

FINAL PROJECT COMPLETION REPORT

I. BASIC DATA

Organization Name: World Wide Fund for Nature (WWF)
Project Title: Ecology Training Program
Project Dates: September 2001 – August 2004
Date of Report: September 28, 2004

II. OPENING REMARKS

Provide any opening remarks that may assist in the review of this report.

The focus of this project was to provide clear guidance, aid, and mentorship to Malagasy graduate students enrolled in the Ecology Training Program (ETP) of WWF-Madagascar. More specifically we provided the means for these students to have considerable guidance with field projects associated with their higher degrees in the field of biology. Further, the interactions (e.g., university courses and field schools) of project members with other Malagasy students not enrolled in ETP provided another level of capacity building for the next generation of Malagasy conservation biologists. Finally, data obtained during biological inventories plays a major role in providing information associated with the immediate needs of the country with regards to priorities of conservation actions.

III. ACHIEVEMENT OF PROJECT PURPOSE

***Project Purpose:** The short-term impact of this project is to provide clear guidance and aid to Malagasy students working in the field of biology with regards to the implementation and advancement of field projects associated with their graduate studies. This provides an important sort of mentorship for these students. Also, the interactions of project members with other students not enrolled in the project in the form of university courses and field schools provide another level of instruction. Another important impact is that the data obtained during biological inventories plays a major role in providing information associated with the immediate needs of the country with regards to priorities of conservation actions.*

Planned vs. Actual Performance

Indicator	Actual at Completion
Purpose-level:	

<p><i>Indicator 1. Support for the Ph.D. research of three Malagasy students in the field of conservation biology</i></p>	<p>Two of the three students (V. Soarimalala and M. J. Raherilalao) that were planned to have finished their Ph.D.s in the context of this project have done so. However, because of complications at the level of the University of Antananarivo the final presentations have not yet been made. These two theses have been okayed by the lecture committee and await the final stage for presentation. The third student (D. Rakotomalala) had a baby about 16 months ago, which has slowed down the final thesis writing stages. A draft of a portion of this third thesis has been circulated to some committee members.</p> <p>An ETP student, V. Razakarivony, presented one DEA during this period. C. Maminirina will present her DEA on 1 October 2004.</p> <p>Several additional higher degrees have advanced to the final stages in the context of this project. These include five Ph.D. students (J. Ranivo, N. Rabibisoa, N. A Ramanitra, M. Raheiasena and H. Rakotondravony) and three D.E.A. students (A. Tianarifidy, E. Ificene, and Juilana Rasoma) – in all cases these students are at the writing stages of their theses and mémoires.</p>
<p><i>Indicator 2. Field school program designed and implemented</i></p>	<p>Over the course of this grant several field schools and field training excursions were conducted to advance the education of young Malagasy biologists. Further, small grants were given to Malagasy student associations for training field trips: Bemaraha —6 students, Anjozorobe – 12 students, Kirindy-Mitea – 2 students, Mikea – 3 students, Namoroka (two different trips) – 4 students, Ankarafantsika – 4 students, Ampijoroa – 12 students, Midongy-Sud – 3 students, and Tampolo – 18 students. Thus, in total 64 different students took part in these field schools.</p>
<p><i>Indicator 3. Short course and seminar program at the Université d'Antananarivo</i></p>	<p>Each year during the three-year period of this grant A. Raselimanana and S. Goodman gave courses or seminars either at the University of Antananarivo or the University of Toliara. The subjects included: mammalian systematics, conservation biology, herpetology, ecological variation, biogeography, and field survey techniques.</p>
<p><i>Indicator 4. Upgrading project library and computer facilities</i></p>	<p>In total something on the order of 225 books and close to 4000 reprints were added to the ETP library. Amongst the reprints was a portion of the collection of the late Phil Hershkovitz that was donated by the Field Museum. Four different computers were purchased with CEPF funds, two of which were donated to the University of Antananarivo. Further, the Field Museum made available 16-used computers, three scanners, and four printers that were sent to Madagascar in a shipping container and divided between the ETP and the University of Antananarivo.</p>
<p><i>Indicator 5. Publication of book</i></p>	<p>A book entitled, "The Natural History of Madagascar" was published in late 2003. This 1700 page book has received considerable international attention and acclaim. Further, a considerable number of monographs and scientific</p>

	papers were also published in the context of research conducted under the CEPF grant (see Appendix "PUBLICATIONS" sent as an accompanying attached file)
--	--

Describe the success of the project in terms of achieving its intended impact objective and performance indicators.

In the context of this project, the ETP progressed as planned and in many cases surpassed expected outputs. This project has become an important component in the advancement of conservation biology science for Malagasy students. One of the critical aspects at the foundation of this project is the development of Malagasy biologists and providing them the needed education to play major parts in the improvement of conservation on this unique island. The field programs continue to provide high quality information on the biota of unknown or poorly known areas of Madagascar that is of paramount for future conservation actions. We strongly believe that the ETP plays a critical role in the betterment of the national conservation biologists' community.

Many of the students that pass through this project are currently working in the domain of conservation and several hold important positions. These include the biodiversity program officer of WWF, director of the Peregrine Fund (Madagascar), director of the Parc Botanique et Zoologique de Tsimbazaza, director of the Parc National d'Andringitra, etc. Thus, after over a decade of effort, "the fruits" of our work are being seen, with the installation of scientifically well-founded conservation biologists in important posts. Certainly, this is the seed of change for the island-nation with respect to conservation policies and the future in this regard is notably brighter than in the past.

Were there any unexpected impacts (positive or negative)?

Perhaps the most important points to mention with regards to this question are:

1. **Civil unrest** – During a period of about eight months in late 2001 and 2002 there was notable civil problems on the island associated with the transitional period between the out-going and in-coming presidents. This stabilized considerably towards the latter portion of 2002 and life returned to normal. During this difficult period several ETP activities were curtailed. Most notable in this regard were field missions. Further, because of various types of problems students were not able to devote the time needed to their studies at the university, which was largely closed during this period, hence slowing down progress in the advancement of and termination of higher degrees.
2. **Complications at the University of Antananarivo in the presentation of Ph.D. theses** -- Within the University of Antananarivo system there is a problem that has come up with regards to committee members for Ph.D. projects. Within the French system there are two levels of Ph.D. - Doctorate de troisième cycle and Doctorate d'état. In France the latter degree no longer exists and has been replaced by the habilitation. The Doyen of the University of Antananarivo has come out with a ruling that in order for someone to sit on a Doctorate de troisième cycle committee at the University of Antananarivo they need to have a Doctorate d'état degree. Within the Department of Animal Biology at that university there is no specialist working on birds or small mammals with the necessary degree to be the appropriate committee

member. Thus, this aspect, as well as some other problems within the university system, has delayed the final Ph.D. presentation of two ETP students. In order to overcome this problem Steve Goodman will be presenting a habilitation at the University of Orsay (France) and Daniel Rakotondravony (mammalogist) at the University of Antananarivo will be presenting his Doctorate d'état in Antananarivo. Further, Achille Raselimanana is advancing on his Doctorate d'état thesis.

