

Zoos and Aquariums Committing to Conservation 2011

Open Roundtable Discussions - Notes

Tuesday, March 8, 2011

Engaging schools with conservation curricula

Co-facilitators:

Jennifer Snell Rullman, Snow Leopard Trust

Susie McGuire, Conservation Fusion, Inc.

Attendees:

Lynne Myers	Co-director Project Dragonfly, Miami University	myersLB@muohio.edu
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	Conservation Research	
Stephanie Stowell	Project Dragonfly, Miami University	stephanie@slstowell.com
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Susie – background in zoo education, started own conservation education non-profit

Jen – background in zoo education and community-based conservation. Conservation organizations – how to connect community-based conservation if no education department? Connecting with zoos could help to reach education audiences.

Robin Keith, Institute for Conservation Research, San Diego Global, Conservation Education – programs to engage students in conservation, research lab dedicated to education audiences – e.g. students can do PCR and other DNA work – how we are using science to address wildlife conservation issues. Branching out into ways to engage students without bringing them into the facility. And how to engage with field programs.

Mark MacAllister, North Carolina Zoological Society, FieldTrip Earth – engaging K-12 students in field wildlife conservation – students interested in the researcher/career track. Have learned about how teachers and students make use of ‘raw’ materials from the field.

Wendy Blakely, Painted Dog Conservation and Africa Matters – help keep students in school, aimed at students in Africa, pays school fees, work with a performance group – conservation education through cultural performance. Interested to hear who is doing what and what could be relevant for both organizations. Painted Dog Conservation has a robust education program.

Harriet Allen, Washington Department of Fish & Wildlife, Endangered Species Program Manager, how can education play a role in human-wildlife conflict?

Nicholas Jorg, Washington Department of Fish & Wildlife, pick up ideas on how to reach schools with curriculum to engage students more actively

Wendy Gardner, Sky Valley Bear Smart Program/Grizzly Bear Outreach Project and Woodland Park Zoo – how to integrate with what schools are already doing

Kevin Taylor, Teton Science Schools – great partnership with Houston Zoo to lead tours and trips into national parks (for zoo community as well as staff), interested in learning more about what zoos are doing and interested in developing partnerships (e.g. domestic travel for members or supporters or staff)

Ruby Yamuna, Tree Kangaroo Conservation Program – teacher trainings and other education projects, interested in learning to improve education program

Kathy Krogmeier, Blank Park Zoo in Iowa – very active conservation committee, get ideas to take back and share, here to listen and learn

Susan Ladder, Ape Action Africa – sanctuary in Cameroon, frontline conservation, strong education program but Cameroon requires environmental education in public schools but teachers lack capacity to provide, so the sanctuary provides this for students (session in school and guided tour at the park). Trying to connect – want kids not to feel isolated, feel part of the larger community – pilot with some schools outside of Chicago. Difficult to get into the curriculum – connected with afterschool science and math curriculum for the state. Art

exchange and Internet chat to make those connections (two years into pilot) – looking for ideas on how to fund this type of project.

Etty Ramawathi, Health in Harmony – was a teacher before joining this organization. Education in community about importance of protecting the forest. Biology teacher asked her to come to the school and give lessons on conservation education.

Stephanie Stowell, Project Dragonfly at Miami University – field courses for educators and zoo-based, teachers develop inquiry skills to help make connections between conservation knowledge, engagement and action. Always looking for more connections to curriculum and ideas, things that are happening in their own backyards and in other parts of the world.

Jenny Mears, Woodland Park Zoo – partnered with Snow Leopard Trust on Engaging Students in Conservation Solutions, also partnering with Project Dragonfly

Katie Remine, Woodland Park Zoo – (ditto)

Suzanne Ackerman, Point Defiance Zoo & Aquarium, Wild Wonders Outdoor Theater – and have been a formal teacher. Interested in hearing what's going on.

Cathleen McConnell, Point Defiance Zoo & Aquarium – academic and community programs, don't have capacity to specifically create curriculum, so curious to learn more. And involved with Tompotika Conservation in Sulawesi – needed a curriculum on local forest. Piloted in schools – not sure what the next steps are, what's effective in getting curriculum into in situ schools.

Rob Holmes, Green Living Project – document unique stories around the world, including wildlife conservation, education, community development, food, tourism. Document and distribute to promote these projects worldwide – one of the biggest outlets is schools. Have developed a curriculum around the documentaries. Multimedia, sustainability, global – storytelling, not try to be everything. Here to hear other stories. Education is important for us.

Michele Slavin, North Carolina Zoo's UNITE Program – conservation and training for teachers year-round. Need ideas and suggestions.

Lynne Born Myers, Project Dragonfly at Miami University – lots of work with teachers and informal educators and other community members, learning how to engage in conservation – any individual can find a voice and make a difference in my realm and sphere of influence. Sometimes important for teachers to have a curriculum to latch on to, but also push teachers further.

Jill Korach, Project Dragonfly at Miami University – zoos are the reason we were able to get started with global conservation partnerships for educator field courses, as free-choice learning environments. Voice – of conservationists in the field, students, educators – all voices come together as that story. Want to hear what everyone is doing.

Laura King, art educator, educational software, Equus Inc.— artwork for exhibits, theme on how to communicate conservation messages for people to take home, requests for crossover from exhibit art to zoo/aquarium stores – middle ground between whimsical and scientific illustration. Working with conservation organizations – huge library of conservation art available free of charge; and partner work with Project Dragonfly and Snow Leopard Trust. Have seen a big change in zoo & aquarium industry – want to get back to education roots, find ways to be useful to the industry.

What do we mean by communities? Engaging in the field where the species are and remotely teachers in other regions?

Susie – just started Conservation Fusion a year ago, connect students in areas of high biodiversity and students in the US. Sharing some ideas from what Conservation Fusion has done:

- 8 schools in Madagascar – few resources/books. Get kids and teachers engaged in local biodiversity – picked a mascot for each school, books with mascot for each school, costumes made by HS students in the US. Mural painted by kids in US to take to schools in Madagascar – on themes of clean water. All ideas came from kids in the US – how to develop materials for the field. Making it real – knowing the names of teachers, direct link with a conservation person in the field. Engaging US students – wrote a grant to MIT in Boston, HS kids worked on modifying fuel efficient rocket stoves – engineering magnet high school, developing modifications to the rocket stove to improve the design and recipes for biofuel briquets (using invasive species); class goes to Boston in the summer to present the idea. Kids developed a biosand filter and made a film to show at Movie Night in Madagascar – got it translated into Malagasy. US kids developing materials and get translated.
- Think about engaging engineers, other people from other fields in conservation.
- Service learning project at University of Nebraska – learned about tortoises and conservation, made education materials to bring to Madagascar
- Conservation day with schools.
- Simple project that students here can do to both learn about and support field conservation. Motivating for US students to have a real world project. Show pictures side by side – materials in US and materials in use by schools in the field
- Shipping costs – often a barrier, maybe fundraiser by a school could support this

Ideas for work in the field, ideas for more broad engagement ex situ

- how do we engage students in field conservation
- how to make connections with kids in the field (US and abroad)

We talk about developing one curriculum that can be applied everywhere

- can't really do that, need to find out what's needed by that community, provide resources to get ideas that can be adapted to fit the local need

How education in US and Europe can support education in the field

- difficult to do this – in Borneo with Project Dragonfly talked about use of social media, how do educators share transformative field experiences with others back home so they care as much as we do? Teachers did projects back in schools to try out ways of connecting.

