

# 2011 ANNUAL REPORT





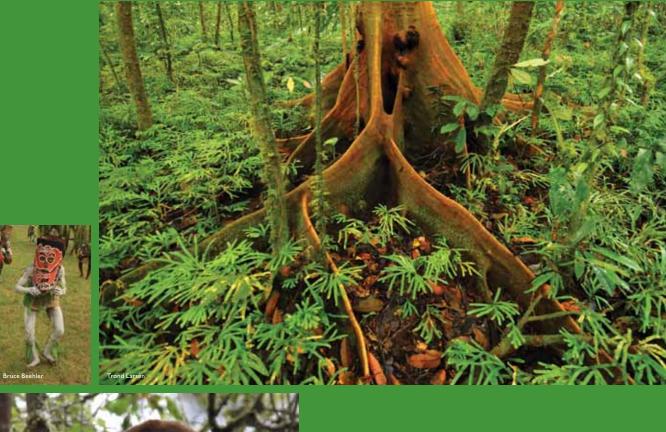








# 2011 ANNUAL REPORT



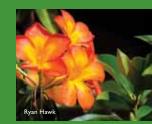




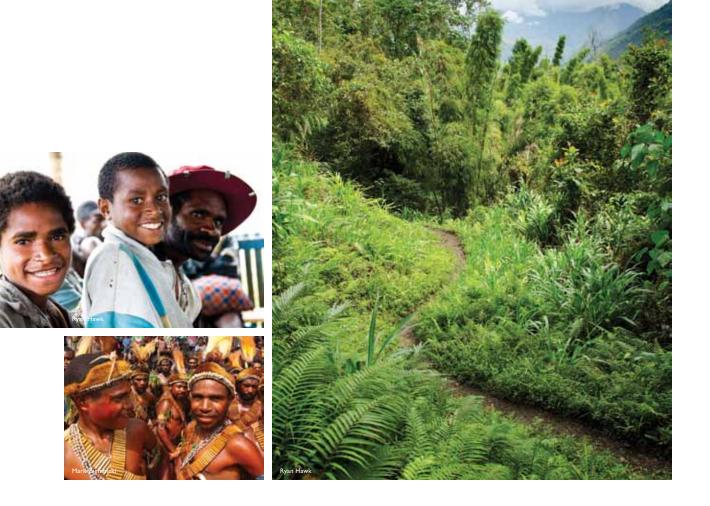


# CONTENTS

About Us	.Page 06
2011 Year in Review	. Page 12
YUS Conservation Endowment	. Page 14
YUS Conservation Area	. Page 16
YUS Community	.Page 20
Research	.Page 22
Conservation Coffee & Livelihood	.Page 25
Education Project	.Page 26
Health	.Page 28
Outreach & Communications	.Page 30
Partnerships	.Page 32
Support	.Page 34
Maps	.Page 38







# ABOUT US

**VISION:** The Tree Kangaroo Conservation Program envisions a sustainable, healthy environment that maintains the unique biodiversity of Papua New Guinea in balance with the culture and needs of human communities. MISSION: The Tree Kangaroo Conservation Program fosters wildlife and habitat conservation and supports local community livelihoods in Papua New Guinea through global partnerships, land protection, and scientific research.



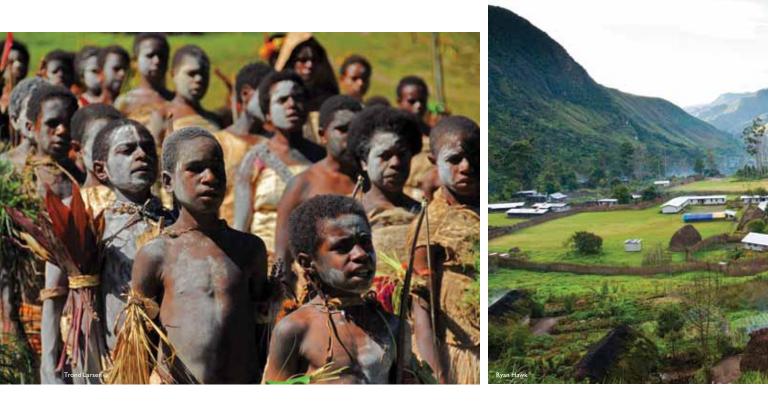




# HISTORY

The Tree Kangaroo Conservation Program (TKCP) is the flagship field conservation project based at the Woodland Park Zoo (WPZ). In 1996, TKCP began as a study of the conservation status of the endangered Matschie's tree kangaroo (*Dendrolagus matschiei*) and the tree kangaroo's habitat on the Huon Peninsula in Papua New Guinea (PNG). Over time, TKCP evolved into the collaborative, holistic program it is today; a partnership with local landowners, the PNG government, conservation biologists, social scientists, universities, and research institutions.

The YUS Conservation Area (CA), named after the three main watersheds in the area, the Yopno, Uruwa and Som, begins at sea level and rises over 4,000 meters, encompassing a spectacular and unique spectrum of wildlife and habitats. The creation and development of the YUS CA represents the work of 16 years of partnership between TKCP and local communities, a partnership which has grown to include local livelihood programs and improved access to government services such as healthcare and education. It is this partnership in and around the YUS CA that helps local residents create a connection between their commitment to conservation in YUS and better lives for their families and neighbors. In the years since TKCP was founded, an increasing number of local people have partnered with us to set up and manage the YUS CA, ensuring the ongoing existence of vital habitat. Because indigenous people own over 90% of the land in PNG, they must be the drivers of any sustainable conservation efforts. Through successful partnerships, technical and financial support, and a long-term commitment to sustainability, the people of YUS, working closely with TKCP, were able to set aside a remarkable 187,000 acres for wildlife and habitat conservation. In 2009, the YUS CA became the first governmentally recognized Conservation Area in PNG, which was an incredible achievement. In accordance with the PNG Conservation Areas Act of 1978, the YUS CA is a place where commercial resource extraction, such as logging and mining, is prohibited forever. The YUS CA protects the uniquely diverse habitat for the Matschie's tree kangaroo and other endemic and endangered wildlife, as well as the precious natural resources of the region for generations to come.



## PARTNERSHIP WITH CONSERVATION INTERNATIONAL AND THE GERMAN DEVELOPMENT BANK (KfW)

In 2008, TKCP was privileged to receive a collaborative, multi-year grant from Conservation International (CI) and the German Development Bank (KfW), under the German government's Ministry for the Environment "Lifeweb Climate Change Initiative." 2012 will mark the fourth year of this partnership and TKCP is grateful for the growth opportunities that this financial support has allowed. Under this initiative, goals for ensuring the long-term success of the YUS CA have been established, and our path to achieving these goals include:

GOAL: Developing a Landscape Plan for sustainable land use in and around the YUS CA.

ACTION: The Landscape Plan is being developed collaboratively with multiple stakeholders ranging from local landowners to National and Local-Level government agencies. GOAL: Building the capacity of a YUS community-based organization for assisting with local management of the protected area.

ACTION: The YUS Conservation Organization (CO) is composed of elected YUS landowners from across the YUS landscape and is meeting regularly with TKCP staff to learn how to help manage the YUS CA.

