CBSG News

Inside...

2004 CBSG Annual Meeting

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CBSG In Asia: Gaining Momentum

This issue of *CBSG News* provides reports from our Annual Meeting in Taipei last September. I must admit that in the past I have not been an enthusiastic fan of annual meetings – of CBSG or of any organization. It is wonderful to have the chance to meet with many colleagues from around the world, but it is often hard to accomplish much useful work in the few days that people gather. However, the CBSG staff works hard to make our Annual Meeting both productive and enjoyable, and I think that they succeeded again this year! We want to express our sincere thanks to Director Pao-Chung Chen and Eric Hsienshao Tsao and all of their staff at the Taipei Zoo for being such incredible hosts. Meetings cannot be productive unless someone works very hard before, during, and after the meeting to take care of all our needs for meeting rooms, equipment, food, local information, and hundreds of aspects of logistics. Our friends in Taipei set such a high standard for hosting meetings that I think it will be many years before anyone can match their hospitality.

It was especially nice to meet in Asia. A high priority of mine is to increase the global reach and effectiveness of CBSG. To do that, we need to develop more friends and colleagues in all parts of the world, so that we can share concerns, ideas, techniques, expertise, and enthusiasm to do more to help protect the biodiversity of our world. CBSG's main office is in the USA, but most of the world's biodiversity, as well as human diversity, exists outside of North America. We need to develop CBSG regional networks, and partnerships with colleagues working in conservation, in every region of the world. Over the years, CBSG has been involved in many workshops and conservation projects in Asia, but this past year we had an especially high level of CBSG activity in Asia.

In the week before the Annual Meeting, CBSG led a PHVA workshop on Formosan pangolins, and a training workshop on the use of Vortex to guide species risk assessments and conservation planning. When we began to plan that training workshop, we expected that we might have 10 or 15 participants. However, more than 70 people attended! This makes clear how much potential there is in Taiwan, and probably throughout Asia, for CBSG to help more people contribute to wildlife conservation. In just the few months since the Annual Meeting, CBSG has conducted further training in Indonesia, in Thailand, and in Pakistan. This year CBSG also conducted an orangutan PHVA workshop in Indonesia, a freshwater biodiversity CAMP in Pakistan, led a genetic management masterplan workshop for giant pandas in China, and participated in conservation planning workshops for Gobi bears in Mongolia and Asian vultures in India.

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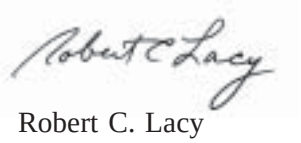
Asia is a vast and complex region, and CBSG can do more to help our colleagues throughout Asia to protect and restore their wildlife populations. In that respect, I was very pleased that colleagues from China, South Korea, Singapore, Thailand, and Vietnam joined us at the Taipei meeting. The vitality of the CBSG depends on constantly bringing new people into our networks, because the problems of conservation – and the opportunities to do something to address those problems – are increasing, not decreasing.

Asia was not the only region of the world that was represented at ourAnnual Meeting by a number of special colleagues. From the regional zoo associations, we had Bart Hiddinga (EAZA), Miranda Stevenson (BIAZA), Bill Foster and Michael Hutchins (AZA), Qadeer Mehal (SAZARC), Jansen Manansang (SEAZA, and CBSG Indonesia), Brij Raj Sharma (Central Zoo Authority of India), Yolanda Matamoros (AMACZOOA, and CBSG Mesoamerica), Mark Craig (ARAZPA) and others, and the registration list for our Annual Meeting included participants from 30 countries! We were also fortunate to have guests from the IUCN Reintroduction Specialist Group – including Fred Launay, Hamish Curry, David Lucas, Sanjay Molur, and the many other people who are active members of both the RSG and CBSG. We benefited greatly from inviting colleagues from another of SSC's Specialist Groups to discuss with us topics of joint concern, and I expect that we may continue that practice in future meetings. As Frances Westley described in her acceptance of the Ulysses S. Seal Award, the creativity, productivity, and success of a group like the CBSG comes not from what we contribute as individuals – as important and talented and hard-working as we all are – but rather from what happens among us. I am grateful to everyone who contributed to our Annual Meeting and to the many CBSG activities throughout 2004.

I want to encourage you to mark your calendars now for the 2005 Annual Meeting that will be held in Syracuse, New York, USA on 29 September-1 October. It is easy to get to Syracuse from New York City (where WAZA will meet 2-6 October) or from many other cities in the USA, and we will keep the costs for registration and hotel low so that as many of you as possible can participate.

Finally, in thinking about 2004 having been in some respects a "Year of CBSG in Asia", on behalf of all of the CBSG staff, I want to express our deepest sympathies for the people, communities, countries, and even wildlife populations that suffered so greatly as a consequence of the recent earthquake and tsunami. We are not yet aware of the loss of any of our members of CBSG, but we have heard that some of our members in Asia did lose friends and colleagues. Most of the zoos of the region are inland and had relatively little damage, but the destruction of coastal communities and environments is beyond anything that we can fully understand. We sincerely hope that the people of the world will do everything that can be done to help the devastated areas recover from this tragedy.
Sincerely,



Robert C. Lacy
CBSG Chairman

CBSG's Statement of Vitality

"CBSG cares about saving endangered species and habitat. It bases its mission and activities on the development and implementation of scientifically sound processes. CBSG takes a leadership position in the conservation community based on cross-cultural, interdisciplinary and inter-sector partnerships.

CBSG News

CBSG News is published by the Conservation Breeding Specialist Group, Species Survival Commission, World Conservation Union. *CBSG News* is intended to inform CBSG members and other individuals and organizations concerned with the conservation of plants and animals of the activities of CBSG in particular and the conservation community in general. We are interested in exchanging newsletters and receiving notices of your meetings. Contributions of US $35 to help defray cost of publication would be most appreciated. Please send contributions or news items to:

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2004 Ulysses S Seal Award Presentation

Most of my duties as CBSG chair are pleasant ones, but one responsibility that falls on me is especially nice. As Chair of the CBSG, I have the great pleasure of presenting the Ulysses S. Seal Award for Innovation in Conservation. To quote from the statement made by the CBSG Steering Committee when this Award was created:

"Ulie's great passion and talent was his creative thinking about how new science could be most effectively applied to solving the problems of wildlife conservation. His contributions were amplified many times over by his further ability to recognize, encourage, and utilize others who also were making such innovative contributions. Fittingly, the CBSG has chosen to honor Ulie by creating the Ulysses S. Seal Award for Innovation in Conservation. Each year, the CBSG will consider nominations for this award. All members of CBSG are invited to submit nominations. The contributions of a nominee need not have been through work connected with the CBSG, but should reflect the CBSG values of creative thinking that results in improved conservation action. A committee appointed by the CBSG Chair reviews all nominations, and their recommendation for any award recipient is subject to the endorsement of the CBSG Steering Committee. Omaha's Henry Doorly Zoo has developed a medal to recognize the recipients of the Ulysses S. Seal award. The award will normally be presented at the annual meeting of the CBSG, although an award may not be given every year."

Frances Westley with Nate Flesness, recepient of the 2003 Ulysses S. Seal Award

We received a number of nominations in 2004, and the award committee was in agreement that all of the nominees are people who have made huge contributions to conservation and are well deserving of many awards and accolades. However, we can give only one Seal Award each year, and we worked hard to decide who should be this year's recipient. At the 2004 Annual Meeting in Taipei, the 2004 Ulysses S. Seal Award was presented to Dr. Frances Westley. An announcement of the award was made also at the World Conservation Congress in Bangkok in November.

Many CBSG members know Frances, but others are aware of her work only indirectly, by virtue of seeing how effectively CBSG facilitates conservation. And others may not even know the extent to which the philosophy, processes, and techniques for which the CBSG is rightly famous were – to a considerable extent – contributions of Frances and of her collaborations with Ulie and with others in CBSG.

To quote from a nominator:
"While I recognize that the award is not limited to recognizing someone who has directly influenced CBSG, I feel that it is appropriate to acknowledge the significant contribution Frances Westley has made to the way in which we think and work. Frances' application of social science theory and practice to our biological science-based conservation efforts has profoundly changed CBSG's workshop approach and improved our effectiveness. Much of what we take for granted today, the things we think of as core CBSG philosophy, came from Frances. CBSG is recognized within the global conservation community and our sound science focus remains our foundation. However, integration of the tools of process design and facilitation that Frances introduced to us and trained us in, are seen as key strengths of the organization and are sought after by individuals, institutions and organizations worldwide. In addition, Frances was the driving force behind our work in incorporation of the human dimension into the PHVA process. Frances Westley meets all our stated

criteria, she has contributed as much or more than any other single individual (excluding Ulie, of course) to the evolution of this organization, and she continues to serve as one of CBSG core team of innovative thinkers and leaders."

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A number of the Steering Committee members provided further documentation of the appropriateness of awarding the Ulysses S. Seal medal to Frances, and I could fill several pages re-telling how much impact Frances has had on so many people in conservation. I will instead just tell you about the impact Frances has had on my own work in conservation.

Frances changed the way I work with colleagues, the way I do science, and the way I do conservation. I was trained to be a rigorous, hard-core, quantitative, natural scientist, in the best traditions of academic science. In other words, I was taught to distrust and discount whatever cannot be demonstrated through controlled experiments, in which the system of study is isolated from all potentially confounding variables, and data had to be sufficient to reach preordained statistical confidence levels before it could be allowed to impact judgment. I was also taught that the way to the truth was to attack all colleagues mercilessly, seeking any potential flaw in their arguments and data, and – when any such flaw could be found – to then gleefully dismiss all their ideas and replace them with my own.

Like most natural scientists, I knew almost nothing about the social sciences, and I knew even less about how to work with networks of people who have diverse interests, systems of knowledge, and ways of communicating. However, after more than a decade of exposure to Frances Westley, both directly and through seeing what the CBSG was able to accomplish by following her approaches, I have begun to see the light. What I know about collaborative processes and how to integrate diverse perspectives and disciplines to achieve effective results largely comes from what Frances has taught me.

What sets the CBSG apart from most other science-based conservation organizations is that we have developed effective processes for facilitating collaborative efforts to apply science to conservation problems. Our scientific expertise and tools are important, but the processes by which we guide people from problems and conflicts to progress and solutions come from the social sciences, not from genetics, ecology, or wildlife biology. The incredible power that comes from using social science skills to apply the natural sciences to conservation problems is a legacy of the sometimes difficult but always rewarding collaborations among Ulie, Frances, and other colleagues within the CBSG network.

I should point out that Frances's contributions to the CBSG and conservation are not just in the past. Frances has just started a new job as the Director of an interdisciplinary program in the Environmental Sciences Department at the University of Wisconsin. Even while stepping into that leadership role, Frances is also working with us and with our colleagues at Durrell Wildlife Conservation Center in Jersey to develop a series of professional training courses and internships to provide many more people from around the world with key skills that will allow them to apply and further develop the processes used by the CBSG to promote wildlife conservation.

From Ulie, I learned the importance of blending passion, thinking, and science in the service of conservation. From Frances, I learned *how* to do it. Therefore, it was especially rewarding for me to present on behalf of the entire CBSG, and on behalf of Ulie's family, the 2004 Ulysses S. Seal Award for Innovation in Conservation to Frances Westley.

Presented by Robert Lacy, CBSG

Ulysses S. Seal Award Acceptance Speech

Thank you very much. It is hard for me to express how grateful and how gratified I am by this award. It means more to me than any I have ever received. I am a sociologist by training and have, for years, worked in the faculty of management, but my work with CBSG has been the most meaningful work of my professional life. The satisfaction of working in conservation, with the kind of brilliant and dedicated professionals who make up this network, many of whom have become dear friends, has been a great reward in itself. I particularly appreciate your generosity in making it possible for my daughter Clara to accompany me.

But I'd like to lean on your generosity a little further, and use this moment in the limelight to talk a little bit about what makes CBSG such an innovative organization. For me it is one of its most precious qualities…but it isn't an easy one to understand or grasp. And while it is immensely gratifying to be recognized with such an award, I actually think that individual initiatives are only a small part of the kind of innovation CBSG is known for. Like so many of us working for CBSG, I have always felt that I was part of a larger stream of energy, a stream of energy directed against all odds at saving the species and spaces we love. And like so many others I was drawn into that stream by Ulie Seal.

Now Ulie *was* an innovator and he fostered innovation in everything he did: of that much I am sure. But CBSG's capacity to innovate lay not just with Ulie but with a kind of interaction which he encouraged and which seemed to release enormous energies for change in those that participated in them and continue to radically alter the relationship between science and conservation action.

Innovation has been widely studied and some of the most illuminating literature I have read compares innovation processes to those of an art form – specifically that of improvisational theatre. Improvisation is the art of creating drama in real time, in a group, with no script, with nothing more than a theme, a sense of ultimate direction and of course great skill. It isn't easy to create something out of nothing. But there are guidelines about how to do it. And those who have studied innovation processes in many contexts have argued that the guidelines for improvisation and innovation are very similar. Let me share a few of these. As I do so, you might think of your own experience with CBSG.

Frances Westley and daughter, Clara Bird

First, improvisers are taught to see the world in terms of abundance-they believe that everything they need to create a story lies in that interaction. They call it *eating what is on your plate*. Now conservation organizations are notoriously short of some kinds of resources…money, for example. But Ulie had an amazing capacity to see richness in the people he met and knew how to mine it. He could see potential where people themselves couldn't see it and he knew how to connect that to possibility. The CBSG processes have come to embody this capacity…they encourage everyone to participate and to see others as an enormous resource. This provides them with a wealth of human energy and ideas.

Secondly, improvisers are taught not to say "no". *Don't refuse the gift: negation stops action* is their second maxim. I can't recall how many times I heard Ulie bark out "Go for it" when someone would propose to him an idea for a direction. He believed that people needed to keep experimenting and that they would only do so when their energy was engaged. He risked, of course, the possibility that their initiatives would not fit neatly into the umbrella of CBSG products and processes, but he saw a far greater risk in not using the energy where he found it.

