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PETER RAVEN RECEIVES COSMOS PRIZE

Dr. Peter Raven, Director, **Missouri Botanical Garden** was awarded the prestigious Cosmos Prize for 2003. The prize, a pure gold medallion and 40 million Japanese yen (\$340,000), was presented at a formal ceremony in Osaka, Japan in October. Established in 1993, the Cosmos Prize recognizes the endeavors of researchers and scientists worldwide who support a holistic global perspective, a long-term vision and the interdependent relationship among all living organisms on Earth. It rewards research and achievements in not only the natural, cultural and social sciences but also literature, criticism and other disciplines. Raven was honored for his “outstanding research work and achievement concerning all life phenomena on Earth embodied in flowers and greenery.” The prize commemorates Expo '90, the 1990 International Flower and Greenery Exposition held in Osaka, which was dedicated to the theme: *The harmonious coexistence of nature and mankind*. The Expo '90 Commemorative Foundation awards the prize annually to an individual or group whose work has applied and realized the ideals and concepts that the Foundation strives to preserve.

HONORARY DEGREE FOR ROBERT R. HERMANN

Robert R. Hermann, founding Chair of the ICTE's Development Board was awarded an Honorary Doctorate of Humane Letters at the Commencement Ceremony held on Saturday, January 10, 2004 in the Blanche M. Touhill Performing Arts Center. The degree was awarded in recognition of Hermann's significant contributions to the University of Missouri-St. Louis in general and the ICTE in particular. In 1990, while a member of the UM-St. Louis Chancellor's Council, he helped create the ICTE and developed the World Ecology Award that has been presented to outstanding ecologists and environmentalists from across the globe. Recipients of the award include John Denver, Captain Jacques Cousteau, Prince Sadruddin Aga Khan, Dr. Paul Ehrlich, President José Figueres,

Dr. Richard Leakey, Dr. Jane Goodall, Ted Turner, Dr. Gro Harlem Brundtland, Harrison Ford, Conservation International, Teresa Heinz and HRH The Prince of Wales.



Robert R. Hermann (right) receives the Honorary Doctorate of Humane Letters from Chancellor Thomas F. George at the Commencement Ceremony held in the Blanche M. Touhill Performing Arts Center on January 10, 2004.

Hermann has been a civic leader in Missouri since 1957, when he helped organize the first charity polo match in Ladue. In 1981, he was instrumental in developing the first Veiled Prophet Fair (now Fair St. Louis). He was founder of Operation Brightside and has led large fund-raising initiatives for the Alvin J. Siteman Cancer Center, the Saint Louis Zoo and the Missouri Botanical Garden. He has served on the boards of the Missouri Botanical Garden, Saint Louis Zoo, Muscular Dystrophy Association and Municipal Theatre Association. He received the Saint Louis Zoo Award (1998), the Saint Louis Variety Club Man of the Year Award (1996) and the Schlafly Award from the St. Louis Public Library. In 1999, he was named “Citizen of the Year” in recognition of his philanthropic service to the City of St. Louis.



OLGA MARTHA MONTIEL TO LEAD CONSERVATION CENTER

ICTE Development Board member **Olga Martha Montiel** has been appointed Director of the Center for Conservation and Sustainable Development (CCSD) at the **Missouri Botanical Garden**. Olga Martha Montiel was previously the Interim Director of the CCSD and Assistant to the Director of the Missouri Botanical Garden and was appointed to the position after an extensive, year-long, international search.

The CCSD works through the Garden's extensive global reach to advance international conservation and sustainable development throughout the world and was established in spring 2001 with the help of a \$5 million pledge from the Bellwether Foundation of St. Louis and \$1.1 million from four other foundations: the John D. and Catherine T. MacArthur Foundation, the David and Lucile Packard Foundation, the William and Flora Hewlett Foundation and the Summit Foundation.

Olga Martha Montiel has had extensive field and administrative experience. She joined the Garden's staff as Assistant to **Dr. Peter Raven** in 1991. She has had long-term involvement in the Garden's multiple research activities in Latin America and has firsthand knowledge of the botanical and conservation communities there. She is an editor of the *Flora de Nicaragua*, the first complete flora of a Latin American country published in Spanish and one of the most extensive published accounts of plants of any part of the world. She is currently directing the Garden's conservation program in Nicaragua and is preparing a species conservation analysis of all Nicaraguan plants with the aim of developing practical conservation strategies within that country—a project that epitomizes the goals of the Center.

