## **Report of the Conservation Biology Policy Graduate Certificate Program Review Committee to:**

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#### **Executive Summary:**

We have completed our review and recommend that the Conservation Biology Policy Certificate Program be continued on a provisional basis for two years, provided that this time is spent to develop and initiate a revised program that addresses the weaknesses of the current program. Further, a strategic planning workshop should be organized to bring together key faculty (See attachment A) who could catalyze the creation of a more vibrant certificate program in Conservation Biology Policy. In addition, the pending Conservation Biology Science Certificate Program should not be approved, as our suggested revisions involve merging the two certificate programs. Initial resources should be provided to free up faculty time to develop linkages across campus, to create and teach core or capstone courses, and to seek outside support for this program on an ongoing basis.

#### **Summary of process:**

On October 10<sup>th</sup>, the review committee met with Dean and Vice Provost Marsha Landolt, Associate Dean John Slattery, Divisional Dean for Sciences, Ron Irving, and Associate Dean for Academic Affairs, Gail Dubrow, to discuss our charge in reviewing the Conservation Biology Policy (CBP) Certificate Program. Following that meeting, we met to discuss the self-study and our charge, and to develop a series of questions that we needed to answer to make our recommendations. We met individually with members of the steering committee to broaden our understanding of the program. We also met with Mark Withers, Dee Boersma, and Julia Parrish during this time. A representative from the GPSS, Kristine Tardiff, organized an on-line survey of the 22 students in the program, to which 4 responded, and we met with one graduate student on December 4 (See Attachment B). On December 9, we met to discuss our individual interviews and initial impressions, and to plan the site visit. During the site visit on December 11, we had the opportunity to talk with Craig ZumBrunnen and Richard Gammon, co-directors of PoE, with David Szatmary, Vice Provost of UW Educational Outreach, with one of the graduate students, and with 5 of the graduate program directors of relevant departments. We concluded the day with a thorough discussion of our findings and recommendations.

#### **Findings:**

The information we gathered paints a consistent portrait, as we each heard similar strains from the different individuals and groups with which we met. Those we spoke with expressed a belief that as it is presently structured, the certificate program provides opportunities for graduate students to receive certificate recognition for their course work in conservation biology policy, and that many students are pleased with the flexibility and ease of completing this program. However, it was universally acknowledged that the program needs more structure and better focus, and in particular needs to attract stronger commitment by students and faculty in the life sciences if it is to achieve its interdisciplinary goals. Furthermore, significant improvements could be realized with relatively modest resources. Several problematic features of the current program consistently arose in our discussions:

First, over 3/4 of the students who have been or are now involved with the program are social science students, and are primarily taking courses that they would have pursued without the certificate program. For example, the student we met with is enrolled in the Evans School and CFR, and all of the courses he will take for the certificate are part of his program, except Biology 476. This is not atypical. Faculty report that some students take one course that stretches them, but that the majority of the courses taken are reinforcing their current program of study – but not stretching them into new areas. Apart from taking a number of courses related to conservation biology policy, few are truly fulfilling the spirit of the certificate program in stretching their boundaries and going beyond their home department or discipline for class experiences.

Second, there appears to be little or no sense of community among the students. Only those who already know each other from their home departments know others in the program. Faculty also reported that they did not know who might be a CBP certificate student in their classes, with a few exceptions. Thus, participation in the program seems to be primarily an experience of taking some related courses in a pathway, rather than a substantive engagement with broad, interdisciplinary program of inquiry.

Third, related to the last point, it seems that the capstone experiences are not functioning to bring together interdisciplinary teams as hoped. Most students are not taking courses that truly provide this kind of experience, and those that do are not necessarily working in teams that group CBP students -- that is, they work in teams, but not necessarily with people with different disciplinary expertise. We learned that a number of faculty have reworked their courses to make them more appropriate for certificate students (e.g., creating more problem-centered learning, and team based exercises). Yet because of the skewed disciplinary expertise among the students, and because many select capstone projects in their home department, there is not an opportunity to combine natural science and social science students within these teams.