This makes for messy, emergent processes. It is and was difficult to plan when you are focused on what each person has to offer. New people and elements keep changing the mix. Yet this is consistent with a third principle of innovation, *focusing on the here and now and not being distracted by memories and anticipation*. I remember Ulie listening attentively to complaints of not enough information at a workshop and responding "Well that's ancient history; what are we going to do about this now?" He never allowed lack of preparation get in the way, another element of improvisation and innovation. Be prepared only for surprise.

Lastly innovation, like improvisation requires great attentiveness to what is happening around you, to people and their ideas and concerns, combined with a confidence that things will move forward. Improvisers must be intense listeners and Ulie was one of the best. And they are listening simultaneously to what is offered in the present and to those ideas or offerings that can move things forward. This requires great patience, an attention to process over outcome in the present and a faith and confidence that such attention will bear fruit. And this quality too is now built into the processes that CBSG has developed…they are inclusive, unfolding and sometimes messy, but great productivity comes from the chaos, and great innovation.

Of course, this creed is built into CBSG's philosophy. Someone once said that to foster innovation is to be a farmer and "farmers don't grow crops; they create the conditions for crops to grow". Inventions in conservation are like the plants that grow; they are created by individuals...individuals experimenting in the context of immediate conservation challenges. Ulie was responsible for some of the inventions, as were many others, including Nate Flesness, Bob Lacy, Onnie Byers, Phil Miller, and many, many other network participants, vets and curators, field researchers and managers. But mostly CBSG has acted like the farmer, developing a culture and a context that nurture inventions everywhere, and allow them to grow into innovations. And despite Ulie's departure, these capacities for cultivation are alive and well. In Phil's presentation, he explored the ways in which the PHVA process is evolving, in response to the needs of the individuals who participate in those processes. Bob Lacy described how CBSG is pushing the forefront of knowledge management by finding ways to integrate the knowledge in multiple disciplines…again, gathering new knowledge and finding ways to connect it to risk assessment and conservation action. The insistence on openness and participation are not just a good philosophy, it is a necessary pre-condition for maintaining a context for innovation.

My own passion is linked to the possibilities of innovation in training…of designing new teaching tools and programs that will capture the best innovations that are happening throughout the CBSG network and allow these innovations to be disseminated across the network as widely as possible and as quickly as possible. Most recently, I spent three chaotic and productive days brainstorming with others about what shape a new generation of training programs for conservation agents should look like. We had rich material to work with. We evoked in detail the extraordinary experiments and successes going on in Mauritius, Madagascar, Mexico, India, and Central America. And as we talked we drew from the experience of others and from our own expertise, and as we talked new ideas and designs began to take shape that seemed promising and yes, innovative. At the end of those few days, we all felt excited and hopeful and satisfied. *But here is the key.* It was impossible to tell who among us had innovated…who had created the innovation. It was an improvisation, something good had been created out of our interactions with each other, our ability to build on each others ideas, to be attentive, to be patient with chaos, to make good use of each other's gifts. That innovation has characterized countless experiences I have had with multiple groups within CBSG over the past 15 years. One might say it is the CBSG way.

So while I am very, very honored by this award, I say, without modesty that to the extent that I have contributed to innovation in conservation, I couldn't have done it without you. One doesn't innovate alone. That is the secret Ulie knew….that is the secret of CBSG.

Frances Westley, University of Wisconsin
2004 Ulysses S. Seal Award Recipient

CBSG Philosophy

Seventeen years ago when I attended my first CBSG meeting, all I knew was that it was an organization working for conservation. But after the meeting I was hooked. I cannot say exactly why, but there was something during that meeting that caught my attention, something that fascinated me, and I have been hooked ever since.

I have often thought about what was so extraordinary at that meeting. It all started in chaos. We sat around one big table in a meeting room. Some people had to stand or to find a chair next door. Although we were not as many as today, it felt crowded, and I felt uncomfortable, having expected an organized conference, with nice talks that you could listen to without feeling responsible for anything.

When the meeting started, the chaos slowly turned into productive discussions where I, a newcomer in the zoo world, could make myself heard and even got some of my comments written on a flipchart. It was a fantastic feeling, and I really felt, when it was all over, that WE - myself and the whole group - had produced something important. We had been through a process that had undressed a problem layer by layer in a way I had never experienced before, and after that we went through all the different layers to come up with sound recommendations to solve those problems.

It was incredible, and for several years when people asked me why I considered that meeting such a success, my answer would simply be: because there was a special atmosphere or spirit, a sense of magic at that meeting. Later, when I learned more about CBSG's methods I found out it was the way the meeting was run – the facilitation process - and the concept behind CBSG meetings that gave me such a good experience and resulted in productive recommendations.

I feel privileged today to have the opportunity to say a few words about the philosophy and unique values of CBSG. For those of you who have attended CBSG meetings, it will probably be familiar, and for those of you for whom this is your first CBSG meeting, take it as a story from someone who truly believes in the CBSG processes, and don't hesitate to get back to me after the meeting if you disagree with what I am saying.

What is it, then, that is so unique about CBSG?
It all started exactly 25 years ago, when Dr. Ulie Seal was appointed Chairman of the newly established Captive Breeding Specialist Group.

Ulie's scientific background helped him understand the need for getting solid scientific data on the table before making decisions. At that time, many conservation decisions were made on gut feelings, and sometimes no background at all. So, Ulie and CBSG developed a workshop process whereby scientific data could be extracted and used as a basis for the final prioritizing and decision making in conservation matters. That itself was a great leap in the right direction – to base conservation recommendations on scientific data and methods.

Then, Ulie took this development further. Together with good friends and skilled colleagues, including CBSG's present Chairman, Dr. Bob Lacy, he developed the conservation tools that we are still using today and constantly developing to secure a systematic and scientific approach to the conservation planning process. The PHVA process and the use of computer simulations such as VORTEX are scientifically-based tools that help us identify the most important conservation actions. We are now far beyond the stage where conservation recommendations were made on gut feelings, and have entered the era where conservation recommendations are based on valid, scientific arguments.

Ulie realized that conservation is much more than considering biological data alone. Conservation is also a question of managing human behavior. In order to conserve a threatened species you need to be able to manage humans as well as animals and habitats – both during the decision making process and afterwards when the decisions are going to be implemented in the real world.

Luckily Ulie had a degree in psychology and understood the barriers involved when groups of people try to make decisions. He improved the

decision-making process by integrating the principles of group dynamics into the process, creating a sound basis for future conservation planning.

Stakeholder participation is part of the larger issue of incorporating human factors. We are all familiar with the traditional barrier between the scientist and the lay public. Scientists think that the public doesn't know anything about scientific issues and should not be consulted in such matters. To the public, the scientist is living in another world where only theories count, so he does not know anything about real life. Thus everything that comes directly from science is just theoretical nonsense.

It is easy to imagine how conservation recommendations from scientists alone will be received by the general public and politicians. Often, such recommendations, no matter how valid they may be, die a silent death due to lack of understanding. The same goes for arguments against the scientific recommendations. They are ignored by the scientists with the argument: "They don't understand what this is all about," and the result is that nothing happens.

The only way to overcome this paradox is to make all the stakeholders part of the process and also part of the final recommendations, ensure that everyone is heard during the process, and that you promote consensus and not allow anyone to dominate the process. In practice this means that you need to have hunters, farmers and conservationists around the same table together with the relevant decision makers when planning for conservation. That is not an easy task, but CBSG does it, and it works very well! By being part of the decision-making process you get a much better understanding of the other side, and you feel responsible for the final outcome of the discussions since you have been involved in the development of those decisions. So, the aim of full stakeholder participation has been a natural element in CBSG workshops for many years.

Stakeholder participation also means access to a much bigger group of people. That brings me to another key factor in the CBSG concept, the use of networks. CBSG has a global network, people dedicated to the same philosophy and working with the same scientific tools, and these networks make use of their own local networks with a profound knowledge of the local culture, systems and languages. CBSG thus reaches far into the local communities all over the world, and we all know how important that is in conservation. Nobody can do conservation alone. But together we can achieve a lot, and by using local networks CBSG avoids falling into the cultural pitfalls that are so dangerous for global organizations. Moreover, different regions have different strengths, and instead of considering them barriers for a global approach these differences are highly respected by CBSG and considered valuable factors from which we all can learn.

There is much more to it, time is running short. I am sure you will experience at least some of these key factors I have described during the next few days. But I will not end this talk without mentioning the importance of good personal relationships and humor in all this work. Good humor can help you through many cramped situations, and good friendships will help you find a way forward if you for some reason feel you have ended in a blind alley with no way out - a feeling you easily can get when working with conservation matters. CBSG networks are very closely woven, and both factors - humor and relationships - play an important role in the daily work, thanks to a bunch of visionary people that took a holistic view on conservation, including the human factor, instead of relying on the traditional narrow approach.

Thank you all for listening, enjoy the next couple of days and remember: together we do make a difference!

Presented by Bengt Holst, CBSG Europe

A Decade of CBSG Process, A Lifetime of Hope

As I talk to you today, I want to explain the underlying principles of our workshop processes. But I hope you'll indulge me by letting me do this in a much more personal way than I might do otherwise. You see, 1 November marks my 10-year anniversary with CBSG, so I thought I would give this presentation by telling you what I've learned, what I've seen, what I've taught, and what I've come away with for the future of this organization and of biodiversity conservation around the world.

What all of us here at CBSG are trying to do is effect change: in people's behavior and, subsequently, in their activities, for the benefit of natural places around the world. We do this by bringing people together in a structured environment to talk about the issues that define a particular conservation problem, to assemble the many different types of information that are available, and to help them analyze this information in order to make more effective decisions about management of wild places and the species therein. Through the years, we've developed a set of core processes that target biodiversity at many different levels: from the broad landscape perspective as embodied in our Comprehensive Conservation Planning process to the fine-grained analysis of individual species or population viability defined in our Population and Habitat Viability Assessment (PHVA) workshop. Rather than describing these processes in detail, I would like to discuss a set of principles that define the philosophy of these processes and, by extension, the very essence of the organization itself.

Above all, our processes are based on a concept that Ulie and Frances Westley called "knowledge-based facilitation". We at CBSG possess a unique combination of skills that span the biological science of conservation and the social science of human behavior and communication patterns. With this skill set, we are able to understand the complex biological issues that confront wildlife managers seeking to prevent species extinction, while being adept at helping them structure their thinking so that they achieve a greater level of understanding of the issues and potential solutions. With this concept as a theme, we are able to design workshop processes that are culturally sensitive; inclusive, non-threatening, and collaborative; structured for optimal assembly and analysis of information; scientifically rigorous; and geared to foster shared understanding of issues and solutions among the participants. These principles combine to create a set of tools for conservation planning that stand alone in their accessibility and productivity.

I want to focus on a few of these principles in light of my own experiences over the past decade. First on my list is the issue of cultural sensitivity. It's amazing how important this can be in the evolution of trust between facilitator and participant and, therefore, the success of a workshop. And I've learned so many simple things in this area over the course of my CBSG tenure. For example, it's common practice to leave your shoes on when walking into a meeting room in the United States, but this is an unacceptable practice in Malaysia. Participants in México may be very comfortable with starting a meeting at 8:30AM and working until 6:00PM, while their counterparts in Spain routinely start *and* finish up to three hours later in the day! The soft and supple handshake I experience when greeting a man from Senegal is worlds away from what I am accustomed to when greeting a man from Texas. For us to be successful in our work, we have to embrace these elementary observations as differences – free from judgment – for seemingly simple differences like a handshake will often open a window to other cultural differences that may very well define their conservation philosophy.

Another extremely important element in our workshops is the actual design of these processes. First of all, the physical location of a workshop is a major component of a successful design. Many of my most positive CBSG experiences have come from participating in workshops located far from civilization: from the jungles of Malaysia to Costa Rica to the mountains of

New Mexico. Many miles away from the office and its complications, participants are able to focus on the tasks at hand and, perhaps more importantly, socialize with each other during meals and evenings, breaking down barriers of communication and fostering trust. Finally, our design provides each participant with opportunities to speak in a comfortable and non-threatening environment. At the tree kangaroo PHVA in Papua New Guinea in the late 1990s, villagers were able to share knowledge and experiences with established scientific authorities on an equal footing. This benefits everybody greatly and, ultimately, gives greater hope for the species' future.

I have been working with many CBSG colleagues on the PHVA workshop design and have developed a process element where all participants prioritize conservation goals as a single group. Historically, we've used colored dots for each person to cast their vote for those goals they see as the highest priority. I just returned from a PHVA on mountain tapirs in Colombia where one of the participants suggested that we give each person a handful of brightly-colored beans and allow them to drop these beans into small paper sacks taped next to each of the working group goals. He thought the natural material would be more easily accepted by the participants, and more fun than the colored dots. He was right! This interaction reinforced in me the value of simple tools and techniques when engaging stakeholders in the conservation workshop process.

Finally, I want to touch on the principle of gaining knowledge and sharing information. At its heart, a CBSG workshop is about scientific analysis of biological information in a human social context. Therefore, sharing information and discussing it openly and constructively is vital. One of my most valuable rewards is the vast amount of knowledge and expertise to which I am exposed on a nearly daily basis. Through this process, I've learned about the physiology and biology of Sulawesi's babirusa, and the grave threats that it faces from hunters in the deepest recesses of its range. I've learned about goblin ferns in the northern forests of the United States, and that common earthworms – ubiquitous in every garden but exotic to our continent – are chewing their way through fern habitat at an alarming rate. And I've learned about the threats Mediterranean monk seal pups face as their mothers are forced to give birth to them in wave-beaten caves instead of the more familiar calm of the adjacent beaches, which are increasingly dominated by both tourists and residents. Through my experiences over these 10 years, I can only marvel at the wonders of the biological world and at the dedication with which the conservation community seeks to understand it.