IV. PROJECT OUTPUTS

Project Outputs: Enter the project outputs from the Logical Framework for the project

Planned vs. Actual Performance

Indicator	Actual at Completion
Output 1: Over the course of the next three years, the period of the requested funding, at least three students will finish their Ph.D.s and at least four students their D.E.A. degrees at the Université d'Antananarivo	
<i>Indicator 1.1 Three students finishing field research associated with their Ph.D. theses and advancing considerably on the write-up before the termination of this grant</i>	Two of the three students that were planned to have finished their Ph.D.s in the context of this project are ready to do so. Further, additional five students are preparing their Ph.D. degrees. Only one of the four projected DEA degrees has actually been presented and another four DEA diplomas should be presented before the early portion of 2005.
Output 2: It is planned to conduct a series of field schools for Université d'Antananarivo students not enrolled within the ETP.	
<i>Indicator 2.1 At least 25 students external to ETP to be identified and participated in the field school.</i>	Over the course of this grant we conducted field schools and training excursions at several different sites on the island. For a number of reasons, these were not all carried out at the originally planned sites. However, the actual number of non-ETP students taking part in these exercises (n=64) far surpasses that originally planned in the context of this grant (n=25). Further, during the course of these field schools ETP students currently terminating their Ph.D. degrees took on the role of instructors and mentors of younger student participants.
<i>Indicator 2.2 session 1 - Ankarafantsika 2002</i>	
<i>Indicator 2.3 session 2 - Namoraka or Katsepy 2003</i>	
<i>Indicator 2.4 session 3 - Midongy Sud 2004</i>	
Output 3: Over the course of this project a series of courses and seminars will be given in the Department de Biologie Animale, Université d'Antananarivo.	
<i>Indicator 3.1 At least two courses and seminars per year during the duration of this project</i>	The courses and seminars were given as planned in the Malagasy university system by Steve Goodman and Achille Raselimanana. While most of these were associated with the University of Antananarivo, some course work and student

	instruction was also associated with the University of Toliara. In recent years the vast majority of attention has been given to the University of Antananarivo and to some extent the provincial universities have been left to languish. Over the past few years a DEA program has been created at the University of Toliara in animal biology and conservation and we have tried to assist this important initiative. Further, students from the Central Highlands clearly have educational means surpassing those from coastal areas and it is important to try to harmonize these differences. It is for this reason we have and will continue to bring students from the lowland portions of the island into the fold of the ETP.
Output 4: It is critical that the ETP library and computers be regularly updated to provide the means for students to have access to recent bibliographic information and modern facilities	
<i>Indicator 4.1 At least 15 new books added to the library per year</i>	Expected total was 45 new books and the actual total was 225 books.
<i>Indicator 4.2 At least 50 article reprints added to the library each year</i>	Expected total was 150 new reprints and the actual total was about 4000 reprints.
<i>Indicator 4.3 Addition of a computer to the existing facilities</i>	Four different computers were purchased, two of which were donated to the University of Antananarivo. Further, the Field Museum made available 16 used computers, three scanners, and four printers.
Output 5: A book ms., "The Natural History of Madagascar" has been submitted to The University of Chicago Press.	
<i>Indicator 5.1 Publication of the book in late 2002 or early 2003</i>	The book of over 1700 pages was actually published in late 2003. The delay was for numerous reasons, but most importantly associated with the scale of the project. The book has received considerable attention with reviews in Science, Nature, New York Times, etc.

Describe the success of the project in terms of delivering the intended outputs.

The grant we received from CEPF has been of considerable help in advancing the goals of the ETP: 1) train Malagasy scientists to meet human capacity needs with a mandate to advance biological, ecological, education conservation practice, and policy-making, 2) provide academic and practical opportunities for educational exchange, research, and training to promising Malagasy students and researchers, 3) facilitate communication and exchange in the fields of biology and ecology amongst Malagasy students and researchers, 4) furnish logistical, financial, and supervisory support to Malagasy students in fields related to conservation, in collaboration with local universities, and 5) use the scientific data resulting from field inventories for the advancement of habitat protection and conservation of Madagascar's unique biota.

In virtually all cases the final outputs of the project surpassed the anticipated outputs. Numerous Malagasy students have taken part in field inventories or our annual field schools and training sessions. Several students have or are in the process of completing their DEA or PH.D. degrees in collaboration with the ETP. Many of the fruits of this project have advanced in their professional careers as conservation and evolutionary biologists.

Over the course of the past three years survey teams from the ETP have visited a considerable number of forest sites that were previously poorly known with regards to their vertebrate faunas and some remarkable new animals to science have been discovered. Further, information has been gathered on other animals that were poorly known, these include considerable expansion of geographic ranges and aspects of their natural history. Numerous scientific publications have appeared that help advance our knowledge of the Malagasy biota and help to underline its uniqueness and importance as world patrimony.

Were any outputs unrealized? If so, how has this affected the overall impact of the project?

The only point to mention in this regard is the number of graduate students that have actually presented their Ph.D. or DEA degrees. As explained above, this has been largely due to internal university problems and in one case of one student the birth of a baby. In general we do not consider this to be a serious impediment to meeting the projected goals of this project. Two of the three Ph.D. students ready to present their doctorate degrees already have three-year “post-docs” associated with a Malagasy rapid field inventory team and a considerable number of other students are making considerable progress on their higher degrees which will be presented by mid-2005.

V. SAFEGUARD POLICY ASSESSMENTS

Provide a summary of the implementation of any required action toward the environmental and social safeguard policies within the project.

Not really applicable.

VI. LESSONS LEARNED FROM THE PROJECT

Describe any lessons learned during the various phases of the project. Consider lessons both for future projects, as well as for CEPF's future performance.

