

**College of the Rockies - Canadian International Development
Agency
Youth International Internship Project**

Final Intern Project Report

**Sustainable Forest Management Project Assistant
Iwokrama International Centre, Guyana**

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Table of Contents	<i>Page Number</i>
1.0 INTRODUCTION	
1.1 Internship Project Background	3
1.2 Intern Background	3
1.3 Overview of Each Project Phase	4
1.4 Overview/Background of Work Location and Living Arrangements	4
2.0 WORK EXPERIENCE	
2.1 Project Name, Start date, End date	5
2.2 Project Objectives	5
2.3 Work Accomplished	5
2.4 Project Challenges	6
2.5 Project Contacts	7
2.6 Project Sustainability	7
2.7 Project Promotion	8
2.8 Plans for the Future	9
2.9 Comments on the Project	9
2.10 Recommendations for Future Interns	9
3.0 ACKNOWLEDGEMENTS	10

1.0 INTRODUCTION

1.1 Internship Project Background

The Iwokrama Forest is 360,000ha of tropical rainforest located within Central Guyana, South America. In 1989, the forest was designated by the Government of Guyana, as an area to be utilized by the international community to demonstrate conservation and sustainable utilization of tropical rain forest. In 1996, the Iwokrama International Centre for Rain Forest Conservation and Development was formed to manage the forest and design an approach which demonstrates the ecological, economic and social benefits of sustainable development and conservation.

My internship was designed to work with the Forest Manager, within the forest management unit of Iwokrama. The previous Forest Ecologist, David Hammond had produced a report 'Guidelines for the Installation of Permanent Sample Plots within the Iwokrama Forest' and received funding from ITTO to initiate the project. As Permanent sample plots (PSP) provided data on tree growth rates and species composition, they have long been considered the mainstay of sustainable forest management. Hammond proposed establishing a network of PSPs throughout the Iwokrama forest, which through prescription of various treatments and subsequent long-term monitoring, data would be generated relating the effects of : 1. Ecotourism, 2. Kufa & Nibbi (Non-timber Forest Products) Harvesting, 3. Timber harvesting and boardmilling, 4. Background Climate change, 5. Crabwood seed collection, 6. Timber Harvesting and log extraction, on long-term forest health.

1.2 Intern Background

I graduated from the Faculty of Forestry within the University of British Columbia. As my degree is in Natural Resource Conservation, I am very committed to learning and promoting the concepts of sustainable resource management, and working with Iwokrama seemed like a great opportunity to see the application of these concepts in the field.

Most of my employment experience has been working as a seasonal field biologist, researching endangered plants and animals. Although this work has provided me with great experiences in the field, it has not allowed me to apply the forest management and ecological principles I studied at university. I am very interested in sustainable forestry, but there are few opportunities for this type of work in Canada.

I have traveled throughout Central and South America, and I have strong interest in tropical forest ecology. I applied for an internship, as I desired an experience which was more integrated, rather than just passing through as a visitor. I chose this internship to gain an insight into sustainable forestry and to learn tree identification. From my previous experiences, I knew this was no small task, but working with the staff of

Iwokrama seemed like an ideal opportunity to gain skills and knowledge necessary to identify the flora.

1.3 Overview of Each Project Phase

Since the staff present within the forest management unit were not fully committed to implementing the permanent sample plots, as my terms of reference had described, there was no logical progression of project phases during my internship. However I did have the opportunity to contribute efforts to many different projects and expeditions so I gained a diversity of experience.

In addition to establishing and inventorying two PSPs, I accompanied a botanical expedition with Smithsonian Institute staff members (both Guyanese and American), re-established a garden at the field station, contributed to the Canopy Walkway Management Plan, and developed and applied a methodology for surveying saplings within the PSPs.

1.4 Overview/Background of Work Location and Living Arrangements

During my internship I was based out of the field station, approximately 250km south of Georgetown. The field station provides a very comfortable setting, including: private bedrooms, running water, electricity (the generator is run on a specific schedule), 3 meals a day, and GREAT company! Forest Rangers, Rangers-in-training, cooks, medical staff, and support staff have come from all over Guyana to work at Iwokrama and with them they bring an amazing collection of knowledge, experience and insight which they were so generous in sharing with me.

