

## Revision of SCB Code of Ethics (Statement of Values) – July 2004

During April-Jun 2004, a total of 93 persons sent comments, all via e-mail. One virus-infected e-mail was deleted unread and is not included in this total. Eighteen persons commended the document and urged its approval in its current form. The other 75 respondents supported the spirit and intent of the Statement of Values, but suggested constructive modifications. Responses were received from USA (63), Canada (6), UK (2), and Australia (2), with 1 comment each from Chile, Democratic Republic of Congo, France, Israel, Netherlands, Papua New Guinea, Sweden, Philippines, Puerto Rico, Republic of South Africa, Switzerland, and Taiwan. The geographic location of 8 respondents was not determined. The ad-hoc committee was pleased with the large number of responses, as well as the constructive spirit in which comments were made.

In early July 2004, Erica Fleishman and Paul Beier revised the statements in light of the comments, and circulated this draft to the ad-hoc committee at the same time (July 8 2004) as this was submitted for inclusion in the BOG Briefing Book. When the rest of the ad-hoc committee provides comments, the final proposed text will appear on the SCB website by 20 July 2004. The text as of 20 July 2004 will be presented to the membership for a vote (with no possibility for amendments) at the Members Meeting in New York on 1 August 2004.

The comments are printed below. Individual comments are separated by \*\*\*\*\*. Comments were edited for spelling, typos, and (in a few cases) for length. The comments are grouped into sections corresponding to each sentence, with final sections on “General Organization,” “Should we have a Binding code?,” “Proposed new statements,” and “Other comments.”

### Title and Preamble

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Draft:

#### **Society for Conservation Biology - Statement of Values**

The Mission of the Society for Conservation Biology is to develop the scientific and technical means for the protection, maintenance, and restoration of life on Earth, including species, ecosystems, and the processes that sustain them. To meet this goal, we encourage all conservation biologists to

Revised:

#### **Society for Conservation Biology – Code of Member Ethics**

The mission of the Society for Conservation Biology, a global community of conservation professionals<sup>1</sup>, is to develop the scientific and technical means<sup>2</sup> for the protection, maintenance, and restoration of life on Earth, including species, ecosystems, and the processes that sustain them. To meet this goal, we encourage all conservation scientists<sup>3</sup> and practitioners<sup>4</sup> to

Comments:

The title Statement of Values is a misnomer. This is a Code of Conduct because each numbered statement denotes action (preceding verb on each numbered statement). There are values implied in each numbered statement, but values defined as: beliefs of a person or social group in which they have an emotional investment (either for or against something), are inherently individual within a social group. Good example might be how individual SCB members interpret statement number 16 (animals used in

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<sup>1</sup> The revision includes our new tag line to make it clear that we are not just biologists.

<sup>2</sup> Several comments wanted us to expand the SCB Mission Statement to include the *practice* of conservation, in addition to “developing the scientific and technical means for conservation.” Revising the SCB Mission Statement is beyond the scope of this document. Instead the other revisions in the Preamble should suffice to include practitioners.

<sup>3</sup> “Scientists” is more inclusive than “biologists.”

<sup>4</sup> SCB is not an organization that includes every stripe of conservationist, but it seems reasonable that we would want all conservationists to follow these guidelines.

research). This statement could be interpreted quite differently between researchers based upon the highest published standards, and by the individual researcher's beliefs and values on the treatment of animals.

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Do not limit the audience to "conservation biologists" as currently stated. Instead, to emphasize the broad reach and relevance of SCB to all those concerned with conservationist (including conservation biologists, social scientists, policy makers, etc) I suggest changing that sentence to read as follows: "To meet this goal, we encourage all conservationists to.." An alternative may be "all those in the conservation field" or "all conservation scientists."

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If SCB intends to include practitioners, then we must strive to seek out and include practitioners in our meetings and at every level or the bulk of the studies will be only academic exercises and have no relevance to "protection, maintenance, and restoration of life on Earth, including species, ecosystems, and the processes that sustain them." Thus I suggest change to "The Mission of the Society for Conservation Biology is to develop the scientific and technical means and to practice such means for the protection, maintenance, and restoration of life on Earth, including species, ecosystems, and the processes that sustain them. To meet this goal, we encourage all conservation biologists to"

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I believe that "means" is too vague and even could be interpreted to suggest that we would use any means to reach our goals. My suggestion is to change the first sentence by adding two words 1) information and 2) tools and deleting 'means'. It would read as follows: "The Mission of the Society for Conservation Biology is to develop the scientific information and technical tools for the protection, maintenance, and restoration of life on Earth, including species, ecosystems, and the processes that sustain them."

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This lacks the link to application. The mission of SCB is more than providing the scientific and technical means – just another set of data that is never ever put to use. The society was formed to promote ideals, too. I suggest: "The mission of the Society for Conservation Biology is to promote Conservation Biology and its application to protect, maintain, and restore biological diversity, including species, ecosystems, and the processes that sustain them."

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Although a substantial portion of my professional work involves restoration of native systems, preservation is by far the preferred scenario from the point of view of the resource. For that reason, I suggest that the mission statement substitute "conservation" for the phrase "protection, maintenance, and restoration." The phrase suggests that restoration is on the par with protection and maintenance, rather than a distant last resort.

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Suggest "We seek to discover, understand, and develop scientific and technical means for the protection, maintenance, and restoration of the species and ecosystems of this planet and the processes that sustain those species and ecosystems. Integral to this pursuit is the promotion of the highest standards of conduct among members of our profession. Thus we as conservation biologists:"

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The phrase, "...restoration of life on Earth," implies that the Earth currently is lifeless. Perhaps it would be better stated as "...restoration of the natural world," or "...restoration of stable, self-sustaining ecosystems." This phrasing will be less grandiose and more practical.

## Statement 1

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Draft: Actively disseminate information to promote understanding of and appreciation for biodiversity and the science of conservation biology.

