



## TEAM Network Science Meeting 2006...

**O**n February 10th, 2006, the first TEAM Network Science Meeting took place in Foz do Iguaçu, Brazil with almost one hundred international scientists in attendance. Approximately half of the participants were from one of the five TEAM Network Sites, three in Brazil, one in Suriname and one in Costa Rica. The other participants were from different research institutions, universities and NGOs from all over the world, including Cameroon, Canada, Democratic Republic of Congo, Ecuador, Ghana, Madagascar, UK, USA, Venezuela.. The meeting was a global collaboration of tropical ecologists.

During the three and a half day meeting, participants broke into working groups. Each group worked on one of the TEAM Monitoring protocols. The groups were given the task to develop scientific protocol questions that relate directly to the mission and goals of the TEAM Initiative as well as to review the current protocol's effectiveness at answering those questions, and feasibility of implementation.

Plenary sessions were also held including Cyberinfrastructure for Ecologists by Peter Arzberger, University of California San Diego and New Tools for Understanding Avian Population Dynamics by Ryan Norris, University of British Columbia;

### Highlights from the TEAM Network Meeting:

- "It was a good opportunity to exchange ideas and organize the working group with concise information. I guess that the most important thing now is to put the hands on and work!" *Suzana Ketelhut*
- "For me, the benefit of the meeting was as much in getting to know TEAM participants and their differing visions of the project, as it was working out details of protocols." *Robert Colwell*

*Continued on page 2*

*Introducing 4 new sections in this issue of the TEAM Network News: an article on the TEAM Network Meeting 2006 on page 1 and 2; a new section on other networks that might be of interest to TEAM, Networks (Nĕt'wûrks') on page 8; Tech Talk: TEAM Informatics on page 9 and the TEAM Photo Rally on page 15.<sup>e</sup>*

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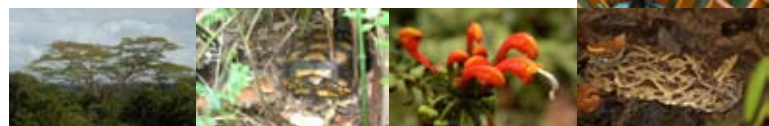
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- [www.teaminitiative.org](http://www.teaminitiative.org)
- [www.conservation.org](http://www.conservation.org)
- [www.biodiversityscience.org](http://www.biodiversityscience.org)

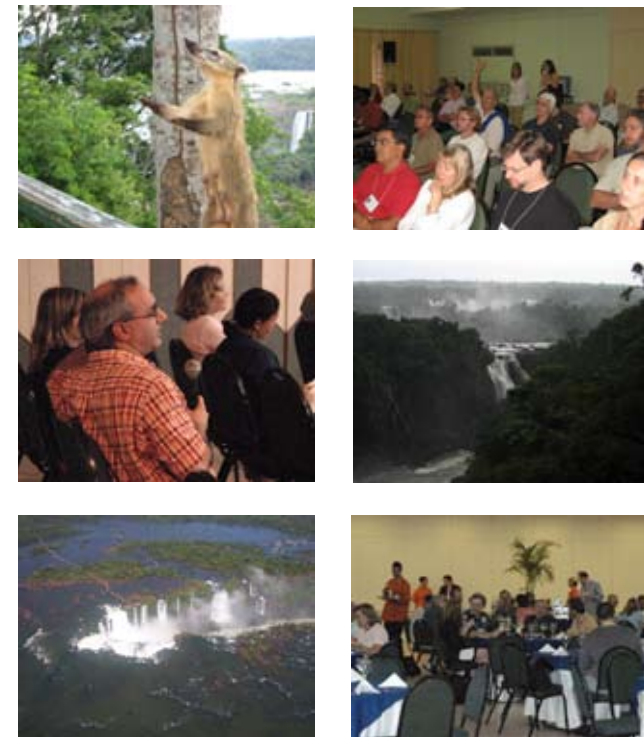
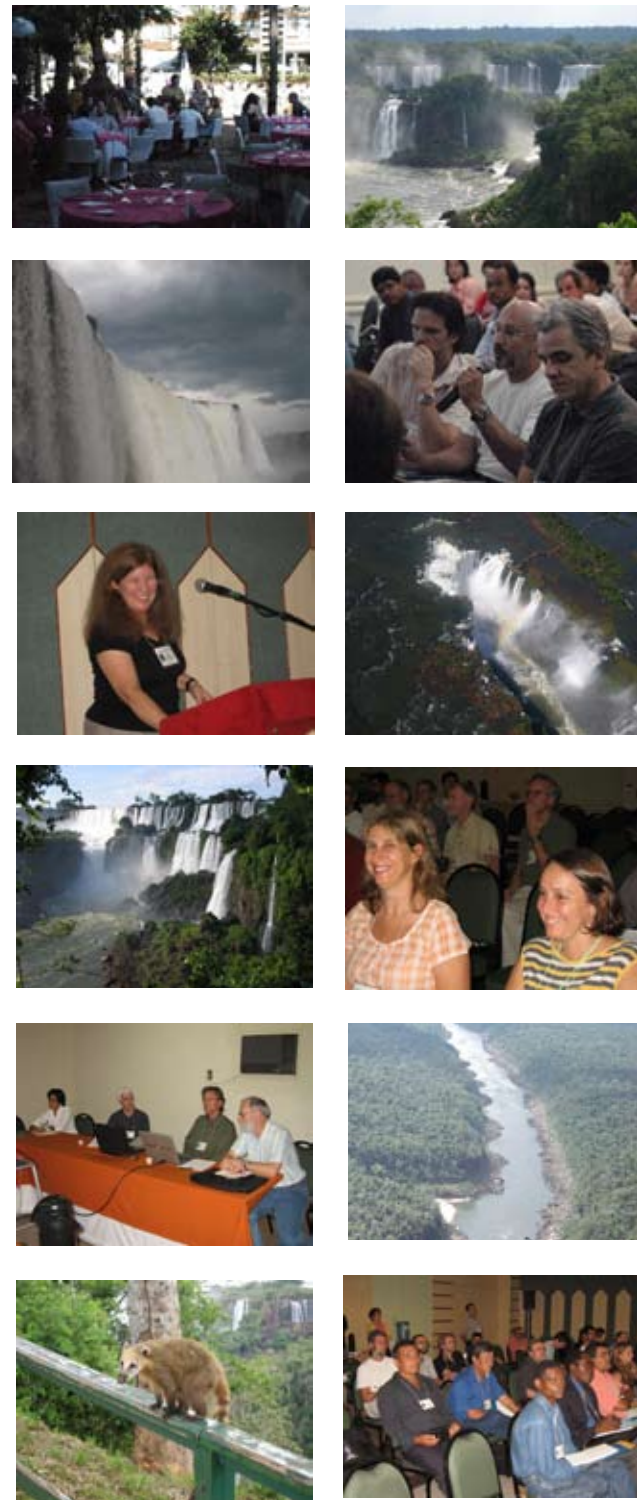