We have collaborated with many important people to get where we are as an organization, but above all we owe who we are to Ulie Seal. In everything he did, Ulie was a teacher – even when it wasn't so obvious. One of the most important things he taught me was the importance of listening to people, with total focus and respect, because everybody has an important story to tell. The future of successful conservation will often come down to the individual: people like the man I met in Belize who was once the best marine turtle hunter in his region but now guards the turtle nests he has found on the beaches and protects them from predators; and Don Ovidio Paya, a regional governor in Colombia who, in his search for harmony between the people and animals of his region, has risked his own life to do what no one else has been able to do – broker a lasting peace between his people and anti-government rebels seeking to destroy the very fabric of Colombian society. We must recognize and tap into the energy and creativity of these people in order to become more effective. Ulie has helped us to do that.

Through his death, Ulie has passed the torch on to all of us; it is now time for us to carry on and rise to the many challenges that now face us. There are still some wild places out there, with people living the ways their ancestors lived, but human pressures remain unrelenting. Our approaches to conservation must rise to the challenge. We can't afford to be too self-assured – Ulie, Bob, and the rest of us would never allow it.

As the newly-described lemur species that bears Ulie's name scratches out an existence in the remaining forests of Madagascar, I and the rest of the CBSG staff look forward to working with each and every one of you to meet this challenge – to improve our methodologies for bringing people together to share ideas, to work together, to effect change.

Presented by Philip Miller, CBSG

Examining Biocomplexity With Meta-Models

PVA and Biocomplexity

Population Viability Analysis (PVA) is any synthesis of knowledge about a species, its environment, and human actions that might affect the species or its habitats into a model of population dynamics that allows us to predict the long-term viability of the populations. Often, viability is assessed as the probability of population persistence over a stated time frame, but other measures of viability, such as attaining a specified rate of population stability or growth, or retaining a desired level of genetic diversity, can also be useful in conservation planning. To conduct a sufficiently thorough PVA to provide estimates of viability with reasonable confidence, we need to assess a large number of factors – some of which are intrinsic to wildlife population dynamics, others describing outside forces impinging on the population, and yet others representing impacts of human activities on the population. Figure 1 shows a simple representation of some of the factors that need to be included in a PVA.

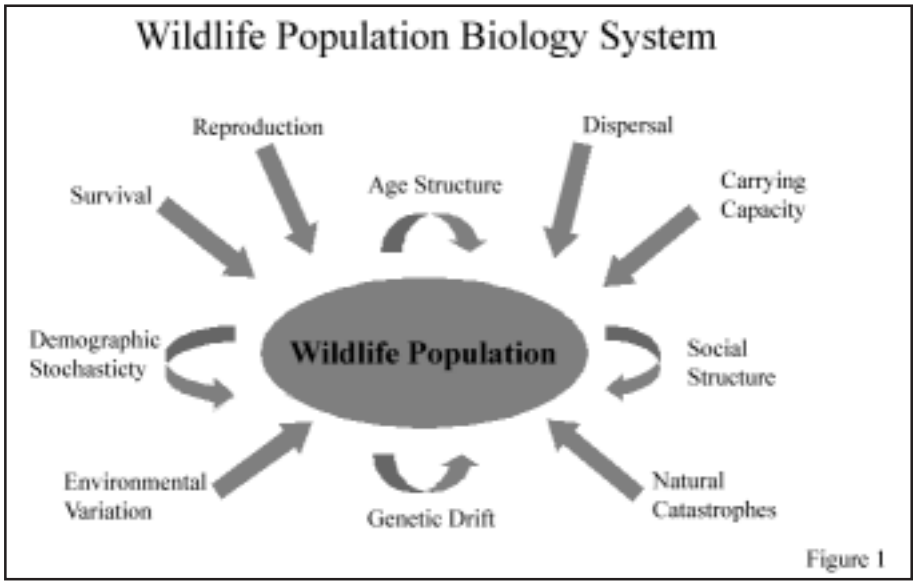


Figure 1

Because there are so many factors affecting population viability, and because these factors interact in complex ways, most PVAs use computer simulation models to project the likely fate of populations. The PVA model used most often by CBSG in our PHVA workshops is the Vortex program. Comparisons of projections made by Vortex and other PVA simulation models to the trajectories of real wildlife populations have shown that the predictions made by the models seem to be reasonably accurate when the dynamics of the system is relatively simple – single-species systems that do not have strong dependencies on the dynamics of other species; nor constant impacts of human activities; lack of systematic trends in environmental conditions; and minimal effects of disease.

Perhaps even more so than other PVA models that are widely used, Vortex can consider the impacts on a population of a large number of factors – including the inherent uncertainty of sex ratio, reproduction, and mortality; annual fluctuations in demographic rates; density dependence of reproduction and survival; impacts of catastrophes such as fires and severe storms; the effects of inbreeding on demographic performance; the type of breeding system (polygamy vs. monogamy); habitat limitations (carrying capacity) and trends in habitat; dispersal among partly isolated subpopulations; and management through harvesting, supplementation, or control of breeding. However, in spite of the flexibility of Vortex, we have found that it alone is not a sufficient model of all of the forces that might determine whether a population persists or perishes.

Open-Data Meta-models of Complex Systems

When CBSG and its associates and collaborators began to realize that PHVAs for assessing species risks needed to deal with biocomplexity as an integrated realm of study, and not simply biology, we first considered creating what we termed a “mega-model”, within which we would simulate processes from many disciplines and their interactions. However, we quickly realized that such an approach would not likely work, or be very useful if it did work. First, the team of collaborators in our “biocomplexity network” did not have the required expertise to develop models of economic, social, political, and other processes.

Second, we realized that we did not need to develop such models, as experts in those disciplines have already developed sophisticated models for understanding those processes. Finally, even if we could build an all-encompassing mega-model for predicting wildlife population viability, it would be likely that the complexity of that model would be so great that it would be very difficult to discern which factors and processes (or interactions among them) were the dominant determinants of population viability.

We therefore turned our attention to pursuit of a different approach, one we term a "meta-model". In a meta-model, two or more models of particular systems are linked together – with each maintaining its structure, but passing data back and forth between the models as they simulate the combined system. We call these "open-data" meta-models because the data tables that each model uses to store its current description of the system (lists of animals and their characteristics, and tables of attributes of the environment) are available to each other program. Any program within the meta-model can change the description of the current state of the system, in accord with the processes that program is modeling. Such open-data meta-models can make use of existing, well-tested models from each discipline, but by linking them together they provide an understanding of the overall system that could not be obtained from examining each model in isolation.

As an initial test of the meta-model approach, we developed a two component meta-model that links Vortex to a new epidemiological model of infectious disease called Outbreak. In the linked model, Vortex simulates the population biological processes, such as reproduction, mortality, and dispersal, while Outbreak simulates the process of infection, disease, and recovery and resistance. The two programs exchange information about the status of all animals in the population while they run simulations of their parts of the overall system. We hypothesize that by linking the two models, we will obtain different projections of the dynamics of populations subject to disease than we would produce if we used Vortex or Outbreak as an isolated model.

The Vortex-Outbreak meta-model is now functional (although the user interface will still be improved further) and is available at *www.vortex9.org*. We are now also testing a 3-component meta-model, which includes a new program called Spatial (developed by JP Pollak) that simulates the movements of animals on the landscape. We are also beginning to test a 4-component model that links also to GIS (Geographic Information System) programs for representing and modeling complex landscapes. While these meta-models provide us with the ability to develop integrated, multi-component models of more complex systems than can be analyzed with previous approaches, we recognize that we have just begun to explore the possibilities of a meta-model approach, and we are still far from having the tools we need to conduct species risk assessments that integrate a wide diversity of kinds of knowledge. However, we are optimistic that the meta-modeling approach may be a major breakthrough in the study of complex systems, such as those that impact species viability. To open this approach up for further exploration, we have added to Vortex the option of any user linking Vortex to any other models of his or her choosing, as long as some relatively simple rules are followed by the programs for how to exchange data about the state of the system.

We do not yet know if our meta-model approach to biocomplexity will help us to understand and solve conservation problems. As we explore this approach, we may find that the complexity of meta-models is too great for us to be able to use them in PHVA workshops, or perhaps at all. We also may find that the open-data meta-model approach is useful for linking some kinds of knowledge systems (quantitative models of physical and biological systems), but not others (ethical systems, or qualitative assessments of values). However, we are eager to explore how well this approach can provide us with a framework for the interdisciplinary collaborative analyses that we feel are essential to developing effective conservation strategies.

Presented by Robert C. Lacy, CBSG

Introduction to the IUCN Reintroduction Specialist Group

The Reintroduction Specialist Group (RSG) was founded in 1988. It currently has over 300 members worldwide, an additional 200 subscribers on its mailing list, and over 150 subscribers on its email list. The group's functions are to review and comment on the technical aspects of reintroduction projects, and to encourage governmental and non-governmental organizations to conduct viable reintroduction projects according to IUCN guidelines. It also prepares and disseminates newsletters, CDs, guidelines and policy statements, and maintains a viable international network to help it carry out its mission.

Products

The RSG has produced policy guidelines, including; the IUCN position statement, Reintroduction Guidelines (1998), and the Placement of Confiscated Animals (2002). It also produces taxon-specific guidelines, such as for primates (2002), African Elephants (2003) and Galliformes (ongoing). The RSG has produced 23 issues of our newsletter, *Re-introduction NEWS*, since 1990. It has also produced a CD-ROM containing all of the RSG and SSC guidelines, and has produced a successful website (www.iucnsscrsg.org).

Arabian oryx in Oman *© Mark Stanley Price*

Reintroduction Programs

The RSG differentiates among introduction, reintroduction, reinforcement/supplementation and conservation introduction using IUCN definitions. The principle aim of a reintroduction should be to establish a viable, free-ranging population in the wild. RSG reintroduction projects have four stages: feasibility, implementation, post-release monitoring, and dissemination of lessons learned.

Feasibility

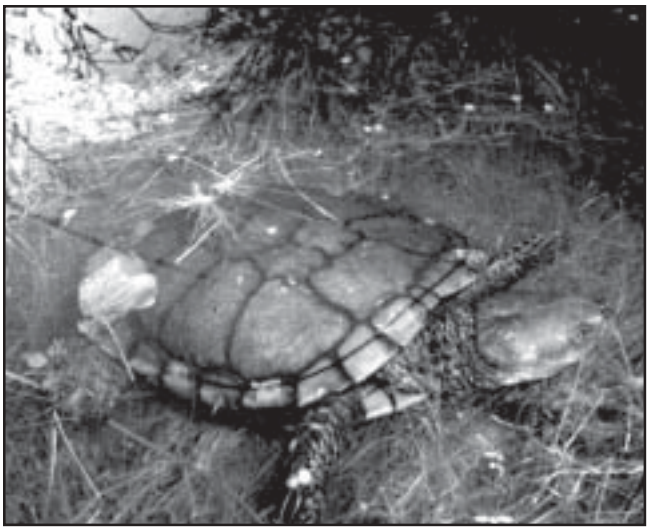
In the feasibility stage, the group gathers data on habitat suitability, biological issues and socio-political and economic concerns. If the project proves feasible, it should proceed. If there are concerns, then these are addressed before proceeding further. The RSG considers disease risks, social disruption, genetic factors, the original cause of decline, carrying capacity of the reintroduction site, and possible need for habitat restoration when finding a reintroduction site. The taxonomic and genetic status of the species is evaluated, modeling and a PHVA to guide long-term population management is performed, and the source of the animals to be introduced is carefully considered. Finally, human activities are considered, the socio-economic impact of a long-term reintroduction is of importance in determining a reintroduction site, especially if the species is migratory, crossing provincial, national and international boundaries.

Implementation

In the implementation stage of a reintroduction, the RSG ensures that funding for all phases of the project is in place, that the project is done as a carefully designed scientific experiment, and that the welfare of the animals will be of high concern during all stages of the project. The group ensures veterinary protocols are in place and makes certain of the approval of relevant government agencies, land owners, NGOs, and of a multidisciplinary team, established to oversee the project.

Post-Release Monitoring

The post-release stage is the most important, because without monitoring the success indicators identified



Western Swamp Turtle © *Gerald Kuchling*

previously cannot be evaluated. The monitoring is done on all or a sample of the introduced animals, using direct or indirect means. Long term studies on adaptation, ecology and behaviors should be undertaken during this phase. The RSG recommends that all mortalities be thoroughly investigated.

Dissemination of Lessons Learnt

Whether successful or not, the results of projects should be published in popular literature. Future projects should learn from past successes and failures to help develop their own strategies. A cost-benefit analysis should be carried out on the project as a whole. Finally, public relations activities and dissemination through the mass media is important to our long-term goals.

To help inform others about reintroduction, the RSG has produced the Reintroduction Practitioners Directory, which lists 217 species on which information was available in 1998. The group has also produced the Reintroduction Database, which lists 475 species with varying levels of information on each. Together these tools help the RSG and others with the complex process that is reintroduction. The RSG feels that the participation of the Zoo community in reintroduction projects for conservation projects could be greatly enhanced, leading to a better future for many threatened species.

Presented by Frederic Launay, Reintroduction Specialist Group

Sally Walker Receives Hediger Award

In November 2004, Sally Walker received WAZA's prestigious Heini Hediger award for outstanding service to the zoo and aquarium community for her work in South Asian Zoos. Sally has been active in conservation since she founded the Friends of the Mysore Zoo Society in 1981. Sally also established the Zoo Outreach Organization (ZOO) which has established a network throughout South Asia, bridging social, economic political and language gaps to further conservation efforts. Sally has been a CBSG member for more than fifteen years, and founded CBSG's first regional network. We at CBSG are very proud of Sally and congratulate her on this well-deserved honor.

Sally Walker and WAZA President Ed McAlister

Sally and her staff at ZOO

African Primate Sanctuaries and Conservation

The Pan African Sanctuaries Alliance (PASA) is an organization of 18 primate sanctuaries from across Africa that has come to represent an important model for institutional collaboration in conservation. Each sanctuary is committed to providing the best possible facilities and care for African captive primates in Africa, while working towards the protection and conservation of species in the wild. Sanctuaries operate in the context of an integrated approach to conservation that can include rehabilitation and reintroduction.