The field station is positioned on the edge of the Essequibo River, just down river from the community of Fairview, and Kurupukari Crossing (where the road to Brazil, bisects the Essequibo River). The field station is most easily accessed by boat, as the 1km road into the field station is in pretty rough shape. A large area was cleared for the field station, but it is surrounded by tropical rainforest. There are numerous hiking trails which lead from the field station through the surrounding forest.

When I was out in the field working on specific projects, I slept under a tarpaulin shelter in a hammock. This was my favorite form of accommodation as the forest really comes alive at night. I also enjoyed being able to cook my own food while in the field, as it gave me the opportunity to perfect the art of making bakes (fry bread), roti, and other local cuisine. I was always accompanied by experienced Iwokrama staff who ensured my safety when living in remote locations.

2.0 WORK EXPERIENCE

2.1 Project Name, Start date, End date

Establishing long-term monitoring systems for the sustainable use of tropical rain forest.

Start date: October 1, 2002

End date: March 15, 2003

2.2 Project Objectives

The objective of Forest Management Program within Iwokrama is to conduct inventory, planning, management and monitoring functions in support of the sustainable management of resources and functional units of the Iwokrama Forest.

More specifically, my internship was designed to assist in the implementation of permanent sample plots (PSPs) within the Iwokrama Forest. I was to review, implement and adapt the guidelines used to establish PSPs. Establishing PSPs consists of locating a specific location within a particular forest type, and delineating a one hectare plot. The plot is marked with PVC pipes, and 25 subplots are delineated within the plot. Subsequently, all the trees with a diameter at breast height (DBH) >10cm are identified, measured, examined and labeled. Data is recorded and entered into an excel file. Re-enumeration should take place periodically over time in order to indicate trends and the effects of particular prescribed treatments.

In addition to the PSP project, I was given the freedom to participate in any other projects or activities within Iwokrama which interested me.

2.3 Work Accomplished

Upon arriving in Guyana, I learned the Forest manager, Francis Kahmbwe, was in a 'wrap-up phase' of his contract as it ended December 2002. The PSP project was in its initial phase of starting up, but as David Hammond's contract had ended earlier in the year it became obvious that momentum for the execution of the project was in short supply. The Acting Forest Manager, Terry Amer had some contrasting views to Hammonds PSP objectives, and due to financial constraints of the whole organization the pressure on the forest management unit to switch to large-scale forest operations made PSPs establishment seem unrealistic. If the forestry unit is to provide the financial results required, the scientific approach of PSP methodology may not be the logical or feasible approach.

Regardless, it was decided that I would go ahead with the PSP project for the time being. Upon arriving at the field station, I learned that the forestry research assistant whom I was to establish PSPs with, was away from work recovering from Malaria. Fortunately, the timing was right for me to join a botanical expedition with Smithsonian Institute staff from Guyana and the U.S.A. This was a definite highlight of my internship experience as

I gained so much knowledge, and explored a lot of area in the Northwest of the reserve. In addition to plant identification, I was introduced to methods of plant collection (including tree climbing!), and plant preservation in the field. The samples we collected will be housed in herbariums all over the world (including Kew Gardens, Smithsonian Institute Headquarters and within Guyana).

My second month in Guyana was spent camping in the field establishing two PSPs. We established the plots and inventoried all the trees within the 1 ha parcels. Working closely with George Roberts, the forest research assistant was an excellent experience because his tree identification skills are incredible. It was also interesting learning the common names for the trees, rather than the scientific names as with the previous crew.

Returning from holidays in the New Year, I learned work would no longer continue on the PSP project. At this point I began to shift my attention to creating a food garden at the field station. There is a lack of fresh produce at the field station, so it seemed like a constructive place to focus my energies. Previous gardens at the field station have been neglected, and even within a short time of neglect, they are overtaken by weeds. I am hopeful that this attempt will last until the river floods it out, as it does in the rainy season. As of March, it was looking great and should be producing significant quantities in the next few weeks.