# TEAM Network Science Meeting 2006 continued...

- “Let’s see, highpoints: First, meeting other team participants and biologists from other parts of the globe or that study other organisms.
- 2. reaffirming that the bird protocols are basically good.
- 3. establishing promising future objectives, the sense that the big picture goals of the project are really attainable.
- 4. challenging and constructive scientific exchange of ideas.” *Mario Cohn-Haft*

To continue the momentum that was created during this first meeting, the next TEAM Network Science meeting will be December 1-5, 2006. We are happy to announce that INPA has agreed to host the meeting in Manaus. Check the next TEAM Network News for more information.

*The following images showcase some of the various events that took place during the February 2006 TEAM Network Science Meeting.*



# TEAM Network Debates

*This section highlights current scientific topics being debated within the TEAM Network. All are invited to submit debate comments (300 words or less) to TEAM Network Debates:*

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### Response to ‘Is Lucid software useful to the TEAM Network?’ from the October 2005 issue:

J. Longino wrote in the last newsletter “parataxonomists must be able to recognize the ant fauna in the field, and be specialists about local fauna”. We agree that training and specialization of local people is one of the aims of the TEAM Initiative, but considering it is a 10 years project – how much effort are we – experts or not – able to put into specimen identification at a higher taxonomic level? I went back to the Protocol text and got the following questions:

- 1) What is the baseline level of fluctuation in leaf litter ant communities in tropical forests? How does that baseline differ across regions?
- 2) Are there trends in indices of species richness or relative abundance over time? If so, do those trends correlate with trends in climate measures, etc.?
- 3) Is community composition changing over time?
- 4) At what spatial scale does turnover in litter ant community composition occur?

Around 80% of those questions can be answered using morphotypes rather than species names. There is no consensus about data analysis yet, but it should be able to answer several questions at the beginning of the protocol. For among sites comparisons species morphotypes MUST be equal across sites and across regions (e.g. Manaus “Gnamptogenys sp1” equals than Caxiuana “Gnamptogenys sp1”, Rio Doce, Surinam, La Selva). I believe that the effort necessary to train new taxonomists and the accumulation of material will always be problematic. By our experience in Manaus, we could “fast train” two persons with no past experience on ant identification in less than one year to sort out specimens by subfamily and genus. Considering that we found ca. 45 ant genera – how long will take to train both to identify and sort out ca. 300 species in 10 years? I think it’s necessary to connect efforts, and to concentrate taxonomic power in some regions. All “teams” should be able to access either alcohol/mounted collections from all TEAM

classification– and leave identification of new/complicated species (e.g. Pheidole) to specialists who are interested in collaborating and can make taxonomic descriptions/revisions faster than most of us.

*Suzanne Ketelbut Lead Scientist for Ants at the Manaus TEAM Site*

### High tech in the Tropics: Analog is passé.

Old habits die hard, particularly when they surround tried and true methods for doing research. Ever since portable digital recorders hit the market in the late 1980’s the debate has raged about whether to use traditional reel-to-reel analog tape recorders or new digital ones. Early on evidence suggested that the popular digital audio tape (DAT) recorders were subject to failure in the high humidity present in tropical forests, and this kept many researchers from going digital. In the late 1990’s the compression algorithms used to store sound on Mini-discs kept many researchers away, as did the overwhelmingly commercially successful mp3 format, for fear that recordings would not be of research grade. In the past few years, however, portable digital recorders have matured to the point that they are the clear choice for bioacoustics field work.

These recorders use solid-state recording media such as flash memory cards that are used in digital cameras, and can capture high-quality sound in formats such as WAV-files that have no data loss, are easily readable by a computer, and easily archived. With no moving parts and a wide range of recording format options and microphone inputs, recorders such as the Marantz PMD670 are endorsed for field use by the bioacoustics community and research institutes such as the Cornell Lab of Ornithology. Using a recorder such as this enables researchers to accurately capture high-frequency sound that is beyond the range of analog tape recorders, and greatly speeds up processing time if the sounds are later analyzed with computer software. Lastly, digital recorders such as this cost only slightly more than their analog counter-parts, but their performance is far superior.

*Scott Brandes, Research Engineer-Bioacoustics for the TEAM Initiative*



# TEAM Network Debates continued...

## Changes in patterns of butterfly abundance: The jury is still out as to the cause

Fruit-feeding butterflies have been monitored now for 33 consecutive months at Caxiuanã, although the first month (March 2003) was an incomplete sample (133 vs 480 trap-days). One would expect some sort of tranquility in these samples, but the last five months of sampling have shown a derailing of the butterfly train. The following graph of the total number of butterflies collected in these months gives an idea of what I'm talking about (Figure 1).

