COMMUNITY BASED WETLAND MANAGEMENT

CADDO LAKE INSTITUTE, TEXAS
CASE STUDY

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Presented at the
CONVENTION ON WETLANDS OF INTERNATIONAL IMPORTANCE ESPECIALLY AS WATERFOWL HABITAT

6th Meeting of the Conference of the Contracting Parties
Brisbane, Australia: March 23, 1996

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Edited Remarks Accompanying Chart Presentation of
Dwight K. Shelhnan, Jr. President, Caddo Lake Institute
at the Technical Session concerning
Community-based Wetland Management.
of
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Thank you Mr. Chairman & Mr. Vice Chairman.

Let me first introduce the personalities involved in our delegation and the ecosystem that we represent . (Slides) Lights Please.

We are ,a site-based NGO Institute and Academy Program dealing with Wetlands Science Education.

Caddo Lake is a 26000 acre, or approximately 10000 hectare, wetland on the border of Texas, Louisiana, United States. It is located in a sub-tropical region in a rural area as, indeed, most remaining wetlands are located in rural areas.

Our job is to devise strategies and bring resources to empowering the local community to take care and become good stewards of their own wetlands. Ours is a work in progress. It is only 3 years old. To provide more information about us we've tried to put out a fairly detailed package. I think all of you have got it. The folder depicts the cypress ecosystem itself. I will point out a few things in the package for your further reference. There are two pamphlet items, I especially want to mention.

One is a yellow pamphlet on our letterhead that is also a technical summary of the remarks I'll be making. It describes in more detail our program and some of the techniques we use. I won't go into all of those today. It is in three languages, the three Ramsar languages. On the reverse side is a biographical or curriculum vitae type description of the people on our delegation. We have a federal scientist, a bureaucrat if you will. He is Dr. Carroll Cordes. He was the first person to mention the Ramsar treaty three years ago.) We have university professors and former public school teachers. We have a private land owner. I mention private land owners because if we talk about catchment issues (in those countries that have private land ownership) the inclusion of private land owners is very important. So I would refer you to that pamphlet.

We also have a six language pamphlet inclusion that describes the role of our site-specific NGO, The Caddo Lake Institute. It is a creature of Mr Don Henley, who is its principle sponsor. He grew up in this area, moved away to become a well known musician, and also an Internationally known environmentalist. He is somebody who we describe in the United States by saying that he "walks what his talk." He speaks for the environment and he also acts for the environment. The Institute is only one of the many things he has done.

The other things in the folder I wanted to bring to your attention include Status Reports on Joint Monitoring Projects that the people in this small rural Texas community, in the south east part of the United States, have done with people in Ethiopia and other countries. The Ethiopian project is just beginning. I hope to see the Ethiopian observer here sometime during this. meeting. We have projects that are farther along with colleagues in Kenya and also in Hungary. We've been the beneficiary of some good advice from Hungarian and other central European wetland scientists that we are now attempting to apply in our local arca. Thosc joint monitoring projects are a feature that I think is worth mentioning.

Our theme, as I think Mr. Henley said this week, is: "So many wetlands and so little time." My projection --considering the rate at which we're saving wetlands and the rate at which we're destroying them-- is 'that we will never get the job of saving them done in time --unless we rapidly proliferate the number of site-based local NGO's, wetland clubs, academies and institutes that will enable local people to take care of their own wetlands. It is pointless to wait for the UN, or the Ramsar Convention nations, or even national governments in some cases, to mobilize the resources to intervene in all of our local communities to save all of our local wetlands. These wetlands may be gone by then. So, the need for rapid proliferation of local NGOs is our first message.

And we have hoped that our presence here would stimulate, first an opportunity for others to look at the model, or the working example, that we're creating (ours is not completed) so that others may adapt it to their own cultures and their own situations. Secondly we wish to show that there is a place for small site-based wetland NGO's in the global wetland conservation effort.