Fourth, faculty are disengaged from the program -- even those on the steering committee described themselves as less involved than they could be or expected to be. They do not meet often, do most of their work on email, and noted that they could contribute more, but somehow do not. Many were clearly embarrassed for not doing more, yet in spite of their sense of the importance of the program and a will to have it succeed, none reported strong professional engagement. All made it clear that they thought an effective program could be of great importance both to students and society. All asserted that UW must offer interdisciplinary training in conservation biology. Yet the fact remains that the level of faculty involvement is minimal across the board. Most notable perhaps is the absence of a significant number of faculty from the biological and life sciences.

In reflecting on these issues, we independently reached similar conclusions and recommendations. While the certificate program provides recognition for student work it is not achieving the goals of stretching the boundaries of its participants, nor of creating an interdisciplinary community of graduate students and faculty engaged in substantive exploration of this field and its practice. Everyone agrees that a fully effective program will require better focus and higher commitment.

Our conclusion is that the certificate in its present form gives very little added value to students, and that the present weaknesses should be addressed by developing an effective interdisciplinary curriculum and program.

Along these lines, and as further explained in our **Recommendations** below, we think that the addition of the proposed science certificate in conservation biology should not be pursued. While the two certificate model is intended to broaden the backgrounds of graduate students by having science students take the policy certificate and policy students the science certificate, the experience of student enrollment in the Policy Certificate program suggests that the two-certificate model would not promote cross-disciplinary learning and teaching. It might instead codify divisions that are not productive, reinforcing the existing divide between public policy and science that is currently frustrating the program goals of cross-disciplinary teaching, learning and problem-solving.

The next section offers suggestions for an improved certificate program. Before proceeding, we wish to note that the existing program has some strong assets in place. Mark Withers is universally and deservedly praised for his accessibility and prompt assistance in finding courses, and for providing quarterly summaries of available classes, notices of relevant workshops and conferences, and the weekly summary of on-campus environmental events. And, given that the certificate program is built at present entirely on existing courses, with no investment apart from a portion of Mark's salary to administer the program, it has been successful in beginning to establish connections among various programs on campus around the theme of conservation biology.

### Toward an Effective Program in Conservation Biology Science and Policy

In this section, we offer suggestions for an improved Graduate Certificate Program in Conservation Biology Science and Policy. The section first considers some of the lessons that other interdisciplinary certificate programs at the UW may offer for improving the structure and content of the certificate program in conservation biology. The section then offers specific recommendations for a new structure for the conservation biology certificate program, integrating the public policy and science elements into a coherent program in conservation biology science and policy.

#### Lessons from other models of interdisciplinary certificate programs:

The Environmental Management (EM) Certificate Program appears to have a much greater sense of cohesion and community, due in large part to its inclusion of required core courses and capstone experiences. However, because it has not developed a sustained budget, EM also has

the problem of scrambling each year to find the means to deliver the courses. It appears to be a stronger model overall, but it would be good to avoid its pitfalls by developing a method of sustaining the CBP program on more permanent resources.

The Global Trade, Transportation and Logistics Studies (GTTL) program has 2 core classes, and then a more open structure, but with students participating in some kind of group work experience. Students in the program usually develop team-based small projects from the 2<sup>nd</sup> core course that they take (which is theme based). These experiences appear to be successful in bringing students from different disciplines together, and to cross boundaries in significant classroom experiences. This organization might be a useful one to emulate in a restructuring of the CBP certificate program. This model seems to be well supported, in part because the program is also open to professionals who are admitted through Educational Outreach. In our meeting with David Szatmary, we learned that it is possible to create a program that would be attractive to professionals, and which would benefit the program both by bringing active practitioners into the classroom dialogues, and by increasing financial support through the fees paid by participants.

GTTL has an oversight committee that includes both University and private/public sectors. Such a committee could be useful for the CBP certificate program in helping formulate the combination of courses and experiences that would best benefit students to become real-world practitioners of conservation biology.

#### **Recommendations:**

We recommend that the certificate program be changed in a number of ways to achieve the primary goals originally envisioned, that the CB Science Certificate proposal be rejected, and that one unified track for both science and policy students be developed. The program should be given provisional approval for another 2 years within which time it should be reorganized and set on a trajectory towards success. We recommend the sponsorship of a retreat for strategic planning for reorganization, and temporary resources to fund release time for faculty for planning, creating and delivery of core and capstone courses, and development of the seminar series.