These results might mean a good year for butterflies (at least the few species that exploded) or a bad one (when fruiting of forest trees failed and our banana baits became more attractive). For the western Amazon basin this year was the worst drought in the past 80 years, but such a pattern does not show up in our meteorological data from Caxiuanã. I will look for a pattern with the number of sunny (rainless) days, but the fact remains that we do not have a good handle on these data. Our weather station is far removed from the plots where collections are made, and our hand-held Kestrel 3000 units are not accurate (if that is the precise word I am looking for).

*William Overal, Lead Scientist for Butterflies at the Caxiuanã TEAM Site*

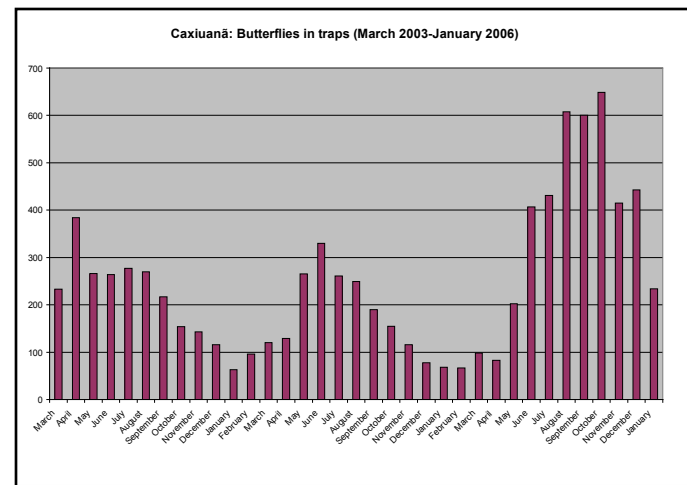


Figure 1: Number of Butterflies in the Traps at Caxiuanã (03 2003 to 01 2006)

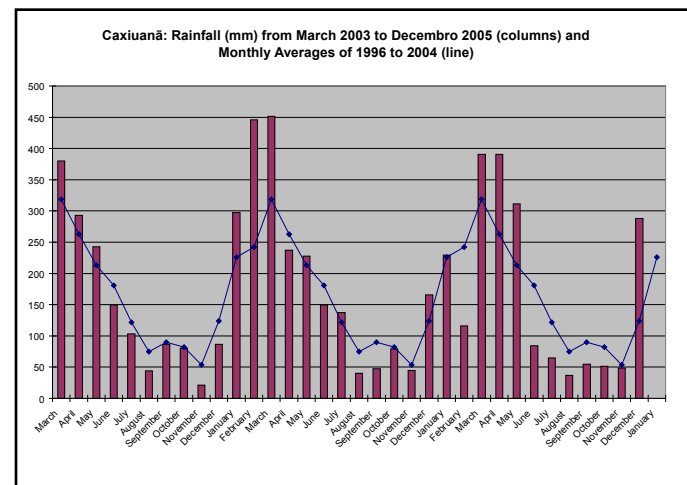


Figure 2: Rainfall (mm) from Caxiuanã, March 2003 to December 2005 (columns) and Monthly Averages of 1996 to 2004 (line)

# TEAM Network Highlights

## La Selva TEAM Site

La Selva Biological Station was established in 1954 in the Caribbean lowlands of northern Costa Rica. It was first an experimental farm owned by Dr. Leslie Holdridge. In 1968, the Organization for Tropical Studies (OTS) purchased the area for use as a research station. Today the station encompasses approximately 1,600 hectares and is adjacent to the Braulio Carrillo National Park, which covers more than 46,000 ha. Together, the station and park compose a large portion of the Cordillera Volcánica Central Biosphere Reserve.

The station receives an average of 4 meters of rain per year and the majority of the station is primary tropical rain forest, but premontane wet forest also is found. There are two large laboratories used for a variety of research projects. In the past year, 291 researchers working on 152 separate projects and 108 college-level courses used the station. In 2004, 116 papers were published from research done at La Selva. Training groups, workshops, high school groups, and ecotourists also use the station. Currently there are 8 long-term projects, including TEAM. These long-term studies focus on a variety of topics ranging from arthropods at the station to the effect of volcanism on streams to the use of native species in restoration.

TEAM began the Volcán Barva Site at La Selva in 2003, and has four working Integrated Monitoring Arrays (IMAs). TEAM has three principal researchers – David Clark, Jack Longino, and Robert Colwell – and eight technicians who record field data. David Clark is TEAM's site coordinator and lead scientist for the vegetation, climate and soil protocols. He is the director of many projects related to landscape-scale litterfall monitoring, forest dynamics, coarse woody debris input monitoring and long-term tree demography monitoring, including the TREES and CARBONO Projects. Jack Longino oversees the TEAM ant protocol at this TEAM Site and is also directs the ALAS (Arthropods of La Selva) project. The ALAS project is a long-term effort to assess and monitor the arthropod biodiversity in a lowland tropical rainforest for tropical biodiversity research. Robert Colwell participates in both ALAS and the Volcán Barva TEAM site at La Selva, and focuses particularly on data analysis. Additionally, Johanna Hurtado Astaiza is the Volcán Barva Site Manager. In November 2003, Scott Brandes and Piotr Naskrecki set up a lab for acoustic monitoring of nocturnal insects where they collaborate with researchers from the TEAM Site.

Currently, the climate, vegetation (1 hectare plot and litterfall), ants, butterflies, birds, and camera trapping protocols have been implemented. TEAM's work at La Selva has already recorded several new species for La Selva, including one species of liana, three species of ants, and five species of butterflies. The TEAM Site also recorded the jaguar (*Panthera onca*), a species previously believed to be locally extinct, and a rare species of deer (*Mazama americana*).