In fact, this global effort will not succeed to save wetlands, or even ameliorate rapid wetland losses, unless there are many, many more site-based NGOs. One for each wetland, if necessary.

That's our plea. You will notice a pledging document going through the halls here for NGO's --primarily small ones-- to pledge what they can to Ramsar objectives, in services or in funds. And we hope that many of the people here who are interested in this idea will sign that pledge with us. And we will start to keep track of what we are doing while the Ramsar Bureau and the other international agencies and governments are dealing with much bigger problems perhaps.

The issues I'm going to go through today will be discussed in summary form. We have a booth here, we have even a video tape that describes our program today. It's available to you and you need only stop and speak with us.

The idea of community based participation in wetland Management can only begin --and I don't want to sound dogmatic-- can only begin in our view by making practical Wetland Scientists of the people who live in the neighbourhood. So that's the theme that we deal with. In the United States we call this NIMBY Power (that's American for "Not In My Back Yard.") That's how many of us feel when large, potentially disruptive activities and the like come to our neighbourhood. It's a very powerful inducement for getting local people, who know an area the best, to learn the skills they need to be good stewards of their own environment.

The Caddo Lake Institute is a local wetland institute. Its emphasis is on the Wetland Science "Educators." Notice I do not say "education." It is the job of educators to do education. It is our job to train educators to be Wetland Scientists. In the process and as byproducts, students are trained in those skills. But that is not our primary purpose. Our purpose is to create master Wetland Educator Trainers. The second thing to note is that our institute today is an institute "without walls." It has no building. It utilises the facilities of a consortium of local public schools and local colleges and universities. These have facilities that are sufficient for our needs at the moment. And that is an intentional decision that we don't want to get involved in the idea that we have to apply for a grant to get a building to do this, because it does not require a special building to do our program, although we may eventually have buildings when the program justifies having them.

We call ours a "marginal cost approach." I discussed this with Mr. Henley this afternoon. I said "You know when we're all through people are going to say 'There's nothing new here'." And he said, "People don't necessarily need to be instructed, they just need to be reminded."

I think that much of what we're trying to do is to remind ourselves that we may already have in every Wetland Community resources that we can use and that we can "re-mobilise" or "re-target" on the task at hand.

First, we have local educators and that is what we use. We have local college educators who bring the science to the activity. One of our colleagues, as you will see in the biographic materials, is a limnologist. He has been integral in our program not only in providing limnological advice but also in redesigning curricula and teaching it.

We try not to invent anything new, so we use purchasable materials particularly in the global area. Our program is designed and based upon the IUCN document called "Caring For The Earth." One of the most profound things that document says is "Increasingly we must teach each other." That is really what we're about: exchanging with each other what we already know and then expanding who "each other" includes, to include the other actors in this program. In our case this involves joining local conservation resources with state or federal conservation agencies. But the idea here is, if we're going to work from the Ramsar theme we want to make sure the people in small rural communities understand that they are world citizens and that if they have a Ramsar site they have a common interestwith all other citizens of the world who also live near or at Ramsar sites, or just in wetland areas. The beauty of that is that the IUCN material, the Agenda 21 material and the Ramsar Manual have all been translated into multiple languages, so that we don't have to stop and do something (like translation) before we can begin to distill the lessons from them. I might add that Caring For The Earth also, if you read it. .. (Holding up the book) ... This book that one of the earlier versions of it .. .has a series of tasks identified as those which local people can do. So one of my functions was to abstract that material and to say "Well, sure, that's what we can do as local people." There wasn't anything new. All that was needed was to be "reminded."

The other thing that we do is this: we use proven curriculum guides and I am going to show you some of these. What we are faced with all over the world is that plenty of work and grants have been given to many people to create high quality curriculutn material. Again, much of it has been translated into multiple languages. The principle one we use to train teachers with, is called Project WET. It has International components.

