridging gaps (e.g. Science Sub-group Report)
- 7) Managers often overlook the basis of all scientific investigation is questioning. Often times science findings in one area may lead to more questions and more complex questions about that topic. Managers should understand that science isn't always cut and dry
- 8) Resist temptation to use science for political agenda
- 9) Scientists need to be aware and involved beyond their own work and agency
- 10) Its necessary for scientists to present all of the science, not just that supporting the issue you are trying to address
- 11) We need more experimental cause/effect research rather than less. In complex systems simple, easy to understand (or single factor correlative) explanations are likely to be wrong. In the case of P and Cattails, the simple explanations seems to have been correct, but it is dangerous to base management policy on such simple correlations without the cause/effect research to back it up. Support of empirical data collection is preferred, especially if work may be contested.

Break-Out Group #2 (Facilitators: Tim Bechtel & Rob Sosnowski)

- 1) Centralize and identify manager needs/wants for specific scientific data and advertise these outside their agency, e.g. put needs onto a PMC or Restudy Web Page. Articulate research needs on an annual basis. Hold annual planning and problem solving workshops for manager and scientists to synthesize and identify major gaps in science (e.g. Restudy,**
- 2) Scientists need to pull all the pieces together for the managers. There are many complex related issues being addressed by the scientists but not much synthesis of the data. Some one(s) need to draw the common thread through the issues, show how one management option may impact another etc.**
- 3) Scientists need to focus on using lay-person terminology and avoiding scientific jargon in their discussions with presentations to managers and the public
- 4) Both groups need to work better together and separately to communicate with the public.

- 5) Scientists and managers need to work better together and separately to communicate with the public.
- 6) Communicate with each other before during and after and communicate outside
- 7) Anticipate, define, receive (interpretations) and act
- 8) Meet on informal basis and talk at various levels
- 9) Questions that need to be constantly revisited by all relevant parties
- 10) Don't get lost in the work, too details- need appropriate level of research.
- 11) Long term planning agreed upon by managers and scientists.

Break-Out Group #3 (Facilitator: Stuart Langton)

- 1) Scientists and managers should jointly set goals, objectives and vision including funding (managers need to say what they want and scientists need to say what they can and can't do)**
- 2) Provide support and assistance to help scientists synthesize, apply and translate and communicate ("gray hairs")**
- 3) Basis for action is sound science/management principle
- 4) Scientists need to be willing to give "best professional opinion"
- 5) Managers should meet with scientists to learn and understand their models and tools, etc. Managers need to be accessible and attend meetings with scientists
- 6) Do not do data dump synthesize information for managers and public
- 7) Scientists should meet regularly with policy makers
- 8) Managers need to support scientists and that support needs to be communicated...build trust...decision making

Break-Out Group #4 (Facilitator: Bob Jones)

- 1) **Communicate, communicate, communicate- improve it among and between managers and scientists especially in identifying goals, objectives and jointly evaluating results**
- 2) **Need to develop region based science plans as a roadmap**
- 3) **Use new funds to have information specialists to work with scientists to synthesize results for scientists, managers and the public.**
- 4) Encourage on going/constant partnerships with scientists, managers and affected interests in a defined ecological “place” to identify clear, goals, objectives to be achieved.
- 5) Managers need more involvement in identifying effects/implications of research on management role, plans and processes.
- 6) Provide a forum for scientists to initiate interactive discussions with managers on public resource management goals and objectives
- 7) Consider the big picture—ecosystem restoration
- 8) Scientists need to define up front what products research will offer to managers.

Break-Out Group #5 (Facilitators: Lynn Mason & Ed Terszak)

- 1) **Managers need to put effort into understanding science**
- 2) **Scientists and managers need to work better together and separately to communicate with the public**
- 3) **Identify ultimate goals and set clear objectives**
- 4) Scientists need to pull the pieces together
- 5) Separate good from bad with goal of reaching a consensus
- 6) Managers should understand science isn't “cut and dry:
- 7) Communication with managers should be jargon free
- 8) Multi formats for public understanding

- 9) Cause and effect research needed
- 10) Managers need to continue to communicate to law makers.