Public outreach talks have been given ("Long-term monitoring in tropical forest: the TEAM model and the case of the Volcán Barva TEAM Site"), preliminary results have been presented to the Environmental Ministry (MINAE), and presentations have been made at two principal universities in Costa Rica. Alexandra Aparicio, the former manager for the Volcán Barva TEAM Site, and James Sanderson, a research scientist with TEAM, have prepared a paper for publication on camera trapping of medium and large terrestrial mammals at La Selva.

*Submitted by Johanna Hurtado*



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**Caxiuanã TEAM Site**

The researchers at Caxiuanã have been busy submitting papers and giving presentations at various symposia and congresses. One paper, detailing a rare sighting of a Harpy Eagle preying on a primate, was published in Neotropical Primates. The predation occurred during a particularly exciting census for the TEAM primate protocol. Another paper, on Ants, is currently in press for Acta Amazonica. Please see the citations below. Presentations were given at the following Symposium and Congresses: the XVII Simpósio de Mirmecologia-Biodiversidade e Bioindicação by A. Arruda, A. Bastos, A. Harada, R. Souto, V. Rosário; Annual Meeting of the Association for Tropical Biology and Conservation by W. Overal; III Congresso Brasileiro de Mastozoologia by J. Silva-Júnior and S. Martins; and IX Congresso Argentino de Meteorologia by A. Costa.

*Submitted by Simone de Souza Martins*



**Manaus TEAM Site**

The new TEAM-INPA facilities, funded using the TEAM Initiative Block Grant, will be completed in March of this year. These facilities will include office and laboratory space and function as the scientific hub for the Manaus TEAM site.



The second TEAM Manaus Site workshop took place on December 5th and 6th, 2005. INPA hosted the event where the findings from each of the different protocols were presented. In an effort to analyze and integrate the work of the three different Manaus sites, PDBFF, Ducke and LBA, representative from each site attended. The representatives included Dr. Regina Luizão from the PDBFF site, Dr. Nadja Cunha from the Ducke site and Dr. Flávio Luizão from the LBA site. Also present were INPA's acting Director and TEAM Site Coordinator, Dr. Edinaldo Nelson, and TEAM's Regional Manager, Dra. Cecilia Kierulff, who both contributed to the discussions on data policy issues.

*Submitted by Jorge Gallardo*

After finishing our first year and a half of sampling for the ant protocol, we were ready to participate of 3 different events this year. We attended the ATBC Conference at Uberlândia, MG, where we presented the first results of our "numerical" findings and Fabricio shows his dancing skills; the Myrmecology Congress at Campo Grande, MS, where two students each presented a posters with results from 2 parallel projects in the TEAM IMA's; and the IUSSI – BR, Belo Horizonte, MG, where we presented results from one parallel project in the TEAM IMA's. After that, we decide to go back on the old-fashioned cardboard boxes and start to sit our ants on top of pins. After this process is complete, we hope to keep up our ambitious purposes –and take digital pictures from Manaus Ants as soon as possible!

*Submitted by Suzanne Ketelhut*

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**Citations**

Martins, S. S., E. M. Lima, and J. S. Silva-Júnior. 2005. Predation of a bearded saki (*Chiropotes utahickae*) by a harpy eagle (*Harpia harpyja*). *Neotropical Primates* 13:1.

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**Rio Doce TEAM Project**

The Rio Doce State Park (PERD), a 35,976-ha park, is the largest fragment of the Atlantic forest in the State of Minas Gerais and was classified as an Extreme Biological Relevance area for conversation in the Atlantic Forest hotspot. The forest surrounding the field station is a mosaic of primary and secondary forests, in different regeneration stages, encompassing over 50 ponds and swamps. The park's research activities include TEAM as well as numerous independent projects related to the Long-Term Ecology Research Program sponsored by PELD and CNPq.



The Rio Doce TEAM Site's first year of monitoring saw the implementation of six protocols by over 30 researchers including professors, graduate and undergraduate students. The camera trapping protocol was implemented in March 2004, while the other protocols did not begin collecting data until December 2004.

During the first year, the Primate Protocol had approximately 371 visual recordings of 18 species of mammals, of which five were primates. Using the primate data, scientists have already begun to make preliminary estimates of population density for the three most abundant primate species. Over 18 species of large mammals, such as the spotted jaguar and the tapir, have been captured in the camera traps.

As for invertebrates, the ant protocol completed one year of data collection with a volume of samples so large that the materials are still being triaged and processed. Butterfly collection began at two IMA locations, the Lagoa Preta and Lagoa Central plots, in March 2004.

The 1 ha vegetation plots were establish in December 2004, with the first tree measurement made in August 2005 and species identification started in September 2005. The litterfall protocol began in July 2005, after all the litterfall traps were built and installed.

Presentations were given at the following Symposium and Congresses:

- III Congresso Brasileiro de Mastozoologia 2005, by Nunes, A. V. & Scoss, L. M. and by Scoss, L. M., Araújo, G. C. & Nunes, A. V.
- The Annual Meeting of the Association for Tropical Biology and Conservation, 2005 by Scoss, L. M., Sanderson, J. G., Viana, L. R., Nunes, A. V. and by Viana, L. R., Scoss, L. M., Fonseca, G. A. B.
- The 19th Annual Meeting of the Society for Conservation Biology, 2005. by Viana, L.R., Scoss, L. M., Fonseca, G.A.B.

- XI Congresso Brasileiro de Primatologia - Porto Alegre, 2005 by Diaz, L.G., Mendes, C.L., Barbosa, E.F., Moreira, L.S., Melo, F.R., Consenza, B.A.P. & Strier, K.B. and by Dias, L.G., Mendes, C.L., Barbosa, E.F., Moreira, L.S., Melo, F.R. & Strier, K.B.

