Consortium on Law and Values in Health, Environment & the Life Sciences
2011-12 Student Proposal Cover Page

Applicant Information

Applicant Name: Chih-Chien Huang
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Project Title: Improving national forest management by linking stakeholders to wildlife monitoring activities in Taiwan

Department: Conservation Biology
College: College of Food, Agriculture & Natural Resource Science

Home address: 1207 Gibbs Ave.
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Zip: 55108

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Dean's name: Dr. Allen Levine
Dean's email: aslevine@umn.edu

How did you hear about this funding opportunity? Department mailing list and official call for proposal by email

Funding

Total amount of funding requested: $8,943
Is funding available within your center or dept for this project? No

Executive summary (maximum 200 words)

This proposed project focuses on evaluating knowledge, attitudes, and behaviors of principal stakeholders (from local indigenous communities, citizens, and NGOs) before and after they participate (as “citizen observers”) in a wildlife survey activity on national forest lands in Taiwan. Information gleaned from these citizen observers will be synthesized and employed by the national forestry bureau to help benefit future wildlife and national forest management. Through a workshop, questionnaire and interview, this project will generate management feedbacks from participants (forest users) that will be used to adapt national forest management actions. In addition, participants will better understand both societal and biological impacts if they participate in national forest management. This project will be conducted under auspices of the Taiwan Forestry Bureau and has a very high likelihood of success because it will promote bottom-up national forest management decision-making in the future.

Approvals

Check all appropriate approvals required for your proposal. Approvals must be obtained prior to receipt of funding. If you have applied for approval but have not yet received it, indicate that below.

IRB Yes ☐ No ☐ Application pending
I will submit an IRB application by the end of March 2012

IACUC Yes ☐ No ☐ Application pending

Other Yes ☐ No ☐ Application pending

Checklist

☐ The proposal is 1000 words or less excluding budget, biographies, references and citations.

☐ The proposal includes a work plan with a specific timeline using months or quarters to identify work to be done and completion dates.
- The proposal includes a 1-2 paragraph biography of the applicant and all co-investigators.

- The budget form is complete including the funds sought for this project, other pending applications for this project, and the amount/source of matching or other funds.

- The applicant's faculty advisor is copied on the application email. Professional students w/o advisors check NA.

- All necessary approvals are pending or received.
Improving national forest management by linking stakeholders to wildlife monitoring activities in Taiwan

Project Rationale:
Taiwan is a distinctive island comprised of 58.5% of forest lands (73% of that primary forest). This should be adequate to sustain wildlife populations. However, many wild animals such as Asiatic black bears, Sambar deer, and other large mammals in Taiwan have been considered nationally “Endangered” since 1989 (Taiwan Forestry Bureau, 2009), yet demands for wildlife-based tourism/education are overwhelming. Based on that, Taiwan Forestry Bureau (TFB) encourages communities located around national forests to participate in national forest management. Since 2002, TFB has provided “Community Forestry Project” offering eco-tourism related training to local communities to integrate with national forest management. But local communities’ knowledge and attitudes toward natural forest management have not been evaluated or integrated in management actions. In addition, citizens show interest in participating in wildlife related activities such as sightseeing, observations, and monitoring. Thus, I will conduct a project to evaluate attitudes of principal stakeholders before and after they participate in wildlife survey activities, and synthesize their opinions to benefit future wildlife and national forest management in Taiwan.

This project will be a part of a larger project, which focuses on developing a system of “citizen observers” to monitor large mammals. This larger project will fell within the auspices of the TFB. The expected outcome is that participants’ knowledge, attitudes and behaviors toward wildlife and habitats will change, and TFB’s national forest management will also adjust, with greater understanding of citizen users of the forest. Citizen observers can not only become better data-collectors over time, through training and working with professionals (Dickinson et al., 2010), but can also engage with managers to become conservation ambassadors. I conducted a pilot study during June to August 2011 to gauge citizen observers’ abilities and attitudes in terms of searching for wildlife sign, and to explore local communities’ attitudes for being potential participants. This pilot study yielded good responses from citizen observers in knowing wildlife resources and inspiring suggestions toward management as well as local communities. Local communities -mostly indigenous tribes- showed high interests and extraordinary knowledge in surveying wildlife and had strong management opinions.

Project Objectives:
The TFB wants to increase not only public awareness in natural resource but also public acceptance through a more transparent decision-making processes. Through this project I could gain a better use of knowledge and experiences from different stakeholders as well as synthesize a more effective learning process between the stakeholders and government agencies.
(1) To improve government management efficacy in managing national forest by incorporating suggestions from stakeholders, including local communities, citizens, and NGOs in Taiwan.

(2) To understand the attitudes and behaviors of participants toward national forest management.

(3) To evaluate attitudinal differences toward national forest management among stakeholders and employ in management adjustments.

**Project Methods:**

I will recruit participants through the TFB website, newspaper, blogs, and by contacting outdoor clubs, NGOs, and local communities (indigenous tribes). Prospective participants will receive necessary training (e.g., identify signs of wild animals, national forest management policies) before conducting wildlife monitoring activities (i.e., the broader project, where volunteer observers will record animal sign found along forest trails). I will conduct formal open-ended, in-depth interviews, and informal interviews and participant observation before and after monitoring activities. Survey data will be coded and analyzed by SPSS software (version 13), and descriptive and inferential statistics will be applied.