CCSD advocates a scientifically based approach to conservation and draws upon the knowledge accumulated by the Garden from decades of activities in tropical countries. CCSD puts scientific information to work for conservation by developing partnerships with individuals, organizations and institutions and by sharing the resources of the Missouri Botanical

Garden—data, trained people, capabilities for accessing financial support—to improve life in countries rich in biodiversity. To fulfill these goals, CCSD develops conservation strategies and implements programs in areas of great threat and importance. It strengthens local capabilities in tropical countries, particularly by training residents of these countries, empowering them with the knowledge that will enable them to address conservation problems.

PRINCE CHARLES RECEIVES WORLD ECOLOGY AWARD

The International Center for Tropical Ecology at the University of Missouri-St. Louis presented its World Ecology Award to Britain's Prince Charles. The presentation was made by Jorie Butler Kent, a member of the ICTE's Advisory Board, at a small ceremony in the prince's offices in London, England.

HRH The Prince of Wales has been a tireless campaigner for the protection of the British countryside and its rural way of life. He has promoted the concept of sustainable development and has focused attention on issues relating to modern farming methods and the importance of organic agriculture and other mechanisms that reduce the environmental impacts of food production.

Through his many speeches he has supported the certification of timber from sustainable sources, the Biodiversity Convention and the need to protect wildlife and conserve tropical rain forests. He has shown his deep concern for declining fish stocks and the impact of the fishing industry on marine birds and used his influence to urge the implementation of sustainable fishing techniques.

Prince Charles has supported numerous conservation and environmental organizations through leadership as either President or Patron. Some of these organizations include: Atlantic Salmon Trust, Botanic Gardens Conservation International, British Deer Society, Foundation and Friends of the Royal Botanic Gardens, Kew, Friends of Conservation, Marine Conservation Society, National Council for the Conservation of Plants and Gardens, Scottish Wildlife Trust. Through his Charitable Foundation, he has



provided significant financial support to initiatives pertaining to the environment and the promotion of sustainability.

The World Ecology Award is presented by the International Center for Tropical Ecology to eminent individuals who have raised public awareness of our global ecological crisis and made significant contributions to environmental protection and biodiversity conservation.

ICTE DIRECTORATE

Dr. Bette Loiselle has taken a leave-of-absence as ICTE Director. Bette has been awarded a large collaborative research grant by the National Science Foundation that will support her research at the Tiputini Biological Station in Ecuador and this project will mean that Bette will spend significant time in Ecuador. During Bette's tenure as Director, ICTE endowments grew from \$70,000 to over \$2 million and national and international recognition of the Center was significantly enhanced. Her leadership, vision and dedication were key in fostering the rapid growth and development of the Center.

Dr. Peter Stevens will serve as interim Director. Peter, who joined the Department of Biology in 1999, was formerly Curator of Harvard University's Herbarium.

NATIONAL SCIENCE FOUNDATION AWARD

The National Science Foundation has funded a proposal submitted by the ICTE and the Department of Biology: *The Missouri Science Teaching and Education Partnerships (MO-STEP)*. Total funding over three years is \$1,591,972. Principal Investigators of this program are **Dr. Patricia Parker**, E. Desmond Lee and Family Fund Endowed Professor in Zoological Studies, **Dr. Charles Granger**, Professor of Biology and Education, **Dr. Bette Loiselle**, Associate Professor in Biology and **Dr. Patrick Osborne**, Executive Director, ICTE.

The MO-STEP program will combine the academic strengths of the Department of Biology, the International Center for Tropical Ecology and the pedagogical background of the Science Education Program at UM-St. Louis in a tightly coupled collaboration with five urban high

schools and with conservation-focused organizations within St. Louis. The program will support ten graduate fellows and five undergraduate fellows and place them in Biology classrooms in high schools within each of the following School Districts: Florissant-Ferguson, Normandy, Maplewood-Richmond Heights, Pattonville and Wellston.

MO-STEP will provide current information and practical, cutting-edge applications that link ecology, conservation biology and molecular genetics and will utilize close ties with the **Missouri Botanical Garden, Saint Louis Zoo** and **Forest Park Forever**. MO-STEP will facilitate the professional development of a collaborative team of university and high school faculty working to improve science education at grades 9 through 16.

