



# SCIENCE, RESEARCH CAN SMALL ZOOS



Elephant work in  
the Kruger Park in RSA

It is now well understood how important AZA zoos have become in the context of science, research and conservation biology. One has only to look through previous articles in *CONNECT* or its predecessor, *Communiqué*, over the years to see the impressive accomplishments for which our flagship zoos have been responsible. But, what is the role of the smaller zoo and how can these institutions generate the resources to make their own contributions?

The story of science and conservation in a small zoo – and in this case ZooMontana – is not meant to focus on that particular program, but rather to suggest a model that might be pursued in other small and or limited resources institutions. The obstacles to implementing science, research and conservation in the smaller institution are multiple and often seem overwhelming. The primary hurdle is always financial limitations and usually, a lack of physical facilities. How can a zoo with no tax support compete with conservation programs at the major zoos, with research budgets in excess of 12 million dollars in some case? Sometimes the problems even include governing boards and the general public, where there exists an honest lack of understanding of the role of the modern zoo. A strong and dedicated administration, however, can turn it all around.

In the earliest days of ZooMontana, the director took the first positive steps. The first task in building a program of research and conservation was the creation of a master plan which provided a roadmap for direction and action for 10-15 years into the future. This is hardly different than building a sound master plan for the Zoo itself. ZooMontana completed such a plan in 1994, even before its official opening, and if the first draft was to be taken seriously, the young institution would have been competing with San Diego or the National Zoo. The plan was far too ambitious and not very realistic and this became apparent in the review process. Several professionals from established zoos provided plenty of construc-



Research Tech, Robin Lyda, looking at a set of gels.

the Fish and Wildlife Service (USFWS) and Montana Department of Fish, Wildlife and Parks. These agencies educated ZooMontana on regional conservation problems and particularly those problems that their own agencies were unable to tackle. Slowly a more realistic plan emerged.

The second step was fitting the talents of available personnel to the possible research and conservation opportunities. It does not take a genius to understand that someone trained in animal behavior is not going to be very effective in studying wildlife diseases. In ZooMontana's case, the director's zoo veterinary background was fit into the need for health assessments of black-footed ferrets about to be released in Montana at that time. The Zoo's horticulturist initiated a plan for reforestation of the Zoo's riparian zone, which had long been overtaken by non-native species, such as Russian

# AND CONSERVATION: PLAY TOO?

By Kimberly Frank

tive criticism and a gentle reality check. For example, David Wildt, at the National Zoo, gently removed our immediate aspirations in the area of molecular biology with a candid look at his own budgets. Nadia Loskutoff, at Henry Doorly kindly steered us away from assisted reproductive technology with a good analysis of the problems and costs therein. Many other suggestions and much good constructive advice helped the Zoo focus on several areas where it could realistically contribute.

In rewriting the master plan, the Zoo relied heavily upon state and federal agencies, including the National Park Service (NPS), the Bureau of Land Management (BLM), the Forest Service (USFS),

Olive. The Zoo's education director was put in charge of developing a novel cooperative pen-pal education program that connected school age children in Billings, who were enthralled with the new Amur tigers with their counterparts in the Sikote-Alin region of eastern Russia, where the last remaining wild population of these tigers existed. Finally, the director of science and conservation biology, whose expertise was reproductive physiology was assigned the job of finding funding for a Science and Conservation Center, where his former academic expertise in wildlife contraception research and urinary and fecal steroid metabolite analysis could be

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carried out on the Zoo grounds. Because there was little chance of recruiting scientists from elsewhere, available expertise was carefully fit to research and conservation needs.

Funding in the small (and large!) zoo is always a problem and there were no easy answers. Grant writing became a way of life. With logistical help from the Forest Service and with initial funding by the American Association of Zoo Horticulturists and a private foundation, the Zoo embarked upon the riparian reforestation program, enhancing the critical new growth of cottonwood, upon which 75 percent of Montana's birdlife depends. The Amur tiger pen-pal project received partial funding by way of the Liz Claiborn and Art Ortenberg Foundation and a cooperative effort was established with the nearby Hornocker Wildlife Institute, which already had contacts in Russia. Soon Russian children were exchanging letters with Billings children and building pride in their "ownership" of the wild Amur tiger. It can be argued that this is not exactly the same as discovering a lost species, but it also can be argued that the conservation consequences might be significant when these Russian children become adults.

After four years of fund raising, the resources to build a 3,200 square foot laboratory complex became a reality and in 1998 the Science and Conservation Center was officially opened. The grant success was based on a past record of research and never struck supporters as a new "pie in the sky" enterprise. Fitting personnel to tasks, and tasks to serious problems was beginning to pay off. Now the task became finding a sustainable operational budget, which was well beyond the Zoo's capabilities. Once again, the precise nature of the endeavor was carefully fit to the possible funding sources. Government agencies, including the NPS and the BLM and the Rachel Carson National Estuarine Reserve, struggling with wild horse overpopulations, provided some funding for the immunocontraceptive vaccine made at the Center. Other AZA zoos began utilizing the urinary and fecal steroid metabolite analysis for pregnancy diagnosis and ovarian function information, and before long more than 100 AZA zoos were utilizing the contraceptive vaccine for population management. In this latter case, the

program's technology addressed a major zoo issue. All this provided enough operating funds to begin work. The USFWS, along with several NGOs funded trials of

elephant immunocontraception in the Kruger Park in South Africa, to find alternatives to culling, which can interfere with the genetic viability and behavior of certain herds. Today 12 different game parks in South Africa are managing their elephants with immunocontraception. The USFWS and the Navy funded a project to reduce fertility in water buffalo on the Naval Base in Guam. Finally, several animal welfare organizations funded both basic research and application of immunocontraception to urban white-tailed deer.

The manner in which the master plan was written, made it easy to add new and innovative conservation projects. The Zoo partnered with a local company that produced floating islands for water purification and wetland restoration, encouraging and testing this technology in animal habitats where water quality is important. The company and the Zoo continue to benefit and much valued information has been learned. Equally important, it cost the Zoo little and actually reduced the Zoo's operational costs as the need for chemicals was reduced. Another foundation sponsored a regional survey of amphibians and reptiles, where losses are occurring rapidly; and also provided funding for educational posters identifying Montana's frog, toad, salamander, and snake species. There are other projects in progress and projects for which funding is being sought. The point here was that sustaining operational budgets required fitting the applied research to the needs of others who would pay for the services. Pure conservation efforts required philanthropic foundations whose interests matched the proposed projects.

In August the Science and Conservation Center (SCC) celebrated its tenth anniversary. It had become self-sustaining during these years, even built a significant endowment and formed its own non-profit organization, but it remains the Zoo's conservation arm through a symbiotic MOU. The Zoo, without any source of tax support, still cannot afford its own sophisticated research and conservation center, staff and operational budget for these activities, but the SCC makes up this deficit and represents ZooMontana within the research and conservation arena.

The success can be traced clearly to the master plan, and to careful fitting of available resources and personnel to realistic programs, focusing programs that represented niches unaddressed by other NGOs or agencies, and which had either philanthropic appeal or income generating possibilities, and, of course, strong administrative support. The small zoo can play a significant role in research and conservation, but it must plan carefully, be realistic, utilize local resources wisely, have strong administrative support, and of course, have the will to play a role.

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