During February, I decided to re-visit one of the PSPs earlier established. Out of my own interest and motivation, I spent one week with a ranger trainee, camping out and surveying vegetation in the understory of an established PSP. Although not included in Iwokrama's original PSP methodology, I think recruitment data should be included in inventory data. Other PSPs throughout Guyana inventory understory vegetation, so I referenced previous studies and adopted their methodology so that the data from Iwokrama will be compatible with the National PSP Database. I have produced a report documenting the survey protocol, and I hope that the work can be replicated at some point in the remaining 2 PSPs (in total there are now 3 PSPs in the Iwokrama Forest). I also entered the data into an Excel spreadsheet in hopes that it will be incorporated into the existing PSP data files.

Throughout my internship, I was also appointed to a working group responsible for managing the newly constructed canopy walkway. Together we attempted to design how the facility was going to function, and initiate work on a management plan. Currently the walkway is only partially open (to limited visitors) but hopefully soon it will be properly functioning as a tourist destination.

2.4 Project Challenges

The most challenging aspect of the PSP project, was maintaining momentum for its continuation during my work term. Being that the Acting Forest Manager, did not fully support the project it was constantly being cancelled, leaving me without a project. In the 5 month internship period, I contributed to the PSP project for only one month. It was also frustrating as the project required very little in terms of financial assistance, but as I

am only learning how to identify the trees, I was dependant on other specific staff members to assist me in the PSP process. They were not always available, as they were assigned different work priorities. In lieu of working on the PSP project, I became involved in numerous other projects but it was difficult to stay focus and productive without tangible objectives and goals.

It was also difficult to work within the uncertainty of the organization. It was more or less my last day as a intern, that it was finally announced that Iwokrama would continue operations but on a much limited budget and again only for a specific time period, when hopefully further funding will be sought. With so much uncertainty, people were often hesitant to initiate projects as there future viability was not clear.

With all the staff turnover in the forest management unit, I never really felt as though I had a supervisor, who could advise me throughout. My terms of reference stated I would be working directly with a “forest mentor”, and as this person never materialized it was a bit disappointing. I did have the opportunity to learn from the rangers, rangers-in-training, and research assistants so everyday was filled with learning experiences.

2.5 Project Contacts

Terry Amer, previous Acting Forest Manager”, current Forest Operations Manager
tamer@iwokrama.org

2.6 Project Sustainability

Permanent Sample Plot Project

The very nature of PSPs, implies that they will last for a long period of time. Their viability requires however, that they are periodically re-measured, and that professional tree-spotters or botanists visit the sight to assist in identification of the “unknown” species. There are detailed documents which explain survey methodology so that consistency can be maintained during re-enumeration. There has also been a specific timeline recommended for re-enumeration. It will be up to funding and forest management priorities to maintain the long-term monitoring of these PSPs. The data collected from the three PSPs within Iwokrama will also be exported to the National PSP database, currently managed by the Forest Research Unit within the Guyana Forestry Commission. The head of the research unit, Raquel Thomas is a previous employee of Iwokrama and is very familiar with the location of the PSPs. I am confident that the value of these PSPs will not be overlooked, and I hope funding can be arranged to manage them in the long-term.

Once the forest management project shifts from paper to reality, it has the potential to contribute greatly to Iwokrama, the local communities and the global community. It has the potential to provide income to Iwokrama (from timber and non-timber forest products) which would increase the capacity for research, eco-tourism, and ideally make

Iwokrama financially self-sufficient. In addition it will provide income through employment opportunities to the local communities.

Although Iwokrama is currently steering away from the PSP project and its prescribed treatments, in exchange for a larger scale forestry operation, the established PSPs have the potential to assist in ensuring sustainability of forest operations, contribute data to the National PSP Database and are often a required component in order to achieve forest certification.

Garden Project

Throughout establishing the garden, I worked directly with one of the Ranger trainees, Ewart Smith. He has an agriculture background and is very committed to all aspects of supervising the garden. I am confident the garden will persist, at least until the rainy season when it is apparently inundated with water from the river. I hope a system can be installed at the field station that would see all the rangers spending time regularly in the garden, as a co-operative effort would greatly increase production, and positively effect the well-being of everyone at the field station. The lack of collective management in the garden has been the fault of previous garden attempts, as the individual responsible for the garden may periodically be away from the field station. I am hopeful that more staff will begin to take ownership of the garden, and I have made recommendations to the Forest Operations Manager.