To better understand our rationale, we first describe what we feel are the critical components to making this certificate program of significant value to graduate education.

(1) Students need to step out of their disciplinary boundaries to learn the context, methodologies, concerns and practice of other disciplines. To be attractive to students, it is likely that at least some courses need to be designed specifically for graduate students of this program. Currently, the set of course offerings often include courses that either seem to begin in a foreign culture and vocabulary and therefore are intimidating or inaccessible, or are too watered down to stretch the bounds of student experience.

(2) Students from different disciplines need to be in at least some classes and other program experiences together. The real benefits of this program will come from students understanding from one another how conservation practice is informed by the work of distinct disciplines, and how their approaches to similar programs yield different understandings and insight. It is from

these exchanges that new collaborations are born -- and how faculty are in turn drawn into this process. There are a number of methods for achieving this -- shared core classes, required seminar series, student seminars to report research results, participation in conferences and workshops, and capstone activities.

(3) Faculty need to find impetus to join in this effort. Many would be willing to invest more if they saw prospects for significant intellectual challenge and engagement. Means to achieve this include helping faculty become aware of prospects for new research collaborations and teaching experiences, support of their home department to make courses for the certificate program part of their annual schedule, buy out of their time to allow them to develop more appropriate courses, etc. A faculty leader or leaders that coordinate the program, and help to draw faculty across the campus into the program may be useful in achieving this end. Sponsoring a planning workshop among all interested faculty and student representatives could also be a first step to creating the faculty engagement necessary to success.

(4) We believe it would be helpful to enlist the Office of Educational Outreach to conduct a market survey among conservation professionals to better understand what educational experiences and skills are needed as preparation, and what kinds of program configurations would attract professionals to enroll in the program. To the extent that the results of this research can be accommodated into the new design, the conservation biology certificate program will benefit through the incorporation of conservation professionals into the program, and increased outside financial support.

#### Potential Structure of a Revised CB certificate program:

We feel that the campus community would be better served by a single certificate program, "Conservation Biology Science & Policy," that included a number of core courses, a robust interdisciplinary seminar series and a select set of capstone experiences. In our discussions, many people suggested models that might work better than the existing model, and many of our specific suggestions are drawn from these interviews. We wanted first to acknowledge the recommendation of the self-study and the proposal for the science certificate to create a single core course and a seminar series that support both the certificate programs. While we agree with these recommendations in broad form, we believe they will be insufficient to create the conditions for student synergy, and broadening of student perspectives and experience.

We recommend that at least 2, and possibly 3, core courses be developed specifically to serve this program, as well as other interested students. A pair of courses in Conservation Biology Science and Conservation Biology Policy should be required of all students in the program. Two courses would allow the development of sufficient depth in both topic areas, providing meaningful challenge to students from both natural and social science backgrounds within each course. Currently, the required core course is drawn from undergraduate offerings that are taught at a level inappropriate for developing the knowledge and skill base of graduate students. A single team-taught course that combines Conservation Biology Science and Policy would likely be too brief and superficial to provide the rigor needed for graduate students and professionals who might be attracted to the program. A potential third course presenting an overview and inquiry into various disciplinary paradigms could precede the two core courses. The goal of this third course would be to provide an understanding and respect for the contributions of distinct disciplines to conservation concerns – an interdisciplinary perspective that is often lacking in the preparation of most graduate students. Together these courses would foster sufficient depth to understand the key methodologies, problems and solutions offered from the natural science and social science perspectives. Crucially, both natural science and social science students need to be recruited to these courses, to take on these experiences together.

A second component would be a seminar series that is interdisciplinary, including both UW and outside-UW speakers, which must be taken by all students. The Bevins Series on Sustainable Fisheries is an ideal example of what could be achieved in this regard. A truly interdisciplinary series, the seminars bring outside and international speakers to campus, with considerable attendance (150 per seminar) from the campus and broader communities. The seminar series is paired with an undergraduate and a graduate course. The graduate student course is composed half of natural science and half of social science students, and they meet with the speaker, and wrestle with the realities of sustainable fisheries practice. What is it to be a scientist in these issues? What does it take to produce credible science and to defend that science in court, in commissions, etc.? What are the social contexts that have led to overexploitation -- etc. etc. The cross disciplinary focus is eye opening and life changing for the participants. What would be ideal would be the creation of 1-2 additional series that serve distinct interest clusters across the campus. Once endowed, and run in rotation, this mechanism would enable a campus-wide enrichment and focus on conservation issues, providing an intellectual center for conservation work that would attract broad faculty and community participation

Many have mentioned the opportunities to exchange research ideas and findings in single day events that bring together people from many disciplines. Events like this would be invaluable. By providing an opportunity for social science and natural science students to present their research, and to socialize together and with faculty, many of the synergisms that we are lacking could be cultivated.