Revised: Actively disseminate information to promote understanding of and appreciation for biodiversity<sup>5</sup> and the science of conservation biology.

Comments: Emphasize not just "biodiversity," but also something like ecosystem functioning and values, a broader term than just "biodiversity" and one that may better fit with the interests of a broader range of the Society's members.

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SCB should promote not only dissemination but effective translation of science into understandable and usable forms for the benefit of policy makers, land and water managers, and the public. I've found that all too often "dissemination" means little more than presenting one's scientific finding but frequently in a format or in language that is inaccessible to users.

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I suggest: "Actively disseminate information to promote understanding of, and appreciation for, biodiversity, biodiversity conservation and the science of conservation biology." Comment: The challenge (and the niche) for the SCB is to contribute to the "Science of Biodiversity Conservation" including collection of biological data, economic considerations, psychology, philosophy etc. We already have plenty of ecological societies world wide and we should consider ourselves to represent more than just a sub-unit within an ecological society!

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The Statement should not use the term "biodiversity" as if that were the only measure of conservation.

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*Timely* dissemination is also a concern, particularly with respect to endangered species.

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Suggest "Disseminate information and sustain personal conduct that promotes understanding of, and appreciation for, biodiversity and the science and ethics of conservation biology."

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We often qualify the term *biodiversity* with "native" since there are those in the public who hold to the concept that the more diverse the better. Surely the "understanding of" incorporates this idea of really understanding biodiversity and what it is and all the levels/scales that it encompasses. What about "biological, ecological, and genetic diversity of natural systems" as something a little better defined than the vague "biodiversity"?

## Statement 2

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Draft: Encourage the use of reliable information, rigorous scientific methodology, and sound inference in management decisions affecting biodiversity

Revised: Advocate the use of reliable information, rigorous scientific methodology, and credible inference in management decisions affecting biodiversity.

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<sup>5</sup> Several commenters believed that *biodiversity* was simply species number or that *biodiversity* focuses only on conservation of species rather than ecosystems. The revision retains the word, however, because biodiversity has been clearly defined as including composition, structure, and function at scales from genes to ecosystems.

Comments:

Suggest “Encourage decision-makers, the media, other scientists, and fellow citizens to use sound information, rigorous scientific methodology, and sound inference in management decisions affecting biodiversity.” OR “Insist on the use of sound information, rigorous methodology, and sound inference in management decisions affecting biodiversity.”

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'Encourage' might be replaced by 'stimulate' as *encourage* is already used in the introducing sentence (So, it now reads: "...we encourage all conservation biologists to ... 2. encourage ..." which is not quite nice).

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I suggest inserting the words "and regulatory" before “decisions”. 'Managers' may not be a sufficiently broad reference group here: we want to ensure that it is understood that we mean environmental regulation (and regulators) also, not just managers.

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Suggest: “Advocate the use of rigorous scientific methodology and sound inference in management decisions affecting biodiversity.” (I would avoid using the phrase ‘sound information.’ Would not rigorous methodology produce such anyway?)

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Suggest “Advocate the use...” Suggest replacing “sound” with “credible” or “reliable” or “logical” (“sound” may not be familiar to some ESL speakers.)

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An issue I wonder about is the role of conservation biologists in the formation of public policy and the political process. Should there be language to “inform policy-makers of scientific information important to the formation of sound public policy regarding the conservation and/or restoration of biodiversity”? Numbers 1 and 2 allude to this, but the responsibility of conservation biologists to inform policy-makers is not explicit. Two arguments against including such language are that 1) it is the responsibility of policy-makers to seek relevant scientific information and 2) the role of scientists as activists has caused major disagreement in professional organizations like SCB and is still heavily debated. However, two arguments for the inclusion of such language are that 1) many policy-makers demonstrate a lack of ability or desire to seek and use relevant scientific information, therefore it is scientists’ responsibility to present it to them, and 2) public policy has become the most influential factor in the conservation of biodiversity and biologists would be foolhardy not to work in that arena. Perhaps amend # 2 to read, “Encourage the use of sound information, rigorous scientific methodology, and sound inference in management *and policy* decisions affecting biodiversity.”

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I suggest: “Encourage the use of rigorous scientific methodology, the use of sound information and its actual application in management decisions affecting biodiversity.”

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The Statement should not use the term "biodiversity" as if that were the only measure of conservation.

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The science community has an obligation to advocate for sound biodiversity policy. Colleges in my region actually teach against advocacy, suggesting that a researcher's reputation and career are at stake. If researchers do not speak up, we are taking the brightest and best informed out of the debate. Current wording puts the application of "rigorous scientific methodology" ahead of debate, discussion, and

decision making. We cannot always wait for information and rigorous science. The way I read your statement, "sound inference" requires information and rigorous science. Most often, we do not have this luxury, especially if we are abiding by the precautionary principal. Somehow, I would prefer an acknowledgement that application of the precautionary principal requires bold decision making based upon the best available science. My point is that precaution requires policy; and policy sometimes (often) must come before rigorous (complete) science. Your statement #2 puts science -- and rigorous science -- before policy making; I believe it should be the other way around.

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In 2 & 3, Don't focus on *biodiversity* to the exclusion of other aspects of conservation (e.g., endangered species conservation, which might not directly consider larger biodiversity issues). Perhaps we should expand the list or simply replace "biodiversity" with "ecological systems," or "the natural world," or simply "nature." Although biodiversity is important, it is too narrow. For example, the current administration is quietly changing EPA regulations that will have consequences for individual species, including humans. Although diversity might not be affected greatly, individual animals might experience reduced fitness and health.

### Statement 3

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Draft: Recognize that uncertainty is inherent in managing ecosystems and species, that it is usually easier to prevent harm to biodiversity than to repair it later, and that, in scientific assessment of a potentially harmful action, the burden of proof lies with proponents of the action.

