NATIONAL ZOOLOGICAL PARK
ANIMAL NUTRITION DIVISION

STRATEGIC PLAN FY2006-2010

CLINICAL ANIMAL NUTRITION PROGRAM
NATIONAL ZOOLOGICAL PARK
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Cover photo: Foods coordinated through Clinical Animal Nutrition have multiple roles, including providing basic nutrition and satisfying behavioral aspects of feeding, as in the case of this macaw. Photo courtesy of NZP Amazonia staff.

Clinical Animal Nutrition group. Top, left to right: Leigh Sue, Management Support Assistant; Matthew Young, Commissary Steward; David Polete, Commissary Manager; Mark Edwards, Supervisory Animal Nutritionist; Bottom, left to right: Bernard Graham, Commissary Steward; Sherry Hargraves, Commissary Steward; Not shown: Tyrone Savoy, Commissary Steward. Photo courtesy of NZP Office of Public Affairs.

NATIONAL ZOOLOGICAL PARK
ANIMAL NUTRITION DIVISION

Over the last two decades, zoos around the world have recognized the science of animal nutrition as a critical component to the well-being of zoo collections. Nutrition, as an aspect of a preventive health program, is not only important to the welfare of the National Zoological Park's (NZP) living collection, but also to the preservation of species throughout the world.

Animal nutrition as a science involves many factors:

1) Species-specific, scientifically-based diets that mirror not only the nutritional needs of different species, but also their diets in the wild. Foods are prepared and presented in ways that encourage natural feeding distribution and behavior. Appropriate diets provide species with the nutrients they need to thrive – to lead healthier, longer, and happier lives.

2) Improved health through nutritional needs by providing enrichment, and by limiting the spread of disease through eliminating cross-contamination, utilizing human-grade feed ingredients, and using hygienic practices to ensure a high quality of health and, therefore, longer and more productive lives of the living collection.

ANIMAL NUTRITION DIVISION: WHERE WE ARE

The NZP Animal Nutrition Division is responsible for getting the right food to the right animals at the right time both at the Zoo's Rock Creek campus in Washington, D.C. and the Conservation and Research Center (CRC) in Front Royal, Virginia. The Animal Nutrition Division staff, consisting of a Supervisory Animal Nutritionist, a Commissary Manager, four Commissary Stewards, and a Management Support Assistant, operates out of a 4,750 square-foot facility at the General Services Building and from the Department of Conservation Biology Building, both at the Rock Creek campus.

For a quarter century, the clinical nutrition program, now under the Directorate of Science, has been responsible for the acquisition, management, and distribution of food ingredients to the various animal departments, where the animal care staff then prepares and presents the food to the collection. Traditionally, the nutrition program staff has worked closely with the animal care staff. The Animal Nutrition Division develops the specifications for foods to meet or exceed industry quality standards. Within the Division, Commissary staff compiles, orders, and receives requisitions. During the five-day work week of the Commissary, staff reduces the inventory according to the requested orders, packages foods for the appropriate animal units, and delivers them. Over 2,500 pounds of food from 8 food categories are disseminated to over 300 different species at 20 locations on the Rock Creek campus. One day a week staff delivers 200 pounds of food from 8 food categories to the Front Royal campus.

Carrying out these tasks requires the appropriate financial capital needed to maintain [feed] the live collection. Budget development, acquisition,

and management are the backbone to a successful operation, ensuring on-demand inventory and funds availability. The animal food budget is the largest operational budget within the NZP, excepting the global NZP administration and technology budget, including personnel.

ANIMAL NUTRITION DIVISION: WHERE WE ARE HEADED

As part of the current program of revitalization and improvement at the zoo, the Animal Nutrition Division is poised to strengthen its own operations in a number of ways that will improve operational efficiency both within the division and throughout the zoo, to the benefit of the living collection. These improvements will move along several tracks:

- *Creation of species-specific diets*. This will be done in cooperation with the Nutrition Advisory Group (NAG) of the American Zoological Association. Our Supervisory Animal Nutritionist, Dr. Mark Edwards, is a member of this active international organization.

- *Centralizing food preparation at the Commissary*. Centralization offers significant benefits over the current system:
    - Elimination of work redundancy throughout the zoo. Food preparation is similar in various animal units, and centralization of food preparation would not only streamline processing, but also reduce a large personnel expense across the Zoo and increase the time available for other aspects of animal health and welfare.
    - Consistent implementation of the standardized diets and enrichment foods approved by the Clinical Nutrition Program

for each species. A scientifically-based and administered diet creates the ability not only to improve animal health, but also to create a scientifically-based methodology to identify areas of nutritional improvement for a species and/or a particular animal, to target disease in conjunction with approved veterinary techniques, and to provide scientifically-based and traceable evidence of nutritional gains, to be shared with the zoological community as a whole.