© CWAF, Cameroon

For most primate species, we are not yet at the stage where wild populations are so low that they need to be supplemented with captive animals. However, learning how to successfully reintroduce endangered primates into habitat areas seems necessary as the long-term survival of many of these remaining populations becomes increasingly tenuous. Today there are three ongoing pioneer programs that have already released great apes back into habitat areas. PASA is building on the successes and lessons learned from these ape reintroductions in order to inform and refine future efforts, and to generate effective mechanisms and knowledge for ensuring that reintroductions have the greatest possible positive impact on the conservation of species and the habitats that support them.

PASA Reintroduction Policy

PASA members will have as the ultimate goal of their conservation actions, the conservation of species, the preservation of biodiversity, and the pursuit of animal welfare. PASA recognizes the IUCN/SSC Guidelines for Non-human Primate Reintroductions (2002) as the most advanced and comprehensive approach available at this time. PASA supports such conservation action where appropriate, and where programs can adequately fulfill the pre-conditions as defined by this document.

Sustainable protection of habitat and biodiversity must clearly be the ultimate goal of conservation action. In securing this outcome, the chance of endangered primate species surviving beyond the immediate future improves greatly. However, despite years of environmental intervention and investment in protection and sustainable resource consumption, this remains an elusive goal throughout many of the remaining primate range areas across Africa. PASA believes that keystone species like chimpanzees and gorillas can be used as an effective conduit with which to achieve a greater level of habitat protection, and that reintroduction can benefit and support ecosystems if this goal is imbedded in its rationale and built into its implementation. For a single-species conservation action such as reintroduction, the goal is to establish a viable, self-sustaining population. Particularly in the case of apes, this could not be achieved without concomitant strategies to protect or restore the ecosystems into which they are released.

If the reintroduction of primates is delayed until their numbers are critically low in the wild, the associated risks and uncertainties of release could conceivably rule it out as an appropriate conservation tool. The current rate of forest fragmentation and human population growth in Africa will also make finding suitable release sites and adequately fulfilling the IUCN Guidelines for Non-human Primate Reintroductions (2002) extremely difficult. We now know that wild-born captive chimpanzees and gorillas can be successfully reintroduced into the wild, under certain specific conditions, and it is important that ongoing studies in Congo and Gabon continue to advance our knowledge of the factors that contribute to the success or failure of African ape reintroductions. In order for primate reintroduction biology to progress, PASA member sanctuaries will be generating as much relevant information as possible in the coming years to model the efficiency of different release strategies for a number of primate species.

PASA sanctuaries have taken the lead in reintroducing African great apes, which to date have exceeded all expectations in terms of survivorship and wider conservation impact. However, reintroductions are not

undertaken lightly, and in all cases so far, many years of careful preparation have been undertaken prior to release. There is a high level of awareness of the potential risks to wild populations, human communities and captive animals. Member sanctuaries manage captive populations in such a way that release back into the wild may be possible, but there must be a strong conservation justification to consider implementing such a program. Reintroduction as a management tool is not considered appropriate justification for a release program. It is also recognized that a reintroduction requires a long-term continuity of inputs, controls and evaluations, and that they may not be appropriate in a majority of cases.

© Tacugama Chimpanzee Sanctuary

The Future of Reintroduction for PASA

As well as the projects already underway in Congo and Gabon, nine other member sanctuaries in six countries are at varying stages in the planning and implementation process for primate reintroductions. Countries where these projects are located include Nigeria, Guinea, Sierra Leone, Congo, Cameroon and the Democratic Republic of Congo (DRC), with ape and monkey species.

All PASA member sanctuaries have made long-term *in situ* commitments to the welfare and conservation of both their captive populations and wild conspecifics, and most have already established close working relationships with national governments, local NGOs and local communities. This makes them optimally placed to pursue programs of reintroduction as part of a wider integrated approach to preserving endangered species in the wild. This integrated approach already encompasses a wide range of activities and programs *in-situ* that will naturally reinforce future reintroductions and increase the likelihood of securing habitat protection.

© Chimpanzee Conservation Center, Guinea

The collaboration among PASA members in recent years has created a strong organizational focus on reintroduction as a conservation tool. The willingness to advance the state of knowledge by collectively addressing complex conservation issues is making the process more efficient, and allowing projects to be more innovative by being able to avoid replicating the failures and mistakes of earlier efforts. Future reintroductions will continue to build on the lessons learned from a variety of projects in diverse settings, working with a range of species in pursuit of common conservation goals.

The PASA 2004 Management Workshop highlighted key areas in the reintroduction process that could not be adequately fulfilled by some sanctuaries at this stage, and areas of concern were identified through the past experiences of HELP and PPG. These included issues concerning time and resource requirements, technical and operational aspects of a comprehensive post-release monitoring regime, site selection and the appropriate criteria for evaluating the success of a reintroduction. Other topics which need further investigation and debate include the potential future alignment of breeding programs both among *in situ* projects and with the *ex situ* community, and increasing international support for reintroduction as part of an integrated *in situ* conservation strategy for primates.

Submitted by David Lucas, PASA

Reintroduction in South and East Asia

As chairs of the recently established (December 2002) regional branch of the Reintroduction Specialist Group for South and East Asia, we have identified the following objectives for the region;

- There have been many genuine reintroduction attempts in the region, and one of the first tasks has been to attempt to compile all of them along with their complete *modus operandi*.

- All participants in reintroduction activities in South and East Asia will be identified and maintained in a database.

- A number of agencies have released animals in the wild in the name of reintroduction. Having a list of such releases will be useful in evaluating them as per the IUCN Reintroduction Specialist Group guidelines of reintroduction and advise accordingly.

- Activities will be segregated into scientific/well planned and unscientific releases through analysis of all projects under the above headings. This will help in drawing up position statements and action plans for evaluating future projects on the basis of the RSG guidelines.

- A separate, web-based newsletter for the region will be published as frequently as possible to encourage projects to be highlighted as well as evaluate projects of their utility.

- The concept of reintroduction is not a very well understood subject, and we arrange training at any possible opportunity for people at various levels who are involved in any stage(s) of reintroductions. The annual meetings we have started are in themselves training. We also include reintroduction in our frequent field techniques training courses. We have conducted a meeting with a training component in Sri Lanka and another to be in Pakistan, 29-30 November 2004. We included reintroduction in our February 2004 training on field techniques for non-volant small mammals in Coimbatore, and will also do in the February 2005 Bangladesh training for both volant and non-volant small mammals.

Exercises in the Name of Reintroduction

The term *reintroduction* is often confused with the glamour it carries rather than the scientific method one has to follow to make it successful and potentially viable. In compiling the various projects within India, as a starting point, we came across an overwhelmingly large proportion of releases of animals and plants that were referred to as *reintroduction* but did not meet any of the criteria for same. These are continuing at an alarming rate. Here we list a few instances of releases disguised as reintroductions for the following reasons:

Name and Fame

This is a very common reason for planning a reintroduction. Many individuals have in the past (and some even now) released animals with the intention of making a name and becoming famous within their capacities as officers in tenure or to prove a

successful role in office. Some species that have suffered such release are lions and gibbons, among others. Such efforts are often characterized by poor research, no planning, short executive time and no follow up monitoring.

Excess Stock Release

Many zoos, universities and forest department deer parks in India have released excess stock of deer into nearby forests due to lack of space in the enclosures. Appropriate reintroductions are planned from stage one and are never considered as part of excess stock release due to unplanned breeding of animals in captivity. Spotted deer is one the most common species released this way. Failures are due to: lack of breeding plans and space, diseased animals and insufficient preparation.

Animal Welfare

A recent phenomenon in the country is to release laboratory animals into the wild, without any scientific evaluation by animal welfare organizations or NGOs. These are hazardous for both released animals and their conspecifics and others in the wild. Lack of scientific application, diseased and experimental animals, released in prime habitats and no monitoring are some typical scenarios.

Human-Animal Conflicts

This is a typical example of shifting problems by shifting problem animals from one place to another. This is being done with the support of the various governments and the courts who do not understand the implications. Even more frightening are those who do understand the implications but are satisfied to move the problem away from their area. Primates and leopards are some examples. NGOs, courts, civic bodies, forest departments, zoos and animal welfare activists become involved due to political pressure.

Aforestation

Some species are released or planted without sufficient planning or study to increase green cover and to convert wastelands in the name of ecological restorations. Examples are Prosopis, Acacia, Eucalyptus, Wattle and Pine. The problems include poor knowledge and application, lack of science, political motivation, and emphasis on "easy" instead of appropriate species.

Well Meaning

Reintroductions in the past have been conducted for a variety of good reasons, like saving species from extinction (gharial, mugger), and to clean up rivers (freshwater turtles). These exercises (also the recently conducted red panda release) conducted by forest departments, zoos, government, institutes, individuals and NGOs lack the overall needs of a successful reintroduction program. Although temporarily satisfying, the projects have setbacks due to the following reasons: need of the hour releases, not well financed, lack of long-term planning, monitoring and management, human-animal conflicts.

Even though these examples are all from India, there are equally many or more from South East Asia, with similar circumstances surrounding them.

All the news is not bad, however. There have been well-planned reintroductions in the region as well, including the *Rana taipehensis* frog, gharial (partially successful), Romer's tree frog, primates in Vietnam, and orangutans in Indonesia. It is these examples that should be publicized and emulated.

Submitted by Sanjay Molur and Sally Walker, CBSG South Asia

© Orangutan Foundation

Back to Africa: Reintroducing Antelope in Southern Africa

Reintroduction is a word we are hearing more often at conferences and workshops held by the zoo community. But how many zoos really perform reintroductions, or feel ready to embrace the idea? Now is the time to start; waiting for species to become extinct in the wild is too late. Many zoological institutions become involved in *in-situ* conservation projects, but how many actually involve their own animals? *Back to Africa* has partnered with three European zoological institutions to reintroduce antelope in Southern Africa.

Back to Africa

Back to Africa is an organization that relocates rare and endangered African species from zoological institutions worldwide "back to Africa". We follow the IUCN Reintroduction Specialist Group "Guidelines for Reintroductions". Our charitable business is to start breeding projects of rare animals to re-stock our National Parks and to research the reasons for their decline and investigate their adaptability when released into the wild. With our knowledge and contacts in Africa we are able to identify responsible custodians and safe areas for our animals.

Sable Antelope

From February 2002 to June 2003, ten sable antelope were imported from three European zoological institutions as a donation to the South African National Parks. They were transported to Graspan, near Kimberley in the Northern Cape Province, where they formed the nucleus of a breeding group that will be used to stock various parks in South Africa from where this species has been extirpated. So far, five young have been born.

Roan Antelope

Back to Africa, in conjunction with the Marwell Zoological Park, Winchester, United Kingdom, introduced four roan antelope into the Mlilwane Game Reserve in the Kingdom of Swaziland. This event occurred in December 2003. Another five arrived in November 2004.

Research

Could disease be playing a role in reduced numbers of sable and roan antelope? To this end a *Back to Africa* working group has been formed comprising ourselves, the Faculty of Veterinary Science University of Pretoria, the National Zoological Gardens, and SANParks. We are researching the diseases of these rare animals and identifying ways of preventing them.

A new theileria species preliminarily named *Theileia sable* has been identified. We are at an advanced stage in producing a vaccine against this fatal disease. We are liaising with academic institutions worldwide to initiate zoological studies at our project sites.

Submitted by Hamish Currie

World Zoo and Aquarium Conservation Strategy Working Group

Group Members

Jo Gipps, Miranda Stevenson, Lena Linden, Onnie Byers, Brad Andrews, Kazuyoshi Itoh, Bernard Harrison, Mark Craig, Mike Hutchins, Alex Rubel, Ivan Rehak, Peter Dollinger, Richard Tenaza, Eo Kyung Yeon, Yolanda Matamoros, Paul Boyle, Mark Craig, Frank Haelewyn, Jorg Adler, Sally Walker, Sue du Bois, Anne Baker, Bill Foster, Sophon Dumnui, Jansen Manansang

The World Zoo and Aquarium Conservation Strategy is in its final draft form, after nearly two years of hard work by many people around the world. At the CBSG Annual Meeting a working group was held:

a) to discuss the 'Foundation' document before publication,
b) to consider the way forward for the preparation of the Resource Manual for individual zoos, regional associations and WAZA itself, and
c) to start developing the Action Plans that will correspond to the elements of the Strategy

CBSG has been assisting the WAZA with the creation of the *World Zoo and Aquarium Conservation Strategy* since the first planning meeting organized by Ulie Seal in 2002. The document, which will be launched in May 2005, was authored by a large and diverse group and drafts were circulated to all WAZA members and to regional zoo associations in hopes of ensuring production of a product containing broad input and varied perspectives on the key strategic directions for zoos and aquariums. The *World Zoo and Aquarium Conservation Strategy* was officially presented to the community at the CBSG and WAZA Annual Conferences in October 2004.

The group focused on the development of the associated documents: the Resource Manual and the Action Plans.

The Resource Manual is a set of non-prescriptive tools to help institutions develop and implement their own Action Plans. The Manual will be primarily web-based, with hard copy available. It is envisioned to include sets of guidelines (many of which already exist) that can be used by zoos, regional associations and WAZA to fulfill the strategy's recommendations. Sections of the Resource Manual will correspond directly with the *recommendations* made at the end of each chapter of the foundation document.

The next - and most essential – step is the development of action plans on the global, regional and individual institution level to achieve the visions outlined in the document. These will be detailed plans defining WAZA's/ regional association's/ institution's contribution to implementation of the recommendations for each chapter. Action plans are not meant to be hierarchical. The goal is for the work do be done where it can be best done and to avoid duplication of effort. The group worked on the process, based on CBSG methodology, for producing WAZA action plans. The process involved:

- **Vision and Recommendation Discussion:** Review, and ensure everyone understands the meaning of, the chapter's vision and recommendations.
- **Goal Identification:** Brainstorm goals related to implementation of each recommendation. Prioritize goals based on the ability and the appropriateness of WAZA to implement it.
- **Action Step Development and Prioritization:** Action steps are small, implementable steps that help you to achieve your goals. Each action step includes: a timeline, responsible party; resource needs and measures of success.