*Submitted by Luiz Dias*

**Citations**

Viana, L. R. & Scoss, L. M. 2005. Occurrence of the colored peccary *Tayassu tajacu* (Linnaeus, 1758) in the Parque Estadual do Rio Doce, Minas Gerais, Brazil. *Suiform Soundings, IUCN/SSC Pigs, Peccaries, and Hippos Specialist Group (PPHSG)*, 5(2): 13-17.

2005. Monitoramento da evolução da habituação do miquiri *Brachyteles hypoxanthus* à presença do pesquisador. Livro de Resumos do XI Congresso Brasileiro de Primatologia - Porto Alegre, 13 a 18 de fevereiro de 2005 - PUCRS

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**CSNR TEAM Site**

The TEAM Site in Suriname is managed by the Centre for Agricultural Research in Suriname (CELOS) and facilitated by Conservation International Suriname. Operations in the Central Suriname Nature Reserve (CSNR), a UN Natural Heritage Site since 2000, started in April 2005 when the first Integrated Monitoring Array (IMA) plot was established. This IMA is located on mesophytic high dryland forest which is typical for the major part of the Surinamese interior. In August 2005 the central 1 ha Vegetation plot was inventorized and in the following month the Modified Gentry Plots were evaluated. Predominant species in the 1 ha plot were *Iranthera sagotiana* (Myristicaceae) with 42 trees; *Swartia remigifer* and *Dicorynia guianensis* (Leguminosae) with 36 and 26 trees, respectively; *Astrocaryum sciophyllum* (Palmae) with 25 palms; and *Eschweilera corrugata* (Lecithidaceae) with 25 trees measured.



## TEAM Site News Continued...

The implementation of the TEAM protocols for ants, butterflies, birds, primates and camera trapping will start in 2006 after training of the students and technicians by the lead scientists is completed. Students from the Anton de Kom University of Suriname and Biology students from the Institute for Advanced Teacher Training are eager to become part of TEAM research. In January 2006 an Ants training course will be conducted, and Jim Sanderson will assist in the location of the camera traps.

Simultaneously with the TEAM field work, field station facilities are being constructed on the right bank of the Coppename River, just across Fungu Island at the Gateway of the CSNR. Presently a lodge with 10 rooms has been constructed for the core team and eventual labourers, while construction of a laboratory and office is currently underway. The field station can only be reached by a two to seven hour boat trip, depending on the water level, or by a fifty-minute flight with a small aircraft. These logistics present challenges for the site.

Submitted by Rudi van Kanten

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- Please send TEAM Site News items to [teamnetworknews@conservation.org](mailto:teamnetworknews@conservation.org)

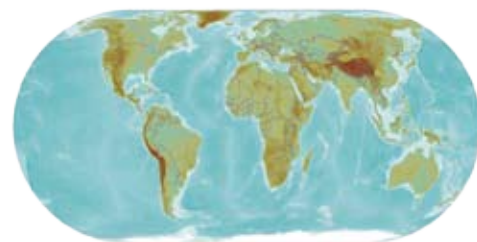
## Networks (Nēt'wûrks')

As everyone knows, networks are a great way for many different people, groups, institutions, etc. to communicate and interact. This section will highlight Networks of interest to those within the TEAM Network.

### International Organization of Biological Field Stations, [www.iobfs.org](http://www.iobfs.org)

For almost seventeen years, IOBFS has been collecting information on international biological field stations with the mission to aid in the exchange of information both between those field station with the IOBFS and between IOBFS and the interested public. Their goals are to:

1. Develop a directory of field stations to assist in establishing a global communication network.
2. Link field stations through an electronic information network.
3. Facilitate the exchange of scientists among field stations.
4. Foster development of education programs at field stations.
5. Develop cooperative research activities.
6. Strengthen library resources at field stations.
7. Provide global positioning devices to facilitate mapping in remote areas.
8. Organize an international meeting among field station representatives.



From [www.iobfs.org/about.htm](http://www.iobfs.org/about.htm)

Currently there are over three hundred field stations in the IOBFS Network. Members in the Network can fill out a questionnaire with information about their field station. That information or their field station webpage will be posted on the IOBFS website. Interested parties can also join the IOBFS listserv to communicate with other institutions that manage field stations.

- Do you know of a Network that you think the TEAM Network members might be interested in learning about? Please send recommendations to [teamnetworknews@conservation.org](mailto:teamnetworknews@conservation.org)

## Tech Talk: TEAM Informatics

As an interim solution to TEAM's information management strategy, TEAM has developed the TEAM Initiative Information Management system (TIIM v1.0) <http://www.teaminitiatedata.org>. This system provides TEAM Network members the ability to load, store, and access protocol and protocol-related documents and associated metadata. A Separate system has been established in Brazil to accommodate the current Brazil data requirements and can be found at <http://www.teaminciatiavadados.org>.

## TEAM Network Calendar

### Upcoming events...

- *CI Madagascar Meeting: June 20-24, 2006, Antananarivo, Madagascar*
- *Second TEAM Network Science Meeting: December 1-5 2006, Manaus, Brazil*

### Past events...

- *Second TEAM Manaus Meeting, Manaus, Brazil: For a description of the meeting, see page 6.*

- *TEAM Scientific Oversight Committee meeting, Foz do Iguaçu, Brazil:*

Taking place one day before the start of the TEAM Network Science Meeting, this meeting was an opportunity for TEAM to present an update on work that has been accomplished as well as the future plans for the TEAM Initiative to the Scientific Oversight Committee. Highlights from the meeting were presentations on the TEAM Information Management System, Operations, Communication, the Global Implementation of the TEAM Network and the discussions that followed.