NEWS FROM THE ICTE DEVELOPMENT BOARD

David Shores, founding Chair of the ICTE Development Board has moved to Honolulu, Hawaii. In view of this, while he remains a member of the Board, David has stepped aside as Chair. The Development Board first met on November 5, 1992 and David has, for over a decade, provided the vision and guidance that has helped the Center grow into a nationally and internationally recognized leader in tropical ecology and conservation. David's leadership by example was instrumental in the success of the many fund-raising and outreach activities that have been promoted by the Development Board. He organized the first ICTE Conservation Forum in 1997 and assisted in strengthening links between the ICTE and both national and international conservation organizations. David was awarded his master's degree in Biology from UM-St. Louis in 1994 and, in 1997, was recognized for his services to the ICTE and UM-St. Louis with the presentation of the Distinguished Alumni Award. David has devoted countless hours to the ICTE and his zeal and enthusiasm for environmental conservation have been exemplary. We wish him, Janet and Julia happiness in Hawaii.

The Development Board has elected **Ilene Follman** to chair the Board. Ilene joined the



Development Board in 1994 and has guided the education and outreach mission of the Center through the *EarthLinks: Ecology in Transit* program. Ilene earned her bachelor's degree in biology and master's degree in international affairs, with an emphasis in conservation biology, from Washington University. She is a master ecologist at the **Missouri Botanical Garden** and has published more than 60 articles, curriculum guides and newsletters and led workshops and events that promote environmental awareness.



COLLABORATION BETWEEN THE ICTE AND THE CCSD, MISSOURI BOTANICAL GARDEN

Dr. Lúcia Lohmann, a recent Ph.D. graduate from the University of Missouri-St. Louis and the **Missouri Botanical Garden** is the first postdoctoral fellow in the joint program between the Center for Conservation and Sustainable Development (CCSD) at the Missouri Botanical Garden and the International Center for Tropical Ecology at the University of Missouri–St. Louis. Lúcia is working under the supervision of **Bette Loiselle** and **Olga Martha Montiel** and the objective of Lúcia's postdoctoral research is to use the tribe Bignoniaceae (Bignoniaceae, Lamiales) as a model group to address questions about conservation, ecology, evolution and biogeography using herbarium data.

The tribe Bignoniaceae constitutes the most diverse and abundant group of lianas in Neotropical forests. Lianas account for a third of leaf biomass of tropical forests, contribute between 20-25% of the floristic diversity of Neotropical forests, and are an important source of food for many animals. Yet, lianas have been poorly studied and little is known concerning many aspects of their biology, ecology, evolution and systematics. The tribe Bignoniaceae was the focus of Lohmann's Ph.D. dissertation, for which she produced a well-supported phylogeny and a new generic classification for this tribe. Lohmann's new classification only recognizes monophyletic genera that are characterizable by morphological synapomorphies and, therefore constitutes a considerable improvement in the taxonomy and systematics of this group. The tribe Bignoniaceae also consists of one of the groups on which the late **Al Gentry** worked extensively. Thus, a vast collection of databased and geo-referenced Bignoniaceae specimens are housed at the Missouri Botanical Garden.

Given the ecological importance of Bignoniaceae and the data that are already available for this group, this tribe represents an excellent model group to address biogeographic, evolutionary and ecological hypotheses that are central in conservation biology. As far as biogeography is concerned, Lohmann is adding a temporal component to the phylogeny of Bignoniaceae (by incorporating fossils and dates) and combining these data with detailed GIS maps; both of which will be the basis to test specific biogeographic hypotheses on the origin of the Neotropical flora. Lohmann is also modeling the distribution of species using a variety of algorithms, those of which are the basis to test specific hypotheses concerning niche divergence and niche conservatism.

The above-mentioned analyses, in combination with the identification of patterns of species richness and endemism (through gap and complementarity analyses) will lead to a holistic approach to conservation. This will enable conservation decisions to be made based on the underlying processes that generate particular distributions and species richness/endemism patterns. It is anticipated that publications in the



realms of biogeography, systematics, evolution, ecology and conservation biology will result from this work, demonstrating the broad approach to conservation of the joint program between the Center for Conservation and Sustainable Development and the International Center of Tropical Ecology.

THE CHRISTENSEN FUND FELLOWSHIP PROGRAM

The Christensen Fund Fellowship Program in Plant Conservation has awarded fellowships to **Monica Carlsen** (Venezuela) and **Corneille Ewango** (Democratic Republic of Congo).