This process was then used in workshops held during the WAZA Annual Conference to begin the WAZA-level action planning process. It is suggested that a similar process be used for action planning at the regional and national zoo association- and individual institution-levels.

Conservation Breeding Guidelines Working Group

Group Members:
Chen-Yang Lin, Chien-Jen Yang, Franck Haelewyn, Alex Hon-Tsenyu, Kurtis Jai-Chyi Pei, Kristin Leus, Jansen Manansang, Abdul Qadeer Mehal, Mei-Hsiu Hwang, Mark Pilgrim, Karin Schwartz, Mark Stanley-Price, Kathy Traylor-Holzer, Sally Walker

Members of this working group recognized a need among zoos in some regions for conservation information that is easily accessible and understandable. Zoos that are just starting the process of creating a systematic breeding and conservation program should have access to guidelines regarding how to begin and how to decide what level of management to target. Some zoo managers believe that in order to contribute to conservation, they have to take on the highest possible task (i.e., breeding animals for reintroduction). They need to understand the wide array of activities covered by captive management and need advice on how to choose the appropriate level for managing populations of particular species. These options span the entire spectrum of rationale for keeping animals in captivity

The goal of this group is to create guidelines for *ex situ* management rather than for all types of conservation efforts. The guidelines need to apply to how facilities can determine small population and animal management for conservation, while taking into account the specific situations of these zoos, and include information on how to achieve specific levels of management. They must include general guidelines for animals in captive settings, as well as specific guidelines on how to determine management types and goals. The main need is to provide access to the existing information for guiding *ex situ* population management and conservation activities.

As the term "conservation breeding" is not only confusing but also implies the need for breeding, a new name for the guidelines is needed. The current working title selected by the group is *ex situ* Conservation Management Guidelines.

Guideline Components

- Husbandry: general and species-specific
- Enrichment
- Welfare issues
- Record-keeping
- Staff training (all levels)
- Collection planning
- Methods for networking and collaboration
- Population management, all levels
- Guidelines on appropriate species selection
- How to contribute to *in situ* conservation
- Conservation education in zoos
- Placement of confiscated animals

The group recognized that most of this information already exists, but that it is often not accessible to those who need it, or is not written in simple language that can be understood. Therefore, the main need is to provide access to this information for guiding *ex situ* population management and conservation activities. There is also overlap with the WZACS tool kit. We must make sure the two groups do not work independently but in parallel.

Strategies for Action

Given the working group discussion, there are three possible strategies for organizing and distributing this information:

- Gather all existing information and make it widely available (on a website).
- Gather all existing information, get feedback regarding how to make the documents/information useful in the region, modify the information,and distribute the revised information.
- Gather all existing information and glean some general strategies for distribution.

Recommended Actions

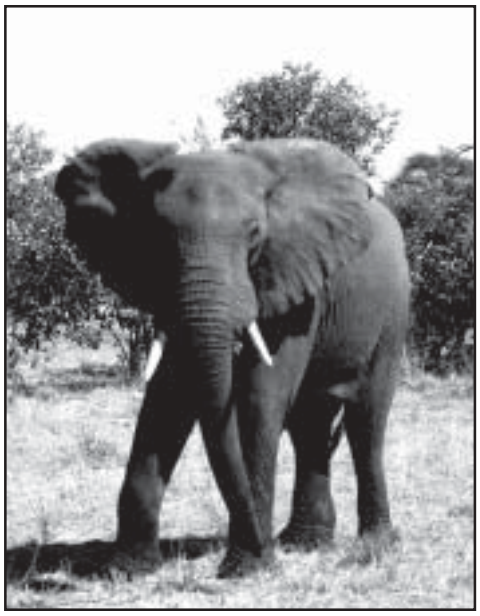
The group decided to initiate the process of gathering information and will later evaluate the need to modify or condense the content.

- Send the relevant information to Sally Walker, who will categorize it for website posting. Highest priority is collection planning guidance.
- Possibly set up a list serve to facilitate communication and progress.
- Identify a point person in each regional association to send the official documents from the region.

Elephant Conservation Working Group

Group Members

Hiroshi Hori, Parntep Ratanakorn, Mark Pilgrim, Bill Foster, Eric Miller, Sophon Dumnui, Jansen Manansang, Heribert Hofer, Glen Holland, Paul Boyle, Brad Andrews, Michael Hutchins, Anne Baker, Saman Sananayake, Teruaki Hayashi, Jörg Adler, Alex Rübel, Bengt Holst



What roles can zoos effectively serve in elephant conservation, and how can zoos ensure that they are making the greatest possible contribution? Which roles are not effective for zoos? This working group decided to keep its focus on elephants in zoos and not to include elephants in other captive/domestic situations. The recommendations based on elephants in zoos can be extended and adapted to elephants in other situations at a later date. CBSG can facilitate the inclusion of domesticated elephants in South and South East Asia in organized breeding programs. Everyone agreed that elephant breeding for reintroduction purposes was not a realistic issue.

Within the Zoo Community

Roles that zoos can play in elephant conservation are: funding, research, education, professional training, technology transfer, knowledge of what causes people to care, ethical codes, and public relations and marketing. The group identified the following needs within the zoo community: necessary skills, vision/ commitment/innovative ideas, technical guidelines and programs, and the lack of a tradition of conservation. It also found that poor animal welfare, institutional restrictions and ignorance are obstacles within the zoo community.

The Outside World

The group found that local politics, red tape and corruption, restrictive legislation, permitting issues, zoo critics and the lack of proper projects can all negatively impact elephant conservation. Obstacles from both inside and outside the zoo community include fundraising issues, the lack of prioritized needs and strategies, cultural and language barriers, the lack of partnerships, turnover of trained personnel, and the lack of a proven connection between zoo education and *in-situ* conservation. The group decided that the non-zoo groups that influence elephant conservation are SSC elephant specialist groups, CITES, NGOs, zoo critics such as PETA or Born Free, wildlife departments in elephant range countries, the media, zoo visitors, government and regulatory authorities, teachers, intergovernmental organizations, and research scientists.

How do We Interface with the Outside World?

Possible actions discussed included:

- Write a white paper addressed to the global zoo community.
- Develop an objective description of the current state in each region with reference to the four defined roles zoos can play in elephant conservation.
- Develop a position statement that identifies what needs to be done, what is being done and what is planned.
- Identify who to talk with and in what sequence.
- Write an explanation paper to address why we need their help.
- Know what we want from each group.
- Develop a global action plan that includes business plan and implementation plan.
- Assimilate information on the current state, and develop outline of what data are needed, to be done by Mike Hutchins, Bengt Holst and WCS. Goal is to give a report on current state in September 2005 and have position statement. (With assistance from S. Sananyake and Glen Holland).

CBSG Process Evaluation Working Group

Group Members
Amy Camacho, Phil Miller, Chris West, Frances Westley

While a tremendous amount of money, brainpower, and physical effort has always gone into the science and practice of biodiversity conservation, our community has historically found it equally challenging to evaluate the fruits of our labors. Is our work in conservation really making a difference to the future of our planet? How do we define the *success* of a conservation-based activity? Are we able to find a metric to unambiguously measure the outcome of our activities?

Do the workshops we design and implement – and the PHVA process in particular – truly make a lasting contribution to the conservation of our planet's biodiversity? Our working group addressed this question through discussions focused on PHVA survey data, conservation process literature, and process evaluation techniques.

The working group discussed the PHVA process in detail, with the recently-formulated project evaluation model developed by Chris West and his colleagues at the Zoological Society of London as a conceptual backdrop. We were able to articulate what we as CBSG saw as goals for the conduct of a PHVA:

- To embrace the widest stakeholder body possible while organizing workshops, with the aim of ensuring later participation;
- With this diverse stakeholder representation in hand, to engage in a thorough analysis of the state of conservation of the species or population of workshop concern;
- Through the broad conservation analysis, to then use more and better-quality scientific data in order to effect a more complete biological risk assessment for the species or population of concern;
- With the more complete risk assessment in hand, to assist workshop participants in the formulation of a more effective species Action Plan;
- In parallel with the development of a more effective species Action Plan, to enhance existing professional networks and/or to create new networks in order to promote opportunities for involvement of multiple stakeholder domains in the implementation of the Plan; and
- To provide exposure to the PHVA process through first-hand participation in an actual workshop.

After a thorough review and assessment of the original PHVA Workshop Process Surveys, the working group decided to scrap the current methodology of two separate workshop surveys, one given at the very beginning of the workshop and the second administered at the very end as a means of gaining "customer feedback" on the workshop process and the CBSG team acting as facilitators/ PVA modelers. We combined the first two surveys, paring away many questions we now see as much less important.

Our third workshop survey, administered 1-2 years after the PHVA workshop itself, was also reviewed and left largely untouched; we felt that, in its current state, it already does an excellent job of providing CBSG with insight into the longer-term role that the PHVA can play in species-focused conservation efforts.

Additional action items identified during our discussions included the following:

- Determine the extent to which we would need to customize the evaluation process for a given PHVA workshop, as a function of the specific workshop objectives outlined by the inviting institution(s) and the body of workshop participants.
- Investigate the prospect of infrequent external audit of the PHVA process by trained professionals.
- Determine the best methodology for evaluation of the PHVA workshop report document.

To receive a copy of the revised PHVA workshop process surveys, please direct your request to Phil Miller at the CBSG office.

Reintroduction Working Group

Group Members

Mie-Hsiu Hwang, Joe J. C. Guo, Chang Lin, K. Y.Lue, Jason S. C. Chin, Hang Lee, Bart Hiddinga, Tilo Nadler, Willie Labuschagne, David Lucas, Nan Schaffer, Devra Kleiman, David Reed, Fred Launay, Akira Murayama, M. Nael Abu Zeid, Frands Carlsen, Holly Hunt, Mark Craig, Greg Geise

The group began discussing the very diverse topics we identified during the issue generation process, and reached the conclusion that it would not be possible to produce a valuable set of objectives and action steps on such a set of diverse and very specific problems in the relatively short time during the working group sessions. There was consensus in the group that focusing on the reintroduction guidelines and the way they are followed (or not) would cover a lot of the ground in the initial brain-storming topics.

Clarification

The starting point of reintroduction guidelines is the reintroduction area, not the source of animals. From the RSG point of view; if there is a piece of land suitable for introducing animals, one would look for appropriate animals for reintroduction. This is opposed to a surplus situation where there is a source and the possibility for reintroduction is looked into for different purposes. From the RSG point of view, reintroduction is solely for conservation purposes. The guidelines are adopted as the official IUCN statement on

reintroduction. They are also adopted by some countries as their official policy on reintroduction. It is here that they are first legally binding. The confiscation and rehabilitation guidelines are adopted by CITES.

Problem Statement

There are many reintroduction projects where practitioners do not follow guidelines resulting in a large rate of failure or risk of failure. How do we make sure that the RSG guidelines are available to all interested groups, landowners, governments, NGOs, and captive breeding institutions? How do we make sure they are implemented? How far do you follow the guidelines? What are the difficulties? How can they be addressed?

Stakeholders do not know the guidelines due to limited distribution of guidelines, the lack of communication among organizations, government policies and language problems. This group suggests direct mailing guidelines to IUCN members and reintroduction practitioners, making translations available to RSG members, linking with other NGO websites, and promoting the guidelines at zoo associations.

- More efficient dissemination of guidelines (more targeted, translations, etc.)
- Wider distribution of the guidelines
- Increased awareness and importance of the nature/complexity of reintroductions

There are two viewpoints on noncompliance with reintroduction guidelines: Stakeholders who know, but do not want to follow the guidelines, and Stakeholders who know, but are unable to follow the guidelines due to restrictions beyond their control. The guidelines can be made more practical by identifying which elements are most important, developing a reintroduction manual, a directory of regional advisors, and taxon/environment specific guidelines. This group suggests that the impact of reintroduction programs and the guidelines be reviewed, and possibly changed, to respond to these concerns. This group understands stakeholders to include policy makers inside and outside governments, relevant scientists, reintroduction practitioners, landowners, and animal providers such as zoos, nature reserves and private individuals.

Zoo Biology Training Working Group

Group Members

Kathy Traylor-Holzer, Karin Schwartz, Sue DuBois, Sally Walker, Yolanda Matamoros, Bernard Harrison

This working group met to continue the discussion started at the 2003 CBSG meeting on how CBSG could act as a catalyst for facilitating professional development and training in zoo biology for zoos/ aquariums in regions with little access to such programs. The discussion began by reviewing the work done by the group in 2003. That preliminary work focused on necessary tasks that needed to be addressed, such as the processes for identifying regional training needs, identifying sources of trainers, and developing the strategy for coordination of training efforts. The focus of the project changed this year as the work progressed.

Scope and Mission

This year, the main issue began as follows: There are different kinds of zoo biology training needs in different regions of the world. How can CBSG act to facilitate this training process?

CBSG Program Officers have been approached by several CBSG regional conveners concerning the need for training in various zoo biology disciplines for zoos in their region. In South Asia there is an interest in basic training: animal husbandry, nutrition, records-keeping and animal welfare. Some zoos in India are ready for more advanced training in topics concerning population management. In Indonesia and Southeast Asia, there was a need for population management training. In China, although there are no ISIS members, zoos are maintaining studbooks and are following population management practices, but have requested advanced training in population management. In Mesoamerica, basic husbandry and animal welfare training is needed.

Training will also take place in connection with the release of ZIMS (Zoological Information Management Systems) by ISIS in 18-24 months. How could CBSG be involved in training for ZIMS? There would be a need for training for the entire ZIMS package, with initial prioritization for records and data management. Training would be needed for the basic skills of records-keeping.

Facilitating all of these training needs and opportunities would be a very large task. A training coordinator may be needed for CBSG to effectively facilitate training, which is a larger undertaking than CBSG intended. It was suggested that perhaps this would be an effort more appropriate for WAZA to undertake. CBSG might provide assistance by researching training needs. The working group came to a consensus that CBSG's goals for improving training should begin with a more narrow focus to ensure that the project was not too expansive to accomplish.