- Prevention of disease due to the food itself, food preparation, or food storage and delivery. Utilization of human-grade feed ingredients (USDA-inspected and approved) reduces the potential for disease transmission through food ingredients. Using hygienic practices in food handling, preparation, and delivery prevents cross-contamination between humans and food products, as well as between food products.
- Elimination and/or reduction of equipment redundancy throughout the zoo. Proper food storage, such as freezers, shelving, packaging, and re-packaging in a centralized location help to prevent spoilage and access of disease-causing rodents to food sources. Proper food storage and delivery techniques also prevent food-related illness. Enforcing even one of these components in each of the animal areas creates additional operational costs to the Zoo at large that centralization would reduce.

- Strengthen the workforce of the Animal Nutrition Division through the hiring of additional staff (a Clinical Nutritionist, a Commissary Specialist, and two additional Commissary Stewards); establishing performance standards, incentives, and accountability measures;

offering learning and professional development opportunities; and assessing job classification and satisfaction.

- *Move to a seven-day work week*. This would provide a consistent, reliable resource to the living collection and allow time-sensitive, recurring, critical processes (e.g., thawing meats and fish) to be integrated into routine centralized operations. Workloads would be distributed effectively throughout the week.

- Improve the efficiency and efficacy of all Animal Nutrition Division operations to ensure the greatest return from resources.
    - Reduced food waste, with resultant cost savings.
    - Increased time available to animal keepers for direct animal care, husbandry training, and other responsibilities – keepers now spend 25-40% of their time on food preparation.
    - Refurbish the Commissary to create a fully equipped state-of-the-art facility that can support an expanded Animal Nutrition function.

- Create a state-of-the-art Animal Nutrition Division, including Commissary Management and Operations that will be emulated throughout the world.

- Apply scientific methods, implement best practices from multiple industries, and participate more extensively in national and global zoological communities.

- Be a core player in efforts to raise awareness of, and support for, sound nutrition for animals, and, through these efforts, promote human nutrition education.

The strategic plan that follows summarizes how the Animal Nutrition Division intends to move down these tracks during the period FY2006-2010.

Bernard Graham, Commissary Steward, prepares individual orders of foods required for each animal area at both Rock Creek and Front Royal facilities.

THE STRATEGIC PLAN, FY2006-2010

MISSION

Nutrition is a critical aspect of animal care. As part of an integrated zoological team, we are committed to leading with innovative, scientifically based nutrition practices and programs that contribute to the health, well-being, and survival of animal species.

VISION

By implementing innovative approaches and practices, we enable animals to live happier and healthier lives, we serve as a role model and resource for zoos worldwide, and we educate the public about all aspects of animal nutrition. Worldwide, the NZP Animal Nutrition Division will be respected as a global leader in applied animal nutrition.

CORE VALUES

The core values of the NZP Animal Nutrition Division inspire and enable it to fulfill its mission. Animal Nutrition Division staff is:

Committed. Animal Nutrition staff is passionate about promoting the health, well-being, and survival of all animals through superior nutrition.

Knowledgeable. Animal Nutrition staff uses the most current research and experience-based information and practices to ensure they do the best job possible for the Zoo's living collection.

Innovative. Animal Nutrition staff strives to learn about and to develop new ideas, procedures, and methods to help it fulfill its mission.

Respectful. The Animal Nutrition Division values its clients, animal and human, and treats them with the care and attention they deserve.

Professional. Animal Nutrition staff works in a timely, competent, and ethical manner that meets or exceeds the standards required for proper food preparation and delivery.

STRATEGIC GOALS

To fulfill its mission, the Animal Nutrition Division will:

Goal 1. Prepare and deliver superior, nutritionally complete, and balanced diets, including core and enrichment foods, for all species in the National Zoological Park's living collection.

Strategies

- Maintain the required number of staff with the ability to perform specialized tasks and to fill in for colleagues.
    - Volunteers. Develop opportunities for volunteers to participate in daily operations.
    - Interns. Develop opportunities for interns to participate in daily operations as part of a broader animal nutrition internship program.

- Centralize the preparation and delivery of all animal foods, working in partnership with NZP's animal management and veterinary staff.