Students should then be encouraged to take courses outside their home discipline from the array of courses currently offered by UW, as is already described in the CBP certificate program guidelines and CBS certificate program proposal. However, one of the biggest obstacles to bringing students, particularly from the life sciences, into this program are the number of credits required to obtain the certificate. Thus, the requirements in this area should be minimal – perhaps a single additional course would be sufficient when combined with the other program elements.

The final element would be a capstone experience that again affords an opportunity for students in the program to work together on a problem. It is probable that the design and development of appropriate experiences could be a topic in a planning retreat. There are numerous models that already exist that can be discussed (e.g., PbAf 596). The crucial aspect of a successful capstone experience is meaningful engagement of students from both the natural and social sciences in teamwork.

The Program on the Environment is the most logical home for this certificate program. In this regard, Mark Withers should continue administering the program, in coordination with the steering committee and associated faculty teaching or facilitating other aspects of the program.

One potential scenario for funding the interim needs for this program is given in Attachment C.

**Conclusion**: The University of Washington, as the premier research university in the Northwest should support an innovative interdisciplinary program in conservation biology. Although the existing graduate certificate program has made a start, a significant reform of the program should be attempted that addresses the key needs for this program: true interdisciplinary course and teamwork among groups of natural and social science graduate students, the engagement of faculty across UW departments and schools, and the involvement with professional conservation biologists in seeking solutions to our regions' pressing conservation biology problems. We suggest a faculty strategic planning retreat that includes existing and former steering committee members, faculty offering courses in the program, and other interested faculty not yet involved in the program (see Attachment A) be conducted to develop a final form for the program. Every effort should be made to find permanent resources for the program. The program should be re-evaluated at the end of 2 years.

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Clare M. Ryan Associate Professor College of Forest Resources

Attachments

#### Attachment A.

# List of Faculty not currently involved in the Conservation Biology graduate certificate program often mentioned in interviews as people who should be involved:

Present Steering Committee

Dee Boersma, Biology Gordon Bradley, CFR Patrick Christie, SMA Kern Ewing, CFR David Fluharty, SMA Carolyn Friedman, SAFS Greg Hicks, Law Kristina Hill, Landscape Architecture Tom Hinckley, CFR Daniel Huppert, SMA Martha Groom, IAS, UWB & Biology Terrie Klinger, SMA David Layton, Evans School Tom Leschine, SMA John Marzluff, CFR Ed Miles, SMA David Montgomery, ESS Kerry Naish, SAFS Tim Nyerges, Geography Julia Parrish, SAFS & Biology Devon Pena, Anthropology Sarah Reichard, CFR Jennifer Ruesink, Biology Clare Ryan, CFR Daniel Schindler, SAFS & Biology David Secord, UWT Si Simonstad, SAFS

We recommend that these people be contacted for input and involvement in the future development of the program.

#### Attachment B.

## Report by Graduate Students for the Conservation Biology Policy Graduate Certificate Program

## A report by the Graduate and Professional Student Senate (GPSS) and students from the Conservation Biology Policy Graduate Certificate Program December 8, 2003

On December 4, 2003, GPSS planned to meet with graduate students in the Conservation Biology Policy Graduate Certificate Program to discuss their opinions about the Program. Of the 22 students in the Program, four returned surveys and one attended the December 4 session. The survey touched upon such issues as program design and requirements; contribution of the Program to a student's degree; quality of communication and instruction; and overall climate and acceptance of diversity.