GOAL: Developing and implementing community-driven ecological and socio-economic monitoring systems to evaluate the impact of the YUS CA on wildlife and local communities. ACTION: Ecological and socioeconomic baseline data are being collected and monitoring tools are being developed by James Cook University (JCU) colleagues and TKCP. Local YUS Conservation Area Rangers are being trained to carry out this work in the future. GOAL: Supporting research into the impacts of climate change on YUS, and promoting the expansion of protected areas in PNG with the YUS CA as a model.

ACTION: A reef-to-ridge elevational research transect has been established with data being collected by Cl, JCU, and TKCP to develop the YUS Landscape Plan and document climate change indicators.

GOAL: Disseminate lessons learned with the YUS CA to the PNG government and other NGO's in PNG. ACTION: One multi-stakeholder workshop to disseminate lessons learned in creating the YUS CA was held in 2011 and another is planned for 2012.









From CI, Olivier Langrand, Ulrike Troeger, and Bruce Beehler, and from KfW, Marcus Stewen and Hubertus Kraienhorst.

# KfW MID-GRANT ASSESSMENT IN PNG

In February 2011, TKCP and CI traveled with representatives from KfW in YUS to discuss the substantial progress on the KfW "Lifeweb Initiative" grant goals and revise strategies moving forward. TKCP, CI, and the KfW representatives met with members of the PNG government and visited three project sites within YUS, and attended the first meeting of the YUS CA Management Committee.

#### **COMMON ACRONYMS**

TKCP – Tree Kangaroo
Conservation Program
WPZ – Woodland Park Zoo
(Seattle, Washington, USA)
PNG – Papua New Guinea
YUS – Yopno/Uruwa/Som
CA – Conservation Area
CBO – Community Based Organization
YUS CO – YUS Conservation Organization
(the YUS CO is a CBO)
NGO – Non Governmental Organization
CI – Conservation International
KfW – German Development Bank
JCU – James Cook University
(Cairns, Queensland, Australia)
LLG – Local Level Government
GIS – Geographic Information System
LUP – Land-use Planning

UAV – Unmanned Aerial Vehicle

#### DEFINITIONS

Ward: A ward is a group of villages

**Local Level Government:** A group of wards makes up the LLG

Unmanned Aerial Vehicle: Often called a drone, the UAV used by JCU and TKCP takes aerial photographs of the villages to be used in land-use planning

# TREE KANGAROO CONSERVATION PROGRAM STAFF

TKCP and the YUS partners were very successful in 2011, and credit is due to the strong team assembled among Lae, Papua New Guinea; Cairns, Australia; and Seattle, Washington, USA. TKCP said goodbye to several staff members in 2011 and we want to thank Micah Anderson (Community Based Organization Coordinator), Hilary Aten (US Program Coordinator), Mike Heywood (Regional Program Manager), and Delilah Yamuna (Bookkeeper) for their valuable contributions to the program. TKCP also welcomed several new team members:

- Dr. Ashley Brooks, the new YUS Landscape and Management Planner, is leading the creation of the YUS Landscape Plan.
- Mikal Nolan, Community Based Organization (CBO) Manager, and TKCP's first YUS CBO Coordinator Tingke Dope, are teaming up to build capacity of local members of the YUS Conservation Organization.
- Steven Fononge of Mumanarang Village has been hired as the third Conservation Officer in the Som zone.
- Courtney Harris joined TKCP as the US Program Coordinator and is focusing on grants management and outreach in the US.













DR. LISA DABEK
 Program Director and
 Senior Conservation Scientist,
 Woodland Park Zoo,
 Seattle, Washington USA.

KARAU KUNA, JR. Mapping and Conservation Coordinator, Lae, Papua New Guinea. **2** ZACHARY WELLS Regional Program Manager, Cairns, Australia/Lae, Papua New Guinea.

BENJAMIN SIPA
 Sustainable Livelihoods Coordinator,
 Lae, Papua New Guinea.

**3** COURTNEY HARRIS 2012 US Program Coordinator, Woodland Park Zoo, Seattle, Washington USA.

RUBY YAMUNAPNG Program Coordinator,Lae, Papua New Guinea.

















**Som Zone Conservation Officer,** YUS LLG, Papua New Guinea.

**1** VIKTOR EKI Mapping Assistant, YUS LLG, Papua New Guinea.





Ø MIKAL NOLAN
 Community Based
 Organization Manager,
 Lae/YUS LLG, Papua New Guinea.

**12** DONO OGATE Uruwa Zone Conservation Officer, YUS LLG, Papua New Guinea.

**13** MATTHEW TOMBE Mapping Assistant, YUS LLG, Papua New Guinea.

# DR. ASHLEY BROOKSYUS Landscape and

Management Planner, Cairns, Australia/ Lae, Papua New Guinea.

**10** TINGKE DOPE YUS Community Based Organization Coordinator, Lae/YUS LLG, Papua New Guinea.

**13** NAMO YAORO Yopno Zone Conservation Officer, YUS LLG, Papua New Guinea.

JESI MATTHEW

TKCP Administrative Assistant, Woodland Park Zoo, Seattle, Washington USA. TKCP is very sad to report that Jesi Matthew, a wonderful and valuable member of our team, passed away in early 2012.



# 2011 YEAR IN REVIEW

FRIENDS OF TKCP GENEROUSLY HELP CREATE THE YUS CONSERVATION ENDOWMENT

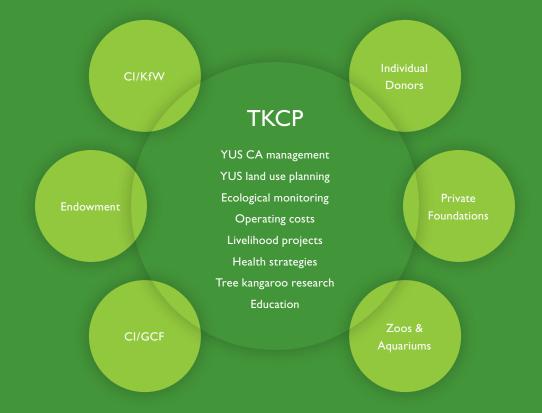
Thanks to friends around the world, WPZ's TKCP met a truly impressive milestone with regard to sustainable funding for the YUS CA. We were able to raise \$1 million and meet a matching grant challenge from Conservation International's Global Conservation Fund (GCF). The resulting \$2 million endowment will support the management of the YUS Conservation Area for years to come. Please see the complete list of YUS Conservation Endowment donors on page 34.

### YUS COFFEE REACHES US SHORES

The YUS Conservation Coffee Project, named after the conservation efforts in the YUS CA, has been a great success. By partnering with TKCP, Caffé Vita, and the PNG Coffee Industry Corporation, YUS coffee growers have vastly improved the quality of their coffee beans, created a market for their coffee, and shipped the first batch of pure YUS coffee to the United States in 2011, which debuted on Caffé Vita's shelves in early 2012. This is wonderful progress for a project that only began in 2009!