People have contacted CBSG for training opportunities. In order to help promote effective training, CBSG will compile databases of needs and training programs. This will help facilitate communication between those that are in need and those that can provide training. A third database will be developed to identify funding sources. Some funding sources mentioned were AZA Training Awards and grants from British Council, GEF, UNEP and CIRCC.

© Karin Schwartz, Milwaukee County Zoo

Action Plan

The new revised CBSG goals for facilitating zoo biology training are to:

Regional differences were discussed along with the need to respect cultural as well as managerial style differences. In order for someone from the outside to provide training, it needs to be done with sensitivity to the culture of that country in mind. In India, training from the outside may work better in field biology than in zoos. Zoo staff may be open to only certain avenues of outside assistance. It would be possible to have a team to come over and refresh the knowledge of zoo directors who can then assist in training in their region. A big problem is turnover in staff. Since many people that work in zoos in India come from forestry departments, It was suggested that preliminary training for forestry staff might help prepare them for a zoo career.

For AMACZOA (Mesoamerican and Caribbean Zoo/ Aquarium Association) institutions, there has been a training program in place for about 14 years that is directed at different levels in the zoo – zookeepers, curators, educators, and directors. Also there is training available in such areas as strategic planning and marketing. AMACZOA is now trying to establish a program with CBSG and is working on extending a proposal for funding. Training areas would include reproduction, nutrition, animal welfare and education. Everything is ready to establish a program.

Many established training courses exist; AZA (American Zoo and Aquarium Association) offers a series of training courses annually through the AZA Professional Schools.

1. Compile a needs database (what types of training are needed in various regions of the world).
2. Compile a listing of current and past training programs and opportunities.
3. Compile a list of funding sources available for training opportunities.
4. Make all three listings accessible.

To compile the needs and training program databases, the regional CBSG conveners will approach zoo associations in their region. Zoo associations that do not fall within the geographic scope of a CBSG regional office will be contacted directly. A survey will be developed to collect the information. A plan for collecting funding information was not specifically discussed at this session but will be developed as results from the initial survey are collected. This survey is targeted to be developed by the end of 2004 for distribution early in 2005. In general the survey will be distributed through CBSG regional conveners to approach regional zoo associations.

Zoos and aquariums make significant contributions to global conservation efforts through education, propagation of protected species, participation in conservation management programs, collaborative efforts in *ex situ* and *in situ* research and other areas of wildlife management. CBSG is in a position to be able to assist collaborative efforts by facilitating zoo biology training in regions of the world that need assistance. This coordination would entail identifying gaps in training, and linking those that need assistance with those that can provide the professional development programs.

PKBSI Planning Working Group

Group Members

Sophon Dumnui, Kanchai Sanwing, Miranda Stevenson, Mark Stanley Price, Kristin Leus, Hiroshi Hori, Jansen Manansang, Abdul Qadeer Nehal, Kathy Traylor-Holzer, Bernard Harrison, Sally Walker

As a result of the economic crisis in the late 1990s many Indonesian zoos have gone through a financial crisis that did not allow them to provide the care for their animals and to develop their zoos according to the standards that they, and the outside world, aspire to. The Indonesian government has requested input from the Southeast Asian Zoo Association (SEAZA) and the Indonesian Zoological Parks Association (PKBSI) on how zoos could and should contribute to conservation. SEAZA and in turn PKBSI has asked CBSG's assistance. CBSG suggested that since CBSG South Asia has worked on similar issues in their region, this regional team would be best suited to take this issue forward. The Indonesian zoos have some immediate needs that need to be addressed, leading to the formation of this working group. This group attempted to clarify the specific needs of PKBSI and identify mechanisms and actions to fill these needs.

Current Situation

The needs addressed by this working group are primarily for PKBSI, but generally also apply to SEAZA as a whole. SEAZA and PKBSI decided to first concentrate on Indonesian zoos and expand from there. Following is a summary of the current state of affairs.

- During the SEAZA board meeting in Singapore in February 2004, nine species were selected as flagship species to link *ex-situ* and *in-situ* conservation activities in the region.
- PKBSI identified 15 priority species for conservation in Indonesian zoos. There is significant overlap with those species identified by SEAZA. For each of these species the zoo and specific staff member responsible for the species studbook were identified. A list of holding institutions and the number of individuals of the species in each zoo has been compiled. Criteria used to select these priority species include the IUCN Red Data List category, whether the species is already in zoos, its cultural importance, native species, and the importance for education.
- The Indonesian government has a list of 12 endangered species with high priority for conservation.
- There are currently 29 zoos in PKBSI, of which 10 have undergone an evaluation and have qualified to be a member of SEAZA.
- All animals in Indonesian zoos belong to the government. Three government departments are involved in the management of zoo collections: forestry (PHKA), home affairs, and science (LIPI). Every animal exchange between zoos needs a government license. There is an interdepartmental committee that evaluates the species' value in international exchanges. This committee will also need to approve any guidelines produced or procedures recommended by this working group. It is hoped that in time PKBSI can take on more of this responsibility.

Babirusa at Taman Safari

- None of the PKBSI member zoos is currently a member of ISIS, so they do not have access to ISIS software. There has been substantial training in SPARKS within SEAZA in past years. However, it is not clear how many of the people that received training are still in the zoos, or are currently using or have access to SPARKS.
- For a few of the 15 priority species, records for individual animals in collections have been gathered, sometimes in the form of a studbook.

However, the level of completeness of the records is unclear and the records may not be kept on computer or in a form suitable for data analysis.

Indonesian Management Groups

It was suggested that PKBSI needs a management group system equivalent to the Taxon Advisory Groups in AZA or EAZA. In these regional zoo organizations, a Taxon Advisory Group (TAG) is a group of people who are experts in a particular group of species. One of the tasks of the TAG is to develop a regional collection plan for the species in their taxon. The regional collection plan gives zoos in that region guidance on which species are recommended to be kept in those zoos and at what level they should be managed. The TAG also assists and evaluates the studbook keepers and species coordinators.

Indonesian zoos have a need for a similar management group that operates at a higher level than individual zoos to help make conservation decisions and management plans for priority species. For PKBSI these species cross a diversity of taxonomic groups. If PKBSI forms an advisory group for all species, then the species coordinators and studbook keepers (and possibly others) might comprise the group members. This group would need information on the status of the captive population in order to make conservation and management recommendations for each species.

Studbook Data

Population analysis requires that population data for a species be recorded in an appropriate format. For most zoo populations, studbook data are recorded in the SPARKS software program and analyzed using PM2000 software. Several zoo staff within PKBSI are trained in SPARKS and use it to maintain studbooks for Javan gibbons, babirusa and Sumatran tigers.

It is important that zoo staff understand the need for good and complete manual records and to understand why data need to be entered into a computer for analysis. People will usually only do studbooks if they enjoy it and are supported in their efforts. It may be beneficial to provide a training refresher course to the entire group of studbook keepers to improve their skills and morale.

Recommendations

The working group made the following specific recommendations to PKBSI:

1. Move PKBSI zoos toward entering data into SPARKS for the 15 priority species in order to be able to analyze the data and eventually make recommendations.
2. Organize SPARKS training through SEAZA for all designated studbook keepers, including a refresher on the biological aspects of studbook management, the need for complete records and the importance of recording assumptions vs. facts. Each should bring their own data.
3. Start with the studbooks of the species for which there are already a fair number of specimens in the zoos with fairly complete records. Possibly train all of the studbook keepers using these studbooks as training data or use hypothetical studbooks.
4. Meet with staff from ISIS during WAZA's annual meeting.

Due to limited time, the working group was unable to discuss other aspects of conservation activities in Indonesian zoos. It was suggested that Jansen Manansang obtain a copy of the World Zoo and Aquarium Conservation Strategy as a guide in this process.

CBSG Process Evaluation: Be there or be square!

Introduction

In recent years many zoos have repositioned their values and goals to take account of the ongoing biodiversity crisis. For this emergence of zoos as conservation NGOs, the zoo community should feel pleased. However, while *in situ* conservation spending by zoos has increased dramatically, the impact of this spending has rarely been evaluated in detail, and in light of this the conservation performance of zoos has become of increasing focus. The need for an explicit system to measure zoos' performance in conservation is in response to both new legislation affecting zoos and as a way of providing benchmarks and targets to encourage best practice. The Zoo Measures group, a collection of both zoo professionals and academics with conservation interests, has begun a process to develop a tool-kit to measure the effectiveness of conservation spending from zoos.

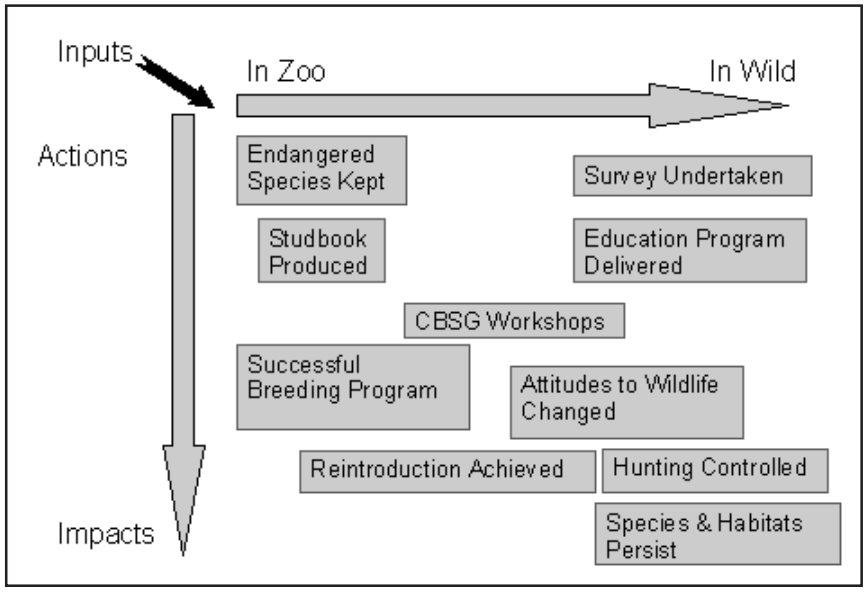
Background

To effectively measure conservation we first have to define what this term actually means. Many definitions can be utilized; however, the Zoo Measures group used the following:
…actions that directly enhance the persistence of wild habitats and wild species…
This defines an impact, not an input. By using the above definition, conservation becomes much more problematic to assess and the time frames of reference considerably longer, but it also becomes significantly more relevant and appropriate to the current and future conservation mission of zoos.

Developing a Tool-Kit

Conservation projects vary considerably within and among zoos. To begin to assess projects, a conceptual framework was used to approach and designate the conservation activities of zoos. A simplified version is below.

The parameters in the top left corner are easily measured through zoo records; however, zoos are aiming to become effective in the bottom right corner. Therefore, it is essential that zoos are able to effectively measure whether they are achieving their aims in an increasingly competitive business climate, and whether their conservation spend is producing value for their money.



Keeping in mind this framework, we defined a formula to measure conservation as;
IMPACT = Importance x Volume x Effect

Wherein,

- Importance = how influential or significant was/is the target of the project for conservation?
- Volume = How many/much of the target (people, species, habitat, policy) were/was addressed by the project?
- Effect = How did/does this project affect relevant conservation outcomes?

A scoring system was devised, which was weighted to take into account the differing factors described above.

The projects that were evaluated fell into five different broad categories, though it was recognized that some overlapped and contained an element of more than one of the identified project types. The categories identified were; education, training, research, species and habitat.

Questions Addressed in the Trial

Having established a test tool with which to evaluate conservation projects, questions were then formulated to bear in mind during the initial testing phase and included: *Can zoo-based conservation projects be scored? How consistent are different people's scores of the same project? How similar are scores made by actual project leaders and independent assessors? What do these scores tell us about successful and less successful conservation projects?*

Twenty-seven projects from five organizations were evaluated. Data were gathered regarding cost, duration and contribution type. Seven projects contributed to more than one project type giving a total of 41 project scores. Four members of the Zoo Measures group scored all the projects independently, using information supplied by the project leader in a standard format. In addition, discussion with each project leader provided supplemental information. For most projects, someone directly involved in the project also provided scores, as it was recognized that they knew a great deal more about the project than the independent scorers but less about the scoring system, providing an element of validation.

Results

When the correlations (Total = I x V x E) between all independent scores and project experts were analyzed, significant correlations were found between all assessors, indicating that the tool-kit, at this initial stage of testing, was an appropriate and accurate way of measuring conservation impact of zoo-based projects.

Conclusions

From this initial trial a number of conclusions were generated:

- It is possible to score projects, even when assessing impacts;
- Independent assessors generally arrive at similar conclusions, but can differ from assessments made by project leaders;
- Scoring systems have the potential to guide project choice.

This pilot project needs to be developed to incorporate a wider range of projects in relation to cost, type and success in order to standardize and calibrate scores. This presents a number of opportunities to develop the tool-kit further. In particular, assessing the complex relationship between conservation impact and project expenditure is essential for zoos, providing parameters for wise use of limited monetary resources. It is foreseen that extending the management principle of consistent, objective evaluation for the selection and review of projects is vital for the future development of zoos. In addition, reporting objective successes to a wider audience not only enhances the perception of zoos, but may encourage further links and funding opportunities with other conservation organizations. To further test this model, the EAZA conservation database will be used to investigate how this tool works over a wider range of projects.

Acknowledgements

The Zoo Measures Group: Georgina Mace, Institute of Zoology, ZSL; Andrew Balmford, Dept. Zoology, University of Cambridge; Nigel Leader-Williams, DICE, University of Kent; Andrea Manica, Dept. Zoology, University of Cambridge; Olivia Walter, UK Federation of Zoos, Alexandra Zimmermann, Chester Zoo

Submitted by Chris West and Lesley Dickie, Zoological Society of London

Coral Reef Mesocosms at the National Museum of Marine Biology, Taiwan

Four coral reef mesocosms have been established for exhibition, education and research in the Coral Kingdom Pavilion at the National Museum of Marine Biology and Aquarium, Taiwan since July 2001. All mesocosms use live sand and live rocks as biological reactors to control water quality and maintain biodiversity. The theme of the four tanks is the stony coral community on the reef flat, the soft coral community on the reef slope, the gorgonian coral community on the reef wall, and a gigantic isolated coral reef. These mesocosms simulate the tropical coral reef communities in the Kenting National Park, southern Taiwan. The community dynamics of corals in the first three tanks were monitored using annual censuses from 2002 to 2004. Overall, of the 992 colonies recorded, 34.2% showed positive growth, 22.7% showed negative growth, 13.2% showed emigration, 3.8% showed immigration and 26.1% showed recruitments.