- *TEAM Network Science meeting, Foz do Iguaçu, Brazil: For a description of the meeting, see page 1-2.*

- *Communication Training Workshop, Foz do Iguaçu, Brazil:*



Twenty network meeting participants took part in a communication training workshop that was lead by Nancy Baron, Ocean Science Outreach Director for SeaWeb and COMPASS. Nancy is the lead communication trainer for the Aldo Leopold Leadership Program where she works with environmental scientists to help them translate their work effectively to journalists, the public and policy makers. Using those same techniques, Nancy was assisted by four journalist in running the TEAM Communication Workshop. The journalists included Thomas Hayden, a freelance science writer based in the US; Marcelo Leite, a columnist at

Folha de S. Paulo; Natasha Loder, the science and technology correspondent from the Economist; and David Malakoff, the Technology and Science Correspondent from National Public Radio.

The highlight of the meeting was a one on one mock interview between a journalist and one of the participants. The interviews portrayed the many different situations where journalists and scientists can meet and interact, including radio interviews, casual conversation at a cocktail party, press conferences, and phone calls.

- *Informatics Working Group, San Francisco, USA:*

The Informatics Advisory Group met May 23-24 at the Gordon and Betty Moore Foundation in San Francisco. The main discussion topics were the conceptual architecture, collaboration tools for network members, high performance computing, serving data over the internet, environmental database interoperability standards, and wireless sensor networks. The meeting was very eventful and produced a roadmap for the TEAM Informatics development. Look for a special feature on TEAM Informatics progress in the subsequent newsletters.

- Please send any TEAM related events to [teamnetworknews@conservation.org](mailto:teamnetworknews@conservation.org) for posting in the next newsletter.

- For the Volcán Barva TEAM Site, what is your title?

*I am the Principal Investigator, along with Co-Principal Investigators John (Jack) Longino and Robert Colwell.*

- Describe the capacity in which you work with TEAM.

*Together with my Co-Principal Investigators, I will analyze the data produced by this site. My particular interest is in forest ecology, so I mainly work with the vegetation data. I also live at La Selva and am the senior scientist that oversees the management and administration of the TEAM site.*

- How many years have you worked on the TEAM Site?

*I have worked with TEAM since the Site started at La Selva; the Site is now in its third year here.*

- How many years have you worked at La Selva?

*I have lived and worked here for 26 years.*

- What protocols have you worked on with TEAM?

*I focus my work on the vegetation protocol and the site establishment protocol. However, in setting up a TEAM site like this, you end up working with all the protocols at some time.*

- Are there any interesting findings from your work?

*In spite of the immense amount of research done at La Selva (a new research paper appears every 3 days!), there are still a surprising number of new species for the station that have been found over the course of my research. Deborah Clark and I have recorded 15 new tree species for the station. The specimens are still being worked on, so we do not know yet how many (if any) are new species for science.*

- Do you have related research that has stemmed from your TEAM work?

*Together with my wife and colleague Deborah Clark, I have several long-term forest ecology projects that have now become part of the TEAM work.*

- Have you presented at any conferences or published any work based on your research with TEAM? With other research at La Selva?

*With my colleagues, I regularly give presentations at international meetings, university seminars, and to the dozens of graduate and undergraduate courses that pass through La Selva annually. I present results of my work at major conferences every year, usually the Ecological Society of America or the Association for Tropical Biology, or both. So far I haven't presented anything from TEAM because the site is just getting going.*

- What is your educational background? Previous work and/or research experiences?

*I did my undergraduate at the University of North Carolina at Chapel Hill and my Ph.D. at the University of Wisconsin. Deborah and I did our Ph.D. research in the Galapagos Islands while we were members of the Peace Corps there.*

- What are your hobbies?

*I enjoy playing a variety of musical styles on mandolin, fiddle and guitar.*



- How many years have you worked on the TEAM Initiative?

*I've worked with TEAM for three years.*

- What is your educational background? Previous work and/or research experiences?

*I received my bachelor's degree in physics from Georgia Tech and my master's and Ph.D. at Texas A&M. For my Ph.D., I did an Interdisciplinary Engineering program that concentrated on bioacoustics.*

- What are your research interests?

*My research focuses on bioacoustics and digital signal processing.*

- Do you work with any protocols other than acoustic?

*I also work with the avian monitoring protocol. In particular, I help with the acoustic part of the protocol; how sounds are recorded and how they are analyzed.*

- What progress has been made with the acoustic protocol?

*I have built hardware to record sounds in remote locations in the field and have also created software to analyze these sounds. We're in the testing phase for this protocol at La Selva, so it has not yet been implemented elsewhere.*

- What taxa are the acoustic monitoring able to capture?

*The monitoring focuses on crickets. We first find sonotypes by grouping similar calls that we think come from the same species. One of the challenges with crickets is that many of the calls are unknown, so we have to work with field biologists to link calls to known species. I am working on creating a monitoring system for frogs and hope to work with birds also. Of the three, the birds are the most challenging because of the complexity of their vocalizations.*

- Are there any interesting findings from your work?

*We have recorded many undocumented crickets. This is both interesting and challenging because many of the crickets have not been studied or identified before. So, it means a lot more work must be done to document and identify these species.*

- Do you have related research that has stemmed from your TEAM Initiative work?

*Prior to joining TEAM, I did research involving bioacoustics with marine mammals, but never really applied this to the monitoring of crickets. So, this aspect was a new direction for my research.*

- Have you presented at any conferences or published any work based on your research with TEAM?

*I have a paper that will be published soon that I wrote with Piotr Naskrecki (a scientist who works for Conservation International on the Invertebrate Diversity Initiative) and a colleague at Cornell. For this, I created an algorithm to automatically detect cricket calls with software. This software is used to analyze our canopy recordings in order to monitor the cricket species found at a site. I hope to present this topic in the spring, but have not yet presented it.*

- In the future, what do you hope to accomplish?

*I would like to make acoustic monitoring viable for insects, frogs, and birds.*

- What are your hobbies?