Given the increasing awareness of the Malagasy government associated with environmental issues, this is a moment to seize with the advancement of national conservation biologists and the creation of new protected areas. It is clear to us that three important factors can be attributed to the success of ETP: 1) the remarkable ability of Malagasy students and researchers to move forward as natural scientists and conservation biologists, 2) the willingness of the national government to support this work, and 3) the energy and dedication of the project coordinators (Steve Goodman and Achille Raselimanana).

The means for Goodman to devote to this project, with respect to time and no financial input with regards to salary, is a result of a close collaboration between his home institution (Field Museum of Natural History) and WWF. His position allows considerable flexibility and he is able to live overseas in Madagascar. This provides several key points with regard to the program's advancement: 1) direct and nearly year-round

contact with Malagasy students, 2) considerable immersion into issues and information concerning conservation and science development on the island, and 3) a long-term dedication for the anticipated goals to be met. Further Goodman's contact in the world of natural history museums and evolutionary biology provides an important framework for collaborations and overseas research visits for Malagasy students. The Field Museum, as well as other foreign institutions, have been important centers for the advancement of these young Malagasy scholars. The various points associated with this collaboration have been rather important for the project's growth with regard to Malagasy students and information available on the island's natural history.

It is this style of collaboration and shared financial input in a project such as the ETP that are important factors in its continued success. Thus, taking advantage of unique individuals and circumstances is a point CEPF needs to consider in future granting schemes.

Project Design Process: (aspects of the project design that contributed to its success/failure)

The two people responsible for the coordination of the ETP, Steve Goodman and Achille Raselimanana, are also involved in variety of activities associated with this project and spend at least five months per year in the field, where ETP students accompany them. This has an important impact on the amount of individual time they are able to spend with ETP students when in town. With this point in mind, more numerous and consequently more dispersed activities with an increasing number of students will probably have less of a long-term impact on the development of Malagasy biologists than highly focused and more directed attention to the current number of enrolled students (n=14). Given the current remarkable advancements being made in conservation on the island (e.g., Durban declaration, highly engaged ministers, etc.), it is important that projects such as ETP try to meet the demands of the Malagasy Government and conservation community with regards to training national biologists, advancing students, and obtaining high quality biological information from unknown or poorly known areas of the island. The best means to accomplish this is to recruit advanced Malagasy conservation biologists into the program to augment the number of instructors and mentors available to young students. We recently received a grant from the MacArthur Foundation for a Malagasy biological inventory team, which is known as "Rap Gasy." (No, this is not a new style of music.) This group, composed of A. Raselimanana, M. J. Raheirilalao, and V. Soarimalala, works independently of the classical ETP team under the direction of S. M. Goodman and is responsible for biological inventories, giving classes at the university level in the field of evolutionary and conservation biology, and publishing the results of their research. This new project will allow these researchers to escape the shadow of their mentors, and at the same time advance in the direction they see fit with regards to their research program and interacting with younger Malagasy students. We see this project as a major step-forward to reinforce and advance national biologists.

We will continue to give field schools, which provide a great means of exposing students to field techniques and a variety of issues and at the same time provides a very useful "sieve" for us to choose students that we want to concentrate our efforts with.

Project Execution: (aspects of the project execution that contributed to its success/failure)

We engage students involved in this project at several levels to assist in their personal advancement as members of the future conservation biologists of Madagascar. The coordinators of the ETP help each student with the choice of their thesis topic, which includes a range of points from practical and theoretical aspects; logistical and practical assistance in establishing their research program; materials for the program; financial input to conduct the work; help with analyzing data, its interpretation and writing up the results; access to library and computer facilities; and possibilities to attend international conferences and work in overseas laboratories with collaborators.

In general considerable importance is giving to different aspects of their education in order to accelerate certain aspects of their professional and scientific development. In most cases this works very well, and in a few cases the students find the program too demanding. Several different examples can be provided of these pressures, but here we mention the question of scientific publications. The ETP emphasizes the need for students to make the interpretation of high quality data available to the scientific community in the form of published papers. This is for several reasons: 1) in order for Malagasy natural sciences to advance it is necessary for national researchers to be active participants in the international community, 2) it is important that students have the reflex to use field data and convert this information, when appropriate, into scientific publications, and 3) to augment the international stature of Malagasy scientists. Students enrolled in the program for more than two or in some cases three years and who have completed research projects are obligated to submit one manuscript per year to a peer-reviewed journal. Whether the paper is accepted or rejected is not the critical point, but rather that they have the reflex to turn important field information, when appropriate, into scientific publication.

Aspects such as publications, rigorous field programs, etc. provide a notable intensity to the project. We consider these aspects to be extremely important for the advancement of these young scientists with rapidity and quality. These features are paramount for the future development of natural and conservation development on Madagascar, and safeguarding the extremely important world patrimony of biodiversity found on the island.

VII. ADDITIONAL COMMENTS AND RECOMMENDATIONS

The ETP has been properly nurtured by a number of granting and conservation organizations, and this support has been paramount in its fruition. These organizations should be satisfied with what they have supported and produced. We believe that the next logical step in the evolution of ETP is for it to become an independent non-governmental organization. The reputation of the project is now international and we deem that it has the capacity to stand on its own and benefit the conservation and biological community (governmental and non-governmental) working on Madagascar. Further, by being in the hands of nationals it would allow the project to evolve with a different sort of liberty and in new directions than under the umbrella of WWF.

The focus of the new organization would continue to be biological in nature – but with expanded training of Malagasy students in the domains of biology and conservation and continued studies of the island's unique biota. Given that there already exist several Malagasy NGOs that work in the domain of conservation policy and advocacy, the

mandate of this proposed organization would be strictly pedagogic and scientific to compliment these other efforts and to fill-in a largely vacant niche. A few Malagasy NGOs have been created over the past decade, working largely in the domain of biological inventories and environmental impact studies, but due to a lack of expertise, materials, technical expertise, and financial solvency they have not been able to flourish, and in several cases the research conducted by these organizations and associated reports are at a low to moderate quality. The high standards of ETP research would be maintained, benefiting all interested in conservation on Madagascar.

All of the legal steps for the creation of the Malagasy “non-governmental organization (NGO)”, entitled “VAHATRA”, have been completed. We consider this to be an important step for the amelioration of several of the country’s problems related to conservation and the environment. Our intention for this organization would be the relocation of the currently existing ETP into Vahatra, this would include students currently enrolled in the program and an assortment of materials including books, computers, furniture, etc. Further, an USA-based lawyer is currently completing the process of “The friends of Vahatra” to have tax-exempt status in the USA.