But our program goes beyond that, because we're not just teaching students, we're teaching

teachers to be Wetland Scientists. To teach other teachers to do that our program must be "field based." So this is our water monitoring kit (holding it up.) I won't take it apart, but it's relatively simple and it's relatively inexpensive and it's readily available. We'll even help you get one it you want one. It's used to permit those teachers, who are becoming Wetland Scientists and trainers of other teachers, to actually monitor the quality of their water as a part of their instructional function but also as a part of their professional activity, of being wetland ecologists.

Another item that we use ... This kit deals primarily with what is called water chemistry, so when you test the water you test the way it is right then. But how has its quality been over time? Where is it going. So we've undertaken a local U.S. program called "Save Our Streams" which was created by the Isaak Walton League (which is a fishers organization in our country.) We understand that it has also been translated into multiple languages. It permits these teachers to do what good limnologists do, which is to dig in the mud, dig in the sediments, and find the animals, the "critters" (creatures), that are living there. This particular program allows the assemblages of species to be ranked and graded to indicate a water quality for that particular water system. Certain species are associated with certain qualities and conditions. Does this apply exactly to Texas? No, it doesn't exactly, but it is where we could began. And very quickly our scientist, and our emerging scientists, began to say , "This is not quite right. We don't have this species or there's more complexity to it than that," and so we said, "Fine. We need to go ahead and make a local (benthic) key." That's exactly the point. So these are excellent beginnings.

There's another item that's called Project G.R.E.E.N. Actually there are many Australian organisations showing this now, which shows how wide spread it is. It's here, on the other side of the world. This is a well-organised manual (holding it up) for the monitoring of water chemistry, water quality, benthics and even heavy metals --which is an issue in our community. Again these are good places to start.

The point here is that all of these materials are all well recognised. Here (holding up a manual) is another called Ground Truth Studies Teachers Handbook. This is a beginning orientation of students and teachers in the fact that modern technology has much to do with viewing the world from satellites or by aerial photography. The interpretation of that is a high level skill. But like many of these, it's only the uppermost functions that require pure science. The rest of it reflects levels of technology which local people can learn to apply to interpret this information, just like any other. I also brought another manual --that a friend of mine gave me-- that has to do with coral reef monitoring. I have actually found, since I have come to Australia, that there are a number of protocols the Australians have put together that deal with a whole range of Coral Reefs, Mangroves ... almost every kind of marine wetlands. Almost 90% of those monitoring functions could be performed by skilled teachers who are properly trained. They do not require PhDs in anything.

These are what I mean by proven curriculum guides.

The other enriching feature of our program is that we have engaged ourselves very productively by dealing with federal and state agencies that have conservation and science responsibilities in the region. That means using their map products. It means using their remote imagery. We use their GIS computer technology to do mapping and we use their landscape classifications, so we can have some sort of common idiom.

Do you (local people) need to this in Kenya? Perhaps not yet. But actually perhaps you do and there are probably capabilities in Kenya or in Ethiopia or elsewhere, where this skill is being taught at some institution that could become accessible to educators who indicate an interest.

A subtle outcome of this is that the bureaucratic priorities may begin to change. They like to work where what they do is appreciated, where people are interested. We found that our existence began to modify the way the agencies began to work in our region. Where they may have monitored water once a year we did it once a month. They began to inquire to what we were finding and they became interested in the fact that there was a group of people that cared about what they did.

So our methodology is that we have added Wetland Science to local school'and college curricula. These are small rural institutions but they have infrastructure and capability. I would suspect every community has at least a school system and at least one person or more who has experience and engages in the profession of communicating learning to other people. i.e.: Teachers.

We use the "Multiplier Effect" effect of "training trainers." We work on that. We train teachers to train other teachers. If you think about it, you will see that you get an exponential growth of knowIedge by doing that.

The other important feature of training teachers is that the teacher generally remains in the community. A successful student may move on. We want to make the investment in the local community .

We also train students to train other students. We call them "interns." (In some languages that would be called "apprentices. ") They become assistants to the teacher.