# LAND-USE PLANNING FOR YUS

TKCP and YUS landowners held the first land-use planning workshops, which will ultimately lead to a comprehensive Landscape Plan for YUS that includes villages, agriculture areas, buffer zones and areas designated for protection. Local participants from four initial village wards worked hard to create strategies for their land and the sustainable use of their natural resources.



## WHERE DOES THE TREE KANGAROO CONSERVATION PROGRAM GET SUPPORT?

In 2011, TKCP relied on various funding sources for our continued success. The Conservation Endowment will be used to cover partial core annual costs for the long term management of the YUS Conservation Area starting in 2013.

In addition to the endowment, we partner with a number of other organizations that support our conservation efforts including Association of Zoos & Aquariums (AZA) and the European equivalent (EAZA), and the AZA Tree Kangaroo Species Survival Plan (TK-SSP). Zoos associated with the TK-SSP work together to ensure the survival of tree kangaroos and their habitat and financial contributions are one way that these zoos provide support. Conservation International and the German Development Bank's (KfW) Lifeweb Initiative have been generous supporters over the years and we are grateful for the stability they have provided. These two organizations are striving to solve global problems, including climate change, and TKCP's work in YUS reflects the desire to find practical solutions to these global threats.

We are also fortunate to have generous private foundations and individual donors that see the value in protecting this unique ecosystem and preserving land for wild tree kangaroos and the people of YUS. TKCP sincerely appreciates the assistance provided by all of our donors and look forward to these and other partnerships growing in the future!

For information on how to contribute, please contact TKCP Program Coordinator, Courtney Harris, at 206-548-2620 or Courtney.Harris@zoo.org.



# YUS CONSERVATION ENDOWMENT



Conservation International (CI) has been a major supporter of TKCP since 2004, providing key funding to create the YUS CA. CI's Global Conservation Fund offered a unique challenge to WPZ's TKCP: if we were able to raise \$1 million, CI would match that amount through a Challenge Grant to create a \$2 million endowment. We are proud to announce that, thanks to our partner organizations, donors and volunteers, we were able to successfully meet the challenge to form the YUS Conservation Endowment! The YUS Conservation Endowment is an innovative approach to secure long-term, sustainable funding and will provide ongoing support for the management of the YUS CA while allowing us to also support education, health and the livelihoods of the local people of YUS. WPZ has completed the legal framework for this endowment and an operations plan is in place for dispersal of funds to the PNG program. This tremendous milestone was achieved through generous donations large and small, and we would not have reached this exciting achievement without every gift we received. TKCP, WPZ, and the people of YUS are grateful for the generosity of friends and partners from around the world.



# YUS CONSERVATION AREA

The permanent protection of the YUS Conservation Area in 2009 created an opportunity for TKCP to focus on long-term management and planning to maintain a successful, stable YUS CA. The focus in 2011 was developing land-use planning workshops, continued mapping of pledged lands in the YUS CA, and shaping a collectively agreed upon vision of sustainability with the community-based YUS Conservation Organization (CO) and YUS landowners.

## YUS CA MANAGEMENT

The YUS landscape is unique, with relatively intact habitat that has not yet been subjected to some of the more dangerous external pressures to biodiversity found elsewhere in PNG and the Pacific Islands, such as logging and mining. Largely due to the inaccessibility of the region, YUS represents an opportunity to practice conservation before the arrival of environmentally damaging activities rather than repair damage once it has been done. However, the population in YUS, and the desire for development, is growing steadily and local landowners have realized that they must act quickly to protect their resources before it is too late.

In 2011 TKCP facilitated the development of the YUS Conservation Area Management Committee (CAMC) through the PNG Department of Environment and Conservation (DEC) in adherence to the PNG Conservation Areas Act. This committee, which meets biannually and is comprised of representatives from all levels of government, the YUS Conservation Organization, and TKCP, is the primary group responsible for creating the YUS CA's management plan.



## LAND-USE PLANNING WORKSHOPS

Land that borders the YUS CA is also a critical aspect of the Landscape Plan and managing these areas in an environmentally sustainable way can enhance the effectiveness of the YUS CA as a whole. In early 2011, TKCP's Zachary Wells and Ben Sipa developed a program of three successive Land-Use Planning (LUP) workshops held in four pilot wards. Land-use planning at the ward level is a priority of the PNG government and YUS could represent the first collection of wards in the country to be completely zoned by the landowners.

The workshops are designed to gather communities to discuss land-use zoning strategies, participate in technical trainings in agroforestry and reforestation practices, and to identify opportunities for village growth and sustainable use of local resources. The ultimate goal of these LUP workshops is to create the YUS Landscape Plan. This Landscape Plan, facilitated by TKCP's Dr. Ashley Brooks, will guide landowners on how and where to use their natural resources in order to conserve cultural practices and at the same preserve the forests and wildlife.

In 2011 JCU's Dr. David Gillieson and TKCP's Conservation and GIS Coordinator Karau Kuna, with a team from JCU and CI went to numerous villages in the Uruwa zone to document vegetation types and to take aerial photographs of each village using Unmanned Aerial Vehicle (UAV) technology. These photographs will be used during the Landscape Planning process to provide the landowners with a new perspective on their villages and surrounding environment.



## MAPPING OF PLEDGED LANDS

The mapping of pledged land in the YUS CA is a long and laborious process. Under the direction of Karau Kuna, the mapping team literally walks the boundaries of each clan-owned forest with the landowners, which can take from one day to one week. The process of mapping pledged land is another opportunity for the landowners to learn more about the connection between a protected forest and the health of the villages. Twelve land parcels were mapped in 2011 by Karau Kuna and his team of Mapping Officers, Matthew Tombe and Victor Eki, including six grassland areas pledged for reforestation. This brings the total area of mapped land parcels to 31,737 hectares, or about forty percent of the originally established YUS CA. Through the LUP workshops, which are aimed at sustainable zoning of the landscape, the mapping team expects to strategically increase these mapped areas in 2012.







### STRATEGIC PLANNING AND FOUNDATIONS OF SUCCESS WORKSHOP

Foundations of Success (FOS) is an organization that guides conservation programs on strategic planning. In June 2011, FOS facilitated a workshop at JCU in Cairns, Australia that enabled TKCP to identify threats to biodiversity in YUS and develop long term strategies and evaluation plans to address these threats in the future. TKCP staff from the US, PNG, Australia, as well as colleagues from JCU and CI attended the workshop and produced a draft action plan, including goals, objectives and strategies, which will be finalized in 2012. TKCP thanks the FOS staff for their tremendous guidance in this important planning process. For more information about FOS please see their website at: www.fosonline.org



Tingke Dope visited villages in YUS on a regular basis to keep the communities apprised of progress of the YUS CO ensuring village involvement in conservation outreach.



# YUS COMMUNITY

The people of YUS have been actively involved in the establishment and management of the YUS CA. The creation of the YUS Conservation Organization (CO) provides an avenue to take local stewardship of the landscape to a new level. The YUS CO, a community-based organization, provides each clan pledging land to the YUS CA with the opportunity to elect representatives to sit on committees and advise project partners on conservation and development projects. These representatives are the voices of their respective clans and TKCP is committed to building the capacity of such an important group of conservation leaders.