Once the garden starts to produce, it will be a great asset to the field station. Currently, most of the produce comes from Georgetown (250km away!), and is shipped in small quantities, very sporadically. Producing vegetables at the field station will benefit the health of staff and visitors, increase the self-sufficiency of the field station, and reduce costs and pollution associated with transport.

2.7 Project Promotion

During February, I gave a lecture at the University of Guyana to an ecotourism class. I was invited to share my impressions and experiences of Guyana. Given that there is currently a lot of violence in Georgetown, the whole of Guyana is getting a bad reputation in the media and the effects are wide reaching- even to the moral of Guyanese. Being that I have enjoyed my experience in Guyana so much, and my impressions of the country are very positive, I was invited to share, and remind the students what a great country they live in. Surprisingly enough, the majority of the students had never been to the interior of the country and really have no idea about the majority of the landbase. It is unfortunate that transportation within this country is so limited, because less than 100 km south of the violence in Georgetown, there is beautiful forests, rural villages, abundant wildlife and every other attribute a country can offer ecotourists! The lecture was well received, and I'll never forget the look on everyone's faces when I told them all the countries I'd been to, and that I thought Guyana was the absolute best!

2.8 Plans for the Future

Yes! I came to Guyana with the idea that I may want to pursue a masters degree in tropical ecology. Now, I'm convinced. I'm still working out all the details, but I'm hoping to conduct a research based masters degree within the forests of Guyana. Possibly, I will research within the Iwokrama forest in conjunction with future forest management operations, but it is all still ideas at present.

As I was putting the finishing touches on this report, I was offered a position with Iwokrama, as a crew leader within the large-scale forest inventory project. I gladly accepted, as I have waited too long for the forest management unit to take action, and I can't possibly walk away now! Although the position will last for only a few months, one just never knows where it will lead. There is a lifetime of learning to be done in the forests down here, so I'm in no hurry to rush back to Canada.

2.9 Comments on the Project

Putting the various frustration aside, my time in Guyana with Iwokrama was incredible. This country is so unique and special, and I am very grateful I had the opportunity to discover it. Being that tourism is in such a preliminary phase in Guyana, arriving as an intern definitely assisted in some of the logistical difficulties that an independent traveler might encounter. I strongly recommend sending more interns to Guyana in whatever capacity, as it can only assist the country as it works towards being accessible to the international traveler.

Every minute in this country is a learning experience in some form or another. Whether its how to identify trees by smell, dance the Brazilian "Farrah", climb trees to avoid demise by wild pigs, or understand 'Guyanese English', every day is filled with learning. Although at times I wished I could have focused on the project I came here to do, I realize that part of my learning is accepting the limitations of working in this environment. The unpredictability of life in Guyana is magical. Everyday is filled with surprises, and if your not prepared for anything at ALL times, you may miss out on something wonderful.

2.10 Recommendations for Future Interns

Guyana is a very rural country, with so much to offer a curious visitor. Everyone I met was so supportive and encouraging its really great. Bring with you everything you think you may need, and then some. Once your out in the interior it's very limited as to what one can acquire, and if you have extras of anything people there will be most appreciative! I was constantly being attacked by various bugs, so come well equipped with bug spray (yes- with deet!!), and copious amounts of stop-itch products!. Invariably your first week will be spent scratching like crazy, but have faith it will get better. For some reason even the bugs give a welcoming ceremony!

If you are off to the interior, make sure you say your good-byes to modern communication. There is no reliable phone or email (as of March 2003), so it's back to snail mail which takes over a month to reach Canada. Hopefully you can relish in this inability to be contacted, it really is getting hard to achieve in this modern world.

The environment is very humid, and my camera quickly died a tragic death. Don't bring anything that can't be replaced without too much disappointment. Stock up on multivitamins and other supplements, as fresh fruits and veggies are generally in short supply. You are off to an amazing and wonderful country- enjoy every minute, because the time goes by way too fast!

3.0 ACKNOWLEDGEMENTS

Primarily, I'd like to thank all the wonderful staff out at the field station. You were all so welcoming, supportive and great company throughout my stay. You all shared so much of your knowledge with me, and definitely kept me safe from numerous fatal possibilities in the forest! For that I am very grateful!! I'd like to specially thank George Roberts and Ewart Smith for patiently trying to teach me tree identification. I am catching on, really. Although I still don't always guess the species right, at least I know some of the species names to guess, right?!