Break-Out Group #6 (Facilitators: Susan Coughanour & Julio Fanjul)

- 1) Managers need to continue to (and more so) communicate to law makers, plus staff and policy makers to support \$\$ for research/ science to support management decisions.**
- 2) Managers need to understand that science provides answers in probabilities and risks not absolutes and research often generates new research. Scientists need to frame advice in a risk format, i.e. likelihood of success within specific timeframes.**
- 3) Identify ultimate goals and set clear objectives for all projects at all scales and provide consideration for alternative directions if answers are not as expected (This only works if managers are willing to accept negative information.)**
- 4) Include time for public communication in planning processes; recognize different levels/types of public.**
- 5) Articulate research needs on annual basis and confront managers when bad management is followed. State results in a risk formula;**
- 6) Managers should understand that science isn't always "cut and dry"
- 7) Develop oversight and interagency committee to address or set standards, QA/QC technical issues. Peer review needs to occur at the design level as well.
- 8) There needs to be FULL data disclosure (scientists' effectiveness are hurt by adversarial relationships caused by litigation).
- 9) Listen to feed back- change scientists behavior vs. demanding that management change
- 10) Be aware of long term implications of actions. Short term gains, may result in long term shortfalls. Does current science support long term outcomes?
- 11) Have a common system for defining any agenda or a system for research planning
- 12) Communicate expectation priorities to scientists

13) Need to recognize that agricultural research has benefits for natural system and that vice/versa

- 14) We need more experimental cause/effect research rather than less. In complex systems simple, easy to understand (or single factor correlative) explanations are likely to be wrong. In the case of Phosphorus and Cattails, the simple explanations seems to have been correct, but it is dangerous to base management policy on such simple correlation without the cause/effect research to back it up.
- 15) Modeling needs to be supported by adequate and sufficient field work and should be subject to peer review.
- 16) Identify information gaps that if known, would help them meet their management goals and objectives
- 17) Controversy can be positive- increases public awareness
- 18) Present all science, not just the science that supports the desired outcome (pros and cons)

South Florida Restoration Science Forum
May 17-19, 1999
Embassy Suites
Boca Raton, Florida

“THE IDEA LIST”

This list was compiled from forms completed by participants at the Forum before closing on Tuesday evening.

I. SUGGESTIONS FOR MANAGERS

A. Relationship with Scientists

1. You need sound science to succeed—act like it
2. Managers often overlook that the basis of all scientific investigation is questioning. Oftentimes scientific findings in one area may lead to more questions and more complex questions about that topic. This process ensures that good science continues to happen while weeding out fringe studies. This fundamental process of conducting science investigations should be considered by managers.
3. In connection with the above, identify funding assistance, whether in their own house or others
4. Managers should not fire scientists who are whistle blowers
5. Visit your scientific sites and get to know what they are doing. Don't wait for final research to be completed and publicized.

B. Communication with Scientists/Researchers

1. I.d. ultimate goals and set clear objectives for all projects at all scales and provide consideration for alternative directions if answers are not as expected (This only works if managers are willing to accept negative information.)
2. Managers should specify content how they want information and/or products and why/when communicated
3. Centralize and identify manager needs/wants for specific scientific data and advertise these outside their agency, e.g. put needs onto a PMC or Restudy Web Page
4. Communicate expectation priorities to scientists
5. Managers should understand that science isn't always “cut and dry”
6. Regarding “when”, do not use the line, “If I needed the information tomorrow I would ask for it tomorrow.”

7. Share sub-level information- non science reality such as fisherman's reluctance to support water-way changes
8. Become personally involved with a technical group
9. Work with scientific groups and agencies to help them understand what you need- including articulating the specific questions you need to have answered.
10. Get involved in the major scientific disagreements between different groups- don't let the problems fester and cause division.
11. Make the groups do QA/QC and respond to outside criticism until the problems are resolved
12. When scientists create opportunities for managers to see and hear the scientific information, the managers should avail themselves of those opportunities.

C. Communication with the Public

1. Bring info to low level public comprehension bit-by- bit
2. An example of translating for lay audiences--SFWMD GB gets info from staff that is understandable

D. Focus and Types of Research Needed

1. We need more experimental cause/effect research rather than less. In complex systems simple, easy to understand (or single factor correlative) explanations are likely to be wrong. In the case of P and Cattails, the simple explanations seems to have been correct, but it is dangerous to base management policy on such simple correlations without the cause/effect research to back it up.
2. Support of empirical data collection is preferred, especially if work may be contested.
3. Support for agriculture practice changes-but not black and white- (its good to reduce phosphorous but shouldn't get off easy)
4. Consider impartial science on issues, try to remove political bias.
5. Resist temptation to use science for political agendas.
6. Resist temptation to use science for political agendas.
7. Be aware of long term implications of actions. Short term gains, may result in long term shortfalls. Does current science support long term outcomes?
8. Foster use of numerical analyses
9. Get involved in modeling and push results in direction of data desired by management.

10. I.d. information gaps that if known, would help them meet their management goals and objectives
11. Provide scientists the opportunity to do some science that is not necessarily applied to a management issue—that is, allow for some basic research.