US students think about endangered species – they think about exotic animals, maybe utilizing our local biodiversity, make that real life connection for them – engage them in hands on conservation 'at home' and then that can help better understand the world.

Zoos have ability with our language to communicate along these lines – 'the field' might not always be exotic. How to connect back to the action. Project Dragonfly uses inquiry as a skill – know that your questions matter and can lead to action.

That isolated feeling of students ‘there’ and students ‘here’ – when you’re developing things – we are all on one planet, it’s the commonality (e.g. workshop on ‘trees are life’ could be anywhere) that connects us. Cross-education important. Eco-design school – working on clay oven designs with ceramics teacher, that teacher is really jazzed about this – a purpose, place and people to connect this to.

Talk about reaching all people – start out small, make those intimate connections first, one school. Has to keep coming back – exchange continuously to fuel the fire. People will want to get more involved.

Curious what this conversation will sound like in a few years – expanding opportunities to connect young people directly to other young people. Young people communicate in new ways and connect about what’s important to them. Moving forward – the difficulty in getting stories told, people are absorbed with what they’re doing on the ground, how can they step away and show other people what their seeing, communicate their stories (e.g. like Green Living Project). Broader range of communication that has never been available, how is this going to change this conversation?

Keeping a journal and posting for publication – different styles. Think about expectations of field scientists – we have a responsibility to relay that work in what we’re doing. We may need to change our writing style – some have time, others it’s a challenge. They may not be recognizing the importance of reaching out to K-12 audiences.

Schedule visits to schools (or other) right away when you get back from the field – it’s more real, tangible. Also more than one approach.

Zoos can step up to help field researchers to connect – can zoos support field assistant to help with communication? How can we do that collectively 25 different times – e.g. one place to put things? How could zoos help us – help with formatting, editing to help get the message out. Especially when capacity to do this so limited. The people that are available to do that – could be students, interns, could be a field volunteer gig – collaborate.

Perspective of a field person involved with FieldTrip Earth – the timing factor, have to submit monthly reports, monthly newsletters. Realized – project trains teachers, started sending content from teachers – share their voices. Just starting to try this (UNITE program).

Another thing zoos can do, zoos are putting money out into the field to support field conservation – seeing zoo staff go into the field to see it, any type of staff, those are the people that can be telling the stories. That’s what they do everyday – e.g. keeper talks, education programs/resources. Zoos & aquariums can make that commitment to help communicate – and it’s a professional development opportunity for the staff. Zoos and aquariums need to commit to this – win for the field partners (awareness raised about the projects) and win for the zoos/aquariums because their staff are more empowered and can communicate and engage their communities.

Could use online tools like GoogleGroup (free) that both field and ex situ could use to share. Would be great to have a place for field conservation projects to post needs and leverage partners and resources to help you communicate your stories. Contributed resources to field to help make this kind of communication happen. Suggestion to check out Wildlife Direct website – any conservation project can blog on it. Also used to process donations to field conservation projects. Something like that for the Education community. Pass the word that schools, zoos, this is a resource for them. Take a look at the for ideas.

Ideas for field conservation programs for best practices in education in the field – find each other and discuss further!

In Situ Education – challenges and process of developing a program

Facilitator: Karen Povey, Point Defiance Zoo and Aquarium/Clouded Leopard SSP

Notes taken by Nicole Aragon Ivey, Woodland Park Zoo

Those Present

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Karen Povey	Point Defiance Zoo &	Karen.povey@pdza.org

	Aquarium	
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Note: keepers (like Karen Povey) often drive in-situ education even though they don't have the education background. Keepers shouldn't let that deter them.

Round table to focus on how to overcome the challenges in developing in-situ education programs. Three main topics of interest:

- Difficulty in forming true collaborations with those in the field. Zoo staff need to figure out how to best support in situ education.
- Evaluations are important but difficult to do. Many researchers in the field have grants that require education components. It can be difficult to prove effectiveness of education programs for its own merit, as well as to justify grants.
- Best practices for in-situ programs.

Start with hearing what current in-situ educators are doing:

- Mirriam Monterroso from ARCAS: Best for zoos to start relationships with those in the field little by little. She started with “ecological suitcases” from zoos that provided tools for education programs including things like puppets. Oakland zoo has teenagers working for a week at a time at the conservation center getting to interact with the animals.
 - This led to a discussion of difficulty in shipping to field areas. Receivers tend to get charged fees.
 - Answers to this included having volunteers bring items with them in their luggage, buying things in country instead of shipping them, contacting airlines to see if they will do it free, using “idea wild” <http://www.ideawild.org/>, or USAID which has special PO boxes that can be used <http://www.usaid.gov/>.
 - Another idea was to contact the local US Embassy, which has environmental officers that could help.
- Pilai Poonswad: discussed having no choice in doing education regarding hornbills despite her lack of experience in the subject. Has to attempt to educate poachers however she can. Said she lacked pattern and style in her education and wanted help with those things.
- Rachel Rommel Houston Zoo: after meeting with education staff in-situ found that capacity building was the most important. Held workshops in Panama about the basics of knowing your audience/developing themes etc. before even starting with the amphibian info. Held this as a 3 day workshop.
 - After workshops in situ educators were able to develop their own programs and then ask for the tools they desired from the zoo with much more focus.
- Dought Nkomo from Painted Dog Zimbabwe: Take local school kids in for “Bush Camps.” Kids learn about tree adaptations, why spiders build webs, why trees grow the way they do and taxonomic plant identification. Includes a computer element where many school kids see a computer for the first time. Kids get to see wild dogs at the camp and then go see them in the park. Learn about wild dog distribution and adaptations. Focus on 11 & 12 year olds.
 - Learn about predator and prey interactions through variations of games of tag.

- Adopted for all 6th graders in the area as curriculum component.
- 19 local schools come for free (paid for by funders largely from Houston Zoo). Schools from farther away also come but pay a fee.
- 45 kids come to the camp at a time, the camp has 3 instructors to split the kids into smaller groups.
- Kids that come speak many different languages, which leads to instructors needing to speak all of them. Dought speaks 7 languages.
- 11-12 year old chosen as a focus because that is when they start learning about conservation in school. The older kids in the school that have already completed the program help the younger kids.
- Feel free to contact for outlines of their programs. dought@painteddog.org
- Maggie Esson, Chester Zoo: helps to fund many programs throughout the world. Sees many challenges to in-situ programs
 - Lack in people with a background in education working on these in-situ programs.
 - Education is also not always the answer. Sometimes PR is needed more than anything.
 - Education programs are often divorced from the conservation action.
 - Objectives and focus of programs not fully developed.
 - Education needs to become a part of every mainstream conservation project.
 - Zoos hold tools as a vital resource. Knowledge in plant restoration, education, vet technology, carpentry etc. are valuable tools. A lot of times the skills that zoos possess are more valuable than the money they can give. Skills can't be wasted, but money can. Problems with sending staff to teach skills include finding appropriate coverage for them while they are gone. Has sent carpenters and blacksmiths for weeks at a time to projects.
- General additions:
 - In order to deliver a message that is culturally and locally important collaborates with local small NGOs. Supply those already passionate with the additional tools they need. Local NGOs know the language, culture, and appropriate strings to pull to get the message across.
 - Mentioned that it would be great if in-situ colleagues knew how to develop their own education programs.