And we train both of these to demonstrate their wetlands science skills at community events. We've actually had situations where, at the Ramsar dedication of our Wetlland, people from our program put on for several hundred visitors demonstrations of water monitoring, sediment monitoring, bird habitat issues,, and things of that nature and did an excellent job. We use that process, maybe once or twice a year, too at local high schools and local colleges to recruit other educators who have a common interest.

Ours is a program for exceptional people. Rather than try to force information on people who don't want it or who don't care about that now, we ask interested people to make their presence known to us and --amazingly or not-- we find there are many of these people in every community.

We also *use* these demonstrations and information to recruit private land owners. One of our colleagues on our NGO delegation owns a very significant piece, some 3500 acres, of prime wetland in an area where --if he can improve how he deals with his wetland-- his neighbours may do the same. That's where we move into true community participation. People managing their own property properly.

The participants in our program learn the Wetland Science of their local wetland. They maintain 15 monitoring stations in a network. We do chemistry monthly, benthics quarterly, and coliforms 5 times in every 30 days at selected sites.

We have a number of protocol improvements in process --like the benthics key refinements I told you about. What we found was that if you try to monitor something from the shore line, you know you are not getting good or complete information. So we are beginning to adapt our monitoring to include what our Environmental Protection Agency calls "Rapid Bio-assessment." We are also beginning to randomize our sampling sites, which is considered to be more accurate. That improves the skill of all the people involved. We now begin to understand the difference between real science and something that might not be science. As you do that, local people are able to avoid being intimidated by those who make claims based on scientific information. They are able to tell the difference frequently, or sense the difference, between what is good science and what is persuasion.

We are also --as a by-product of our program-- developing other research projects. I'm only going to flash this (bullet chart) in front of you. These research projects range from doing a biological inventory of an army base to creating a GIS mapping program. We're now in the process of designing a catchment-wide agricultural pathogen reconnaissance because we understand that there may be a number of pathogens being introduced into the water system, and nutrients, because of local agriculture --what we call agribusiness. I won't go into that in any detail (about this bullet chart) now, but it's something we can discuss for those who have an interest..

So what we're developing is a body of knowledge that is specific to this ecosystem which, if we didn't do it, would either be lost, or it would have to be retrieved from some remote government agency. In our program it's kept in GIS format (because our bureaucratic colleagues have made that available to us) in the local colleges. The most important place where it's kept is in the minds of the college professors and scientists who have progressively acquired this information with us. It's also kept at the Institute offices and, where appropriate, it's reported to the state water agencies and health departments.

Our program has this kind of catchment objectives which we believe are compatible with Ramsar Principles.

We plan, with our Kenyan and Ethiopian and other colleagues at other sites, to do "Exercises in characterizing wetlands under Ramsar procedures." It's our hope that this technique will permit people to become aware of what the Ramsar Criteria are. At the same time it may generate additional candidates for Ramsar designation.

Maybe it isn't "Too many wetlands, too little time" --if local communities can begin to press for the nomination or protection of their own wetlands under Ramsar Principles.

We are also engaged with our landowner colleague Mr. Jones in attempting to develop what we call Partnership for "Ramsar- Compatible Private Land Stewardship." That is a process that has just begun for us. But at this point we are forced to deal with all of the issues that have to do with with private property rights and how to respect those interests.

We also hope to have an international multiplier in this way.

So far, you see what we have done is to seek bypass the whole international hierarchy in our attempt is make linkage directly with other sites to encourage them to do the same all over the world. Obviously, we can only handle a few sites. We ask others, if they wish, to do what we are doing. So far we have established relationships with colleagues in the Czech Republic,

Ethiopia, Kenya, Hungary, Turkey and we know from our visit here that there will be more, including a number of Asian countries.