Monica Carlsen completed her M.S. in the Department of Biology in May and has begun her Ph.D. with **Dr. Peter Stevens** and **Dr. Tom Croat**, P.A. Schulze Curator of Botany, Missouri Botanical Garden as her advisors. She has studied plants from the genus *Anthurium* (Family: Araceae) which reaches its greatest diversity in the northern Andes, one of the world's most important "hotspots" because of its diversity, high concentration of endemic species and high levels of habitat loss. Monica has long been attracted to the special conservation problems of epiphytes, which tend to be locally restricted and often heavily collected as ornamentals. *Anthurium* is an ideal Neotropical plant group to use as a model in conservation studies and planning.

Corneille Ewango has worked as a botanist with the Okapi conservation project, a program supported by the Wildlife Conservation Society. WCS biologists, **Drs. John** and **Terese Hart** have tracked Okapi and other wildlife in the Ituri forest for nearly 20 years and Corneille has played a key role in documenting the plants within this significant reserve. Corneille is enrolled in the master's program and his graduate advisor is **Dr. Peter Stevens**. Corneille is developing his research program and plans to study the flora of granite inselbergs in northeastern Congo. These isolated habitats support a diverse and different flora and provide an interesting model to test island biogeographical theory. Inselbergs have been studied in West and Southern Africa but not with any intensity in the intervening area and

Corneille's study will fill a significant gap in our understanding of these interesting habitats.

In November 2003, **Dr. Kamal Bawa**, Distinguished Professor of Biology, University of Massachusetts, Boston and Founder and Trustee of the Ashoka Trust for Research in Ecology and Environment (ATREE), Bangalore, India visited our program as the first Christensen Fund Visiting Scientist.

Dr. Bawa's research is focused on causes and consequences of deforestation in the tropics. He works on economic, cultural and social forces that accelerate deforestation and other forms of environmental degradation. The ultimate aim of his research is to assess how alternate policies for land use might be developed and to determine the extent to which biodiversity is being lost at the level of genes, populations, species and ecosystems and how such losses might be minimized.

In India, a comprehensive research project is aimed at investigating rates of deforestation and the impact of deforestation on the loss of species and ecosystems in two areas: the western Ghats and the eastern Himalayas. Other components of the project include an assessment of the effectiveness of the existing protected areas network in conserving biodiversity, working with local communities to conserve and manage forests, the restoration of biodiversity in logged and other human impacted forests, and a complete valuation of tropical forests including non-timber products.

In Costa Rica, Dr. Bawa and his collaborators are using molecular genetic markers to study the effect of deforestation and habitat fragmentation on the loss of genetic diversity in tree populations. They are also using genetic markers to estimate mating system parameters, effective population size, and the amounts of gene flow among populations.

While in St. Louis, Dr. Bawa presented a formal seminar and led two discussion groups. His formal seminar was entitled: *Building human and social capital for conserving tropical biodiversity*. In the first discussion session, Dr. Bawa presented information on a draft proposal to the Critical Ecosystems Partnership Fund, a joint initiative between Conservation



International, Global Environment Facility, the World Bank, Government of Japan and the MacArthur Foundation. This proposal focused on the determination of conservation priorities for the Western Ghats, a tropical biodiversity hotspot. In his third presentation, Dr. Bawa led a discussion on research priorities in tropical biology. Dr. Bawa met with our faculty and graduate students and also with research faculty at the **Missouri Botanical Garden**.

EARTHLINKS: ECOLOGY-IN-TRANSIT

The ICTE has initiated collaboration with **The Green Center** in developing the EarthLinks program. This has been made possible through significant financial support from **The Trio Foundation of St. Louis**. The Trio Foundation grant will provide funds for a program coordinator (to be based at the Green Center) and a graduate student intern (based at the ICTE). The program will be directed at school children in St. Louis City, St. Louis County and East St. Louis; patrons of MetroBuses and MetroLink; after-school programs and youth groups. Participants will have a guided nature walk and report their experience by completing colorful, informative templates that will be displayed in Metro buses. **Arts-in-Transit (Metro)** are key partners in this program and will provide material support and advertising space for the educational artwork produced by school children participating in the program.

EARTH DAY 2004

Earth Day 2004 will be celebrated with a festival in Forest Park on Sunday, April 25, 2004. The ICTE is participating with an educational-outreach program that will include a bus-painting and interactive display. The Center is working with **Arts-in-Transit (Metro)** to paint an environmentally themed design onto a bus.

The interactive display will focus on tropical products (coffee, cocoa, flavors and spices) and how their harvests can be managed sustainably. In addition to raising awareness about the ICTE and its activities, the event will seek to raise funds through the sale of tropically relevant or environmentally friendly products.