Assessment of In-situ Programs

- Looking for knowledge, attitude and behavior changes.
- Using questionnaires and concept maps as assessment tools.
- These produced different results. Questionnaires' showed that rural kids had the lowest knowledge base while concept maps showed that rural kids had the highest knowledge base.
- Corrin La Combe, San Diego Zoo Institute of Conservation Research: included "trash cleanup" in surveys and the importance of keeping parks clean. Litter was/is a huge problem in the area. As a research tool gave kids small wrapped candy after the intro survey and after the exit survey. Monitored how many candy wrappers made it in the garbage can vs. on the ground after both to show effectiveness of program.

- Many programs found the use of concept maps vital since the practice of checking or circling answers is foreign to a lot of kids.
- Issues include that kids worry that pre-tests are a way of screening them out from being able to participate in programs like bush camp. Concept maps are less test-like and therefore induce less pressure.
- Kids need a lot of reassurance for pre-tests. It can be difficult to convince them that there is no wrong answer on the pre-test.
- Carlos Martinez, Philly Zoo: starts with a game before any pre-tests to relax the kids. They feel less stressed if an evaluation isn't the very first thing they start with.
- Can also be difficult for local facilitators to understand that they should not help the kids on the pre and post-tests. This can skew results.
- Difficulty also in getting in-situ educators to give the pre and post-tests.
- Evaluation required in order to justify who you fund and why.

Best Practices

- CBSG (www.cbsg.org) runs facilitator education courses all over the world. Courses go over the psychology of learning and developing objectives long before resources for the programs are ever discussed. The model for conservation should always be at the grassroots level and facilitator skills should be of the utmost importance.
- Start partnerships with one local NGO to develop a good working model that produces results before expanding.
- Vital to share knowledge with locals. Parks have banned researchers from their land because this happens so infrequently.
- Education in Ecuador changed the perceived value of a local tree from being purely monetary to being a resource for hummingbirds.
- Corrin La Combe at the San Diego Zoo Institute for Conservation has a model in which the research drives the topics of education. Researchers identify the most important threats, identify those that are most human related and then include those in the education messages.
- Have to give back to the community for them to buy in to projects. Most start with educating children. Children take the information home and the adults get interested. Then programs for adults are developed.
- At the Bush Camp, 2 parents were initially invited to each session as a form of transparency for parents to see what they are learning. Now parents are asking for their own camp.

Quarters for Conservation

Facilitator: Steve Burns, Director, Boise Zoo

"Conservation fee" initial idea

When Educating governing body, friends board, mayor, city council - Appeal to heartstrings, e.g. Addax, how many left... Several animals listed on graphics, one went extinct while developing project, became the story. What are you going to tell the 4 year old about this How are they doing in the wild Who knows the status of the animals in the wild. Does your director know and be able to tell others?

General public has less knowledge

People are surrounded by animals, 1970 images found at Target store in 2 hours on everything from shirts to toys. Invest in animals to make sure we, the zoo, has a future Added .25 on each admission, 2.50 on each Membership. Put into a pot at the end of the day. Accept proposals, narrow down to six for public to vote. Online voting - three projects will get all the money 50 cents cap, 5.00 on membership. Two complaints over five years, more compliments. Helps to change people's opinion about zoos. \$125000 thru the program this year. People can vote at the zoo on a daily basis. Starts conversations about conservation. Conservation action by the visitor, Going on at other zoos, Oregon, Oakland, Naples, Tracy Aviary Greenville, Cheyenne, Blank Park, Seattle,

If you get in free you don't get charged, Conservation fee on zoo rentals!!!

How far can we push the envelope?

How do we get to ten percent of your budget going to conservation - Zoo Boise almost to that point A giraffe feeding, boat rides, all money goes to conservation. Construction projects 10% of each budget to conservation, Only one no vote on that issue from a council member. Helps with critics, better sell for projects. From \$1500 to over \$200,000 Delia CMZ, private non profit 2008, developed fun voting process 125000 each year.

Vote for six projects, vetted by committee Designed a fun and interactive display that accepts other money as well as tokens given at entrance when admission paid Projects.

Have to be championed by a staff member, proposed by staff, Could be an environmental, habitat issue, local or international

Must have an action piece, so guest can take action to align their lifestyle ie recycle cans to reduce mining of bauxite

Third year slate chosen

Token cheap, started with fender washer, then a slug that wouldn't mess up other machines.

Local artists group did design. But don't let them build. Idea to generate new money for conservation work. Govt. Run zoos, fees and charges process, separate fee so harder for city to use the funds for something else. Zoo in New England city took money for city services at one point. Cost of implementation: changing signs, Boise uses three vortexes and tokens. If you want to vote more you can with other coins, money. Changed website, round up at gift shops and concessions. Beth USFWS great assistant w creating Ed info for projects Grants for Ed materials usfws Annual fundraiser, raised money for Ed suitcases Gift shop, conservation corner, earmarked for a specific project CMZ 50% to these projects Based on voting, 100% of any money donated in addition Boise puts report on website about where the money goes Ownership of your project or a piece of a larger project Have tagged onto price, 12.25, then they have 3 more quarters to spend Boise, five gallon bucket with hole drilled in bottom, token larger than a quarter This is why we are here... Deal with roadblocks Image of token and one of quarter CMZ has one at entrance, two places to vote for each project Involves the community Changing to two categories next year Beauty and the beast, bugs, a reptile projects that don't get the votes as much as the mega vertebrate projects do.

CMZ has sent keepers to the projects if it makes sense Partially funded by the zoo, getting staff to the field is important

No dips in per cap visible,

Found visitors feel good about it and tends to open wallet for more things in shop, concessions Has anyone done surveys about the program - no one there has but someone thought that the Bronx may have done a survey about their Congo conservation Fee program Increase in appreciation. When visitors have any interaction with zoo staff Other ideas:

Donation box at exhibits with young to send dollars for conservation Maximize attendance, end result is more money for conservation The act of voting increases involvement by the public and conversation about conservation Other programs to generate more money Louisville, gorilla forest money to PASA and Dian foisey projects when project funded Boise does a big cutout of the species in the project that could be used for photos. 2009 "zoo visitors helped do this" on signs, 6 up now and it increase awareness as well.

Summer camp adopts a project, have logo on shirt, \$1. Per camp registration goes to project, gift from project ie. bracelet, Letter about project to parents, talk about it to Campers, usually generates several thousand dollars for conservation.