Ideally, we will do monitoring with them on the same day when we can and we will exchange our data. That gives us the opportunity to discuss differences and similarities with each other. This gives us an opportunity to compare what Lake Nakuru in Kenya is like, how it functions as a flamingo habitat, when it dries up and when it doesn't, and what that means chemically. We all have problems of invasive plants; water hyacinth and hydrilla. We have problems with coliforms and our Czech and central European colleagues have given us some excellent information on the use of constructed wetlands to treat pathogens of that type, but under a strategy adapted from an African strategy by Dr. Patrick Denny whereby we might indeed increase the wetlands by treating our water with constructed wetlands located around our existing wetlands. We can look at migration patterns and we are currently planning to exchange the suggestions about useful bio-indicators. One colleague from Hungary has suggested dragon flies, which live in the water and reflect changes over time. Amphibians are another bio-indicator we're just beginning to consider.

It was our foreign colleagues who suggested to us that while they couldn't create a local institute today, they have schools, and they could train other teachers and that even if they didn't have that, they would be willing to form wetland clubs. In Ethiopia we're dealing with the club. Our hope is that we will be able to support and encourage others in eventually creating local academies and institutes --with or without walls-- as they choose.

So in conclusion, it takes a local entity to make local wetland conservation work --especially private land conservation.

True local empowerment arises I would say only from local lore, local scientific expertise and locally accessible data. We are deluding ourselves if we say otherwise.

I want to deal with the local lore for a minute. It is true that peoples who live in an area over their own lives and over many generations know a great deal about it. But I have found in Texas that approximately 30% of the anecdotal information is false or not relevant. Because they are good stories, legends carry information imbedded within them; they may also have incorrect or irrelevant information. What could such lore provide persons living in a area for generations, for example aboriginals in Australia, that would possibly say anything of value about PCBs or industrial toxins in the environment? How could their culture inform them on things that may be invisible or undetectable by the kinds of processes that their traditions are built upon. The same comment applies to Texans and indeed all Americans. While local lore is an enrichment of the ability to manage wetlands, we need the scientific data and the scientific skill to sort out that which is anecdotal and incorrect or irrelevant from that which can be used and which supports and leads us to better science.

The Caddo Lake Institute is only one working example to accomplish this goal. There are undoubtedly numerous other examples. Ours is yet to be completed.

We believe there needs to be an evaluation and publication of case studies that will address the issue of how local communities at the site level can do what we're trying to do. Not to wait for permission from Ramsar to protect our wetlands; not to wait for permission from the government but, as we say in the US, to "just do it."

Just doing it means taking already paid-for resources, that we've already invested in --such as public schools and private and public colleges and bureaucracies and especially public facilities --and saying to them "You live here too. You may see your task differently but you are our public facility and we want to work with you in a way that makes you look good and in a way that you can make available to us the specialized knowledge that you have."

In our country the state and federal government scientists arc some of our most knowledgeable scientists. The same is probably true in your countries.

We believe that a proposed evaluation of case studies like ours is important. I have to say in all honesty that I value very highly --as you've seen from my reference to IUCN's work-- the work that the large NGO's do. But there is no likelihood that any of the large NGO's are going to get very interested in Caddo Lake, in Texas and Louisiana very soon. We think allowing just the large NGO's to take the responsibility for the NGO role in this is really a tactical error if we ever expect to get this job done.

So that's why we are encouraging two things.

First: at this meeting there is a proposed resolution that requests that case studies be done by these competent organisations --WWF and Kushiro being the others-- but that there be somebody on that study group that identifies the role of small site-specific NGO's like ours and that somehow represents the need to expand that knowledge and extend it to other sites.

Secondly, we welcome you to join us in the pledging activity for the small NGO's to create an ecology --a biodiversity of NGOs that is as biodeverse as the locally-rooted sites themselves-- so that we can seek the resources that can be brought to bear there, not only from our governments, but also from the large NGO's and Ramsar Bureau.

We again commend for your consideration the proposal that will come before you to initiate such a case study and we would like to be a part of that if we could because I think it is our primary mission.