Revised: Recognize that uncertainty is inherent in managing ecosystems and species and encourage application of the precautionary principle<sup>6</sup> in management and policy decisions affecting biodiversity.

#### Comments:

I have some concerns about reconciling this with the previous statement. How can the scientific method be applied when the "burden of proof lies with the proponents of the action"? Legally, the standard is that decision makers can not be arbitrary or capricious in their decisions. In California, the standard for a significant environmental impact (i.e., requiring mitigation or impact avoidance) is "substantial evidence" of an impact. Therefore, the "burden of proof" is on the government that must have existing studies that provide the "substantial evidence" needed to justify denying or modifying an action that would cause a significant impact. Government can not deny or modify an action without substantial evidence of an impact. In cases where private property is involved, such a denial could be considered an economic taking unless the government offered to buy the property rather than approve the project. Thus, the burden of proof is on the decision makers, who are legally constrained from applying the precautionary principle. As written, ".....scientific assessment of a potentially harmful action, the burden of proof lies with proponents of the action" smacks of demanding the project proponent attempt to prove a negative, which is not possible, is not legally allowed, and is not consistent with the application of the scientific method. We should be encouraging decision makers to conduct the appropriate scientific studies necessary to evaluate the proposed action before an irreversible use of resources is considered for approval. Please revise to avoid the apparent conflict with the scientific method.

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<sup>6</sup> The draft wrote out the precautionary principle, which includes the statement that "burden of proof lies with proponents of potentially harmful action." This caused a flurry of comments that even beneficial actions like restoration projects would be blocked if we demanded absolute proof that the action would not be harmful. In fact such comments confuse *statistical* burden of proof (which uses tools like equivalence testing, and would easily be passed by environmentally favorable proposals) with the less attainable burden of proof demanded in a criminal trial. Some comments incorrectly stated that the "burden of proof" clause means that biodiversity trumps all other values – this is groundless. However, rather than use more words to explain this, the revision simply invokes the precautionary principle (which is clearly defined in the conservation literature) by reference.

Burden of proof is absurdly imbalanced. It should be proportional to the known level of risk and size of impact. Given the uncertainty associated with science (probably any action will be at some risk for at least a small negative impact on biodiversity) we would have to always reject a proposed action. Moreover does this compel the membership to oppose every development, every building, every road? Should we give up eating meat, driving cars, using insecticides?

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Delete the word "usually."

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This is not a value statement. It is advice on how to conduct research or conservation work. While it may be true, I suggest it does not belong in a statement of values.

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Science rarely, if ever, proves something. It can conclusively disprove something. But proof is more a concern of mathematics. Science necessarily imperfectly studies the real world, and the uncertainties create indications, tendencies, trends, commonalities, and the like. But does science "prove" things? Certainly not like mathematics does.

The more significant problem is the questions the statement begs: Which potentially harmful actions? How harmful must they be to invoke this principle? Must an action cause zero harm?

Any action can cause harm to natural systems. Having a child, one of the most joyful and positive of human experiences, causes a new burden on the Earth. Every time I drive a car I am causing pollution, contributing to Middle Eastern wars, and further destroying the peacefulness of communities. Even when I ride a bicycle, I may indirectly cause problems in the manufacturing of the bike, the impact of the bike trail or sidewalk, or -- to be really indirect -- the huge fossil fuel energy consumed to provide me with food energy to pedal that bike.

So must the proponent of a new bike trail prove that people won't get hungry and thereby consume more of the tainted products of our industrialized agriculture system? Must they prove that the concrete of the path was manufactured in a responsible manner, preferably using renewable energy? More directly, the paved bike path will reduce the area of infiltration of rainwater. It may increment sedimentation in local watercourses. It may involve cutting some trees. But it will also facilitate less use of automobiles. It will promote human health. It will generate economic activity. So what does it mean to say that the proponents of the new bike path have a burden of proof?

My current occupation involves advocacy for mountain bicycling. I believe mountain biking is one of the least harmful of human activities. I have written a literature review that shows that the limited empirical science about mountain biking indicates that this activity causes about as much harm to natural resources as hiking.

Yet we have encountered hikers and environmentalists who say that bicycling should not be allowed, or trails should not be built, because of the Precautionary Principle. This seems to me an insurmountable, absolute barrier because mountain biking, like hiking, definitely does cause impacts to natural resources. We cannot prove that bicycling and hiking trails will cause no harm. They will cause some effects to surrounding ecosystems, most likely negative from the viewpoint of the other species involved. To understand those effects, we could ask many questions, including "How much damage?" and "How often?" and "How irretrievable?" and "To which species?" Science is extremely valuable in providing answers to these questions.

But in the end, it will never be science that proves or disproves that a level of impact is acceptable. That's always a judgment call by human beings. We have social, business, and political systems that give certain people decision-making authority. Isn't your statement really just asking, or demanding, that decision-makers give a higher priority that they customarily do to the needs of non-human natural systems?

I would support a statement that says something like "We humans have caused a lot of problems for the natural world. It's time for decision-makers to give high priority to environmental and ecological

considerations, and to often reject projects that cause levels of environmental impact that are too high.” Of course, that begs the question, “How much is ‘too high?’”

When I vote in the next election, I’ll choose candidates for whom “too high” is a lower threshold. But I won’t expect them to ask proponents of projects to “prove” that damage will be zero or even minimal. There will always be a weighing of benefits and costs, of interest groups’ strengths and weaknesses, of biases and facts, when any human being makes a decision.

On my next shopping trip, I’ll prefer organic foods because the level of impact to natural systems is lower. But I won’t put a burden of proof on them to demonstrate low impacts, because I know that food arrived in the store via an unsustainable, polluting, community-destroying, fossil-fuel system; that the FDA organic certification system is unfair in its difficulties to small farmers; and that somewhere on that food chain some person may be getting harmed physically, psychologically, or economically.