2003 JANE AND WHITNEY HARRIS LECTURE

The 2003 Jane and Whitney Harris Lecture was presented by **David Quammen**, author of *The song of the Dodo: Island biogeography in an age of extinctions*, which won the 1997 New York Public Library Helen Bernstein Book Award for Excellence in Journalism. His lecture entitled, *Once there were lions*, was held in the Shoenberg Auditorium at the **Missouri Botanical Garden**. Following the lecture, David signed copies of his latest book: *Monster of God: The man-eating predator in the jungles of history and the mind*.

Educated at Yale and Oxford Universities, David Quammen is a renowned science and nature writer. He is a two-time National Magazine Award winner for his science essays and columns in *Outside* magazine and has received an Academy Award in Literature from the American Academy of Arts and Letters and the Lannan Literary Award for nonfiction. His other books include: *The flight of the iguana: A sidelong view of science and nature*; *Natural acts: A sidelong view of science and nature* and *Wild thoughts from wild places*.

2003 CONSERVATION FORUM

The 2003 Conservation Forum was held at the Living World, **Saint Louis Zoo** on November 5, 2003. Over twenty local and national conservation organizations participated and the keynote address entitled *Conservation in Costa Rica: Working mutualisms between people and nature* was presented by **Dr. Frank Joyce**, Asociación Conservacionista de Monteverde and Education Abroad Program, University of California.

In the breakout sessions papers were given by: **Todd Antoine** (Great Rivers Greenway), **Debbie Boege** (Department of Biology, University of Missouri-St. Louis), **Beth Congdon** (International Center for Tropical Ecology), **Pamela Rout** (Wild Canid Survival and Research Center), **Dianne Benjamin** and **Michael Nelson** (The Green Center), **Eric Miller** (Saint Louis Zoo), **Shelley Welsch** and **Linda Fried-Ellis** (River des Peres Watershed Coalition), **Sandra Arango** (Center for Conservation and Sustainable



Development, Missouri Botanical Garden), **Tom Leifield** (Columbia Bottom Conservation Area, Missouri Department of Conservation), **Leonard Sonnenschein** (St. Louis Children's Aquarium), **Mercedes Rouges** and **Lucio Malizia** (International Center for Tropical Ecology).

CONSERVATION ACTION PRIZE

The ICTE's **Conservation Action Prize** was presented at the Conservation Forum to **Wilford "Wolf" Guindon**. This Prize recognizes individuals who are active in the frontline of biological conservation. The award, a trophy and cash prize, honors individuals successful in seeking solutions to conservation problems, developing conservation strategies, implementing programs that conserve natural resources, habitats and biodiversity, educating the public on issues pertaining to biological conservation or providing leadership through example.

Guindon has devoted himself to the conservation of the cloud forests of Monteverde, Costa Rica. His love for this area began with his arrival in Costa Rica in 1951 as one of the original Quakers seeking to establish a new life in this peace-loving country. He is a founding member of the Monteverde Conservation League and has been intimately involved in many conservation efforts including working with local farmers to replant trees and create small forests on their farms (*bosques en fincas*).

He worked with George Powell to establish the Monteverde Cloud Forest Reserve and in 1972, transferred the administration of the Reserve to the Tropical Science Center that Wolf joined and later became the coordinator, a position he held from 1974-1984.

His rapport with local farmers and landowners facilitated land purchases and the expansion of the reserve. He developed trails and protected the forest from poachers and squatters. Wolf was a founding member of the Monteverde Conservation League in 1986 and participated in negotiations for the land purchases to create the largest private reserve in Costa Rica: *El Bosque Eterno de los Niños* that surrounds the Cloud Forest Reserve. In 1998, he received awards presented by Costa Rica's President Miguel Angel Rodriguez from the Ministerio del

Ambiente y Energia and Sistema Nacional de Areas de Conservacion for "distinguished work in support of and consolidation of the system of National Areas of Conservation."

Guindon's knowledge of the natural history of the area is legendary and this has greatly aided conservation efforts, research and education programs. His capacity to work with people, to defuse confrontations and resolve disputes with regard to human dignity and without violence has greatly facilitated the conservation of Monteverde forests. He has championed collaboration among conservation organizations and has been successful in getting people to work towards the common goal of safeguarding biodiversity within the reserves he loves.