F. Establish Standards/Protocols

1. Develop oversight or interagency committee to address or set standards, QA/QC technical issues.
2. When done later in the “process” usually means a “re-do”

G. Request for Proposals

1. Develop question- specific RFPs, while supporting independent research efforts

G. Financial Support for Research

1. Managers need to continue (and more so) communicate to lawmakers the need to support, in terms of \$\$, research/ science to support management decisions.
2. How can scientists get the funding to do thorough, effective research on important issues without litigation.

Other

1. Managers should give e-mail address to subordinates and encourage them to communicate
2. Managers should respond briefly to subordinates.
3. Access technical information available on WEB
4. Clearly define 1-5 year plans of operations

II. SUGGESTIONS FOR SCIENTISTS

A. SWAG

1. Think! Learn to anticipate! Learn to look to the future and take a wild swag (scientific wild-ass guess) as to the types of info decision makers may need.

B. Synthesize Research Information

1. Scientists need to pull all the pieces together for the managers. There are many complex related issues being addressed by the scientists but not much

synthesis of the data. Some one(s) need to draw the common thread through the issues, show how one management option may impact another etc.

2. Grace time to synthesize publications and...
3. Need a procedure for synthesis of information. What was done, why it was done— what were the important results- what do they mean to the managers.
4. Synthesis is critical to understanding issues. Improve mechanism to synthesize data/publications.
5. Write more informative synthesis materials and fact sheets

C. Research Needs

1. Articulate research needs on an annual basis
2. Scientists should be bold enough to directly confront managers when bad science is followed.
3. Scientists should be unafraid to blow the whistle on managers who ignore their warnings on bad practices.

D. Focus of Research

1. Explore multiple scientific explanations- bird/fish water level link- maybe other explanations besides available food in bird/fish population link.
2. What if cattail phosphorous uptake works like body chemistry adjustments
3. If Fort Lauderdale t. air does have measured effect on mercury with east wind, why not limit Ft. L emissions or put up a big fan back east
4. Consider the total picture—specific science on a separate issue may not apply to the whole issue
5. Flooding of agricultural land issue use -- Lake Apopka as a case study and compare with levels of pesticides and number of samples found in the soils in Talisman.
6. Is science dated?
7. Need to explain the term “politics of science.”
8. Build the credibility- remove sacred cows.

E. Communications with the Managers and the Public-Clear, Jargon Free

1. Develop research results in one to two page popular style releases for public and management use

2. Scientists need to focus on using lay-person terminology and avoiding scientific jargon in their discussions with presentations to managers and the public
3. For some scientists, this may require assistance /review by a lay-person or manager-type before the communication
4. Try to be succinct, phrase your results in language that anyone can understand.
5. Translate research to managers and public in clear and simple language
6. Scientists should engage managers to provide research needs.
7. Controversy can be positive—don't take it personally- work it! It increases public awareness.
8. Be audience oriented when communicating
9. Publish in peer journals, but develop outreach to the public (newspapers, etc.)
10. Speak managers language ("without a condescending tone/air)
11. Be succinct, on point, re: how science is meeting/will meet management's needs in reaching management's goals.
12. Be open to feed back and change your behavior instead of demanding that management change.
13. Don't give up on scientists when they don't communicate effectively- train them how to communicate!
14. Be less resistant to working with media, especially when getting negative coverage. Get your oar in the water.

H. Relationship with Managers

1. Keep managers posted on progress and problems.
2. Take results to the management at early stage, ascertain that the output is that desired
3. Do early workshops with managers
4. Scientists need to talk to the managers more, like what is being done at this forum, rather than just talking to each other, (at meetings and through science journals.
5. Talk about what you are doing to managers before you have it published- bring them into it.
6. Present all science, not just science, not just the science that supports the desired outcome

7. Use understandable top level numerical analyses
8. Understand that managers must look out for interests of all concerned parties, not just scientist
9. Pull your scientists into your inner circle—include in management team meetings, have them give 10-minute presentations at all employee meetings—regular column in newsletter.
10. Participate in more planning exercises

I. Funding Issues

1. Understand that managers must have a budget
2. Balance time/cost for projects.
3. Organize budget proposals and all calculations according to management's goal statements.

III. SUGGESTIONS FOR BOTH MANAGERS AND SCIENTISTS

1. Hold annual planning and problem solving workshops for manager and scientists
2. Share objectives with each other.
3. Participate in manager/ scientists interaction groups
4. Have a common system for defining any agenda or a system for research planning
5. Both groups need to work better together and separately to communicate with the public.
6. Coordinate efforts and communicate

Scientists and managers need to work better together and separately to communicate with the public.