The Precautionary Principle attempts to put ecological values on a higher moral plane. While the goal is worthy, the expression of the idea as an absolute, or as the single, priority guidance to decision-making, ignores human nature and misrepresents the nature of values. Good values can compete with each other. It’s unwise to consider one value as an absolute that will necessarily and always trump another.

To summarize, the concept “burden of proof” is a value idea. Science involves values, but science does not determine or prove values. SCB should be a proponent of protecting Nature. But we should do this by saying protection of Nature is hugely important, not by saying that it’s a value that necessarily or absolutely overrides other values.

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I fully understand the sentiment behind this way of promoting appropriate precaution, but I suggest that this formulation needs reconsideration and rewording. It seems inappropriate for the Society's Statement of Values to call on others to take the necessary action, surely we should be directing our values toward ourselves? Given SCB's recognition of inherent uncertainty, most or perhaps all actions are 'potentially harmful'. As stated, the phrase could be interpreted to mean that SCB and its members will stand by while proponents of effectively any action are required to bring ever more rigorous 'proofs' in support of their action, that will never be deemed sufficient or acceptable. Demanding total, convincing proof of lack of harm has (regrettably) been used by some conservationists as a mechanism to obstruct action rather than solve problems. Given the heuristic and probability based outcome of properly conducted science-the approach is actually unscientific. In the real world, decisions always have uncertain outcomes and are usually driven by considerations in addition to biodiversity protection (including human livelihoods, social factors, economics, politics and personality issues). Examination of recent issues of Conservation Biology demonstrates that SCB members are well aware of the pressures of uncertainty and non-biological factors and strive to integrate these into their influence on decisions in order to improve their effectiveness. The phrase as written can be interpreted to support a position of zero risk or total knowledge as a requirement for action. This is an unrealistic and ultimately unproductive approach. Adopting such a position will ensure that SCB is quickly sidelined in important decision making processes. The preceding part of #3 implies that SCB understands that zero risk and complete knowledge are unachievable goals. An adaptive management approach (however variously defined and implemented) has become an important component of effective conservation action. A phrase to propose harnessing the skills of SCB members to properly evaluate incomplete knowledge and assess risk in favor of biodiversity protection would be more effective. To assist the committee's further consideration of these issues I suggest alternative wording as follows: “...in scientific assessment of action, to apply careful assessment of incomplete data and risk, to monitor outcomes, and to modify actions to minimize the probability of irreversible harmful consequences to biodiversity.”

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I fully agree that we should accept and acknowledge uncertainty but there are cases where talking about uncertainty is harmful and, I believe, inappropriate. This is when decisions have to be made, especially when the decision is "yes" or "no". At that point, conservation biologists have to make a decision even when there is uncertainty. I think that this should be stated explicitly in the statement of values. Scientist

all too often lack the courage to make yes/no decisions. They use uncertainty as an argument not to make a decision or recommendation. Then, somebody else, who is not qualified, will make the decision or recommendation.

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Who defines *potentially harmful*? I suggest this modification: ".....in scientific assessment of an action considered potentially harmful by one or more conservation biologists with no financial or other professional interest in the action other than as evaluators of its potential effects...." This deals with these cases: (a) someone employed by or affiliated with a proponent of the 'action' who considers him/herself a 'conservation biologist'; (b) a conservation biologist whose field research might be affected by the 'action'. Might there be other cases that should be taken into account??? (This does generate a run-on sentence that will need editing.)

#### Statement 4

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Draft: Recognize their overriding responsibility to conservation and inform other scientists, the public, and prospective clients or employers of this responsibility.

Revised: Recognize their responsibility to conservation and scientific honesty, and inform other scientists, the public, and prospective clients or employers of this responsibility.

#### Comments

If SCB intends to include practitioners, then we must strive to seek out and include practitioners in our meetings and at every level or the bulk of the studies will be only academic exercises and have no relevance to "protection, maintenance, and restoration of life on Earth, including species, ecosystems, and the processes that sustain them." Thus I suggest change to "Recognize their over-riding responsibility to the study and practice of conservation, and inform other scientists, the public, and prospective clients or employers of this responsibility"

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Merge 4 & 5 into "Recognize their responsibility to the over-riding principles of conservation and scientific integrity, avoiding any actions that compromise those principles and the professional standing of the conservation science community."

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Delete word "over-riding" (3 comments)

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Seems to be a subset of #1.

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Suggest "Accept a commitment to biodiversity conservation, and inform other scientists, the public, and prospective clients or employers of this commitment." OR "Acknowledge to the scientific community and the general public, as well as to prospective clients, employers, and students, that conservation is the prime responsibility of our endeavor and any actions or omissions which may compromise that responsibility are to be avoided."

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Suggest change to: "Recognize their over-riding responsibility to conservation, and to the open communication of scientific information underpinning conservation, and inform other scientists, the public, decision-makers, and prospective clients or employers of this responsibility."

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While it is the mission of the Society "to develop the scientific and technical means for the protection, maintenance and restoration of life on Earth", as stated in the opening sentence of the draft statement, it must be clearly recognized that a conservation biologist's work is not performed in isolation; all of our technical activities are carried out within the broader context of our human-dominated society and the broad range of social, economic and other issues that concern it.

One topic that has received much discussion in the last several years, including within SCB, and one that conservationists have struggled with for a long time is conservation that involves landscapes inhabited by indigenous peoples and local groups. With the current efforts, especially by the large, international conservation groups such as WWF, TNC, CI and WCS, to conserve large landscapes, conflicts between conservation goals and the agendas and needs of indigenous groups have been exacerbated and are receiving increasing attention. Discussions of these issues were especially prominent at the recent World Parks Congress in Durban, South Africa and the Conference of the Parties (COP-7) of the Convention on Biological Diversity held in Malaysia in February 2004.