# THE YUS CONSERVATION ORGANIZATION

The YUS CO was extremely productive in 2011, making final alterations to the Constitution and beginning the YUS CO strategic planning process. The YUS CO holds meetings twice per year and in 2011, TKCP, JCU, and CI facilitated discussions on YUS projects that are currently in progress or are being discussed for the future. As a result of the meetings, the clan representatives approved a revised Constitution and further delineated their roles and responsibilities. Tingke Dope and Mikal Nolan are facilitating the capacity building of the YUS CO.



# **INFRASTRUCTURE IN YUS**

YUS is an extremely remote area, with very little access to government services. With assistance from the KfW Lifeweb grant, TKCP has been able to aid YUS communities in several critical infrastructure projects prioritized by the YUS CO, including building airstrips, field offices, and footbridges.

In 2011 TKCP staff assisted local landowners in completion of two village airstrips in YUS, which will allow people in YUS much easier access to services in Lae. As these airstrips open, a remarkable story of community determination is written, and TKCP is proud to have been able to assist. Both airstrips are waiting for final approval from PNG's National Airports Corporation, targeted for 2012. In addition to the airstrip projects, TKCP led the local construction of a research facility in Yawan village. The YUS Research House, which will double as a TKCP and YUS CO Field Office. was constructed in 2011 and awaits the addition of solar power in 2012. This facility will serve as a research base for YUS partner organizations, TKCP staff, visiting researchers, and will house YUS CO meetings and community activities. Three additional field offices are scheduled to be constructed in 2012 in Tapmange, Ronji and Gogiok villages, establishing field-based operations in Yopno, Uruwa, Som, and coastal regions of YUS. When complete, TKCP and landowner members of the YUS CO will have proper infrastructure and resources to manage the YUS CA from within YUS.

Toward the end of 2011, the YUS CO, facilitated by Mikal Nolan and Tingke Dope, prioritized site selection for permanent footbridges to be constructed over major river crossings in YUS. These bridges will serve several important purposes; increasing the safety of residents and school children, connecting villages and airstrips, and allowing goods and services to move more easily between the rural communities. The current infrastructure projects are evidence that the YUS CO committees are working effectively to look at the needs of their communities and identify practical solutions.





# RESEARCH

# TREE KANGAROO RESEARCH

TKCP continues to provide support for the tree kangaroo research camp, Wasaunon, in the YUS CA. In 2011, the field camp was utilized by research colleagues from CI, JCU, and graduate students from universities in the US and Australia. TKCP has also maintained tracking of its longest radiocollared tree kangaroo, "Trish", to document her reproductive patterns. These long-term data are providing new insight into the reproductive patterns of wild females, which are becoming increasingly important to both captive tree kangaroo management and the conservation of wild tree kangaroos. TKCP will also be launching a new project on examining tree kangaroo home range

and habitat use along their elevational gradient (1,000m to 3,000m) by using National Geographic Society (NGS) Crittercam© technology and radio telemetry. At WPZ, staff began a study to compare captive tree kangaroo behavior with behavior in the wild based on the NGS Crittercam© footage. This study will hopefully be expanded as part of the AZA Tree Kangaroo Species Survival Plan.

One of the benefits of a long term study program is the ability to support multiple avenues of research. In 2011, TKCP continued to collaborate with Dr. T.J. McGreevy, a post-doctoral researcher at the University of Rhode Island. T.J. and advisors Lisa Dabek and Dr. Thomas Husband produced a research manuscript on tree kangaroo genetics, which was accepted for publication, and will increase the overall scientific knowledge of tree kangaroos and how the different species are related.

A second manuscript resulting from TKCP collaborations was accepted for publication. This paper, by Dr. Erika Travis, Trish Watson, and Lisa Dabek, focuses on the overall health parameters of wild tree kangaroos in PNG and how they compare with captive individuals.



# ECOLOGICAL MONITORING

TKCP and CI have continued working with Dr. Mark Ziembicki, Dr. Andrew Krockenberger, and Gabriel Porolak of JCU in Cairns, Australia to establish an ecological monitoring plan designed to document the impact of the YUS CA on the wildlife populations in the area over the long term. The ecological monitoring plan will be completed in 2012.

In 2011 the primary goal of the ecological monitoring work was to establish a series of sampling sites across YUS to assess the status and monitor some of the key faunal groups in the region including tree kangaroos and other marsupial species, as well as cassowaries. These groups are not only important in terms of biodiversity but also to local hunters. A primary purpose of collecting these data is to examine how the YUS CA "Wildlife Bank" system works to increase wildlife in the hunting areas. In a "Wildlife Bank" system like the YUS CA, the protected area is the safe zone where animals like the tree kangaroo can increase their population numbers without the effects of hunting, but once population numbers are high enough, offspring disperse into the surrounding hunting areas. These ecological monitoring data will inform the YUS Landscape Plan and help influence future conservation strategies in the region.

Across the YUS CA, local participation and commitment have been increasing. The development of a core group of local YUS Conservation Area Rangers is an ideal way to incorporate local ecological knowledge into the monitoring program and create local ownership of the management of the YUS CA. In 2011, with the help of the YUS CO, TKCP and JCU identified qualified candidates from local clans and trained them in field sampling methodology. In 2012, JCU and TKCP will continue to work with the initial group of YUS CA Rangers, complete the first stage of training and also introduce a 'YUS Record Book System' designed to gather additional data on the YUS environment and to help monitor breaches of YUS CA rules. Data collected by the YUS Rangers and ICU have already provided key information on wildlife population density and population trends within the protected area, all of which are incorporated into the Landscape Plan.

In addition to creating ecological monitoring tools, Dr. Jonathan Cornelius and Dr. Miriam Murphy, both of JCU, are creating a socio-economic monitoring tool which will allow TKCP to evaluate the impacts of the YUS Conservation Area on local livelihoods.







## CLIMATE CHANGE AND CARBON RESEARCH

Dr. Bruce Beehler of Cl is coordinating a series of studies that will lead to a greater understanding of the impacts of climate change on the YUS CA ecosystem. Throughout 2011, Bruce and teams from multiple institutions, including CI, PNG Institute for Biological Research (IBR), Cornell University, and JCU, along with local village counterparts, conducted surveys spanning the taxonomic spectrum, including birds, bats, beetles, and forest trees, and conducted research on subsistence agriculture. The team created the reef-to-ridge YUS transect in order to conduct surveys on the species abundance and elevational occurrence of forest birds so that there could be baseline data for long-term climate studies. This study is anticipated to continue for at least two additional field seasons. When complete, this ornithological study will be the most comprehensive field study of birds ever conducted in New Guinea.

JCU's Dr. Michael Bird and graduate students Michelle Venter and Wouter Dieleman, conducted research in 2011 to evaluate carbon stocks, both above and below ground, and analysis for these carbon stocks will be completed in 2012. The objective is to map carbon, based on habitat type, across the YUS landscape to provide data to the PNG government as they create climate change-related legislation.