Animal artists, Houston zoo elephants, orangutans, tapirs Pati Medici, Tapir iucn group partnering with San Palo zoo, linking w project in Brazil doing animal art sale Engage staff - Houston's pongos helping pongos staff conservation campaign, staff giving money, then can apply for a grant for their own project Houston also allows keepers to do a Spotlight on species, booth, table out on grounds interacting with visitors, raising money for their projects.

Staff conservation donation program - minimum five dollars, thru payroll so no ones knows who donates, twenty five dollars get a t shirt Facilities, commissary staff donate 100%, other staff 70-80% donate they can apply to work for a project as well, no more than two weeks away from work to work on project often just a few days for local projects, even maintenance staff has done it.

Developing partnerships, scientifically sound, green or conservation based. Worth retention factor as well Houston engages staff almost once a month Open review process of project ideas, grant receiver on staff gives a presentation to the whole staff Organized behind the scenes tour to raise money for the project. Keepers can vote on it since they are the ones who do the tours.

Docents raise money for projects as well Party Madagascar July, Seneca park zoo Researchers talking, marketplace with things from the country ATM fees go to conservation at Kansas City

The challenges and opportunities of addressing human-wildlife conflict involving communities

As the organizers of the Human-Wildlife Conflict (HWC) Roundtable discussion, Som Ale and I want to thank you and the entire ZACC for providing such an opportunity for rich discussion,

sharing of lessons learned and opportunities to move this important field of endeavor forward in positive new directions.

There were two key recommended actions that resulted from our discussions and two key conditions upon which we felt they could be implemented. The names of the participants and notes taken by our two volunteers, Tian Everest and Jessie Sutherland, are attached.

ACTIONS:

1) SHARING LESSONS LEARNED: HWC practitioners need more dynamic opportunities for sharing lessons learned (both the successes and failures) and best practices in addressing human-wildlife conflict.

The group felt there were two critical internet-based opportunities for us to advance the field while also reducing duplication of effort. The first could involve posting of material, possibly on the existing People and Wildlife website (<http://www.peopleandwildlife.org.uk/initiative.shtml>), or another of the web-based resource sites. The second, mentioned by several participants is the option of an ebook for providing up-to-date case studies in conflict with practical analysis and recommendations, as well as resources, for the reader.

An ebook could be made available for free or reduced rates, would be quicker and easier to both produce and update/expand and would be organized more as a living manual illustrating key lessons learned through case studies. The target audience would be practitioners from around the world working on HWC issues. Authors would also serve as resources so that readers might follow up with them and others through the second aspect of this virtual resource which would include an interactive virtual community-of-practice where professionals and students can share lessons and provide guidance/resources to one another to advance the collective knowledge and capacity of the field.

2) TRAINING: HWC practitioners need more opportunities and scholarships for training in dealing with the complexities of human-wildlife conflict.

It was also agreed by participants of the HWC roundtable discussion that The Human-Wildlife Conflict Collaboration (HWCC) in partnership with ZACC would be the best means to ensure these ideas are carried forward into reality. Funding is essential, however, and our group was hoping that ZACC and or its members could find support so that these widely supported and much-needed ideas become a reality. This way ZACC and its members would be better positioned to play an active role in moving the science and art of human-wildlife conflicts forward.

Thank you.

Rodney Jackson and Som Ale

Discussion participants:

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ZACC 2011
Human/Wildlife Conflict Round Table Discussion
Recorded by Tian Everest, Calgary Zoo
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KEY MESSAGES FOR ZACC

- Human/wildlife conflicts (HWC) undercut every program, span many disciplines (social science, conservation biology, etc) and need to involve many stakeholders (governments, local people, etc).
- Solutions must be sustainable over the long-term
- Two areas were identified where ZACC's assistance is requested:
 1. Promote training in HWC including training of trainers. This could include sponsoring someone to attend HWCC training
 2. Provide a staff person to coordinate a centralized website where people can upload their HWC experiences (success and failures). There was an incredible amount of knowledge in the room, but many practitioners are operating in isolation resulting in the same failures being repeated. A similar website has been attempted in the past, but without an associated staff person it has not been maintained and kept current.

GENERAL DISCUSSION NOTES

Knowledge Gaps

- Need greater partnership with social sciences and the dissemination of social science expertise to HWC practitioners.
- Need greater training in assessing conflict including resources for development of effective conflict surveys.
- Needs greater networking around HWC so practitioners can learn from each other's successes and failures. Very difficult to learn about failures as this information is not published
- The development of a centralized web site where information is posted is greatly desired. This would need a designated staff person to coordinate so that practitioners actually post information (everyone wants to do it, but needs prompting as they are busy)
 - Should include enough information so that the info on successes and failures is useful for practitioners and include contact info
 - A format to prompt people on the information to enter would be useful for both people populating the system and end users
 - Could include a financial incentive to field staff (say \$500) to include details on the HWC experiences in their reports back to the zoos.
 - An e-book approach would provide publication incentive
 - Could become an editable publication funded by ZACC

Approaches/Considerations

- Perhaps we should be focusing on good examples of co-existence rather than conflict with wildlife

- The solutions may already be within the communities' local knowledge and cultural traditions. These pre-existing systems may be more sustainable than outside imposed systems.
 - Example: co-existence of Masi with lions in South Africa
- Need to understand what are the connectors and dividers in the human/wildlife conflict system
- Listening to local people, giving them a voice and showing empathy to their HWC challenges goes a long way
- Need to recognize elements of local peoples' culture that can be utilized to reduce HWC.
 - Is it ethical to exploit peoples' beliefs to support conservation?
 - Everything around us is being manipulated so why not utilize people's existing belief systems
 - Successful examples: promotion of Buddhism in Mongolia to reduce overfish and hunting of birds; shifting the Masi right of passage from killing a lion to protecting a lion for a year
- Economic incentives must be long-term and sustainable
 - Examples: snow leopard 'home stay' program; Masi women beading co-op; cheetah project sporting events; snow leopard insurance program
- Need to think through unintended affects of compensation systems
 - Many times people are living with wildlife without a perceived conflict. Then an outside organization comes in and says they will be compensated for damage to livestock/crops. The implementation of the compensation system then ends up creating a divide between the locals and wildlife. The problem becomes even greater when the resources for the compensation system dry up. The result is that the good intentions of the outside organization create a bigger problem than was originally there.
 - Compensation systems are often only applied to specific species that are selected by conservation organizations creating unintended divides between humans and other wildlife species

Multi-National Companies

- Effectively dealing with multi-national companies is very challenging because their dollars far out weight what local communities are able pool together
- Examples of successful case studies include:
 - Mongolia – locals realized that the sudden influx of dollars from the mining company would be short term and that they would only get the marginal jobs. They successfully lobbied the government to establish a reserve on their lands instead of the mine. The community recognized and capitalized the long-term benefit of conservation rather than the short term gains of mining.
 - Ecuador – the local indigenous community partnered with grassroots organizations in the multi-national company's home country (Canada) to effectively stop the company using backlash from Canadian citizens and ramifications on the Canadian stock market.
- Does trying to halt industrial activity result in more conflict? Perhaps it is more effective to work together with government to do land use planning.
 - Successful land use planning requires balancing the power between the local people and companies. Need to get companies to agree to a neutral process order to develop responsible industrial plans.
 - Organizations that focus on this include Resolve and Keystone.