The draft "values" statement, which states:.... "recognize their OVER-RIDING (emphasis added) responsibility to conservation...." may be appropriate from a purely professional point of view but ignores the fact that our professional activities are carried out within a larger, overall context of the world around us. To me, this wording is unacceptable and, in particular, the use of the word "overriding". I suggest, as one comparison with another professional society, that the committee might look at the principles of the Forest Guild (just renamed from the previous Forest Stewards Guild). Its last principles states that "A foresters first duty is to the forest and its future." The use of the word "first" is certainly more modest than the word "overriding".

There are several possible ways to treat the fact that there are conflicts between conservation goals and other societal goals, such as human rights (i.e. the rights of indigenous and local peoples), and that these need to be openly and transparently addressed, in my view, by members of SCB. One approach is to recognize this in item #4, by adding a phrase at the end such as "...., while recognizing and respecting indigenous people's land and territorial rights I am not wedded to the particular language of this suggestion, but rather to the concept.

A second approach is not to use the word "overriding" and to substitute the word "first".

Another approach is that SCB's new social science working group be empowered to draft a parallel statement that would place members' professional conservation responsibilities in a broader context, and cross-reference the two statements to each other. Alternatively, the social science working group might add to the draft statement of values to give them more of a flavor of conservation biologists working in a world full of other sets of values.

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The term "over-riding" could be read as meaning that conservation trumps all else for members of the society and could raise some serious ethical issues. I think something like this statement is important, but I would not, nor do I think most of the SCB membership would, want to be associated with a responsibility to conservation that over-rides all other circumstances at all times as this statement implies. To take an extreme example of a possible implication of this statement, I would not want to contribute to conservation of a particular ecological area if it meant that the people living there would have to be killed. A more neutral and less concerning way to word this statement, I believe, is to simply remove the word "over-riding" so that the statement reads as follows: "Recognize their responsibility to conservation, and inform other scientists, the public, and prospective clients or employers of this responsibility."

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Regarding an "overriding responsibility to conservation." - As a scientist, I believe that my overriding responsibility is to *truth*, as emphasized in points 2, 9, and 10. One entirely plausible reading of item 5 is that I should suppress the truth when it fails to support a conservation agenda. In contrast, I believe that it is my responsibility to critique and correct flawed arguments made in favor of conservation.

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The highest responsibility is to the truth and to rigorous application of science. This trumps the “over-riding responsibility to conservation.” This is not just a theoretical distinction. As part of the pro-conservation community, I am familiar with the temptation to "spin" the facts to present the most persuasive argument for conservation. For example, in presenting a case for a particular conservation measure, one might refrain from mentioning various uncertainties (biological or otherwise) that would weaken one's argument. Doing so might result in a conservation victory short-term, but compromises scientific integrity and risks the reputation of the party involved (and incrementally, that of the wider conservation community). Why should conservation biologists and others stick to the high road when other parties don't? Because it's the right thing to do. And because ultimately, a reputation for scientific integrity strengthens the forces for conservation.

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As written, this tenet implies that conservation goals should take priority over other professional scientific standards. I doubt I'm the only Society member who would be uncomfortable with this verbage. The Society should be dedicated to the twin pillars of conservation and scientific integrity and our value statement should never put these principles at odds. The codification of an "over-riding responsibility to conservation" has the appearance of bias and would open the Society to justifiable censure within the scientific community. To maintain balance I recommend re-writing this statement to read "a responsibility to the over-riding principles of conservation and scientific integrity."

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In the absence of any definition of "conservation" this statement seems meaningless. As Olver et al. 1995 noted, "Conservation, like beauty, is clearly in the eye of the beholder." I urge the committee to unambiguously define "conservation."

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Define conservation broadly: In this context recognizing human ecosystems and shifting away from "wilderness" constructs to a more people oriented view of the world might be useful, but may perhaps not reflect the beliefs of all conservation biologists.

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From: L. Scott Mills, Wildlife Biology Program, The University of Montana

First, a general statement: I believe that SCB absolutely *should* be willing – even obliged -- to be involved over controversies related to inappropriate behavior by our members. If medical societies were not willing to be involved in judging egregious violations of their ethical codes, or law enforcement societies of theirs, the world would be an even more topsy-turvy place. Applied biology in general and SCB in particular has now earned the right to be respected at the highest level of society decisionmaking. With that right comes the responsibility to identify and speak out against inappropriate behaviors within our own ranks. Otherwise, our credibility can rightfully be questioned.

I have strong feelings on this issue because of events that occurred in the winter of 2001-2002. I was one of two Principal Investigators (along with Kevin McKelvey of the USFS Rocky Mountain Research Station) of a nationwide lynx survey using non-invasive genetic sampling using hair rub pads. Before we initiated the study we carefully validated and published the DNA-based species identification protocol I had developed; we also prepared detailed field protocols for collecting the hair samples across 16 states. Although the collection of samples was administered through the USFS infrastructure, folks from several agencies participated; approximately 800-1,000 field helpers assisted in putting out and collecting the hair pads, and sending them to my laboratory for analysis.

However, a handful of field workers in Oregon and southern Washington (where no actual lynx were detected) took it upon themselves to label some lynx samples as collected from the field (complete with slope, elevation, vegetation types, etc. filled out on data forms) when really they were collected from zoos. They sent them in as part of the National Lynx Survey, with no indication to the Principal

Investigators that these were mislabeled samples. These samples would have been folded into our analysis of samples collected as part of the National Lynx Survey.

To make a long story short, a political and media frenzy erupted in December 2001, earning the label of “Lynxgate” by some. Some in Congress interpreted the actions of these field workers as symptomatic of fraud that is rampant among applied biologists. An extreme interpretation to be sure, but then some in the environmental community – committed to above all else to defend these field workers against attacks – developed an equally extreme view that mislabeling samples was an appropriate and even noble thing to do. The only way this view could be advanced was to state (in contrast to the facts) that the protocol was deficient and casual, and the DNA analysis suspect, causing the field workers to feel “compelled” to “test” my laboratory.