Four automatic recording weather stations have been installed at climate monitoring sites, ranging from 100m-3,000m in elevation. These stations will enable data to be collected on changing weather patterns and will be able to be compared with changes in ecosystem composition and subsistence agriculture productivity over time.

# LINGUISTICS

JCU's Dr. Sasha Aikhenrald and Ph.D. student Hanna Sarvasy are conducting linguistics research in YUS to map the grammar of one of the many YUS languages and look at the relationship of language and the natural world.



Daniel Shewmaker and Karl Aglai discuss improved techniques for drying coffee beans.

# CONSERVATION COFFEE & LIVELIHOOD

The YUS Conservation Coffee Project began in 2009 and grew under the leadership of Benjamin Sipa to become a critical piece of TKCP's livelihoods work. YUS village landowners who have set aside land for the YUS CA have access to trainings and guidance on how to increase the profitability and sustainability of their shade-grown, organic coffee. Families grow YUS Conservation Coffee on modest plots which are intentionally kept small and sustainable. Individuals work together as a community to get their coffee beans to market and, through an existing partnership between WPZ and Seattle-based coffee roaster, Caffé Vita, YUS growers will now have direct access to international markets for the first time. The YUS Conservation Coffee is a true success story born from the hard work and dedication of the YUS farmers and TKCP.

Daniel Shewmaker, Caffé Vita buyer, visited the YUS region in June 2011 to observe changes that had been made to the coffee producing methods and the coffee bean quality, including the construction of solar coffee bean dryers and the improved process for pruning and maintaining the coffee plants. The successful relationship with Caffé Vita demonstrates to the YUS farmers that the assistance associated with the conservation efforts increases the value of the crops, and encourages other nearby villages to consider pledging their land to the YUS CA. More land pledges mean more long-term protection for the unique YUS CA ecosystem, and for endangered species, such as the Matschie's tree kangaroo.

Throughout 2011, Ben Sipa and Karl Aglai of the PNG Coffee Industry Corporation conducted coffee growing workshops in two villages and introduced a training manual that promotes positive land management and stewardship. A critical component of the YUS coffee program is educating farmers about the environmental aspects of the region and asking landowners to develop their own land-use plans for their coffee plots, including designating areas within family land for gardening, re-growth, and tree planting.

You can purchase your own YUS Conservation coffee at Caffé Vita locations and at www.caffevita.com!







# EDUCATION PROJECT

TKCP actively works toward the improvement of education in YUS, combining teacher training, scholarships, classroom activities, and support of infrastructure and supplies. TKCP believes that teaching environmental education fosters the desire to protect the local ecosystem. When children learn conservation education in the classroom and bring that knowledge home, entire families are able to benefit and see the value of conservation.

THE TKCP SCHOLARSHIP PROGRAM has been a great way to bring skilled teachers into YUS villages. One of the scholarships is in memory of Association of Zoos and Aquariums (AZA) Colleague, Alice Gilley, and is funded through the AZA Marsupial and Monotreme Taxon Advisory Group (M&M TAG). We would like to congratulate the students currently attending the Balob Teacher's College:

Max Bofengne Mungang Esisingnu Zurepe Firayu Fungkepa Yabot

# SCHOLARSHIPS FOR YUS TEACHERS

Since 2001, TKCP has recognized the need for trained YUS teachers in the YUS village schools and has met that need by co-sponsoring scholarships to Balob Teacher's College in Lae, PNG. TKCP pays one third of the cost of tuition with the remainder split between the family and the YUS Local Level Government. The teaching certificate is a two-year program, after which scholarship recipients return to the YUS community to teach for a minimum of six years, ensuring a steady stream of qualified teachers into the remote villages. In 2010, the YUS CO Education Committee selected three new scholarship recipients to begin the program. These three students, plus a fourth who re-joined the program, completed their first year of training in 2011 and are expected to graduate in November 2012 with a degree in Primary Teaching. Once these students graduate, there will be a total of 20 TKCP-sponsored teachers serving in village schools across the YUS region.





Danny Samandingke and iLEAP Executive Director, Britt Yamamoto, at iLEAP graduation in Seattle, WA.

## ENVIRONMENTAL EDUCATION

In 2011, Education Coordinator Danny Samandingke continued developing the Junior Conservation Ranger Program to facilitate the establishment of environmental education clubs in several YUS schools. This project is being adapted from a similar program run by the Sepilok Orangutan Rehabilitation Centre, which Danny researched on a 2010 visit to another WPZ Partner for Wildlife, the Hutan Conservation Program in Sabah, Borneo. The Junior Conservation Ranger program was initiated in 2011 with students at Yawan Elementary, Notate Primary and Tapmange TokPles Preschool where Danny conducted planning discussions, engaged teachers, and distributed program materials.

Danny also coordinated several environmental education events around the YUS region, including organizing a World Environment Day (WED) essay contest and school celebrations with primary schools, which include 3rd through 8th grades, across the YUS CA.

# STAFF PROFESSIONAL DEVELOPMENT

For three months in late 2011, TKCP Education Coordinator Danny Samandingke was awarded a prestigious professional development fellowship with iLEAP, a leadership training organization based in Seattle, WA. In this program, he was able to learn from and network with global community leaders and partners from NGOs around the world. From this experience, he was able to define strategies for education in YUS. For more information on iLEAP please see page 32.

In February 2011, TKCP's Program Coordinator, Ruby Yamuna, traveled to Seattle, WA to attend the Zoos & Aquariums Committing to Conservation (ZACC) conference held in Seattle and give a presentation at the WPZ Partners for Wildlife (PFW) Summit.

TKCP's Sustainable Livelihoods Coordinator, Benjamin Sipa, traveled to Seattle, WA in December 2011 for the YUS Conservation Coffee Project and TKCP planning meetings. He met with project partner Caffé Vita's coffee buyer, Daniel Shewmaker, and spoke at two evening events.

In December 2011 TKCP's GIS and Conservation Coordinator, Karau Kuna, attended the Society for Conservation Biology's International Congress in Auckland, NZ presenting a talk titled *Engaging Communities in Conservation*.



Mr. Hessing Waiyain, Community Health Supervisor (center) and Dr. Joan Castro (right) visit the health center in Sapmanga village in YUS.

# HEALTH

Access to dependable healthcare is something unknown to many people living in the remote mountains of PNG, and this is particularly true in YUS. TKCP is actively working to bridge the gap between the people of YUS and the Provincial Government Health Services to reduce the incidence of preventable diseases through immunizations. TKCP is also trying to provide education and information about the connection between a clean environment and improved family health.

### IMMUNIZATION INITIATIVE

The YUS region is extremely remote which makes access to government services, including preventative healthcare, very challenging. Since 2006, TKCP has been leading an immunization initiative to reduce the incidence of preventable disease in YUS. With support from CI, KfW, and other donors, TKCP was able to purchase five solar refrigerators, which allow YUS village aid posts to keep and distribute cold-storage vaccines to YUS residents. Two of these refrigerators were installed in 2010, two more were installed in 2011, and the fifth is scheduled to be installed in 2012. The Morobe Provincial Health Department held a training class for YUS health workers in 2011 on how to administer vaccines safely and efficiently in the field.