A number of national and international colleagues have been invited to be members of the management committee – these include Richard Carroll, Jörg Ganzhorn, Olivier Langrand, John McCarter, Russell Mittermeier, Daniel Rakotondravony, and Berthe Rakotosamimanana. Finally, we will seek one other Malagasy member of this committee that has high-level political influence and the capacity to help advance aspects of the association with regards to national policy and at the same time without any political interference from the national government. This management committee would help advise various aspects of Vahatra, including policies, programs, fund raising, and partnership agreements. Yearly meetings of the management committee will be held in Madagascar, and members unable to attend will be able to communicate their views on an established agenda via email.

Given that most grants to the ETP have been for periods of one to three years and that the project’s financial needs have changed over the past decade, a considerable amount of time and effort have been given to fund-raising to maintain the project. In order to ameliorate this economic quandary and to guarantee the long-term viability of Vahatra we seek to create financing using an endowment fund model.

The Field Museum of Natural History (FMNH), Chicago, where Goodman is formally employed, is managing the endowment fund, which will have very restricted usage and be destined for Vahatra. The initial anticipated minimum sum of \$3,000,000 would be invested by the FMNH. Of the yearly interest yielded by this investment, 80% would be sent to Vahatra in Madagascar and 20% would be returned to the fund to increase the capital and allow it to remain ahead of anticipated inflation. During the summer of 2004 Goodman actively fund-raised for Vahatra while in the USA and several grant proposals have been submitted to various agencies, including a \$1,000,000 request for a matching grant to GCF. It is anticipated that it will take two to three years for the needed capital to be obtained and generating interest. The financial officer of Vahatra will receive overseas training and the submitted financial report will follow international standards. Further, a yearly report of the activities of the NGO, as well as the financial report, would be sent to all funding agencies and private donors that helped with the creation of the endowment fund.

At the onset, the interest capital generated by the endowment fund would be sufficient to run the basic aspects of Vahatra (rent, salaries, insurance, infrastructure, etc.), and scientific research, student field studies, and biological inventories would be financed by outside grants. Further, we strongly suspect that the biological research skills of members of Vahatra will be of considerable use to other organizations (WWF, CI, etc.), and that the NGO will receive contracts for a variety of projects. We would continue to increase, through fund raising, the invested capital of the endowment fund to cover other budget requirements of the organization, as well as diversify the types of long-term investments. The long-term goal would be to reduce dependence on outside grants, and that the revenues from the endowment fund would be sufficient to cover virtually all aspects of Vahatra, including overseas trips, field research, and a small grant program for Malagasy students.

One of our clear visions in the creation of Vahatra is that it will form the foundation for a new institute of conservation biology in Madagascar, based in Antananarivo but with numerous actions in provincial areas, and with a clear mandate for the advancement of national biologists and conservation scientists. The institute would be aligned with the University of Antananarivo, but remain physically and financially independent of the national university system. For example, staff members of the institute could be responsible for modules and a portion of the curriculum in the domain of conservation and evolutionary biology at the university and have posts as lecturers, but not be full-time professors. Further, graduate students from the university system would work closely with members of the institute on their thesis research, as has been the system associated with the ETP. The institute would purchase land in Antananarivo, probably within walking distance of the university, and construct a building that would serve as its center.

For more information about this project, please contact:

Steven Goodman
World Wide Fund for Nature – Ecology Training Program
B.P. 738,
Antananarivo, Madagascar
Tel: 261 20 22 34885
Fax: 261 20 22 34888
SGoodman@wwf.mg

Appendix 1. Publications associated with the ETP. An asterisk indicates an ETP student or former student.

- *Andrianarimisa, A. 1992. La Sarcelle de Bernier (*Anas bernieri*), un canard endémique à protéger. *Newsletter of The Working Group on Birds in the Madagascar Region* 2: 6-7.
- *Andrianarimisa, A. 1993. Variation structurale de la communauté avienne d'une forêt dense sèche semi-caducifoliée dans l'Ouest malgache. *Proceedings of the VIII Pan-Afr. Ornithological Congress*: 187-191.
- *Andrianarimisa, A. 1994. Note on Tylas Vanga *Tylas eduardi* at Parc National Montagne d'Ambre. *Working Group on Birds of the Madagascar Region* 4 (1): 6.
- *Andrianarimisa, A. 1994. Bird-netting results at two sites at Parc National Montagne d'Ambre, northern Madagascar. *Working Group on Birds in the Madagascar Region Newsletter* 4(1): 6-9.
- *Andrianarimisa, A. 1995. A record of the Sunbird-osity *Neodrepanis coruscans* in the Réserve Spéciale d'Ambohitantely. *Working Group on Birds of the Madagascar Region Newsletter* 5(2): 8-9.
- *Andrianarimisa, A. 1995. Responses of understory bird population sizes to habitat fragmentation, Central High Plateau, Madagascar. Pages 23-24 in *Environmental change in Madagascar*. B. D. Patterson, S. M. Goodman & J. L. Sedlock, eds. The Field Museum Press, Chicago.
- *Andrianarimisa, A., L. Bachmann, J. U. Ganzhorn, S.M. Goodman & J. Tomiuk. 2000. Effects of forest fragmentation on genetic variation in endemic understory forest birds in central Madagascar. *Journal für Ornithologie* 141: 152-159.
- *Andrianarimisa, A., L. Bachmann, J. U. Ganzhorn, S.M. Goodman & J. Tomiuk. 2000. Fragmentation forestière et ses impacts sur la variabilité génétique des oiseaux dans la Réserve Spéciale d'Ambohitantely. *Dans : Monographie de la Forêt d'Ambohitantely*. J. Ratsirarson & S. M. Goodman, eds. Centre d'Information et de Documentation Scientifique et Technique, Antananarivo, Recherches pour le Développement, Série Sciences biologiques, No. 16: 75-86.
- *Andrianarimisa, A. & S. M. Goodman. 1998. Les oiseaux. *Dans : Inventaire biologique de la forêt littorale de Tampolo (Fenoarivo Atsinanana)*. J. Ratsirarson & S. M. Goodman, eds. Centre d'Information et de Documentation Scientifique et Technique, Antananarivo, Recherches pour le Développement, Série Sciences biologiques, No. 14: 157-181.
- Fergusson, G. W., J. B. Murphy, *A. P. Raselimanana & *J.-B. Ramanamanjato. 1995. Panther chameleon (*Chamaeleo pardalis*), natural history, captive management and breeding. In *Advanced vivarium systems*. P. de Vosjoli & G. Ferguson, eds. The Herpetological Library, special edition.