- Integrate science into the Animal Nutrition Division's work to achieve the highest possible level of professionalism in its operations.
    - Make the use of scientific equipment (e.g., scales and thermometers) a core element of food preparation and delivery.
    - Use the scientific method to evaluate protocols/processes.
    - Implement feeding programs based on research results and known best practices.

- Improve the quality of hay produced at the Front Royal campus, and upgrade its storage.

- Move the browse program toward a production agriculture system, and integrate it into Animal Nutrition Division operations.

- Educate vendors on the requirements of NZP species' diets, and work with them to develop ingredients that meet NZP nutrition standards.

- Increase the security of Animal Nutrition Division operations.
    - Implement basic biosecurity processes throughout the Division's operations.
    - Design and implement a Hazard Analysis and Critical Control Points (HACCP) program.

Goal 2. Optimize the return on investment of resources through sound resource management.

Strategies

- Maximize the effectiveness of Animal Nutrition staff.
    - Develop the most appropriate job classification for the steward position in terms of the actual nature of the work, advancement opportunities, horizontal mobility, and job satisfaction.
    - Facilitate regular access to formal and informal information and learning resources, including professional development courses with certification opportunities, presentations, workshops, web links, publications, internal NZP research results, networks, trips to other zoo commissaries, participation in professional associations, and communication with other entities such as United States Department of Agriculture and American Association of Laboratory Animal Science.
    - Provide cross-training for Animal Nutrition Division staff and animal management and veterinary keepers.
    - Ensure Animal Nutrition Division staff is trained in the use of new equipment and record-keeping systems.

- Identify and implement optimal use of CRC for the production of foodstuffs.

- Implement electronic food management systems.
    - Procurement.
    - Inventory.
    - Food ordering by animal programs and veterinary keepers.
    - Integration of Animal Nutrition Division with other animal management records.

- Implement continuous quality control over vendor and internally produced feeds, inventory, and food preparation and delivery.

- Optimize use of the NZP nutrition lab.
    - Develop and implement a plan, including staffing, for using the lab for the clinical nutrition program.
    - Define and implement a partnership with the NZP nutrition research program.

- Enter into arrangements with other zoos for collaboration on bulk purchases, equipment exchange, and other means of leveraging resources.

- Generate revenue streams to support Animal Nutrition initiatives.
    - Sell excess internally produced hay.
    - Explore other revenue-generating opportunities such as fees from training programs.

Goal 3. Maintain state-of-the-art facilities that permit efficient, high performance operations.

Strategies

- Upgrade and maintain the equipment needed for efficient, reliable operations, including food preparation, storage, delivery, and research.

- Establish a parallel, but smaller Commissary at CRC.

- Develop a venue for professional development programs on animal nutrition operations.

Goal 4. Be recognized as a role model for zoo commissaries worldwide.

Strategies

- Define and achieve standards that exceed industry expectations.

- Be a learning organization.
    - Foster information exchange within NZP and SI and with outside organizations.
    - Continuously master and incorporate new knowledge and practices to improve performance.

- Disseminate information worldwide on the Animal Nutrition Division's best practices and achievements.
    - Provide opportunities for other NZP staff to learn about Animal Nutrition's operations.
    - Play an active role in professional organizations such as the NAG.
    - Develop and share improved/new ways of doing business that increase efficiency and effectiveness.
    - Provide professional development opportunities for staff from zoos worldwide.

- Play a leadership role in the design and implementation of enhanced biosecurity for zoo commissaries, and provide them with information and training.

Goal 5. Increase awareness of the importance of nutrition to the physical and psychological well-being and the survival of all species and, thereby, its importance to human health and welfare.

Strategies

- Develop an awareness program, aimed at NZP staff, the public, and stakeholders, that highlights the Animal Nutrition Division's operations, stewards' jobs, and the importance of proper food preparation and delivery.

- Use the Animal Nutrition Division as a permanent, real-life exhibition that highlights the importance of nutrition and the departmental functions.
- Use a variety of media to disseminate the Animal Nutrition Division's messages, such as publications, workshops, Commissary tours, and incorporation of displays on nutrition and proper diets in NZP exhibitions.
- Develop and maintain partnerships with influential networks and organizations such as 4-H, Future Farmers of America, and the University of Maryland.

- Establish the Animal Nutrition Division as a training venue to raise the awareness of keepers and animal management volunteers, both internal and external, on the role of nutrition in species well-being.

- Change the name of the Animal Nutrition Division to something that is more representative of our partnership role in the welfare of NZP collections.

Forage production at the Conservation and Research Center supports the demands for hay to support the animal collections at both Rock Creek and Front Royal. Photo courtesy of NZP Office of Public Affairs.

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