In order to improve communications from YUS villages in the event of an emergency, TKCP is helping to install radios in more villages in YUS. TKCP Program Coordinator Ruby Yamuna and Yopno Conservation Officer Namo Yaoro coordinated the installation of a new radio receiver in the isolated coastal village of Ronji. This radio will connect to the TKCP office in Lae, as well as to government radios within the health emergency services offices.



 And Hawk



TKCP and the world lost a great colleague, Dr. Theo Likei, Health Advisor for the Morobe Provincial Government. He was a great supporter of the YUS CA and was vital in providing provincial collaboration with TKCP.

Dr. Joan Castro and Ruby Yamuna discuss healthy families and the environment with midwives and mothers.

# THE BALANCED PROJECT

In 2011, TKCP was fortunate to be awarded funding from the Balanced Project, which is a joint public health initiative of CI, University of Rhode Island, and the PATH Foundation Philippines, Inc., and is funded by USAID. The goal of this project is to enable local communities to design and implement public health programs driven by local health and conservation concerns, including family planning and reproductive health, two priorities identified by YUS residents. The Balanced Project funding will enable the training of peer educators in the YUS community on the connection between conservation and food, water and health, as well as the importance of family planning. TKCP is collaborating with the PNG government to develop capacity and support, ensuring that health-related services and supplies will be better represented in YUS. Additionally, TKCP will work with the Morobe Provincial Health Department to provide health trainings and education within YUS. In June 2011, Lisa Dabek and Ruby Yamuna hosted Dr. Joan Castro, Technical Director of the Balanced Project. Dr. Castro conducted village visits and initial group assessments of local health and conservation needs, including local environmental quality (e.g., safe drinking water, access to food resources), local barriers to health, and availability of family planning resources. Based on the information gathered, TKCP will work with the Balanced Project to design a training program that will be developed and implemented in 2012-2013.



# OUTREACH AND COMMUNICATIONS

### **MEDIA**

In 2011 TKCP work was featured in several publications including Time Magazine for Kids, the Weekly Reader, and a Canadian magazine for children, Les Debrouillards, reaching thousands of kids across the US and around the world. Caffé Vita posted a blog article on their website in June of 2011 outlining Daniel Shewmaker's visit to YUS. The text and photos of the blog article can be found at:

http://caffevita.blogspot.com/2011/06/ from-papua-new-guinea.html The coffee industry magazine, Fresh Cup, featured YUS Conservation Coffee in October of 2011, and discussed the challenges and successes of getting YUS coffee to market and about the partnership between YUS farmers and Caffé Vita. You can read the article here:

http://www.freshcup.com/featuredarticle.php?id=153

# AWARDS

Lisa Dabek was one of 29 people nominated for the 2012 Indianapolis Prize, a prestigious international award designed to honor conservation scientists who have dedicated their lives to saving endangered species.

# PRESENTATIONS TO THE PUBLIC

Lisa Dabek and the TKCP team gave presentations about the YUS conservation work in PNG at WPZ and to school groups, universities, and conservation organizations in the US and Australia. These presentations have been an ideal opportunity to broaden public exposure to the program and inform people who would not otherwise be familiar with the YUS CA.



### LESSONS LEARNED WORKSHOP

In late 2011, with funding from KfW, CI and TKCP organized a workshop on what lessons have been learned in creating the YUS CA in PNG in order to support future protected areas in PNG. Attendees included Mr. Gai Kula of R-L Environment Consultancy, representatives from the PNG Department of Environment & Conservation (DEC) and other PNG Conservation NGO's, as well as JCU, the YUS CO, and stakeholders from the YUS community. The primary goal of the workshop was to have a range of conservation practitioners and those affected by protected areas share their experiences, strategies, and identify the most effective ways to create future Conservation Areas in PNG. The final report summarizing the workshop will be issued in 2012.

# TKCP WEBSITE

The TKCP website, hosted by WPZ, continues to be a great resource for publicizing the program and providing access to information about staff, TKCP programs, and ways to donate. The website has new videos, updated YUS information, and even a few blog posts! You can find past annual reports, TKCP project history, and

#### adopt a tree kangaroo on our website: www.zoo.org/treekangaroo

In addition, WPZ published blog posts related to the YUS Conservation Coffee Project and are a great way to learn about the evolution of this livelihood program. These can be found at: http://woodlandparkzblog.blogspot. com/2011/04/drink-coffee-savewildlife.html

http://woodlandparkzblog.blogspot. com/2011/09/coffee-is-life-for-morethan-just.html

# SCIENTIFIC PUBLICATIONS

TKCP participated in two publications that increased scientific knowledge about tree kangaroo genetics and health. McGreevy TJ, Dabek L, Husband TP. 2012. Tree kangaroo molecular systematics based on partial cytochrome b sequences: are Matschie's tree kangaroo (Dendrolagus matschiei) and Goodfellow's tree kangaroo (D. goodfellowi buergersi) sister taxa? Australian Mammalogy, 34, 18–28 Travis E, Watson P, Dabek L. 2012. Health Assessment of Wild and Captive Matschie's Tree Kangaroo (Dendrolagus matschiei) in Papua New Guinea. Journal of Zoo and Wildlife Medicine, 43(1): 1-9

# PARTNERSHIPS

## CONSERVATION INTERNATIONAL

Thanks to the generous support of Conservation International through the Global Conservation Fund and the Asia Pacific regional office, TKCP has achieved many of the ambitious goals set forth, including the official recognition of PNG's first Conservation Area and, most recently, the establishment of the YUS Conservation Endowment. In addition, TKCP has also partnered with CI staff in scientific collaboration, including Dr. Bruce Beehler of CI who is conducting climate change studies in the YUS CA, as well as surveys on local flora and fauna.

## JAMES COOK UNIVERSITY

James Cook University in Cairns, Australia is the closest major university to PNG and has a great interest in PNG's unique and ecologically diverse ecosystems. Several research labs are involved in the YUS project, including JCU researchers Dr. Andrew Krockenberger, Dr. Mark Ziembicki, and former TKCP Research Coordinator, Gabriel Porolak, who are sampling sites in the YUS CA for wildlife population monitoring and training YUS Conservation Area Rangers. Additional collaborators described in the Research section (page 22) are focusing on multiple aspects of conservation research in YUS to provide a scientific foundation of knowledge for the PNG government to utilize in conservation policy making.

## iLEAP: THE CENTER FOR CRITICAL SERVICE

In late 2011, Danny Samandingke visited Seattle, Washington on a highly competitive fellowship awarded from Seattle-based iLEAP. The iLEAP fellowship is an intensive training opportunity undertaken with the goal of strengthening the candidate's leadership potential and encouraging them to find a voice for social change. For more information on the iLeap program, please visit their website: www.ileap.org



# KfW LIFEWEB INITIATIVE

In 2008, the German Ministry for Environment's (BMU) Lifeweb Climate Change Initiative funded CI and TKCP through the German Development Bank (KfW). The goal of the Lifeweb Initiative is to provide funding for protected areas to conserve biodiversity, secure livelihoods and address climate change. Through this funding source, and with the CI partnership, TKCP has been able to build a solid foundation for the long term management of the YUS CA and share knowledge with the PNG government and other stakeholders.