Thank you Mr Chairman

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GREEN Project
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Ann Arbor, Michigan 48104, USA
Phone: 313-761-8142
Fax: 313-761-4951

or William B. Stapp
2050 Delaware Ave.
Am Arbor, Michigan, USA, 48103.

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Texas Water Commission
Post Office Box 13087
Austin, Texas 78711

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RESOURCE BIBLIOGRAPHY AND MATERIALS LISTING
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LOCAL WETLAND INSTITUTE

* Wetland Science Educator Emphasis,

* An Institute "Without Walls"

* No Facilities (yet)

"MARGINAL COST" APPROACH
(Use What Is Already In The Community)

* Local School Educators

* Local College Educators

* Purchasable Global / Ramsar Materials

  IUCN Caring For The Earth
- Agenda 21
  Ramsar Manual

* Proven Curriculum Guides:

  Project Wet, Project Wild, Project Aquatic,
  Project Learning Tree
  Isaac Walton League Benthic Monitoring
  Project G.R.E.E.N. Water Chemistry Manuals and Kits
  Ground Truth Studies Teachers Guide

* Use State and Federal Technology and Science

  Map Products
  Remote Imagery (Aerial and IR)
  GIS Technology
  Landscape classifications

* Most Important: Use Local Wetlands as Classrooms

METHODOLOGY

Use These Locally Available Resources:

* To Add Wetland Science to School and College Curricula

* To Emphasize "Multiplier Effect"

Train Teachers to Train Other Teachers

Train Students to Train Other Students

Train Both to Demonstrate Wetland Science at Community Events

Ramsar Site Discovery Day

High School Discovery Day

Recruit Other Educators

Recruit Private Landowners

ACADEMIC RESEARCH PROJECTS

* Army Base Biological. Inventory
* Ground Truth Remote Imagery
* Baldcypress Regeneration
* Dragonfly Bio-monitoring
* Campus Wetlands / Curricula Design
* Constructed Wetland Prototypes
* GIS Mapping Private Land
* Preliminary Sediments Analysis
* Petroleum Pipeline Sediment Analysis
* Catchment Agricultural Pathogen Reconnaissance Study Design in Process

LOCAL EMPOWERMENT BYPRODUCTS

* Participants Learn the Wetland Science of Their Local Wetlands

* Maintain 15 Station Water Monitoring Network Operated by Trained Participants

  Chemistry Monthly
  Benthics Quarterly
  Coliforms 5 each 30 days
  Improvements in Process

* Other Research Products

* Baseline Data Not Otherwise Collected

* Data Locally Available

  GIS
  Local Colleges and Faculty
  Institute Offices
  Texas State and Federal Agency Partners

* Catchment Implications

  "Exercises" Characterizing Other Wetlands Using Ramsar Principles and Data Forms
  Partnerships for "Ramsar Compatible" Private Land Stewardship

INTERNATIONAL MULTIPLIER PROJECTS

* Support Other Wetland Educators' Efforts to Create Similar Local Programs

* Czech Republic, Ethiopia, Hungary, Kenya, Turkey ... More

* Joint Monitoring and Data Exchange

* Finding Commonalities / Differences

  Invasive Plants

  Coliform / Constructed Wetlands

  Migration Patterns

  Useful Bio-indicators (Dragonflies, Amphibians)

* Stimulate More Local NGO's

  Academic

  Clubs

  Local Wetland Education Institutes and Academies (Our Goal)

CONCLUSION

* It Takes a Local Entity to Make Local Wetland Conservation Work - Especially Private Land Conservation

* True Local "Empowerment" Arises From:

  Local Lore

  - Local Scientific Expertise

  Locally Accessible Data

* Caddo Lake Institute is One Working Example to Accomplish This.

* Different Examples Undoubtedly Exist

* Need to Evaluate and Publish Case Studies

* Hence the Proposed Recommendations