- Ganzhorn, J. U., S.M. Goodman, *J.-B. Ramanamanjato, D. Rakotondravony, B. Rakotosamimanana & D. Vallan. 2000. Vertebrate species in fragmented littoral forests of Madagascar. In *Diversité et endemisme à Madagascar*. Lourenço, W. R. & S. M. Goodman, eds.. Mémoires de la Société de Biogéographie, Paris, pp.155-164.
- Ganzhorn, J. U., S. M. Goodman, *J.-B. Ramanamanjato, J. Ralison, D. Rakotondravony & B. Rakotosamimanana. 2000. Effects of forest fragmentation and assessing minimum viable populations of lemurs in Madagascar. In *Isolated vertebrate populations in tropical forests*. Rheinwald, G, ed. *Bonner Zoologisches Monogr.*, 64: 265-272.
- Goodman, S. M. & *A. Andrianarimisa. 1995. Morphological variation in *Philepitta* spp. (Aves: Eurylaimidae). *Working Group on Birds of the Madagascar Region Newsletter* 5(2): 1-3.
- Goodman, S. M., *A. Andrianarimisa, L. E. Olson & *V. Soarimalala. 1996. Patterns of elevational distribution of birds and small mammals in the humid forests of Montagne d'Ambre, Madagascar. *Ecotropica* 2: 87-98.
- Goodman, S. M., J.-B. Duchemin, J.-M. Duplantier, D. Rakotondravony & *V. Soarimalala 2000. Syntopic occurrence of *Hemicentetes semispinosus* and *H. nigriceps* (Lipotyphla: Tenrecidae) on the Central Highlands of Madagascar. *Mammalia* 64: 113-116.
- Goodman, S. M., J. Ganzhorn, L. E. Olson, M. Pidgeon & *V. Soarimalala. 1997. Annual variation in species diversity and relative density of rodents and insectivores in the Montagne d'Ambre National Park, Madagascar. *Ecotropica* 3: 109-118.
- Goodman, S. M., A. F. A. Hawkins & *J.-C. Razafimahaimodison. 2000. Birds of the Parc National de Marojejy, Madagascar: with reference to elevational distribution in A floral and faunal inventory of the Parc National de Marojejy, Madagascar: with reference to elevational variation. *Fieldiana: Zoology*, new series, 97: 174-200.
- Goodman, S. M., O. Langrand & *R. Rasoloarison. 1997. Les lémuriens. *Dans: Inventaire biologique de les forêts de Vohibasia et Isoky-Vohimena*. O. Langrand & S. M. Goodman (eds.). World Wide Fund for Nature-Centre d'Information et de Documentation Scientifique et Technique, Antananarivo, Série Sciences biologiques, No. 12.
- Goodman, S. M., O. Langrand & *B. Rasolonandrasana. 1997. The food habits of *Cryptoprocta ferox* in the high mountain domain of the Andringitra Massif, Madagascar. *Mammalia* 61: 185-192.
- Goodman, S. M., O. Langrand & *J.-C. Razafimahaimodison. 1994. Les oiseaux, pp. 73-82, in: Goodman, S. M. & O. Langrand, eds., *Inventaire biologique de forêt de Zombitse*. World Wide Fund for Nature-Centre d'Information et de Documentation Scientifique et Technique, Antananarivo, Série Sciences biologiques, No. Spécial.
- Goodman, S. M. & *M. J. Raherilalao. 2003. Effects of forest fragmentation on bird communities. In Goodman, S. M. & J. P. Benstead, eds. *The natural history of Madagascar*. The University of Chicago Press, Chicago.

- Goodman, S. M., J.-M. Duplantier, P. J. Rakotomalaza, *A. P. Raselimanana, *R. Rasoloarison, M. Ravokatra, *V. Soarimalala & L. Wilmé. 1998. Inventaire biologique de la forêt d'Ankazomivady, Ambositra. *Akon'ny Ala* 24: 19-32.
- Goodman, S. M., *M. J. Raherilalao, *D. Rakotomalala, D. Rakotondravony, *A. P. Raselimanana, *H. V. Razakarivony & *V. Soarimalala. 2002. Inventaire des vertébrés du Parc National de Tsimanampetsotsa (Toliara). *Akon'ny Ala* 28: 1-36.
- Goodman, S. M., D. Rakotondravony, L. E. Olson, E. Razafimahatratra & *V. Soarimalala. 1998. Les insectivores et les rongeurs. *Dans : Inventaire biologique, Forêt d'Andranomay, Anjozorobe*. D. Rakotondravony & S. M. Goodman (eds.). Centre d'Information et de Documentation Scientifique et Technique, Antananarivo, Recherches pour le Développement, Série Sciences biologiques, No. Spécial, N° 13: 80-93.
- Goodman, S. M., D. Rakotondravony, *M. J. Raherilalao, *D. Rakotomalala, *A. P. Raselimanana, *V. Soarimalala, J.-M. Duplantier, J.-B. Duchemin & J. Rafanomezantsoa. 2000. Inventaire biologique de la forêt de Tsinjoarivo, Ambatolampy. *Akon'ny Ala* 27: 18-27.
- Goodman, S. M. & *L. M. A. Rakotozafy. 1995. Evidence for the existence of two species of *Aquila* on Madagascar during the Quaternary. *Geobios* 28: 241-246.
- Goodman, S. M. & *L. M. A. Rakotozafy. 1995. Bird subfossils from southwestern Madagascar: inferences about environmental change. Pages 13-14 in *Environmental change in Madagascar*. B. D. Patterson, S. M. Goodman & J. L. Sedlock, eds. The Field Museum Press, Chicago.
- Goodman, S. M. & *L. M. A. Rakotozafy. 1997. Subfossil birds from coastal sites in western and southwestern Madagascar: A paleoenvironmental reconstruction, in: S. M. Goodman & B. D. Patterson, eds., *Natural change and human impact in Madagascar*. Smithsonian Institution Press, Washington, DC..
- Goodman, S. M., *J.-B. Ramanamanjato & *A. P. Raselimanana. 1997. Les amphibiens et les reptiles. *Dans: Inventaire biologique Forêts de Vohibasia et Isoky-Vohimena*. O. Langrand & S. M. Goodman (eds.). World Wide Fund for Nature-Centre d'Information et de Documentation Scientifique et Technique, Antananarivo, Série Sciences biologiques, No. 12.
- Goodman, S. M. & *A. Raselimanana. 2002. The occurrence of *Allocebus trichotis* in the Parc National de Marojejy. *Lemur News* 7: 21-22.
- Goodman, S. M. & *A. Raselimanana. 2003. Hunting of wild animals by Sakalava of the Menabe region: A field report from Kirindy-Mite. *Lemur News* 8:4-6.
- Goodman, S. M. & *R. Rasoloarison. 1997. Les petits mammifères. *Dans: Inventaire biologique de les forêts de Vohibasia et Isoky-Vohimena*. O. Langrand et S. M. Goodman (eds.). World Wide Fund for Nature-Centre d'Information et de Documentation Scientifique et Technique, Antananarivo, Série Sciences biologiques, No. 12.
- Goodman, S. M., *R. A. Rasoloarison & J. U. Ganzhorn. Sous presse. On the specific identification of subfossil *Cryptoprocta* (MAMMALIA: CARNIVORA) from Madagascar. *Zoosystema*.