## THE ASSOCIATION OF ZOOS & AQUARIUMS & THE TREE KANGAROO SPECIES SURVIVAL PLAN

TKCP is fortunate to continue working with AZA institutions as well as with the AZA Tree Kangaroo Species Survival Plan (TK-SSP). In November 2011 Jacque Blessington coordinated the bi-annual TK-SSP meeting with WPZ Zookeeper Beth Carlyle-Askew, WPZ Collection Manager Deanna Ramirez, and WPZ Events Manager Toni Radonich, which was hosted for the first time by WPZ. The TK-SSP workshops give tree kangaroo zoo keepers, veterinarians, researchers, educators, and conservationists from around North America, Australasia, and Europe the opportunity to meet and discuss issues associated with captive and wild tree kangaroos. This meeting also provides a central resource for tree kangaroo husbandry and reproductive information sharing, as well as discussions about tree kangaroo conservation. TKCP's Danny Samandingke and Director Lisa Dabek gave presentations on tree kangaroos, research, and on connecting tree kangaroo zoo programs with PNG conservation.



## WPZ TREE KANGAROO CAPTIVE BREEDING PROGRAM

WPZ is grateful to have a strong link to the global tree kangaroo captive breeding program, and to the excellent Animal Management staff at WPZ. 2011 was a successful year for the captive breeding program and marked the birth of the first joey to parents Huen and Elanna. Special thanks go to WPZ's Animal Management staff: Beth Carlyle-Askew (Keeper), Wendy Gardner (Keeper), Jennifer Pramuk (Curator), Tina Mullett (Collection Manager), and Deanna Ramirez (Collection Manager) for championing the program and providing unending support.

# SUPPORT

TKCP is grateful to all our supporters listed below for helping us to raise \$2 Million to create the YUS Conservation Endowment.

### \$100,000 & ABOVE

Anonymous Conservation International Woodland Park Zoo



### \$50,000-\$99,999

Cammi and Jeff Libby George Meyer and Maria Semple Robert Plotnick and Gay Jensen John F. Swift Swift Foundation Margie Wetherald and Len Barson



### \$20,000-\$49,999

Anonymous Blumenthal-Edsforth Family Columbus Zoological Park Association, Inc. Nina Dabek and Peggy Shannon Microsoft Employee Matching Gift Program Roger Williams Park Zoo Kevin M. Schofield The Shared Earth Foundation

### \$5,000-\$19,999

Paul and Sarah Balle Carolyn Beard Ewel Sonya and Tom Campion Merrick and Lorraine Darley Stuart N. DeSpain Serena and Neal Friedman Lynn Hall Rosemarie Havranek and Nathan Myhrvold The Hoffmann Family Rampa Hormel, Enlyst Fund Carol and Bruce Hosford





Leonard and Norma Klorfine Amanda and Stuart Klorfine Klorfine Foundation Victoria Leslie Trish Miner Richard Saada Sedgwick County Zoo Maryanne Tagney Jones and David T. Jones Craig Tall Gail Warren



#### \$1,000-\$4,999

- Anonymous John and Andrea Adams Albuquerque BioPark Jane Alexander and Edwin Sherin Paul Balle Anthony and Lillian Bay Glen and Susan Beebe Laura Bentley David Brunelle Mark Christiansen Cleveland Zoological Society Michael and Lois Craig Richard and Ginger Goldman
- Ted and Tara Hart IBM Employee Matching Gift Program Sugi Kana Glenn Kawasaki Rob and Marti Liddell Ruth and Terry Lipscomb Bert and Susan Loosmore Steve Macbeth Milwaukee County Zoo Daniel and Meredith Morris Greg Parrott The Reeve Family Patti and William Savoy
- Adam and Catherine Schaeffer Gena Shurtleff Gary Smith and Kathleen Kemper Lisa Tiedt UBS Financial Services Employee Matching Gift Program Utah's Hogle Zoo Christy Wyckoff Lauren Wyckoff ZooParc de Beauval



### UP TO \$999

Anonymous (4) Richard Abel and Roberta Berner Hannah Ahmed Harriet Allen Avery and Marcia Aten Robert Bailey Anne Bartin Dominique Bideau-de Rozario Richard Biribauer Barbara Birney Boeing Employee Matching Gift Program Victor Bozzo Mylene Brooks Barbara Christensen and Jeff Meyer Leonard and Sharon Clemeson Susan Cohen Stephan Coonrod and Cheryl Clark Gabriel Cronin Sophie Danforth Brian Darley James DeBonis Daniel Dechert Patrick Dessalle Scott Dew and Colleen Hanlon Tamara DiCaprio Laurie Ann and C. Bert Dudley George and Barbara Ermentrout Donna and Steve Estes Antebi

Janice and William Fischel Harmony Frazier and Michael Breen Deena Fuller James Galbraith Mary Gillmore Madeleine Hagen Edie and Brian Hall Susan Hall Carol Harell Ryan and Heather Hawk Nancy and Paul Hawkes Sheila and Earl Horwitz Rochelle Howe and Jonathan Greene Mike Kaputa and Suzanne Tomassi Ken Katsumoto Jenny Kim and Stephen Sun Jeanne and Jason Kinnard Amy Kitchener Yoko Kobayashi Nicole Labrecque Jacob Langley Monica Lieb Lincoln Children's Zoo David and Lois Madsen Lindsay Malone Christine McKnight Gary Mozel Val and Laird Muraoka

Oaklawn Farm Anne Palaszewski Christopher Pepin and Ken Miller Craig Pepin Mimi Polk Gitlin Jeremy Potash Helen Ralph Helen Ramirez Roberta Roberts Rohrbach Family **Kimberly Sanders** Santa Fe College Foundation, Inc. Carol and Seymour Sarnoff Doug Schaaf and Judith Nyman-Schaaf Ellen Sciutto Patricia and Scott Sebelsky Judie and Rick Steenberg Laurie Stewart Jonathan and Tiffany Sweet TCS & Starquest Expeditions Steven Thornton and Nancy Ostrander Russ White Kevin and Jo Wilhelm Mike and Jan Williams Ann P. Wyckoff Stacie and Joseph Zane

### In addition to the YUS Conservation Endowment support, the following list represents those who contributed to TKCP operations in 2011.

Conservation International — Global Conservation Fund

Lifeweb Initiative of the German Federal Ministry of Environment (BMU) and German Development Bank (KfW) — through partnership with Conservation International

Albuquerque BioPark

Glen and Susan Beebe

Columbus Zoological Park Association, Inc.