Recruitments included larval recruits of the brooding coral species, *Pocillopora damicornis*, *Seriatopora hystrix* and *Stylophora pistillata* as well as asexual fragments of the octocoral corals, *Sarcophyton*, *Nephthea erecta*, and *Junceella fragilis*. The knowledge and technology to establish and maintain these coral reef mesocosms are important in conservation and restoration of coral reefs. Moreover, as controllable facilities, these mesocosms might be powerful tools for experimental research on the effects of global environmental change at community and organism levels.

Submitted by Fan Tung-Yung and Lee-Shing Fang

CBSG Japan

CBSG Japan's main activity in 2004 was the Elephant Health Care Training Course at the 10th Annual Meeting of the Japanese Society of Zoo and Wildlife Medicine. This program was designed for zoo staff and veterinary medicine students, and enabled CBSG Japan to reach many of the meeting participants. In 2005, we will conduct the same training course with the cooperation of Chiang Mai University in November. We will have the support of the Association of Japanese Zoos and Aquariums and the Zoological Park Organization of Thailand, which tells us that our purpose and message are understood by those organizations.

The 2005 Elephant Health Care Training Course will be held at the Khao Kheow Open Zoo, with support from the faculty of Veterinary Medicine, Chiang Mai University, the Thai Elephant Conservation Center, the Forest Industry Organization, and the Mae Sa Elephant Camp.

Japan International Cooperation Agency (JICA) hosted the Wildlife Conservation and Management meeting, which focused on African countries where three of our members gave lectures on wildlife conservation reproduction, zoo management at Yokohama Zoological Gardens, and the importance of cooperation between zoos and field researchers in conservation activities.

CBSG Japan provided financial support for the Proboscis Monkey PHVA Workshop at Taman Safari Indonesia, and Hiroshi Hori was a meeting participant.

In the coming year, CBSG Japan will hold several training courses for zoo staff and students of veterinary medicine. Most of CBSG Japan's current members are zoo staff, but we intend to diversify our membership, adding field researchers and university professors who understand our purpose and can assist us in furthering our conservation efforts.

Submitted by Hiroshi Hori, CBSG, Japan

CBSG Mesoamerica

2004 Summary

•We attended CBSG's GIS training course in Minneapolis. This course helped us understand how to use GIS to support our future work. Jorge Rodriguez is currently taking a longer course in GIS with an emphasis on applying GIS in conservation at the University of Costa Rica.

- At the Costa Rican Reptiles CAMP in 2004, 223 species were analyzed, and the herpetologists concluded that they have to start studying the population dynamics of several species and not limit their work to surveys. This will be significant change in future herpetological studies in Costa Rica. Information is being gathered for PHVAs on several selected species.
- At the AMACZOOA Conservation Strategy meeting, representatives from zoos in six countries decided to participate in a regional conservation initiative, establishing goals, objectives and activities for the next five years.
- The Manatee PHVA in September 2004 analyzed threats to Costa Rica's endangered manatee population. A VORTEX model was developed and the proposed objectives and actions were adapted into a strategy, which was incorporated into the Tortugero National Park working plan for 2005.
- Participating in the CITES 13 COP allowed us to follow discussions of resolutions regarding *in-situ* and *ex situ* issues in conservation.
- Data obtained at the Costa Rican Amphibian CAMP were utilized in the Global Amphibian Evaluation, which was published in the September issue of the journal *Science*.
- During 2003 and 2004 one of the main conservation activities in the Central Pacific of Costa Rica was reforestation to build the corridors for red-backed squirrel monkeys to maintain the connection between different subpopulations of the species in the area, following the recommendations of the last PHVA on the species.
- The information obtained in the four Botanical CAMPS held in Cuba, organized by the National Botanical Garden and facilitates by CBSG, was incorporated in the Red Lists at their request.

Workshops Planned for 2005

- 17-22 January: Conservation Training Program for Latin America Military. San Jose, Costa Rica.
- 7-11 February: Galápagos Penguin PHVA, Santa Cruz, Galápagos.
- Conference on Conservation: Quito, Ecuador.
- Workshop with the Ecuadorian zoos.

CBSG Mesoamerica has been asked to support and facilitate workshops focused on the following themes: reproduction, nutrition, animal welfare, and reintroduction. CBSG Mesoamerica also intends to conduct workshops on crocodiles, Cuban psittacids, jaguars, Nicaraguan vertebrates, Costa Rican cetaceans, Mexican isthmus rabbits and Cuban boa constrictors.

We feel that the human dimension was the most important part of our work this year.

- We supported different groups of people organizing their knowledge to advance conservation programs.
- We enjoyed seeing the participants working in plenary or groups, presenting, socializing and learning.
- The workshop participants were able to share their knowledge, analyze problems and participate in building a structured plan in which they committed to participate.
- The CBSG Mesoamerica staff grew personally and professionally by helping in this work.

Without the support of Saint Louis Zoo, Sea World, and all of you, none of this could happen. Thank you on behalf of all the workshop participants and CBSG Mesoamerica.

Submitted by Yolanda Matamoros, CBSG Mesoamerica

CBSG Europe

In accordance with the objectives of CBSG Europe we have used the past year to focus on raising European awareness about CBSG and its conservation tools, raising funds for our activities and getting the infrastructure ready. The convener gave presentations at several European meetings, and articles about CBSG Europe have been published in the *EAZA News* (Newsletter of the European Association of Zoos and Aquaria).

Conservation Network Database

The Conservation Network Database listing potential conservation partners in Europe was updated and now includes 179 NGOs and GOs from 35 different countries in Europe. All institutions have approved their inclusion in the database and can thus be considered part of the European network. The database will be made available not only to CBSG, but also to EAZA members in order to further integrate the CBSG Europe network with the EAZA conservation network.

Evaluation of Conservation Projects

CBSG Europe continues its efforts in developing a practical, scientifically based evaluation tool for conservation projects together with an evaluation working group at Zoological Society of London. An existing model of this tool will be tested on conservation projects included in the EAZA Conservation Database and will help developing the database further. After the test period the evaluation tool will be made available to a greater audience through the networks of CBSG, EAZA and WAZA.

HR Strategy

CBSG Europe has developed a Human Resources strategy for its staff members with the goal of having a well-trained team of people that is able to plan and conduct PHVA, CAMP and CCP workshops on its own anywhere in the world. The team must be able to plan and conduct at least two workshops a year and to add to other teams person-by-person when needed.

The present CBSG Europe staff consists of:

- Bengt Holst, Copenhagen Zoo, Convenor
- Frands Carlsen, Copenhagen Zoo
- Kristin Leus, Antwerp Zoo

In order to fulfill the HR needs and achieve the listed goals, each staff member must follow experienced facilitators/modelers in their role at least twice for each type of workshop before they conduct their own workshops. Moreover each staff member must attend annual CBSG meetings as well as any strategic CBSG meetings planned by the main CBSG office or by CBSG Europe. Each of the staff members of CBSG Europe must be prepared to facilitate/model at least two workshops a year – first as a trainee, later on as the main facilitator/modeler.

Planned Workshops

CBSG Europe has worked to some degree as a "mentor" for CBSG Brasil and participated in the launch of CBSG Brasil on 1 June 2004. The close relationship between CBSG Brasil and CBSG Europe has resulted in close cooperation in the planning of the third PHVA for the four species of lion tamarins, which will take place in Brazil in the summer of 2005. CBSG Europe will participate with a facilitator and a modeler.

A European mink PHVA is also being planned.. The highly endangered mink is endemic to Europe and has a very fragmented population. The purpose of the workshop will be to develop a conservation action plan for the European mink population as a whole and will include participants from six countries.

CBSG Europe has started planning for a PHVA for the green toad, along with a Swedish NGO presently working with the species. The green toad is highly threatened in Sweden, and only fragmented populations remain. Captive breeding and reintroductions have been initiated, and a coordinated plan for future activities is needed. The planning has just started, and the PHVA is scheduled for spring 2006.

Last, but not least, members of CBSG Europe plan to participate in the Formosan Pangolin PHVA in Taipei, October 2004, the Proboscis Monkey PHVA in Indonesia, December 2004 and in the Galapagos Penguin PHVA at Galapagos National Park, February 2005.

CBSG Europe Strategic Meeting

Early in September 2004 the staff members of CBSG Europe participated in a strategic workshop at the Minnesota office of CBSG. The purpose of the meeting was to brainstorm about future development and activities of CBSG Europe, including fundraising, as well as to discuss working procedures for the interaction between CBSG Europe and the main office in Minnesota and the other regions. In addition to the more technical issues, the meeting helped us develop a common spirit, and afterward, we felt highly motivated and full of energy when returning to Europe after four productive days in the very heart of CBSG.

Submitted by Bengt Holst, Convenor, CBSG Europe

2005 Annual Meetings

CBSG

29 September - 1 October
Syracuse, New York

WAZA

WORLD ASSOCIATION OF ZOOS AND AQUARIUMS

2-6 October
New York, New York

Look for more information on our website:
www.cbsg.org

CBSG Brasil

CBSG Brasil was launched during the annual conference of the Brazilian Association of Zoos, 1 June 2004, in Rio de Janeiro City, Brazil. CBSG Brasil is working in partnership with IPÊ, a non-governmental organization that works for the conservation of biodiversity and develops conservation projects in several Brazilian ecosystems. IPÊ's conservation work is based on multidisciplinary research that defines planning and action. Field research on endangered species and ecosystems have been important focal points to trigger other conservation actions, and scientific findings are turned into tools for public involvement and participation. IPÊ's researchers are trained in an atmosphere where field studies influence policies favoring conservation.

CBSG Brasil consists of a small volunteer team, including five members of IPÊ's staff. The team has a multidisciplinary background, with one forest engineer, two biologists, and two veterinarians. All members of the CBSG Brasil staff will be trained in the various aspects of facilitating CBSG workshops (modeling, facilitation skills, disease risk assessment, etc). The Brazilian network was created with the goals of providing access to a global network of conservation experts, and bringing a set of unique conservation planning tools closer to Brazilian conservation organizations. The CBSG Brasil office is based in Teodoro Sampaio, a small town 700km from São Paulo City, where Patrícia Medici lives and works. The staff of CBSG Brasil will volunteer part-time, and all members of the staff are paid by IPÊ.

The initial step for CBSG Brasil will be to promote the network in Brazil and to develop a database of potential contacts, partners and supporters such as zoological institutions, conservation organizations, governmental and non-governmental agencies, research institutes and universities. CBSG Brasil needs this database in order to apply in-country expertise to identify species and ecosystems in need of evaluation and conservation planning. Articles featuring CBSG Brasil will be published in Neotropical Primates and Tapir Conservation during 2004.

The main tasks for CBSG Brasil are to identify and support sound conservation activities, to raise awareness about CBSG, and to implement CBSG tools in conservation planning in Brazil with Brazilian staff, while raising funds for CBSG conservation activities in Brazil.

CBSG Brasil is already actively working on the organization of two PHVAs, scheduled for the latter part of 2005. The third in a series of lion tamarin PHVAs will be held in partnership with IBAMA (The Brazilian Federal Agency for the Conservation of Nature and Natural Resources), in June 2005. The second PHVA will be conducted on maned wolves, in partnership with the Pro-Carnivoros Association, a Brazilian NGO, in October 2005.

Submitted by Patrícia Medici, CBSG Brasil

CBSG Indonesia

CBSG Indonesia has had a busy year, and much of the activity has been "behind-the-scenes" as is typical with many of the projects associated with captive breeding. There are many "unsung heroes" who work hard to ensure that our endangered species survive, through careful husbandry and close monitoring of existing gene pools. While this is also true of many other countries, I believe Indonesia faces some particular challenges: not only are many of our endemic species listed as endangered, but we face a continual struggle to unite the people on the frontline of the fight to save them, and need ongoing efforts to convince others who can make valuable contributions to discussions on planning strategies for the animals' future welfare. Keeping the people involved in these programs motivated is quite difficult under these circumstances. However, in spite of our difficulties, we have recorded some impressive successes this year. Among events on the calendar were:

- A PHVA workshop was conducted on Bornean and Sumatran orangutans in January 2004.
- In June CBSG Indonesia was involved in the organization of a workshop on the Javan banteng population and conservation – attendance at this exceeded all expectations, and many recommendations have already been partially implemented.
- Unfortunately, a similar workshop planned for the Bali mynah in August 2004 had to be postponed, but much important conservation work has been done, and vital liaison with other interested parties has been established.
- At the SEAZA annual conference in Hong Kong in September 2004, there was much valuable discussion about captive breeding, and the CBSG Regional Network Convener for Indonesia – Jansen Manansang – was appointed as the incoming SEAZA president.
- Planning for the forthcoming CBSG PHVA workshop training is in the advanced stages, and will be held in December 2004 at Taman Safari Indonesia followed by a PHVA workshop on the proboscis monkey.
- Progress of the CITES meeting in Bangkok is being closely monitored.

- Planning for the joint SEAZA-ARAZPA conference in Melbourne in May 2005 is also well underway. CBSG and WAZA council meetings will be held at the same time, so the trip becomes even more significant for the region.

Among other plans for CBSG Indonesia in 2005 are:

- Support for the adoption of the new *World Zoo and Aquarium Conservation Strategy*.
- Support for the development of a new SEAZA Future document as the current document expires next year.
- Continuation of our efforts to build meaningful communication with others about the future of Indonesia's indigenous animals.
- Hopefully, our Bali mynah workshop will be rescheduled and held as early as possible in the New Year.
- Following the CBSG process training workshop in December 2004, CBSG Indonesia will take the responsibility for leading other PHVA workshops for other regional flagship species and hopes to organize at least two in 2005.