- Goodman, S. M. & *B. P. N. Rasolonandrasana, eds. 1999. *Dans : Inventaire biologique de la réserve spéciale du Pic d'Ivohibe et du couloir forestier qui la relie au Parc National*. Centre d'Information et de Documentation Scientifique et Technique, Antananarivo, Recherches pour le Développement, Série Sciences biologiques, No. 15:1-181.
- Goodman, S. M. & *B. P. N. Rasolonandrasana. 1999. Rongeurs. *Dans : Inventaire biologique de la réserve spéciale du Pic d'Ivohibe et du couloir forestier qui la relie au Parc National*. S. M. Goodman et B. P. N. Rasolonandrasana (eds.). Centre d'Information et de Documentation Scientifique et Technique, Antananarivo, Recherches pour le Développement, Série Sciences biologiques, No. 15:135-147.
- Goodman, S. M. & *B. P. N. Rasolonandrasana. 2002. Elevational zonation of birds, insectivores, rodents, and primates on the slopes of the Andringitra Massif, Madagascar. *Journal of Natural History* 35: 285-305.
- Goodman, S. M., *B. P. N. Rasolonandrasana & P. D. Jenkins. 1999. Les insectivores (Ordre Lipotyphla). *Dans : Inventaire biologique de la réserve spéciale du Pic d'Ivohibe et du couloir forestier qui la relie au Parc National*. S. M. Goodman et B. P. N. Rasolonandrasana, eds. Centre d'Information et de Documentation Scientifique et Technique, Antananarivo, Recherches pour le Développement, Série Sciences biologiques, No. 15: 119-134.
- Goodman, S. M. & *F. Ravoavy. 1993. Identification of bird subfossils from cave deposits at Anjohibe, Madagascar, with a description of a new giant *Coua* (Cuculidae: Couinae). *Proceedings of the Biological Society of Washington* 106: 24-33.
- Goodman, S. M. & *V. Soarimalala. 2002. Les mammifères de la Réserve Spéciale de Manongarivo. In *Inventaire floristique et faunistique de la Réserve Spéciale de Manongarivo, Madagascar*, eds. L. Gautier & S. M. Goodman. *Boissiera* 59: 383-401.
- Goodman, S. M., *V. Soarimalala & D. Rakotondravony. 2001. The rediscovery of *Brachytarsomys villosa* F. Petter, 1962, in the northern highlands of Madagascar. *Mammalia* 65: 83-86.
- Green, A. J., H. G. Young, R. G. M. Rabarisoa, P. Ravonjjarisoa & *A. Andrianarimisa. 1994. The dry season diurnal behaviour of the Madagascar Teal *Anas bernieri* at Lake Bemamba. *Wildfowl* 45: 124-133.
- Kappeler, P. M. & *R. M. Rasoloarison. 2003. *Microcebus*, mouse lemurs. In Goodman, S. M. & J. P. Benstead (Eds.), *The natural history of Madagascar*. The University of Chicago Press, Chicago.
- Mustoe, S. H., D. R. Capper, J. C. Lowen, J. D. Leadley & *D. Rakotomalala. 1998. Zombitse-Vohibasia: A new national park in south-west Madagascar. *African Bird Club Bulletin* 5: 39-45.
- Nussbaum, R. A., Raxworthy, C. J. & *Ramanamanjato, J. B. 1999. Additional species of *Mabuya* Fitzinger (Reptilia: Squamata: Scincidae) from western Madagascar. *Journal of Herpetology* 33: 264-280.

- Nussbaum, R. A., C. J. Raxworthy, *A. P. Raselimanana & *J.-B. Ramanamanjato. 1999. Amphibians and reptiles of the Réserve Naturelle Intégrale d'Andohahela, Madagascar, in A floral and faunal inventory of the Réserve Naturelle Intégrale d'Andohahela, Madagascar, with reference to elevational variation. *Fieldiana: Zoology*, new series, 94: 155-173.
- *Raherilalao, M. J. 2001. Effets de la fragmentation de la forêt sur les oiseaux autour du Parc National de Ranomafana (Madagascar). *Revue d'Ecologie* 56: 389-406.
- *Raherilalao, M. J., F. Gautier & S. M. Goodman. 2002. Les oiseaux de la Réserve Spéciale de Manongarivo. *Dans : Inventaire floristique et faunistique de la Réserve Spéciale de Manongarivo, Madagascar*, eds. L. Gautier & S. M. Goodman. *Boissiera* 59: 359-381.
- *Raherilalo, M. J., V. R. Razafindratsita, S. M. Goodman & J. C. Rakotoniana. 2001. L'avifaune du Parc National de Ranomafana et du couloir forestier entre Andringitra et Ranomafana. *Dans : Inventaire biologique du Parc National de Ranomafana et du couloir forestier qui la relie au Parc National d'Andringitra*. S. M. Goodman et V. R. Razafindratsita (eds.). Centre d'Information et de Documentation Scientifique et Technique, Antananarivo, Recherches pour le Développement, Série Sciences biologiques, No. 17: 165-195.
- *Rakotoarison, N., T. Mutschler & U. Thalmann. 1993. Lemurs in Bemaraha (World Heritage Landscape, Western Madagascar). *Oryx* 27: 35-40.
- *Rakotoarison, N., H. Zimmermann, E. Zimmerman. 1997. First discovery of the Hairy-eared Dwarf Lemur (*Allocebus trichotis*) in a highland rain forest of eastern Madagascar. *Folia Primatologica* 68: 86-94.
- Rakotondravony, D., S. M. Goodman & *V. Soarimalala. 1998. Predation on *Hapalemur g. griseus* by *Boa manditra* (Boidae) in the littoral forest of eastern Madagascar. *Folia Primatologica* 69: 405-408.
- *Rakotozafy, L. M. A. 1995. Deux espèces d'*Aquila* subfossiles à Madagascar. *Newsletter of The Working Group on Birds in the Madagascar Region* 5: 7-8.
- *Rakotozafy, L. M. A. & S. M. Goodman. Sous presse. Contribution à l'étude zooarchéologique de la région du Sud-ouest et extrême Sud de Madagascar. *Taloha*.
- *Ramanamanjato, J.-B. 1995. Biogeography of Malagasy Scincidae lizards. Page 11 in *Environmental change on Madagascar*. B. D. Patterson, S. M. Goodman & J. Sedlock, eds. The Field Museum Press, Chicago.
- *Ramanamanjato, J.-B., Nussbaum, R.A. & Raxworthy, C. J. 1999. A new species of *Mabuya* Fitzinger (Squamata: Scincidae: Lygosominae) from northern Madagascar. *Occasional Papers of the Museum of Zoology, The University of Michigan* 728: 1-22.
- *Ramanamanjato, J.-B., Nussbaum, R.A. & Raxworthy, C. J. 1999. A new species of *Mabuya* Fitzinger (Squamata: Scincidae) from the Onilahy River of southwest Madagascar. *Herpetological Journal* 9: 65-72.