Greater Kansas City American Association of Zoo Keepers

Rampa Hormel, Enlyst Fund

Rahul Kumar and Vasundhara Jain

Lincoln Children's Zoo

Microsoft Employee Matching Gift Program

PATH Foundation Philippines, Inc. – The Balanced Project (funding through USAID)

The Reeve Family

The Shared Earth Foundation



Learn firsthand

#### FOR MORE INFORMATION & TO SUPPORT OUR PROGRAM

Please contact Courtney Harris, Tree Kangaroo Conservation Program Coordinator

Woodland Park Zoo

601 North 59th Street, Seattle, Washington 98103 USA

T: (206)548-2620 F: (206)547-6962 E: courtney.harris@zoo.org

W: www.zoo.org/treekangaroo

# PARTNERS AND SUPPORTERS

TKCP would like to thank the numerous partners and supporters who make our work possible. TKCP is a program of the Woodland Park Zoo and we rely on multiple departments for our work. Many WPZ staff, volunteers, and Board members have been critical to the success of our conservation efforts. In particular we want to thank:

Woodland Park Zoo Board of Directors for their generous assistance with the endowment. We are grateful for your strong support.

Woodland Park Zoo's CEO & President Dr. Deborah Jensen for leadership, guidance, and confidence that we could achieve our endowment and program goals.

Woodland Park Zoo's Field Conservation Division including major support from Dr. Fred Koontz and Bobbi Miller.

Woodland Park Zoo volunteers Judy Nyman-Schaf and Trish Watson who have provided invaluable support to TKCP through photo management and online blog posts.

Woodland Park Zoo's Development Department worked tirelessly with us to achieve the endowment goal. Special thanks go to Major Gifts Officer Paul Balle, Vice President of External Affairs David Wu, Major Gifts Manager Anne Knapp, and Grant Writer Kate Neville.

Woodland Park Zoo's Director of Finance Valerie Krueger, Senior Accountant Celeste Sabers, Accounting Supervisor Nathan Ricard, and the Finance Department for working with us on the KfW grant and Endowment.

Woodland Park Zoo's Communications Department, especially Rebecca Whitham and Ryan Hawk for their talents and hard work in outreach and communications.

Woodland Park Zoo's Animal Management Staff

#### Outside of the WPZ we want to thank the following people and organizations:

The Leahy family especially in memory of Mrs. Jeanette Leahy who provided friendship, history, and many enjoyable visits to her home in Zenag, PNG.

Carl Darnell of Chinook Medical Gear for generous support of our field equipment needs.

PNG Department of Environment and Conservation

Conservation Governor Luther Wenge

Morobe Provincial Government

Kabwum District Government

YUS Local Level Government

Wasu Local Level Government

PNG Forest Research Institute and Anton Lata

Balob Teachers College

Teachers, Headmasters and School Board Members of YUS

James Robins, PNG National Research Institute

PNG Institute for Biological Research (IBR) especially Miriam Supuma and Banak Gamui, and the Board of Directors

Simon Passingan of Barefoot Community Services

Simon Rollinson of Pacific Island Projects

Karl Aglai of Coffee Industry Corporation

Morobe Province Health Department staff especially in memory of Dr. Theo Likei

The Balanced Project, including Dr. Joan Castro, Linda Bruce, and Janet Edmond (Cl) Conservation International including CI-Global Conservation Fund, Jennifer Morris, Chris Stone, Dr. Bruce Beehler, Anurag Ramachandra, Ulrike Troeger, Angela Kirkman, Martine Culbertson, Valeria Martinez, Donna Appelman, David Mitchell, Andre Baumgarten, Mike Donohue, and David Emmett

Damien Ase of CELCOR

Olivier Langrand of Island Conservation

James Cook University including Dr. Andrew Krockenberger, Dr. Mark Ziembicki, Gabriel Porolak, Dr. David Gillieson, Dr. Jonathan Cornelius, Dr. Miriam Murphy, Dr. Tony Page, Michelle Venter, Wouter Dieleman, Leanne Shillitoe, Dr. Sasha Aikhenvald, Hannah Sarvasy

Marcia Brown, Arlyne Johnson, and Richard Margoluis of Foundations of Success

Lae International Hotel and General Manager David Elgar

North Coast Aviation, MAF, SIL for air transport

Tammy Watts of K&L Gates

Deb Wright

Botanists Rigel Jensen and Steve McKenna

2011 field volunteers Mike Kaputa and Suzanne Tomassi

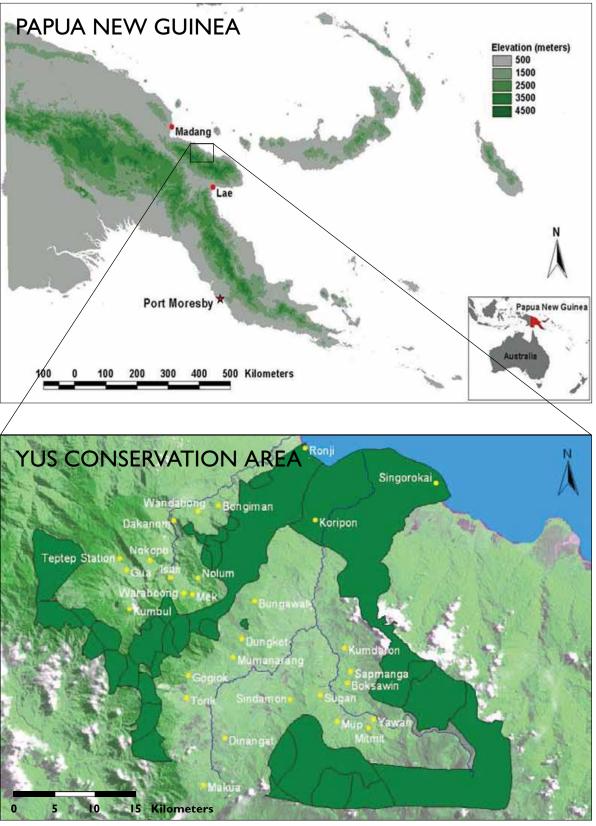
Jane Mogina of Mama Graun

Steve Whisker of PNG LNG project, ExxonMobil

Most importantly, we would like to thank the people of YUS, who are the stewards of the YUS Conservation Area.

All photos in this annual report are by Harriet Allen, Bruce Beehler, Beth Carlyle-Askew, Lisa Dabek, Ryan Hawk, Fred Koontz, Karau Kuna, Trond Larson, Zachary Wells, and Mark Ziembicki (indopacificphoto.com.au). We are grateful to the individuals who have allowed their photos to be used in this annual report. Any photos not credited were provided by TKCP.

## MAPS







#### US OFFICE:

Woodland Park Zoo 601 North 59th Street, Seattle, Washington 98103, USA T: (206) 548-2620 F: (206) 547-6962 Dr. Lisa Dabek E: lisa.dabek@zoo.org Courtney Harris E: courtney.harris@zoo.org

#### AUSTRALIA OFFICE:

Australian Tropical Forest Institute James Cook University P.O. Box 312, Smithfield Queensland 4878, Australia Zachary Wells E: zachary.wells@treekangaroo.org

#### PNG OFFICE:

P.O. Box 360 Lae, Morobe Province, PNG Ruby Yamuna E: ruby.yamuna@treekangaroo.org

www.zoo.org/treekangaroo