- Companies can set up trust funds to address clean up and ecosystem restoration.
- Need companies to also agree to best practices before they begin work.
- If mining companies don't find value in the tracts of land they hold the mineral rights to, they can be quite useful in holding the lands from other industrial activities until protected areas can be established

Government

- Governments must be worked with very careful as attempts to reduce HWC can be perceived as Western meddling. This is very counter-productive.
- Need better dialogue between the government departments to reduce HWC
 - Example: Discussion between the agriculture and environment ministries may prevent the installation of a sugar plantation next to an area of high chimp populations there by reducing HWC. This would provide the opportunity to share with the agriculture ministry the impact on yield that the chimps would have before the plantation goes in.
- Economic evaluation is one approach that is being used to value ecosystems to governments in an attempt to speak the same language as the companies that wanting to extract resources.
 - This approach works well for big developments such as dams and highways, but how do you apply it to the broader scale to keep the basic functions within an ecosystem?

Notes from HWC discussion group.

Recorded by Jessie Sutherland (*I have left them freeform as they occurred to include as many details as I could.*)

- Knowledge of how to tackle problems is not wide spread.
- Range of expertise at meeting, attempt to use opportunity to create a collective idea pool for solutions (and failures) for dealing with conflicts
- In the Canid TAG there is a conflict specialist group. There have been several efforts from IUCN to create such a forum but there has been a lack of dissemination and contributions. (ex. Felids and canids)
- Is a cross species group really valuable or does each spp require a distinct group?
- Snow leopard trust has a forum of international specialists and media that may be a relevant sounding board.
- Check "people and wildlife" website (I did not get the actual web address)
- Also has systematic reviews of individual spp, but these have not been added to in awhile
- Whatever happens has to have funding / support and mechanism or it won't materialize
- Website should be linked across various contributors
- Someone should be appointed or hired to gather info and to follow up on projects and monitor successes
- Peer pressure may be a valuable tool
- Set a small goal such as one entry per month
- Start with a committee of organizations with case studies?
- Point person that trades off, so that the torch is eventually passed to more organizations that can highlight an issue

- Point person should facilitate communication.
- An incentive could be given to change behavior, ownership must be built up
- ZACC could facilitate and train leaders (social science training)
- Zoos could sponsor people to come to human-wildlife conflict training – something tangible zoos could contribute.
- Can we train trainers? – requires funding (no source currently)
- Approach universities to help us train in social sciences? – Smithsonian has such a system with George Mason University
- Study showed the top 6-7 skills required in the field were conflict resolution related
- Training on survey design to assess conflict
- recommendations to satisfy social science and research based science
- template surveys may be useful
- plea to upload information
- examples of coexistence without intervention from conservation orgs would be helpful to design resolution strategies (ex. Maasai and lions)
- examples of financing mechanisms for sustainable community conservation efforts.(B&B for snow leopard tourism, DVD nights and beading related to lion tourism)
- disconnect in culture to provide what tourists wanted
- Cheetah sporting events – made a ball with cheetah image to help relate and build emotional connections
- Livestock insurance programs – farmers contribute a sm amount, programs become self sufficient in a matter of a few years (damage offset program)
- Tolerance levels are higher when damage is not extensive. Compensation puts up dividers and alienates community – is this truly a durable strategy?
- Help ppl to analyzed conflict dynamics (culture, history, connections, etc)
- Compensation is targeted to certain spp and a loss of ownership of the problem occurs
- Plan for shared responsibilities
- Deprivation/damage creates long term hostility
- Communication will help keep us from replicating those efforts that were failures

Strategies for small communities vs. large corporations (ex. Mining)

- Top down management strategies
- Communities can influence and create pressure to protect local areas from companies
- Ideas to help build pride and create community responsibility
- Communities can leverage companies by targeting startup investors in the companies' base country
- Does the conflict with companies increase exponentially if they are completely stopped rather than just minimizing impacts.
- Work to create neutral processes and a balance of power so that everyone's voice is heard
- Build capacity for the less empowered
- Helps company leaders agree to come to a responsible solution
- RESOLVE company helps to facilitate this type of resolution meetings.
- Companies participate in creating prevention practices which results in positive media opportunities for them

- Turn the region into a protected area when the companies is done
- Importance of showing government the economic value of protected areas via studies (acts as a safety net to preserve them in the future)
- Do studies like this detract from the idea of promoting preservation of natural places due to innate value as national and local identity

Gov. (human rights, development) need to open up lines of communication with conservationists to help prevent conflicts

- Need to study and learn to use empathy better (a powerful and sustainable tool)
- Empathy for animals as well as empathy to the local people in the conflicts goes a long way towards resolution
- Explore the role of empathy as a tool – how is the species viewed in the culture and community (historically and currently) and how can that be used to develop new strategies
- In situ education initiatives and training community leaders to help create emotional learning and attitude shifts
- Help shape and highlight historical beliefs (ethics of altering a historical belief?)
- Important social forces – increase social marketing and use more empathy, science alone can't save us
- Sometimes cultural protections of an animal may be in place already and education destroys them (taboos on touching an animal)
- Education needed when irrational ideas are prevalent due to lack of education
- Goals to reduce losses – help increase infrastructure must be worked on simultaneously in order to succeed
- Selectively promote religious practices that instill conservation
- Change belief systems by subtly skewing them towards conservation (ex: right of passage /lions)
- Loss of fear in animals creates different conflicts as well
- Collaborate to form solutions

Specific examples should be disseminated and new connections forged

- Recommend thru ZACC to help facilitate discussions or funding to hire someone to extract information
- Can we use a system that is already in place? - Conservation coordinators in each zoo collect info and sends it to ZACC in their annual report
- Can we use facebook better?
- Propose the best ideas be funded by ZACC?
- When a zoo funds a project it could include a bonus incentive (\$500) for sharing the case study or other information with peers
- Make an e-book collating case studies and use that publication as incentive
- Motivate researchers to share and network
- Self perpetuating fund? Start up \$ from ZACC or zoo fund – provides incentive bonus for projects to share – collate ebook to sell
- Or is free information enough of an incentive to share?
- Time is valuable, don't waste time on failures
- Nuances vs. skeletal studies

- Provide a structure

Wednesday, March 9, 2011

Educator engagement in conservation

Co-facilitators:

Stephanie Stowell and Jill Korach, Project *Dragonfly* / Miami University

Robin Keith and Corrin LaCombe, San Diego Zoo Institute for Conservation Research

Attendees:

Lynne Myers	Co-director Project Dragonfly, Miami University	myersLB@muohio.edu
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Katie Remine	Woodland Park Zoo	Katie.remine@zoo.org
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Carol Merkel	Seneca Park Zoo	cmerkel@frontiernet.net
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Chris Myers	Project Dragonfly, Miami University, Oxford, OH	chrism@muohio.edu
Lynn Harris	Seneca Park Zoo	harris@frontiernet.net
Isabel Sanchez	ZSF/Zoo Miami	isanchez@zst.org
Terry O'Connor	Terry O'Connor Consulting	terry@terryoconnor.net
Kathy Krogmeier	Blank Park Zoo volunteer	Jkkrog95@q.com
Cathleen McConnell	Point Defiance Zoo & Aquarium Education Specialist, Academic & Community Programs	Cathleen.mcconnell@pdza.org
Corrin La Combe	San Diego Zoo Institute for Conservation Research	clacombe@sandiegozoo.org
Kevin Taylor	Wildlife Expeditions of Teton Science Schools	Kevin.taylor@wildlifeexpeditions.org
Mark MacAllister	Field Trip Earth	mark@redtailhawk.us
Greg Rasmussen	Painted Dog Zimbabwe	greg@painteddog.org
Robin Keith	San Diego Zoo	rkeith@sandiegozoo.org

	Institute for Conservation Research	
Stephanie Stowell	Project Dragonfly, Miami University	stephanie@slstowell.com
Jill Korach	Co-director Project Dragonfly, Miami University	korachjk@muohio.edu
Cheryl Joseph	Notre Dame de Namur University (Sociology: Animals In Human Society)	cjoseph@ndnu.edu

Conversations connecting education to conservation are somewhat new in this community. Hoping to create the foundation for ongoing discussion.

Goals for this discussion:

- Talk about educator engagement in conservation action
- Share best practices
- How to cultivate and inspire educator empowerment and voice in conservation issues
- How to provide that ongoing support along that continuum in local community and global conservation issues
- How do we connect our efforts to keep educators involved
- How do we avoid reinventing the wheel
- What are the obvious points of collaboration? If we can come away with some obvious points of collaboration we will have accomplished something.
- Mark McCallister add: shift in K-12 education, big changes, how do we respond to those changes?

Share what you're doing with teachers, challenges you've had, what you want to accomplish that you haven't accomplished yet

Robin and Corrin, San Diego Zoo: teacher professional development program in the summer, teachers spend their time learning ways to teach standards in a wildlife conservation context. Middle and high school life science teachers are their focus. 215 teachers in about 5 years. Had great success in recruiting teachers from southern California. Bit of a challenge getting teachers from far away, even though they offer a travel stipend. Also a challenge to know whether teachers are using what we're giving them. Try to make it align with the standards as much as possible, but sometimes still not implemented. Are trying kits to see if that will help them implement it as much as possible. Hope to get teachers engaged with conservation action, whether with researchers or citizen scientists.

Stephanie and Jill, Chris and Lynn. Project *Dragonfly*: Started with online courses for educators and found that the zoo's conservation efforts really aligned with what we do so we started Earth Expeditions, taking educators on 10-day field expeditions, do research, build inquiry skills, ask

own questions, take time to learn and play, following up with online work. Have a master's degree with a global focus and another with a more on-grounds approach. Success is that it's actually happening, teachers are coming home with this new set of eyes and create wonderful projects. What we'd like to accomplish is how we make students co-creators in the knowledge we're creating and the action we can take. We also hope to watch as educators engage the public in conservation efforts and knowledge creation. Our master's students are doing amazing work at their master's institution.

Michelle Slavin, NCZoo's UNITE program, live and work in Uganda. Teacher trainings for 120 teachers around Kigali National Park. Successes: teacher incentive program, held teachers accountable to what they were doing, raised the bar for our expectations of them. We had a lot of fun projects come out of it. Challenges: infrastructure problems. Some teachers have over 200 students in a classroom, some don't have a classroom. Sometimes I feel bad asking for them to do conservation activities when they don't have some of the necessary tools. Accomplishments: long-term would be to address infrastructure issue, also expand the program so Ugandans are doing my job.

Katie Remine and Jenny Mears: Woodland Park Zoo teacher professional development. Had teacher professional development program for 15+ years and some of our successes with a long-term program were we really built a great reputation within the community of offering high quality professional development. Had great participation, over 4200 teachers mostly locally. Programs through the school year and over the summer. Built great loyalty for the zoo. I think some of our successes have been great feedback from our day-of evaluations pretty continuously, have been able to get some 6-9 months later about what was valuable. The hardest part is what is the impact on the student, whether it's student achievement or appreciation of nature. It's really hard to evaluate the impact of working with teachers on students. It's a challenge to tease that out. Because we're in a big transition right now in partnering with Project Dragonfly and morphing our program into a master's program, what we'd like to accomplish is that when you do engage teachers in a master's degree you are more closely engaged in a deeper way and we can hold them accountable.

Carol Merkal and Lynn Harris, docent Seneca park zoo. Don't have formal professional development department at the zoo. Anxious to hear what this is all about and maybe though we're small we can implement this on some scale. Have done some teacher workshops, but our experience is that when they come to the zoo, the kids just run. Under funded, have a fairly new education manager, trying to bring new things in. we're all ears!

Chris Myers, Project *Dragonfly* Miami University. Work in three main areas, one is public engagement on zoo grounds with exhibit experiences and changing what families might do, second is field conservation piece with links to great conservation projects in the field, finally is these collaborative master's programs we're developing with zoos across the country. One of the main questions we come across is why zoos? What's the power of zoos? Think about it: where can you go and see the world's biodiversity right there? What institution is more beloved in that community than zoos and aquariums. Really strong magnet and ties to worldwide conservation is unparalleled. A lot of times education at these zoos is isolated, so much more power in working together. The Global Field Program uses online web courses tied with field expeditions, even

able to get our conservation partners joining us as part of that global piece. Professional development for teachers has to be inspirational, transformative, a lot of their options are terrible, so I'm very excited about the collaboration among these zoos and aquariums, not only for the Global Field Program but also the environmental stewardship right here in these communities.

Terry O'Connor, conservation education consulting business, have a different group of teachers I'm working with. For the most part, not working with classroom teachers, though I do have background with teacher professional development, but a lot of my work has to do with international education, particularly with bat conservation, developing things that people will then use with their students. Also have experience internationally, for example in China helping them start brand new professional development program. Now working with evaluation with Washington state sustainability service learning. Some successes include getting teachers comfortable with getting kids outside to overcome reluctance and just jumping right in. also, hearing that teachers took our materials and modified them and made them their own. Challenges: funding is a challenge.

Cathy Krogmeyer, Blank Point Zoo, Des Moines, Iowa. We don't have a large education department, but we do have teacher workshops that are full with waiting list. We do have programs that bring middle schoolers

Isabel Sanchez, Zoo Miami, middle school students with zoo magnet program. Classrooms on site, I see them 3 times a week. It's a very good program, but it's not at the level I want it to be. I want it to be more hands-on. We do conservation work at the zoo, but I want them to be able to do more. With middle school, teachers are so preoccupied with time. Have to follow the curriculum, anything extra is too much. Those are the challenges. Overall if we can work collaboratively with them to see how we can help it'll be better.

Dought Nkomo, Xmas Mpofu, Greg Rasmussen, Painted Dog Conservation, teacher workshops every year, department of community education, conservation clubs. Used to do workshops at education facilities, now we go to the schools. We also work with the kids, who don't know much about painted dogs or their conservation. I'm happy to be coming here and learn more and share ideas. Greg: Education program started in 2003. Realized I was leaving knowledge behind and realizing I wanted to leave empathy behind. Got it integrated into school curriculum. We have the kids for 4-5 days, they come to a living camp. We might say it's a success, kids have a great time, but the challenge is measuring your success. See it as a big challenge: are you going in the right way with your education, but also answering the donors. Want to accomplish developing the empathy with the younger kids as well as the secondary students and really get them involved.