- *Ramanitra, N. A. 1995. Inventaire préliminaire de l'avifaune du Tsingy de Bemaraha. *Working Group on Birds in the Madagascar Region* 5:7-10.
- *Ramanitra, N. A. & H. H. Randrianasolo. 1994. Inventaire des oiseaux dans la forêt de Tsimembo et ses environs. Pages 163-180 in Madagascar Project, progress report 2, 1993 and 1994, Wetlands conservation project (R. T. Watson, ed.). The Peregrine Fund, Boise, Idaho.
- *Raselimanana, A. 1994. Etude préparatoire - Herpétologie, pp. 85-89. In: Goodman, S. M. & O. Langrand, eds., *Inventaire biologique de forêt de Zombitse*. World Wide Fund for Nature-Centre d'Information et de Documentation Scientifique et Technique, Antananarivo, Série Sciences biologiques, No. Spécial.
- *Raselimanana, A. 1995. The Malagasy gerrhosaurid lizards: diversity, ecology, and biogeography. Page 12 in *Environmental change on Madagascar*. B. D. Patterson, S. M. Goodman & J. Sedlock, eds. The Field Museum Press, Chicago.
- *Raselimanana, A. 1998. La diversité de la faune de reptiles et amphibiens. *Dans : Inventaire biologique, Forêt d'Andranomay, Anjozorobe*. D. Rakotondravony & S. M. Goodman, eds. Centre d'Information et de Documentation Scientifique et Technique, Antananarivo, Recherches pour le Développement, Série Sciences biologiques, No. 13: 43-59.
- *Raselimanana, A. P. 1999. Le herpétofaune. *Dans : Inventaire biologique de la réserve spéciale du Pic d'Ivohibe et du couloir forestier qui la relie au Parc National d'Andringitra*. S. M. Goodman & B. P. N. Rasolonandrasana, eds. Centre d'Information et de Documentation Scientifique et Technique, Antananarivo, Recherches pour le Développement, Série Sciences biologiques, No. 15:81-97.
- *Raselimanana, A. P. 2003. Gerrhosauridae, plated lizards. In Goodman, S. M. & J. P. Benstead (Eds.), *The natural history of Madagascar*. The University of Chicago Press, Chicago.
- *Raselimanana, A. P. 2003. Trade in reptiles and amphibians. In Goodman, S. M. & J. P. Benstead (Eds.), *The natural history of Madagascar*. The University of Chicago Press, Chicago.
- *Raselimanana, A. P. & *D. Rakotomalala. 2003. Chameaenonidae, chameleons. In Goodman, S. M. & J. P. Benstead (Eds.), *The natural history of Madagascar*. The University of Chicago Press, Chicago.
- *Raselimanana, A. P. & *D. Rakotomalala. 2003. Scinicidae, skinks. In Goodman, S. M. & J. P. Benstead (Eds.), *The natural history of Madagascar*. The University of Chicago Press, Chicago.
- *Raselimanana, A. P., *D. Rakotomalala & F. Rakotondramparany. 1998. Les reptiles et amphibiens: diversité et conservation. *Dans : Inventaire biologique de la forêt littorale de Tampolo (Fenoarivo Atsinanana)*. J. Ratsirarson & S. M. Goodman (eds.). Centre d'Information et de Documentation Scientifique et Technique, Antananarivo, Recherches pour le Développement, Série Sciences biologiques, No. 14: 183-195.

- *Raselimanana, A. P., C. J. Raxworthy & R. A. Nussbaum. 2000. The reptiles and amphibians of the Parc National de Marojejy, Madagascar, in A floral and faunal inventory of the Parc national de Marojejy, Madagascar: with reference to elevational variation. *Fieldiana: Zoology*, new series, 97:157-174.
- *Raselimanana, A. P., Raxworthy C. J. & Nussbaum, R. A. 2000. A revision of the dwarf *Zonosaurus*, Boulenger (Reptilia: Squamata: Cordylidae) from Madagascar, including descriptions of three new species. *Scientific Papers, The Natural History Museum, University of Kansas* 18: 1-16.
- *Raselimanana, A. P. & M. Vences. 2003. Introduced reptiles and amphibians. In Goodman, S. M. & J. P. Benstead (Eds.), *The natural history of Madagascar*. The University of Chicago Press, Chicago.
- *Rasoloarison, R., S.M. Goodman & J. U. Ganzhorn. 2000. A taxonomic revision of mouse lemurs (*Microcebus*) occurring in the western portion of Madagascar. *International Journal of Primatology* 21: 963-1019.
- *Rasoloarison, R. & *B. P. N. Rasolonandrasana. 1999. Les lémuriens. *Dans : Inventaire biologique de la réserve spéciale du Pic d'Ivohibe et du couloir forestier qui la relie au Parc National*. S. M. Goodman et B. P. N. Rasolonandrasana (eds.). Centre d'Information et de Documentation Scientifique et Technique, Antananarivo, Recherches pour le Développement, Série Sciences biologiques, No. 15: 159-169.
- *Rasolonandrasana, B.P.N. 1994. Les carnivores, pp. 68-69. In: Goodman, S. M. & O. Langrand, eds., *Inventaire biologique de forêt de Zombitse*. World Wide Fund for Nature-Centre d'Information et de Documentation Scientifique et Technique, Antananarivo, Série Sciences biologiques, No. Spécial.
- *Rasolonandrasana, B. P. N. & S. M. Goodman. 1999. Les mammifères carnivores. *Dans : Inventaire biologique de la réserve spéciale du Pic d'Ivohibe et du couloir forestier qui la relie au Parc National*. S. M. Goodman et B. P. N. Rasolonandrasana, eds. Centre d'Information et de Documentation Scientifique et Technique, Antananarivo, Recherches pour le Développement, Série Sciences biologiques, No. 15:149-158.
- *Rasolonandrasana, B. P. N. & S. M. Goodman. 2000. Importance du couloir forestier situé entre le Parc National d'Andringitra et la Réserve Spéciale du Pic d'Ivohibe pour la conservation des vertébrés terrestres. In Lourenço, W. R. & S. M. Goodman, eds. *Diversité et endémisme à Madagascar*. Mémoires de la Société de Biogéographie, Paris, pp. 139-154.
- *Rasolonandrasana, B. P. N. & S. Grenfell. 2003. Parc National d'Andringitra. In Goodman, S. M. & J. P. Benstead (Eds.), *The natural history of Madagascar*. The University of Chicago Press, Chicago.
- *Rasolonandrasana, B., *R. Rasoloarison, J. U. Ganzhorn & S. M. Goodman. 1995. Predation on vertebrates in the Kirindy Forest, western Madagascar. *Ecotropica* 1: 59-65.