Submitted by Jansen Manansang, CBSG Indonesia

CBSG South Asia

After an extravaganza of training in field techniques and zoo management in October, ZOO/CBSG South Asia returned for another "workshop smorgasbord" in December. CBSG, South Asia collaborated with Zoo Outreach Organization (ZOO), the South Asian Zoo Association for Regional Cooperation (SAZARC) the IUCN/SSC Reintroduction Specialist Group, South and East Asia, and the IUCN/SSC South Asian Invertebrate Specialist Group in organizing a series of events in Lahore and Islamabad. The events were centered around the Fifth Annual Conference of SAZARC, which traditionally attempts to stack up a variety of useful events to take advantage of having a few dozen zoo people from all of the different countries of South Asia together. This year was no exception. We organized three events, one right after another, a CBSG/RSG meeting, the fifth Annual SAZARC Conference, and a Freshwater Biodiversity CAMP.

CBSG RSG Meeting

In November the theme for the annual meeting of IUCN/SSC/ CBSG was reintroduction. In December, CBSG, South Asia and RSG, South and East Asia conducted a CBSG/RSG meeting in Lahore, Pakistan, following a new tradition established in 2003 when the first South Asian Regional CBSG/RSG meeting was conducted. Since 2000, when SAZARC was founded, there has been a tradition of regional CBSG meetings. Ulie Seal ran the first meeting; now, CBSG/RSG for the region is finding this meeting very useful and intends to continue annually. The external sponsor for the CBSG/RSG meeting was Chester Zoo, which sponsors the IUCN/SSC/RSG, South and East Asia, and also assists CBSG, South Asia.

Participants from Pakistan, India, and Bangladesh gave reports of different reintroduction activities in their areas. Several working groups were formed to identify problems in reintroduction in South Asia. A blackbuck project in Pakistan was reviewed by a working group to determine whether it was consistent with the Guidelines of the Reintroduction Specialist Group. The meeting provided training in the best practice of reintroduction in all its different forms.

SAZARC – Fifth Annual Conference

Following the CBSG/RSG meeting, there was a five-day conference of SAZARC, which is intended to give zoo personnel a forum to discuss their problems and find solutions. Representatives from zoos from eight countries gathered for the meeting: Afghanistan,

Bangladesh, India, Nepal, Pakistan, Sri Lanka, UK and USA. The conference included training in zoo population management led by Miranda Stevenson, (Director, BIAZA) and Bob Lacy (Chair, CBSG) every morning. A very informative and successful half-day session on nutrition with local members as trainers completed the training. In the afternoons, participants formed working groups to discuss how they could use the new *World Zoo and Aquarium Conservation Strategy* for SAZARC, for their national association,

and for their institutions. There were also individual participant presentations and a business meeting in which participants listened to committee reports, formed several new committees and formulated resolutions to carry out in the coming year. Some of the resolutions included: the election of Dr. R. K. Sahu, Superintendent, Kamla Nehru Zoo, Ahmedabad, India as the new President for SAZARC 2005; election of Mr. Abdul Qadeer Mehal as Chairman of SAZARC for the coming year; the decision to accept the bid of the Zoo Outreach Organisation and Coimbatore Zoological Park Society to host the next conference of SAZARC to be held in 2005 in Coimbatore, Tamil Nadu, India, selecting record keeping and taxonomy as training themes for next SAZARC meeting. It was decided to include aquaria in SAZARC and to cooperate with three international campaigns by involving the zoos and zoo personnel of South Asia to the extent possible.

Freshwater Biodiversity CAMP

Following a very successful CAMP workshop for Mammals of Pakistan held in August 2003, ZOO assisted IUCN Pakistan Biodiversity Program to select, organize and facilitate a Freshwater Biodiversity CAMP for freshwater fishes, dragonflies, mollusks, crabs and crayfish. This was the first workshop in a series under the CBSG, South Asia Regional Freshwater Biodiversity Initiative, which aims to join with the IUNC SSC Global Freshwater Biodiversity Assessment GFBA in about 2006. The next CAMP in the series is likely to be held in Sri Lanka or Bangladesh and in other South Asian countries subsequently. A regional CAMP for Freshwater Biodiversity will be conducted in Coimbatore, India in February 2006. At that time the IUCN SSC Freshwater Biodiversity Program will join with us to conduct the global assessment for the region.

Preliminary output of the CAMP revealed at least 17 Critically Endangered, 15 Endangered, 7 Vulnerable, and 4 Least Concern endemic freshwater fishes. Other assessment totals will be available soon. Generally, participants agreed that Pakistan had lost at least 50% of its freshwater systems in the last 20 years. Pakistan is not alone in losing large percentages of its freshwater systems. The conservation community of the world is concerned about this issue all over the globe with large projects focused on freshwater systems and freshwater biodiversity in big organizations like IUCN, WWF, and others. *ZOOS' PRINT* readers will hear more about freshwater biodiversity and freshwater systems in issues to come, both of the magazine and of the Journal. Many thanks to our sponsors who assisted IUCN and ZOO to make this workshop happen.

This stamp was created to honor the SAZARC conference

Hoolock Gibbon, PHVA

CBSG South Asia and the PSG South Asian Primate Network (also a network of ZOO) have initiated a PHVA workshop for the Critically Endangered (in Bangladesh) and Endangered (in India) hoolock gibbon in collaboration with the Wildlife Trust of Bangladesh and the Bangladesh Forest Department. This workshop links to the South Asian Primate CAMP, which was held in 2002. Immediately following the CAMP, a series of teacher training workshops will be conducted at the Asiatic Society, Bangladesh on a cruise ship through the Sunderbans and at the Dhaka Zoo. The training uses tigers as a theme, but some primate researchers will attend the workshop to learn teaching techniques, and a special manual and module has been developed for them. Following this training, a field techniques training for bat and rodent field workers and students will be held at the Asiatic Society.

Submitted by Sally Walker, CBSG South Asia

Lepilemur seali- A New Species!

Named in honor of Ulie Seal,
this newly discovered lemur inhabits the rain forests of eastern Madagascar.

Lepilemur seali

The Madagascar Biodiversity and Biogeography Project, sponsored by Omaha's Henry Doorly Zoo, has announced the discovery of two new species of lemur, one of which the zoo and Dr. Louis have chosen to name in honor of CBSG's late chairman, Ulysses S. Seal.

The descriptions of two new species of sportive lemurs will be published in the December 2005 issue (vol. 26, no. 6) of the International Journal of Primatology by Dr. Edward Louis, head of the Genetics Department of the Grewcock Center for Conservation and Research Center at Omaha's Henry Doorly Zoo.

The two new species are located in very different forest types – in the rain forest of the east coast and in the dry forest of the west coast. The east coast species, Seal's Sportive Lemur or *Lepilemur seali*, is named in honor of Ulie. The west coast species, named the Mitsinjo Sportive Lemur or *Lepilemur mitsinjonensis*, is named after the region.

Dr. Louis, Project Coordinator, has been leading an extensive collaboration in conservation genetics with Madagascan wildlife agencies, conservation organizations and the University of Antananarivo since 1998. Dr. Louis and his team have taken DNA samples from over 1,800 lemurs that were captured and then released back into the wild.

Madagascar is considered one of the most diverse and ecologically important regions in the world. Lemurs are only found in Madagascar and are considered extremely endangered due to the pressures of human encroachment and loss of habitat.

Dr. Lee G. Simmons, Director of Omaha's Henry Doorly Zoo said "The discovery of any new species is noteworthy; the discovery of two new primate species is extraordinarily significant to science and conservation. We are very proud of Dr. Louis and his team's accomplishments."

We at CBSG echo these sentiments and congratulate Dr. Louis, his colleagues and Omaha's Henry Doorly Zoo.

Dr Edward Louis

Annual Meeting Memories

2004 CBSG Annual Meeting Participants

Adelaide Zoo
Mark Craig
Adventure World
Teruaki Hayashi
Africam Safari, CBSG Mexico
Amy Camacho
Al-ain Zoo & Aquarium
M. Nael Abu Zeid
Sultan Al Damaki
Allwetterzoo Muenster
H. Joerg Adler
Auckland Zoo
Glen Holland
AZA
Michael Hutchins
Back to Africa
Hamish Currie
Bernard Harrison & Friends Ltd.
Bernard Harrison
Binder Park Zoo
Greg Geise
Birmingham Zoo
Bill Foster
Bristol Zoo Gardens
Jonathan Gipps
Busch Entertainment Corporation International
Brad Andrews
Cali Zoological Foundation
Mariaclara Dominguez
CBSG
Onnie Byers
Robert Lacy
Philip Miller
Kathy Traylor-Holzer
Central Zoo Authority/Ministry of Environment and Forests
Brij Raj Sharma
Chester Zoo
Mark Pilgrim
Columbus Zoo and Botanical Gardens/The WILDS
Evan Blumer
Chiangmai Zoo
Karnchai Saenwong
Copenhagen Zoo, CBSG Europe
Frands Carlsen
Bengt Holst
Durrell Wildlife Conservation Trust
Mark Stanley-Price
EAZA Executive Office
Bart Hiddinga
Endangered Primate Rescue Center
Tilo Nadler
BIAZA
Miranda Stevenson
Institute for Zoo and Wildlife Research
Heribert Hofer
International Animal Exchange
Holly Hunt
ISIS
Nathan Flesness
Mahidol University
Thattaya Bidayabha
McGill University
Frances Westley
Milwaukee County Zoo
Karin Schwartz
Nasu World Monkey Park, CBSG Japan
Hiroshi Hori
National Fonghuanggu Bird Park
Cho-hsiang Chiou
Tan-fu Liauh
National Pingtung University
Kurtis Jai-chyi Pei
Mie-Hsiu Hwang
National Taiwan University
Alex Hon-Tsen Yu
Hsiao-Wei YuanZ
Hsiu-Hui Su
Hua-Ching Lin
Kuang-Yuan Lue
Ling-Ling Lee
Pei-Fen Lee
Sheng-Hai Wu
Shou-Shien Lee
Tzung-Su Ding
Yi-Ching Lin
Ying Wang
Yue-The-Kirk Lin
Yuying Hsu
National Zoological Gardens of South Africa
Ruben Nqwenya
Willie Labuschagne
New York Aquarium
Paul Boyle
Nordens Ark
Lena Linden
Ocean Park Corporation
Suzanne Gendron
Odense Zoo
Bjarne Klausen
Pan African Sanctuaries Alliance
David Lucas
Parc Zoologique De Lille
Franck Haelewyn
Prague Zoo
Ivan Rehak
Prince of Songkla University/University of Mississippi
David Reed

Provincial Environment Authority of Sri Lanka
Saman Nigamuni Senanayake
Reintroduction Specialist Group
Frederic Launay
Rosamond Gifford Zoo
Anne Baker
Royal Zoological Society of Antwerp, CBSG Europe
Kristin Leus
Royal Zoological Society of South Australia
Edward McAlister
Saint Louis Zoo
Jeffrey Bonner
Eric Miller
Seoul Grand Park Zoo
Kyung Yeon Eo
Sea World Orlando
Brad Andrews
Seoul National University
Hang Lee
Simon Bolivar Zoo, CBSG Mesoamerica
Yolanda Matamoros
Smithsonian National Zoological Park
Devra Kleiman
SOS Rhino
Nan Schaffer
South Asian Zoo Association for Regional Cooperation
Abdul Quaheer Mehal
Taipei Zoo
Chien-jen Yang
Chih-Chin Shih
Jason S.C. Chin
Jun-cheng Guo
Pao-chung Chen
Taiwan Forestry Research Institute
Jung-Tai Chao
Taiwan Pheasant Association
Yun-hung Yeh
Taman Safari Indonesia, CBSG Indonesia
Jansen Manansang
Tsushima Wildlife Conservation Center
Akira Murayama
Ueno Zoological Gardens
Kazuyoshi Itoh
Teruyuki Komiya
University of Maryland/Georgia Institute of Technology
Michael Hutchins
University of the Pacific
Richard Tenaza
WAZA
Peter Dollinger
Walt Disney World
Sue Dubois
Wildlife and Parks of Pakistan
Abdul Qadeer Mehal
Zoo Leipzig
Jorg Junhold
Zoo Outreach Organization, CBSG South Asia
Sally Walker
Sanjay Molur
Zoo Zurich
Alex Rubel
Zoological Garden Dvur Kralove
Kamil Cihak
Zoological Park Organization of Thailand
Parntep Ratanakorn
Sophon Dumnui
Sumate Kamolorranath
Zoological Society of London
Christopher West
Fiona Fisken
Lesley Dickie
Zoologicka Zahrada Mesta Brno
Martin Hovorka
Zoologico National-Chile
Maurico Fabry

CBSG News

Newsletter of the Conservation Breeding Specialist Group
Species Survival Commission
IUCN – World Conservation Union

Frances Westley, 2004 Ulysses S Seal Award receipient, closed her acceptance speech with a favorite poem of Ulie's:

Late Ripeness

Czeslaw Milosz

Not soon, as late as the approach of my ninetieth year,
I felt a door opening in me and I entered
the clarity of early morning.

One after another my former lives were departing,
like ships, together with their sorrow.

And the countries, cities, gardens, the bays of seas
assigned to my brush came closer,
ready now to be described better than they were before.

I was not separated from people,
grief and pity joined us.
We forget - I kept saying - that we are all children of the King.

For where we come from there is no division
into Yes and No, into is, was, and will be.

We were miserable, we used no more than a hundredth part
of the gift we received for our long journey.

Moments from yesterday and from centuries ago -a sword blow,
the painting of eyelashes before a mirror
of polished metal, a lethal musket shot, a caravel
staving its hull against a reef
- they dwell in us,
waiting for a fulfillment.

I knew, always, that I would be a worker in the vineyard,
as are all men and women living at the same time,
whether they are aware of it or not.