I apologize for taking your time to tell this story – believe me, it continues to be painful for me to relate – but it is important because even though there were 4 Congressional Committees launched to investigate this matter, even though I testified to Congress, even though I talked with dozens of journalists ranging from local newspapers to Science News and National Geographic, there was conspicuous silence from the Society for Conservation Biology. And therein lies several ethics lessons, in my opinion. I knew then, and know now, that many people in and outside SCB were afraid to criticize the field workers for mislabeling samples, because they thought that to do so was to feed fuel to a conservative fire in Congress that threatened the Endangered Species Act. And yet, distilled to its barest essentials, what happened was that some field workers fabricated data in a study of a threatened species.

What disturbed me the most was that SCB – the Society that I have been committed to ever since beginning a PhD degree with Michael Soulé in 1988, the Society founded to serve as a trustworthy leader in generating sound science dedicated to resolving conflicts in conservation biology – took the path of not weighing in as to the consequences of mislabeling data in a study of threatened species. There were members of SCB who spoke to the popular press (eg Outside magazine, Audubon magazine) and represented themselves as “founding members” of the Society, who essentially said that mislabeling samples was a good thing to do. After seeing that the SCB name was informally being used by some to condone mislabeling of samples, I contacted Mac Hunter (President of SCB at the time); however he was told by the Board that the Society would not get involved. Mac earned my lifelong respect by writing a personal letter (not in his official capacity as SCB President) protesting the implications of the Audubon magazine article, and making it clear that falsified data of any sort was unacceptable in conservation biology research. Other colleagues also got involved at a personal level (for example, Michael Soulé, Phil Pister, Fred Allendorf and others each wrote personal letters to Audubon protesting the conclusions made by the article in question; not a single one of their letters were printed by the magazine). *But the Society for Conservation Biology remained conspicuously quiet.*

Please take away two points from this background. First, if SCB does not get involved in controversies of inappropriate behavior, if it is not willing to take a stand for the sake of conservation science, then we have abandoned any pretense that we are the ethical backbone of conservation biology. Second, we have to make it clear that our science is beyond reproach. Thus, I am concerned about Statement of Values #4: “Recognize their over-riding responsibility to conservation...” The sad lesson that I learned in the National Lynx Survey affair is that there are some who would pursue what they believed was an over-riding responsibility to conservation *even if it meant taking a stand that was antithetical to science, truth, or facts.* I actually was told by one leader of an environmental group that I should publicly announce that my laboratory was incompetent, and that the field workers had good reason to mislabel samples as a blind test. This person continued: “Scott, if you do not help us make the argument that these guys in Washington and Oregon did the right thing, then you will be playing into the hands of those in Congress who want to bring down the Endangered Species Act.” It horrified me to hear that this person was seriously suggesting that the larger goal – conservation or the Endangered Species Act – was more important than being true to the scientific process by which conservation biologists contribute to important policy decisions.

In the end, this preamble is intended to make just a few comments. First, looking toward the future, I strongly believe that SCB should be willing to be “embroiled” in controversies over inappropriate behavior in conservation biology; if not SCB, then who? Second, with respect to Value #4, I think it is essential that the word “science” follow the word “conservation”. Commitment to

conservation above all else, without adding science into that statement, immediately means that our science will and should be considered to be second-rate. Third, realize that Value #14 does, in fact, commit the Society to step in to controversial issues if a colleague's reputation is being attacked for political purposes.

\*\*\*\*\*

Members should "Recognize their over-riding responsibility to conservation..." Wow, here is a measurable value that implies possible sanctions! Does this clause mean members should take public transit, walk, cycle to reduce harmful pollution? And if members don't do this, what then? Are they bad members? Do they lose membership? "...and inform other scientists, the public, and prospective clients or employers of this responsibility." Can we really expect an SCB member and employee of a forestry company to publicly contradict his/her employer's forestry policies? This is too lofty a statement that expects too much of members. I would do away with this point altogether.

### Statement 5

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Draft: Avoid actions or omissions that may compromise their responsibility to conservation and respect the competence and judgment of the professional community.

Revised: Avoid actions or omissions that may compromise their responsibility to conservation and science.

#### Comments

The wording here could be read as "Avoid actions or omissions that... respect the competence and judgment of the professional community." You don't mean to say that!

\*\*\*\*

Either omit the second clause ('respect the competence and judgement of the professional community') or treat it independently. As is, relatively unrelated things are brought together, making it seem disjointed.

\*\*\*\*\*

Delete all text following the comma so it simply reads "Avoid actions or omissions that may compromise this responsibility." Note: I am not sure that we should trust the judgments of all members of our professional community all the time. Some healthy questioning seems prudent.

\*\*\*\*\*

I would add a clause that while we respect judgments of professionals, it is also our responsibility to question.

\*\*\*\*\*

Add "to conservation" after "responsibility" (avoiding need to refer to previous statement). What is the point of the second part? There are plenty of incompetent, stupid, even criminal professionals out there. Do you mean the professional conservation community? If so, I'm still lost. Then the clause appears to be an attempt to silence individuals who disagree with their peers? I assume you don't intend that meaning either? But if not, I don't know what you mean.

### Statement 6

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Draft: Be willing to perform services *pro bono publico* at a level appropriate to their financial abilities.

Revised: Be willing to volunteer their services for the public good at a level appropriate to their financial abilities.

#### Comments

The term "pro bono" is unfamiliar to many professors and students at Tunghai University (Taiwan).

\*\*\*\*\*

This implies that getting paid is not as valued, or not needed. There is nothing wrong with getting paid to do a job, and I have found that those that are paid spend much more time and do a better job. So delete this.