- Raxworthy, C. J., Andreone, F., Nussbaum, R. A., *Rabibisoa, N. & Randriamahazo, H. 1998. Amphibians and reptiles of the Anjanaharibe-Sud Massif: Elevational distributions and regional endemism. In A floral and faunal inventory of the Réserve Spéciale d'Anjanaharibe-Sud, Madagascar: With reference to elevational variation, ed. S. M. Goodman. *Fieldiana: Zoology*, new series, 90: 79-92.
- Raxworthy, C. J., *J.-B. Ramanamanjato & *A. Raselimanana. 1994. Les reptiles et les amphibiens, pp. 41-57. In: Goodman, S. M. & O. Langrand, eds., *Inventaire biologique de forêt de Zombitse*. World Wide Fund for Nature-Centre d'Information et de Documentation Scientifique et Technique, Antananarivo, Série Sciences biologiques, No. Spécial.
- Raxworthy, C.J., *A. Raselimanana & *J.-B. Ramanamanjato. 1991. The reptiles and amphibians of Ambatovaky. In: Thompson, P.M. & M.I. Evans, eds., *A survey of Ambatovaky special Reserve, Madagascar*. Madagascar Environmental Research Group, London, UK. April 1991.
- *Razafimahaimodison, J.-C. 1993. Inventaire ornithologique dans la forêt de Zombitse dans le sud-ouest de Madagascar. *Working Group on Birds of the Madagascar Region* 3: 4-6.
- *Razafimahaimodison, J.-C. & R. Andrianantenaina. 1993. Ecologie et comportement des groupes d'oiseaux dans une forêt dense humide de Madagascar. *Proceedings of the VIII Pan-Afr. Orni. Congress*: 197-200.
- Schulenberg, T. S., S. M. Goodman & *J.-C. Razafimahaimodison. 1993. Genetic variation in two subspecies of *Nesillas typica* (Sylviinae) in south-east Madagascar. *Proceedings of the VIII Pan-Afr. Orni. Congress*: 173-177.
- *Soarimalala, V. & S. M. Goodman. 2003. The food habits of Lipotyphla. In Goodman, S. M. & J. P. Benstead (Eds.), *The natural history of Madagascar*. The University of Chicago Press, Chicago.
- *Soarimalala, V., S. M. Goodman, H. Ramiarinjanahary, L. L. Fenohery & W. Rakotonirina 2001. Les micro-mammifères non-volants du Parc National de Ranomafana et du couloir forestier qui le relie au Parc National d'Andringitra. *Dans : Inventaire biologique du Parc National de Ranomafana et du couloir forestier qui la relie au Parc National d'Andringitra*. S. M. Goodman et V. R. Razafindratsita (eds.). Centre d'Information et de Documentation Scientifique et Technique, Antananarivo, Recherches pour le Développement, Série Sciences biologiques, No. 17: 197-229.
- Stephenson, P. J., H. Randriamahazo, *N. Rakotoarison & P. A Racey. 1994. Conservation of mammalian species diversity in Ambohitantely Special Reserve, Madagascar. *Biological Conservation* 69: 213-218.
- Sterling, E. J. & *N. Rakotoarison. 1998. Rapid assessment of primate species richness and density on the Masoala Peninsula, Eastern Madagascar. *Folia Primatologica*, Supplement, 69: 109-116.
- Thalmann, U. & *N. Rakotoarison. 1994. Distribution of lemurs in central western Madagascar, with a regional distribution hypothesis. *Folia Primatologica* 63: 156-161.

- Urano, E., S. Yamagishi, *A. Andrianarimisa & S. Andriatsarafara. 1994. Different habitat use among three sympatric couas *Coua cristata*, *C. coquereli* and *C. ruficeps* in western Madagascar. *Ibis* 136: 485-487.
- Vences, M., *A. P. Raselimanana & F. Glaw. 2003. Ranidae: *Hoplobatrachus*, Indian tiger frog. In Goodman, S. M. & J. P. Benstead (Eds.), *The natural history of Madagascar*. The University of Chicago Press, Chicago.
- Yamagishi, S., E. Urano & *A. Andrianarimisa. 1992. Different height use among three sympatric species of Couas in a dry forest at Ampijoroa, western Madagascar. Yamagishi S.(ed.). *Social structure of Madagascar higher vertebrates in relation to their adaptive radiation*. Osaka City University, Japan, pp.53-57.
- Yoder, A., J. A. Irwin, S. M. Goodman & *S. Rakotoarisoa. 2000. Genetic variation in the high mountain population of *Lemur catta* on the Andringitra Massif. *Journal of Zoology* 252:1-9.
- Yoder, A.D., *R. M. Rasoloarison, S.M. Goodman, J. A. Irwin, S. Atsalis, M. J. Ravosa & J. U. Ganzhorn. 2000. Remarkable species diversity in Malagasy mouse lemurs (primates, *Microcebus*). *Proceedings National Academy of Science* 97: 11325-11330.