Cathleen McConnell, Point Defiance Zoo & Aquarium, person that teachers call when they have questions about anything to do at the zoo. Program area of one. We try to supplement what they're currently doing. Not looking for anything to be added to what they're doing. Six years ago the teachers were given a science curriculum to teach from, but still aren't comfortable teaching the curriculum. Biggest challenge: it's just me! I want to be able to reach more teachers in meaningful professional development, in inspirational ways. Give them the science info so they can be the experts, but also they need that foundation of information so they can then teach

about conservation. We have funding for them to bring their kids to the zoo to introduce kids to animals.

Renee, Houston Zoo, look for ways to help our various partners with their education program.

Cheryl Joseph, here purely by accident for sociology convention! Looking for registration desk for them, couldn't find it, found us! Teach sociology, started a new major: Sociology: Animals, Humans and Society. Started at small school where I teach outside of San Francisco. Get a sociology major but add an animal-focused concentration including animal/human bond, teaching learning and healing through animals, animals/people/the environment. Big component is a two-semester internship in which they go out and volunteer at an org that deals with people and with animals, from being a docent at a nearby beach to working at a humane society to working at a farm. I want to thank you all for being here!

Kevin Taylor, Teton science schools, Jackson Wyoming. Six different program areas: residential education program where groups of students come from all over the country, graduate program for folks who are working towards master's, research and stewardship branch, independent school for preK-12th grade and the branch I focus on, which is the ecotourism. I do a lot of training the trainers, teaching the naturalists who are then going to educate the public in four to seven day programs. Over 40 years of connecting people to nature through education. Lot of longevity. Challenges: recession! On the ecotourism side of them, Yellowstone in 2010 broke visitor records but aren't necessarily hiring a guide/educator to make that experience more intimate. Part of my job is to try to educate the public about the importance of that to their visitor. Another challenge is getting to people's head through their heart, we're so good at providing information but how do you get to the heart?

Mark McAllister, NC Zoo, running the society's conservation education website, Field Trip Earth. We take conservation programs around the world and collect the journals and photos and video and maps and make them available to K-12 classrooms. 140 classrooms around the world. Very raw materials kind of thing. Don't provide lesson plans or activities. Good teachers will figure out how to use them in their classroom. Primarily we feel our role is to make those materials available. Gotten lately is the notion of having a more off the cuff relationship getting researchers to hold office hours via Skype. Available for questions from students during that time. Success is having 2-3 first graders pop up and ask me about red wolves from a talk I gave last week! Given the changes with technology and what children expect, I think there's a lot of room for that in the future. Challenge is the pedagogy about the teachers being the provider of info and setting the schedule and switching to a more student focused classroom.

Discuss trends in what we heard, strong recurring themes:

- Collaboration, how to take to the next level, where we can go next together. Heard about really shifting the paradigm to inspire collective conservation action both at home and at global locations that we have the opportunity to make those connections.
- Getting to more student-centered education
- How to get to the heart, get to empathy. Heart gives the inspiration.

- Use a lot of biofacts, people need to touch, taste, feel the wild. Data collection: people learn better hands on; get more of a feeling by seeing it right in front of you. So important to take people right into the park and do a data collection so they can hear/smell/feel what's down there. Also would be great to lend out biofacts so they can make those connections when they then come to the zoo.
- Great to work with what you have, not spend a lot of money to create what already exists.
- National movement to reconnect children to nature, part of children nature collaborative. Teachers want ways that they can get their kids out into nature right in their school yard or close to schoolyard. Houston Zoo: toad trackers, local species that's found on grounds, pretty common toad, teach the kids to measure it, weigh it, what researchers do to find them. Have amphibian unit first then go out that night and search for toads, scientist comes out and tags it with them. Another zoo in Florida does a snake thing on grounds. Find a species that's there and a biologist that's close that works with that species. You can use that data to look at the population of toads that occur on grounds. Important that the data they're collecting matters. Have a place and repository where that data is going. Can you be asking those questions and keeping track of that data even if it's just on a whiteboard. Free-choice learning environment is the coolest thing you can have! How do you break that mold from what you've been doing, telling them what you want them to know. Instead fostering what they are interested in, what they want to know.
- Great to get teachers that hands-on learning so they can do it with their students.
- So many great phenology projects and other citizen science projects. Helping teachers connect the dots to those projects can help connect heart, hands-on, comfort with outdoors and data collection!
- Also we often work alone but would be great to break that down, collaborate, work together and connect. Would be great to trade constituencies, we can teach each other's audiences, trade methodologies. Don't be afraid to ask someone to share their programs! And don't be afraid to share your successful program! We need to utilize the network of zoo educators.
- Also great to let the ZACC conference know what threads we want focused on in education sessions. Also great to add an education tab on ZACC website!
- Data gathering is wonderful for having kids learn the process but especially great if that data is going into a database. NatureMapping has branched out to Jackson Hole, so powerful. See a moose, get GPS points, and then put that data into the NatureMapping database. Kids can pull up the map and see the datapoints that they gathered. This program could be an international program, too. Perhaps work in the field could go into that database. Amazing that wildlife managers are using that data to make decisions. Could be easy to teach the teachers how to do this.
- Can also bring tracking programs to kids: they take their own measurements, their own movements, learn the procedure.
- One challenge is that we get a self-selected group of teachers who might already be doing this kind of education with their students. Want to figure out how to get those teachers who wouldn't already be doing conservation education. Talk to local districts to identify teachers who might benefit from this kind of education (afraid to touch crayfish for example). Woodland Park Zoo has a program that has worked with a district to do peer to peer mentoring from our educators to their teachers. Able to get a lot of teachers involved who wouldn't ordinarily come to our professional development. We work with their

students eight times over two years, they see how we work with their students and are gaining that knowledge along the way.