(1) To identify participants’ understanding of national forest management, I will use a pre-tested structured questionnaire to collect their knowledge and impression of national forest management before their training (in-class) and survey (on-site).

(2) To identify participants’ attitude and behavior change, I will organize a workshop after their field activities (training and survey) with officers from TFB to discuss their observations, feelings, and suggestions toward national forest management. Informal interviews and participant observation will apply at this point to gain some information from participants.

(3) To evaluate attitude differences toward national forest management among stakeholders, I will apply group discussion, open-ended, and in-depth interviews to participants. Furthermore, I will analyze and synthesize their suggestions to benefit future national forest management.

**Interdisciplinary Nature and Significant of this project**

This project will improve national forest management in Taiwan via increased stakeholder involvement. Through this project, I am aiming to build a participatory model to benefit national forest management. This model will make the decision-making process more transparent and adapt local suggestions in management activities. By integrating with wild animal monitoring activities, participants will expand their knowledge and perspectives, both in terms of wildlife biology as well as the functions and responsibilities of the TFB. The TFB will effectively manage national forest by integrating with societal opinions. Given that I have been employed by the TFB (for 8 years) and will work closely with them on conducting this project, I believe that this project has a very high likelihood of success and will promote bottom-up national forest management decision making in the future.
**Completion Schedule:**

The following table shows the schedule for this project.

<table>
<thead>
<tr>
<th>Activity</th>
<th>2012 Dec</th>
<th>2013 Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation (Making connection with communities’ decision makers, citizen observers group, TFB decision makers)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Workshop for participants &amp; Interview I</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Involving wildlife monitoring activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Workshop for participants &amp; Interview II</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Literature cited**


**Biography of Applicant**

Chih-Chien Huang is a Ph.D. student in Conservation Biology at the University of Minnesota. His research is concerned with the assessment of large mammal population monitoring methods in Taiwan, with focus on black bear (*Ursus thibetanus formosanus*) and sambar deer (*Rusa unicolor swinhoei*). His goal is to improve population monitoring methods to aid in developing better management strategies for both government agencies and the public. His formal academic background (B.A and M.A) was social-oriented in forestry management at National Chung-Hsing University (Taiwan), thus his degree program will focus more on statistical methods to generate a predictive model from the field survey results and incorporate with local community and citizens’ opinions toward law enforcement and wildlife management.

Chih-Chien’s formal job in the Taiwan Forestry Bureau (TFB), which was in charge of national forest lands management and nature conservation administration in Taiwan, offered him the opportunity to thoroughly consider nature conservation activities. He was privileged to participate in managing nature reserves and wildlife conservation as well as to operate citizen-based conservation projects focused on motivating local communities involved with wildlife.
conservation. This community/citizen-based survey approach will also directly engage the citizenry in conservation and provide them with an increased understanding of animal ecology, population dynamics, and environmental cognitions.
## Project Title: Improving national forest management through linking stakeholders to participate in wildlife monitoring activities in Taiwan

### Instructions provided below.

<table>
<thead>
<tr>
<th>Personnel costs</th>
<th>Description &amp; justification</th>
<th>Requested funding</th>
<th>Matching/other funding</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Salary = ___hrs x ____ hrly wage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Your salary (stipend)</td>
<td>12hr/week<em>24week</em>$15/hr</td>
<td>$4,320.00</td>
<td>$0.00</td>
</tr>
<tr>
<td>2 Other personnel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Other personnel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Other personnel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 <strong>Personnel Subtotal</strong></td>
<td></td>
<td>$4,320.00</td>
<td>$0.00</td>
</tr>
<tr>
<td>6 Speaker Honoraria</td>
<td>Number of speakers and amount of honoraria</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Supplies &amp; Services</td>
<td>Identify and explain use.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 Equipment</td>
<td>A high quality flash memory digital voice recorder with USB and an extra mini SDHC memory card, microphone device. (Amazon.com price 2/1/12: recorder $199, 8G SDHC $13, microphone $25)</td>
<td>$237</td>
<td></td>
</tr>
<tr>
<td>9 Travel</td>
<td>Minnesota-Taipei ($1,546) checked from kayak.com; housing ($300 for 6 months, offered by TFB); meals and transportation($100/week*24week=$2,400); domestic roundtrip airfare from Taipei to Taitung ($140)</td>
<td>$4,386</td>
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</tr>
<tr>
<td>10 <strong>Subtotal research supplies, equipment, travel, other</strong></td>
<td></td>
<td>$4,623.00</td>
<td>$0.00</td>
</tr>
<tr>
<td>11 <strong>TOTAL BUDGET</strong></td>
<td></td>
<td><strong>$8,943.00</strong></td>
<td><strong>$0.00</strong></td>
</tr>
</tbody>
</table>

1. Stipend justification. You must justify the amount of stipend you are requesting by identifying the number of hours you plan to work on the project and the 2-4. Identify all other personnel to be paid from this grant including interpreters, travel guides, etc. and justify their salary by identifying the number of hours 6. For colloquia, identify the number of speakers and the amount of honoraria you will provide. 7. Supplies and services. List out all supplies and their estimated costs. Explain in line 7 or in the body of your proposal what the supplies will be used for. 8. Equipment costs are allowable only if the justification clearly shows that the equipment is necessary for the project. Include explanation of what will happen 9. Travel costs must include a description of the purpose of the travel, start and stop dates of travel, transportation costs, housing costs, and allowable per diem