NEWS OF FACULTY, STUDENTS, AND ALUMNI

Professor Elizabeth (Toby) Kellogg, E. Desmond Lee and Family Fund Endowed Professor in Botanical Studies was awarded an honorary doctorate (Doctor Honoris Causa) by the Universidad Nacional de Córdoba, Argentina. Toby has also been elected an honorary member of the Golden Key Honor Society. Golden Key is an academic honor society that recognizes and encourages scholastic achievement and excellence among college and university students from all academic disciplines. Honorary members are elected by local Golden Key chapters and are individuals who are active on campus or in the community in areas of scholarship, leadership or service.

Dr. Patricia Parker and Ph.D. student, **Noah Whiteman** received a Dissertation Enhancement Award through the Office of International Science and Engineering of the National Science Foundation. The award (\$25,100) will support Noah's dissertation research on host-parasite evolution using the Galapagos hawk as a model organism. Noah was the 2003 recipient of the ICTE's Stephen Mitchell Doyle Scholarship in Tropical Ecology.

Dr. Peter Stevens, **Dr. Elizabeth Kellogg** and **Alberto Vicentini** received a US-Brazil Dissertation Research Award through the Office of International Science and Engineering of the National Science Foundation. The award



(\$20,091) will support Beto's dissertation research on the *Phylogenetic history and species delimitation in the Neotropical plant genus Pagamea* Aubl. (Rubiaceae). Alberto received the Parker-Gentry Tropical Research Fellowship in 2002 from the ICTE.

Marisol Toledo received funding from the BOLFOR project/Chemonics Int. (\$5,000) and the Stokes Family Scholarship in Tropical Conservation from the ICTE for her fieldwork on diversity, structure and uses of different-aged secondary forests in Eastern Bolivia. She also attended the II Reunión Nacional sobre Investigación Forestal: Logros y estrategias para la investigación forestal en Bolivia (Achievements and strategies for forest investigation in Bolivia) held in Cochabamba, Bolivia in August 2003, with an oral presentation entitled *Comparación de la estructura y composición florística en tres áreas de aprovechamiento forestal en un bosque húmedo de Santa Cruz* (Comparison on the structure and floristic composition in three logging areas in a humid forest of Santa Cruz).

Jay King, DVM, MS (Ph.D. program) was asked by the government of Dominica to investigate the unexplained deaths of the local frog *Leptodactylus fallax*, commonly known as the mountain chicken. The primary cause of mortality was found to be the chytrid fungus, *Batrachochytrium dendrobatidis*, which has been responsible for the deaths of numerous frog species worldwide. Secondary factors may have included stress due to the worse drought in 30 years followed by the wettest year in 10 years, pollution, the *Shigella* bacteria and over hunting. This information was presented at several lectures at the **Durrell Wildlife Conservation Trust** in England. Jay is continuing to investigate the possibility of captive breeding/translocations, DNA comparisons with the other population of *L. fallax* on Montserrat, the possibility of peptides with anti-chytrid activity, and the development of a clean stream program.

ICTE alumna, **Gillian Bowser** is now Gulf Coast Cooperative Ecosystem Studies Unit (CESU) Research Coordinator. She serves as the contact for federal research conducted through the CESU for federal lands along the Gulf Coast. The CESU itself is one of 12 networks throughout the nation with a total of 17 networks possible based on the CESU networks funded by Congress. More information on the CESU network is at <http://www.cesu.org/cesu/>.

ICTE graduate students have recently published the following papers: **Jorge Luis Hurtado-Gonzales** and Richard Bodmer (2004): Assessing the sustainability of brocket deer hunting in the Tamshiyacu-Tahuayo Communal Reserve, north-eastern Peru. *Biological Conservation*, 116, 1-7.

Marcos Maldonado-Coelho and Miguel A. Marini (2004): Mixed-species bird flocks from Brazilian Atlantic forest: The effects of forest fragmentation and seasonality on their size, richness and stability. *Biological Conservation* 116, 19-26.

Juan E. Martínez-Gómez and Jeff K. Jacobsen (2004): The conservation status of Townsend's shearwater *Puffinus auricularis auricularis*. *Biological Conservation*, 116, 35-47.

This biannual Newsletter describes recent activities of the **International Center for Tropical Ecology**. Established in cooperation with the **Missouri Botanical Garden**, the Center promotes research and education in biodiversity conservation and the sustainable use of tropical ecosystems. The Center provides an academic, international environment for graduate education in tropical ecology, evolution, systematics and conservation. The Center supports undergraduate education in conservation biology and promotes awareness within the St. Louis community of the importance of conservation and environmentally sustainable policies and practices.

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