#### Program Strengths

Overall, the students felt that the Program complimented their degree program, with two of the students in agreement and two strongly agreeing. All feel the requirements of the Program are reasonable and most agree that the three Area requirements are well designed and helpful. Students feel the 21-credit Program was worth the extra effort and all but one student feels that the Program helped fill the gaps in their degree program. The Program requirements are clear for most of them and all but one felt the workload is reasonable.

Two students felt strongly that the advising is adequate and uniform and that faculty members are accessible. The communication process is good between both students & students and faculty & students although two of the four students gave a neutral/no opinion to that question. The quality of instruction was rated highly, receiving two agree and two strongly agree.

Based on responses, only one student felt there was an effective process of grievances with the other three with no opinion or neutral, possibly since they had no experience with the process. The overall climate of the Program is mostly rated as supportive and professional and three of the four students noted that students are valued for their diverse backgrounds and beliefs.

One student felt that the Program offers and requires completion of a good range of courses to fulfill the spirit and intent of the Program. (S) He feels to have benefited for participation in the certificate Program. Another student notes to be "wildly excited by the Certificate Program in Conservation Biology Policy and have benefited greatly from it." (S) He goes on to further state that (s) he is very grateful for the Program and the interdisciplinary angle it takes, which "was a welcome and necessary part of my graduate education...the certificate Program helped for both personal 'elective' education and steered me in a preferred and alternative career direction than my actual degree program." Compliments were also given to Mark Withers and the rest of the staff for making the Program available and being so accessible to questions, advice and

mentoring. (S) He also feels "their passion and commitment to the students, the university's vision, and the environment are evident in all they do."

#### Program Challenges

Feelings about the Capstone course were varied, with two students rating it beneficial and two students with no opinion or neutral. One student noted that the Capstone course offerings might need some revisiting because some of the courses listed have not been offered recently (SMA 511 was given as an example).

Another issue to consider is having adequate technical and study space. Students may not have had experience with giving feedback to faculty and the Program to judge it effective since three of the four students had no opinion. Two also had no opinion regarding communication between students & students and faculty & students.

Another student felt the Program should do a better job in fostering a community of learners. Students in the Program don't know each other (s) he claims; "maybe an introductory course would be beneficial...How about a lecture that exposes the campus to the Program?"

A major concern was brought up by one student who says (s) he won't be able to complete the certificate because it is difficult to schedule the coursework around both the course and fieldwork requirements of his/her thesis program. Initially it was easy, (s) he says because there were good course offerings but near the end of her/his program it became increasingly difficult to coordinate the remaining requirements and when they were offered, with her/his degree/thesis requirements. The same student said that there has been discussion as to whether the Program, currently a certificate program, would be expanded into a Master's program. (S) He wishes that there were a Master's in Conservation Biology Program – it was something (s) he wished for throughout enrollment.

Another student felt there weren't enough hard science requirements or offerings. (S) he felt that a student could get through the Program without taking one hard science course, and that might not be a good thing for those in the "soft sciences" such as public policy.

Overall, the students seem to be happy with the Program although there is a question about the Capstone course and the availability of courses to fit into a student's degree program. Also, attempting to foster a community of learners, where students might get to know each other better, might be a goal.

### Attachment C.

# Necessary financial resources to develop and sustain a new program in Conservation Biology Science & Policy:

With a modest financial investment, the program could be made viable and vibrant. In our discussions with Craig ZumBrunnen and Richard Gammon, we were able to gauge a rough idea of potential costs to initiate this program:

Faculty time to teach the core courses (1 qtr release time of 2 faculty, one from the natural sciences and one from social sciences, with expectation that the two coordinate their efforts): 12-15K/yr

Faculty coordination of program, supporting grant writing, development of the seminar series, development of capstone experiences (1 qtr release time): 6-7.5K/yr

Continued support of 1/4 of Mark Withers salary: unknown amount

Support of Seminar Activities (bringing in outside speakers, advertising, etc.): 6K/yr

Support of Faculty Retreat (one time, low expense): 1K

We feel that this level of support should be provided to initiate the reworked program, with the understanding that to the extent possible, departments should be encouraged to make the new teaching responsibilities permanent features of faculty workload, involved faculty should seek outside funding/endowments to support the program on a continuing basis. It should be possible to find a means to provide permanent outside funding of the seminar series at the minimum, but other possibilities such as an endowed appointment in conservation biology might also be feasible.