\*\*\*\*\*

What kind of services does this refer to? What does "*at a level appropriate for their financial abilities*" mean? For most of us time is even more limiting than finances.

\*\*\*\*\*

I won't offer an alternative, but I don't think the modifier 'financial', adequately conveys the range of abilities that might affect ability to contribute. Either omit or find a substitute.

\*\*\*\*\*

Suggest "Be willing to volunteer expertise, at a level appropriate to one's competence and financial abilities."

\*\*\*\*\*

I see the importance and high value in pro bono work, but I also want the public to see science (and scientist) as valued professionals that are worth paying for their expertise and training

#### **Statement 7**

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Draft: Perform professional services or peer reviews only in their areas of competence, cooperate with other professionals in the best interest of conservation, and refer clients to other professionals with appropriate expertise.

Revised: Perform professional services or peer reviews only in their areas of competence, cooperate with other professionals in the best interest of conservation, and refer clients to other professionals with appropriate expertise.

#### Comments

If you are the only conservation biologist available to comment on a development plan or something similar, then you should do it even if some judgments have to be made that may be out of you are of competence. After all, as a conservation biologist, you are trained to evaluate whether something has a positive or negative effect on biodiversity. The lawyer of the company will provide his evaluation even if he is neither trained nor competent.

\*\*\*\*\*

I suggest inserting the words "research and" following "Perform". Although the committee may have felt that research was included within the term 'professional services', I think it merits emphasis, for example, to warn against situations where scientists are 'tempted' into research beyond their expertise because of funding availability.

\*\*\*\*

Suggest: "Perform professional services or peer reviews only in one's area of competence and refer clients to other disciplines when justified." OR "Note the limits of personal professional competence, avoid overstepping the bounds of that competence, and cooperate with those of different competence in the best interests of conservation."

\*\*\*\*\*

delete "only" because it is meaningless, add: "if needed," refer clients to...

\*\*\*\*\*

This seems defensive -- what is the point? Do we need to say it?

### **Statement 8**

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Draft: Maintain a confidential client-employer relationship except when the law or the ethical values contained in this statement require them to disclose pertinent information.

Revised: (statement deleted, because #4 and #5 adequately cover this idea.)

#### Comments

This statement should be interpreted as a guideline that the results of studies or research having conservation implications should be used in discussing proposed actions that led to or are related to the studies, and that confidentiality relationships should not prevent the open discussion of such information prior to any decisions about those actions.

\*\*\*\*\*

In some cases, confidentiality is a required condition for the work. In others, public disclosure is more appropriate. Unless this item can be made more transparent in its purposes, I suggest that it be dropped.

\*\*\*\*\*

Suggest "Maintain confidentiality in professional relationships and research data-collection and use except when law or personal ethics require disclosure."

\*\*\*\*\*

If we keep this clause, we surely must have an amendment, or even a reversal of its sentiment. Nobody needs to be told to obey the law, do they? So, when the law requires disclosure, and the conservationist thinks disclosure is Unethical, then the conservationist needs the society's moral support. Is the society really going to encourage its members to go against their conscience? I hope not. After all, occasionally "the law is a ass, a idiot", and no good at all comes from obeying it. Need I mention the McCarthy era? Please let's amend this Clause.

### **Statement 9**

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Draft: Refuse to allow personal interests, compensation, or other client/employer relationships to interfere with their professional judgment or advice.

Revised: Refuse to allow personal interests, compensation, or personal relationships to interfere with their professional judgment or advice.

#### Comments

Seems redundant to #5 – perhaps merge the two.

\*\*\*\*\*

Suggest: "Refuse to allow monetary considerations, career advancement, rewards or relationships of any kind to interfere with professional judgment or advice." "Client/employer" is awkward – and other relationships could be as damaging.

### **Statement 10**

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Draft: Maintain the highest ethical standards in their research; acknowledge the limitations of their research design, data, and interpretation of results; disclose conflicts of interest; honestly discuss their findings; and attempt to correct misrepresentation of their research by others.

Revised: Scrupulously avoid plagiarism; acknowledge the limitations of their research design, data, and interpretation of results; disclose conflicts of interest; honestly discuss their findings; and attempt to correct misrepresentation of their research by others.

#### Comments

\*\*\*\*\*

I'm sure it is assumed, but the statement should state that fudging or fabricating data is a no-no, and so is plagiarism. We can argue until hell freezes over about the meaning of data, but science is totally dependent on data being fairly and accurately generated. This is the heart of science; everything from there is talk. The recent uproar about Moeller hits fairly close to home. The general level of ethics is on a decline--as suggested by various surveys of cheating by high school and university students--and the pressures to publish and the seduction of plagiarizing presented by the internet have never been higher. The SCB statement should flatly state that making up data (including biasing it in the design and collection) and stealing ideas and language is seriously wrong.

\*\*\*\*\*

Suggest "Maintain the highest ethical standards in their research; acknowledge the limitations of their research design, data, and interpretation of results; avoid and appropriately manage conflicts of interest through disclosure or recusal; honestly discuss their findings; and attempt to correct misrepresentation of their research by others." OR "Maintain the highest standards of research: acknowledge the limitations of research design, data, and interpretation of results; disclose conflicts of interest; and be scrupulous in the pursuit of prior informed consent, honest when discussing findings, and quick to correct misrepresentation of research by others."

\*\*\*\*\*

In place of the initial "research" expand to read "research, management, and environmental review activities" and replace the 2nd "research" with "work".

\*\*\*\*\*

Replace plural "their" with "one's" or "his/her." "Their" has unclear antecedents as there is no subject.