- Shifting paradigms, changing the way we looked at our educator development as a one-off experience where we never see them again. As we cultivate those relationships, imagine what a deeply engaged educator will then take back to their community! They'll be the best advocates, create the most demand for your program. That's teacher engagement! Talked about continuum of getting educators involved in our program, getting them collect data, and get involved, how do we then connect these teachers to conservation around the world. One way UNITE is trying to reengage with local teachers with classroom visits, lure them in with field trip earth. Incentive for schools in US to go online and learn about their projects. These involved schools now fundraise for them! Another example: Snow Leopard Trust has fundraising packet with their program that allows their students to choose what they fundraise for: their school, conservation, etc. way to get students involved in making a difference for whatever they choose. Fun for students to decide what they really care about. Give them ideas for what's out there, who's doing work around the world. Something's going to strike a cord. If you want teachers to engage with you, you have to engage with them! Just offer them pictures, a little video, some stories, a little relationship. Students are amazingly appreciative and respond incredibly well for your program. Way that zoos can help field projects. Example: Painted Dog has an education team that takes videos, but no one can edit it. The right person can take that video and help the program. Can use different hooks, you don't have to be the science teacher at the school to be the person who's engaging in conservation. Can reach the film editing class to help engage people in your conservation program!
- Whole idea of assumptions of participation in knowledge is what gets in the way of effective programs more than anything else. How often do we stalk our students because we have such ingrained notions about what education's for and how it should go. If we don't do it, our systems do it. One of the things Project *Dragonfly* found when they started is that you can go through all your schooling and never see kids as investigators. Doesn't make any sense from a participatory standpoint. That assumption, which is prevalent throughout science literature, is that we don't expect students to do investigations which is what you see in the design in exhibits. A lot of the standards re focused on inquiry, so you have that in your favor if you want to take your kids on a field trip. The internet can help create voices. When does the student say my question is important? Let them be the authors, be a community of investigation. Don't put a limit on only science teachers do that. You can get a pizza factory owner who collects more cell phone for conservation than schools do! It's our assumptions that close them out, you can create the environment that says, come in! They will come. They're looking for ways to be involved.
- One idea: had just heard a presentation about gorillas. Were at vending area where they were selling products from Uganda that people sell so they don't have to poach gorillas. Great if students could sell those products to raise money for schools. Exactly the engaging students in conservation solutions curricula from Facing the Future and Snow Leopard Trust! Key thing to any successful field conservation program is that it touches as many people as possible. So important to get the market for these real sustainable products.

- Hate to see students' fondness for nature, environment, and conservation end because they don't know what to do with it afterward, how to make money from it. Don't pursue it as an avocation. Remember that beyond high school, there's a university that will undertake that and carry it forward!
- Inspiring that there are more of us offering this in different ways, shows there's a need and an interest out there. Now we're seeing those folks coming back in and getting their master's degree and might go back to what they're doing, but will be doing it in a more informed way.
- Connections are great, way to continue forward: connect on ZACC website (education tab) so we all know what each other is doing. Similar to a ZACC yearbook of sorts: name, org, what you're doing, location. Help connect projects with need.

Thursday, March 10, 2011

Using Indigenous Knowledge for Conservation

Facilitators:

John Kamanga and Guy Western, African Conservation Center/South Rift Association of Land Owners

Attendees:

Steve – Conservation Graphics

Helen – human elephant conflicts in Kenya, local perspectives

Kelly Boyer (Iowa State University) studying chimp cons w/Houston Zoo in Senegal

Wants to start ed programs/community forestry programs

Working with local governments, etc

Katie Remine and Jenny Mears (Woodland Park Zoo)

Teacher prof. development; school & community engagement

Painted Dogs

Education

Head Keeper

Amy Mashing – Denver Zoo

Community outreach/public awareness/adult education

Citizen science

Has a program in N. Kenya

Jill Korach, Stephanie Stowell, Chris Myers, Lynne Borne Myers – Project Dragonfly/

Earth Expeditions

Hands on community-based

Kathy – Blank Park Zoo (Des Moines, I

Expansion in African exhibit area

Nicole (Woodland Park Zoo)

Anne Warner (Oregon Zoo)

Connections to local tribes in Oregon

Maasai Community – rangelands, grazing for livestock and water

Supports human communities and wildlife

Wildlife concentrations high around pastoral communities

Why not use indigenous knowledge?

There is a reason why there is still wildlife in these areas.

Coexistence

In Kenya in the 1960s landscapes were set aside for wildlife concentration yet the number of species and populations are dwindling. We are controlling natural phenomenon. Animals need the space for migration, breeding, feeding and water needs.

Example: Maasai men & lions...only kill the older male lions. Good in the long run as diminishes potential future threats as older lions look to human communities for food when can no longer hunt for themselves. Lions now see Maasai men on the landscape and leave. Conflict with current conservation strategies as these strategies focus on keeping humans out of the landscape.

Community conservation efforts of Maasai to create areas for wildlife conservation. Dry season refuges = conservation areas. Now bring in tourists for additional income. Rather than introduce "alien" concepts work within existing practices and understanding.

Mobility: necessary for pastoralism. Must be able to move w/in the ecosystem = Survival. Maasai will continue seasonal movement and maintenance of healthy and balanced ecosystem. Different animals using different aspects of the ecosystems. For example, elephants dig wallows and create waterholes for livestock. Mutually beneficial..."we become friends". Livestock lives very well wildlife.

Indigenous point of view can/should inform conservation strategies.

Guy Western: grew up in Kenya. Grew up understanding the value of coexistence of human communities and wildlife. Wasn't until he came to the US to study that he was introduced to the idea of "pristine wilderness" and the associated challenges and problems with this conservation strategy.

Carnivores: lower conflicts with lions in this area of Kenya (Maasai) than other parts of the country.

Parks have been set aside on what were traditional conservation areas.

"Feedbacks" with the community. Yet the communities already know...they live on the landscape everyday and are amazing natural historians and see. Much for the scientific community to gain from working with the local community.

Gap - Indigenous knowledge is transmitted primarily as an oral tradition

Scientific knowledge is traditionally transmitted in written format

Oral histories as a potential bridge

Gap - between biological and social sciences

"paper work" and process stand in the way of informants/interviews

Trend- more and more scientists in field of ethnobotany are co-authoring paper/research with indigenous people; can reference a personal association

80% of wildlife in Amboseli lost during drought
Only 20% lost in areas where Maasai communities/livestock are in coexistence

Ranch Subdivision: is a big problem. Reflected in loss of mobility. The key to coexistence is that the people are still able to move and have a strong knowledge of how to move w/in ecosystem and to avoid predators. Traditional areas of movement have been restricted by the parks. Even if areas around the park are subdivided they still don't have access to the park; restricts movement.

What is the role of education? Is there a place for indigenous knowledge to be cultivated and shared in schools? National school systems sees indigenous knowledge as "backwards" and the formal system influences kids in negative ways; they learn to see the indigenous systems as irrelevant. Maasai families try to create opportunities during holidays and when kids are home.

Zimbabwe – technology is causing challenges...kids have cell phones, mp3 players, etc and they are not interested in traditional stories and learning traditional ways. E.g. Go out hunting and see two male Kudu fighting...only kill one male kudu...why? To maintain genetic strength.

Kenya – new constitution. Tribal groups have opportunity to influence the curriculum by embedding cultural elements. Before it was impossible (42 tribes in Kenya) due to hierarchy/dominance in the system. Now each group has an opportunity/opening.

Are there conflicts amongst tribes where there is overlap of communities (e.g. hunters and pastoralists in Senegal)? Depends on availability of resources.

Zimbabwe – education programs on traditional hunting methods...hunting for food vs. hunting for commercial/sale. Traditional methods vs. wire snares.

We have an opportunity as conservation scientists to understand indigenous knowledge ... transferrable into the future and to different places. Principles and ideas can be transferred

Ecology & Society – online open access journal
Ecological and sociological perspectives

Spiritual beliefs – danger of being co-opted by "outsiders" to achieve conservation objectives (e.g. Harpy Eagle billboard "saints" in Belize). The role of ritual in conservation.