*I'm interested in birding. It's kind of hard to separate my hobbies from my professional interests, though. I also raise tropical fish and am just getting into growing orchids.*

- If you would like to be interviewed for the next newsletter, please email [teamnetworknews@conservation.org](mailto:teamnetworknews@conservation.org)



## Comings

**Jorge Ahumada, [j.ahumada@conservation.org](mailto:j.ahumada@conservation.org)**

Jorge A. Ahumada received his degree in Biology at Universidad de Los Andes in Bogotá, Colombia in 1988. He spent a few years doing field research on neotropical primates in Colombia and Panama before enrolling in graduate school in 1990 in the US. He obtained his Ph.D. in Ecology and Evolutionary Biology at Princeton University in 1996 where he worked with Andy Dobson and Henry Horn on the reproductive strategies of neotropical wrens in variable environments. He then returned to Colombia to take a position as an Assistant Professor at the Department of Biology at Pontificia Universidad Javeriana. During his tenure there, he created the Laboratory of Population Ecology and worked on the reproductive ecology of cloud forest birds and the effects of forest fragmentation on these communities. In 1997, he became Chair of the Department of Biology and held his position for two years. In 2000, he returned to the US to expand his academic opportunities working with Steve Hubbell on models of tropical forest dynamics. In 2002 Jorge was hired by the University of Hawaii to model the dynamics of bird diseases in Hawaii as part of a Biocomplexity project looking at the impact of malaria and pox on Hawaiian native birds. As of January 2006, Jorge became the new Technical Director of the TEAM Initiative.



Jorge is broadly interested in applying mathematical models to solve applied conservation problems. He is particularly interested in the impacts of climate change on disease and biodiversity, and has done work incorporating the effects of temperature and rainfall on models of disease-transmitting vectors. He likes the outdoors, loves running and cycling, cooking Italian and Colombian food and savoring good wine.



**Daniel Ayres, [d.ayres@conservation.org](mailto:d.ayres@conservation.org)**

Daniel Ayres will be a summer intern for TEAM and he will be assisting in the development of the TEAM web portal as well as a variety of IT tasks. Daniel, originally from Brazil, came to the United States to study computer engineering at the University of Illinois at Urbana-Champaign where he received his undergraduate degree. Previously Daniel led the software development effort for the BioEstat series of statistical software, which was funded in part by the Wildlife Conservation Society. Daniel's interests include object-oriented programming and computer networking.

**Lucio Bede, [l.bede@conservation.org](mailto:l.bede@conservation.org)**

Lucio is a biologist and ecologist. His professional experience includes environmental planning and technical coordination of multi-disciplinary teams and he has also worked as a private consultant in the fields of limnology and landscape planning. Lucio's academic expertise is in benthic macroinvertebrates, population ecology and wildlife management. While currently enrolled in PhD research in the field of sustainable use of natural living resources, evaluating the demographic effects of the traditional extractive management practices upon endangered plant species, he is also working for Conservation International as Manager for the Atlantic Forest Program in Brazil. For TEAM, Lucio will be working closely with the Rio Doce TEAM Site. Lucio is an enthusiastic fan of dragonflies!



**Enrico Bernard, [e.bernard@conservacao.org](mailto:e.bernard@conservacao.org)**

Enrico is a Brazilian biologist working in the Amazon Basin since 1996. His focus is on the ecology of tropical forests and in his research, he uses bats as models for the study of forest dynamics, forests fragmentation and its effects. Enrico has been working in the main ecosystems in the Amazon (e.g. flooded forests, terra-firma forests, campinas, grasslands, secondary forests and forests fragments), and has experience in tropical forests of Central America and Malaysia, and other habitats in South Africa. Besides the scientific publications he has produced, he has also been involved in environmental education, through technical talks and nature photography.

Since July 2003, he has been the Project Manager for the Amazonia at CI Brazil, based in the city of Belém. That position includes a mix of activities, from fieldwork to administrative functions, where he supports NGOs and governmental activities including, for example, technical studies for the creation of conservation units, the elaboration of endangered species lists, and species inventories in areas of special ecological concern. At TEAM, he work closely with the site managers of Caxiuanã and Manaus, supervising and linking their work with CI's headquarter.

## Comings continued...

**Luiz Dias, [luiz.muriqui@biodiversitas.org.br](mailto:luiz.muriqui@biodiversitas.org.br)**

Luiz Dias is a biologist, born in Belo Horizonte, Brazil, who finished his masters degree in Ecology, Conservation and Wildlife management by Federal University of Minas Gerais in 2003. His main scientific interests are ecology, behavior and conservation of primates, specifically muriquis (*Brachyteles hypoxanthus*). Currently, he is the new field manager of the Rio Doce station, but he has worked with the Rio Doce TEAM Site as a researcher of the Primate Protocol since November, 2004. In his new position, Luiz is facilitating the logistic for the implementation of the TEAM protocols in the Rio Doce State Park. Beyond the research in the TEAM, Luiz has been monitoring populations of muriquis in three fragments of Atlantic Rain Forest for the last two years.



**Eric Fegraus, [e.fegraus@conservation.org](mailto:e.fegraus@conservation.org)**

Eric received a B.S. in Environmental Biology and Management from the University of California at Davis in 1997. After graduation Eric conducted research on amphibian breeding behavior at the Smithsonian's Tropical Research Institute (STRI) on Barro Colorado Island. Upon returning to the US Eric became involved with the New York GAP Analysis program at Cornell University. Eric moved to San Francisco in 1999 and began working for an Internet infrastructure firm where he gained valuable web/software development and programming experience. In 2003 he obtained a Master of Environmental Science and Management (M.E.S.M) degree from the Donald Bren School of Environmental Management at University of California at Santa Barbara. He specialized in conservation planning and conducted research with The Nature Conservancy to incorporate socio-economic factors into the design and implementation of wildlife corridors. From 2001-2005 Eric was employed as a graduate student and research scientist at the National Center for Ecological Analysis and Synthesis (NCEAS). While at NCEAS he was involved in a variety of analytical and data management research projects as well as several informatics efforts including the Knowledge Network for Biocomplexity. Prior to starting with TEAM Eric worked as an information manager for an environmental consulting firm. As of May 2006, Eric became the new Information Systems Manager for the TEAM Initiative.

Eric is broadly interested in understanding how information can be documented, archived, analyzed, and synthesized to best address scientific questions and inform conservation decisions and actions. Eric is particularly interested in understanding how anthropogenic impacts affect various components of biodiversity. He is very active and enjoys all types of athletics, food, languages (foreign and computer) and social events.

**Michael Nunes**

Mike began working on the ant protocol for the TEAM Manaus Site in August 2005. As both a field and lab technician, Mike will also begin participating in the digital imaging of ants. He is an undergraduate in Biology with a background in informatics. Mike formerly worked at INPA's herbarium, with data processing, material preparation and organization. Before that he worked on environmental education for an arthropod project at the Bosque da Ciencia (INPA).

# Goings

## Adriana Dantas

Adriana studied environmental education and biology at INPA. She worked during the beginning of TEAM fieldwork, collecting and sorting ants for the Manaus TEAM Site. She is now studying for a Masters degree in agriculture.



## Cecilia Kierulff, [kierulff@uol.com.br](mailto:kierulff@uol.com.br)

After over five years working at Conservation International, as the TEAM Brazilian Regional Manager for the last three, Cecilia has decided to move on. The São Paulo Zoo offered her an exciting job, which she just could not refuse. The Zoo is making a major investment in creating the first Conservation Center in Brazil that will carry out in situ and ex situ management and conservation research. Cecilia has participated or coordinated conservation projects for 30 years and now she has the opportunity to apply all she knows and train others in this demanding, but also extraordinarily rewarding, work. During her time with CI, she says "I have met some great people, made many friends, and sincerely hope we can stay in touch. I will never forget these five years in CI and will continue to work with CI as a partner in the projects I am coordinating - a partnership I sincerely hope will never cease to grow and diversify."

## Mauricio Petrucio, [petrucio@unilestemg.br](mailto:petrucio@unilestemg.br)

Mauricio worked for the last couple years as the Rio Doce TEAM Site Manager. He is now teaching at the Unileste University, MG- Biological Science course. As a doctoral student, Mauricio studied carbon flow and phytoplankton productivity in the lake ecosystems of the Rio Doce and he continues to research lake limnology, chemical and physical water analysis and aquatic macrophytes ecology.

## Ernesto Ráez-Luna

After many years working for CI and working over a year as TEAM Tropical Andes Regional Manager, Ernesto decided to leave CI in January 2006. Mr. Ráez-Luna holds a M.A. in Latin American Studies with concentration in Tropical Conservation and Development from the University of Florida (USA), and is a Ph.D candidate in Resource Management and Environmental Studies at the University of British Columbia (Canada). His Master's thesis dealt with the impact of indigenous subsistence hunting on large Neotropical primates, and his doctoral research explores the political ecology of illegal logging in the Peruvian Amazon. He is a Fellow of the Network for Environmental Sustainability and Health (NESH), an interdisciplinary society based in Ontario , Canada



## Elizabeth Stajka

Liz started to work for TEAM during the summer of 2003 as the Finance and Grants Manager. After more than two and a half years with TEAM, she has decided to leave CI to devote herself full time to her bridal dress design business.

• Please send information, including a bio, email address and photo, on TEAM Network Comings and Goings to [teamnetworknews@conservation.org](mailto:teamnetworknews@conservation.org)



# TEAM Photo Rally

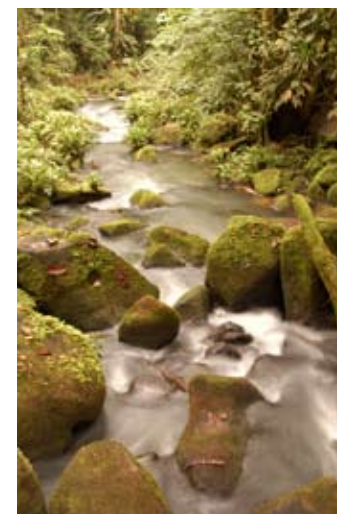
The TEAM Network News is happy to announce a new section entitled the TEAM Photo Rally. TEAM Network members are encouraged to submit photos taken at TEAM sites to the News. The News staff will then select three pictures to feature in the following edition of the News where readers will have the opportunity to select their favorite photo. The photo with the most votes will be featured prominently in the next edition of the news and the photographer will receive a prize. Please submit photos to [teamnetworknews@conservation.org](mailto:teamnetworknews@conservation.org). By submitting a photo, you give TEAM the right to reproduce that photo in future publications.

The dates for submission are:

- August 15, 2006
- November 15, 2006



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## TEAM Initiative Staff:

- Sandy Andelman**, *Vice President*
- Jorge Ahumada**, *Technical Director*
- Scott Brandes**, *Research Engineer*
- Eric Fegraus**, *Information Systems Manager*
- Lorena Garcia-Bustos**, *Program Coordinator/ Graphic Specialist*
- Jenny Hewson**, *Remote Sensing Specialist*
- Caroline Kuebler**, *Program Manager*

## Credits

- Caroline Kuebler- *Editor*
- Amy Heinemann- *Writer*
- Lorena Garcia-Bustos- *Graphic Designer*
- Julia Castro- *Portuguese Translation*
- Patricia Ojeda- *Spanish Translation*

• Would you like to contribute your ideas for stories, pictures, etc. to the next TEAM newsletter? If so, please contact Caroline Kuebler at [teamnetworknews@conservation.org](mailto:teamnetworknews@conservation.org)