\*\*\*\*\*

Emphasize this point by either putting it first or even creating a separate section for (1) science and research, (2) work relationship, (3) sharing of information and so on. I feel the need for such an emphasis because in my last two years of work, I've encountered wonderful people that really care doing academic research for the main goal of conservation but with a poor and unacceptable scientific study design and ethical values (i.e. non-rigorous designs leading to poor data collection but still making conclusions regarding biodiversity as if design and field work were flawless). Conservation biologists need to first remember that they have to strive towards excellence in research and only then use this tool for protection and conservation of biodiversity. There is no place for poor research in our field. We are already facing difficult questions that need to be answered in a limited time topped with a lot of developers and politicians disliking and disbelieving our work and science.

\*\*\*\*\*

I would say "actively" attempt to correct misinterpretations of their research. I am aware of several agencies over-interpreting/selective use of the data gathered by contracting scientists and using it for 'propaganda' purposes. The scientists did not however forcibly correct these statements – eventually the misinterpretations were used to effect government policy, and have led to what I (and many of my colleagues) consider to be a serious conservation issue.

\*\*\*\*\*

Add a statement regarding peer review in this section. Including: “gaining” ideas through papers in the peer review process and also rejecting papers because they “scoop” research the reviewer is working on. Since these are breaches in ethics that definitely happen, I think they should be directly addressed.

## Statement 11

Draft: Claim authorship of a publication or report only when they have contributed substantially to the conception and design or analysis and interpretation, have helped draft or revise the article, and approve of the published version; and share authorship with all persons who meet these criteria.

Revised: Claim authorship of a publication or report only when they have contributed substantially to the conception and design or analysis and interpretation, have helped draft or revise the article, and approve of the published version; clearly state the role of persons listed as authors for other reasons<sup>7</sup>; and share authorship with all persons who meet these criteria.

### Comments

Often the contribution to the collection of data is at such a level that it, in and of itself, justifies co-authorship.

\*\*\*\*\*

It is difficult to follow all of the requirements when a publication integrates the work of people from different teams that were doing their research in an independent way. In general, people from each research team will contribute with partial amounts of information, but they will not have control over the other parts.

\*\*\*\*\*

This does not address instances when a funding agency requires that papers resulting from the funded work carry at least one agency author. This happens a lot when working with state wildlife agencies, especially with Federal Aid projects. Should this be addressed in this item?

\*\*\*\*\*

Suggest: “Claim authorship of a work only when we have contributed substantially to the conception and design or analysis and interpretation of the work, have helped draft or revise the work, and have approved of the published version of that work. Share authorship with all who meet these criteria.”

\*\*\*\*\*

As I read this, someone who was deeply involved in the data collection (say, daily for 3 years) with all the attendant responsibilities and influences on the final product, would not qualify for authorship. I am familiar with the ICMJE criteria from which these were drawn, and am also aware that some sets of guidelines specifically prohibit including as authors people who have ONLY been involved with data collection. However, I personally think that these are authorship criteria written by and for senior scientists. The field biologists who work for me put 110% of themselves into their work and work from 1-5 years on the project, making as much of a personal commitment to the work as I do! I would like the statement of values to allow me the flexibility to include these folks as coauthors on the project, even if their only other contribution is to read and approve the final manuscript (which should ALWAYS be required of every author). I am not the only person who feels this way - "Still others frankly think that those who obtain the necessary funding or who carry out clinical trials, conduct experiments, collect data,

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<sup>7</sup> Several comments suggested that some professional groups allowed authorship for persons who “only” collected data and that the contribution of data collectors merited authorship, if the person also participated in revisions and approved the document. Others argued that funding agencies sometimes required authorship for a representative of the funding agency. This clause allows flexibility for such situations as long as author roles are stated.

or perform statistical analysis -- "the people who actually do the work " (Pinching, 1992) -- fully qualify as co-authors, and they view the ICMJE criteria as a "senior authors' charter" (Pinching, 1992)." See "Is It Time for a New Approach to Authorship?" by E. Leash. From: The Council of Science Editors [http://www.councilscienceeditors.org/services\\_LeashArticle.shtml](http://www.councilscienceeditors.org/services_LeashArticle.shtml)

I realize that these guidelines were written to try to avoid serious problems in accountability and integrity. However, I agree with a point made in Leash's article (cited above) that in many multi-disciplinary research projects it is unrealistic for each and every author to accept full responsibility for every part of the research. Leash summarizes a number of practical, long-term solutions. However, in the short term, we need not go against the tide to adopt more flexible criteria. Both the ESA and the International Committee of Medical Journal Editors have written guidelines that acknowledge the role of those who "carry out the research", and I've inserted their wording below (bold emphasis added). I'd like to respectfully request that the committee seriously consider using one of these alternatives.

Guidelines for Authors for ESA journals ([http://www.esapubs.org/esapubs/authors\\_main.htm](http://www.esapubs.org/esapubs/authors_main.htm)): Individuals listed as authors should have played a significant role in designing or carrying out the research, writing the manuscript, or providing extensive guidance on the execution of the project. Those whose role was limited to providing materials, financial support, or review should be recognized in the Acknowledgments section.

Uniform Requirements for Manuscripts Submitted to Biomedical Journals. From: International Committee of Medical Journal Editors (<http://www.icmje.org/index.html>): All persons designated as authors should qualify for authorship, and all those who qualify should be listed. Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content. One or more authors should take responsibility for the integrity of the work as a whole, from inception to published article. Authorship credit should be based only on 1) substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data; 2) drafting the article or revising it critically for important intellectual content; and 3) final approval of the version to be published. Conditions 1, 2, and 3 must all be met. Acquisition of funding, the collection of data, or general supervision of the research group, by themselves, do not justify authorship.

## Statement 12

Draft: When working professionally outside their country of residence, interact and collaborate with in-country counterparts, for example by presenting seminars, conferring regularly with appropriate officials, sharing publications, and involving colleagues and students in professional activities.

Revised: When working professionally, especially outside their region of residence, interact and collaborate with counterparts, present seminars, confer regularly with appropriate officials, share information, involve colleagues and students in professional activities, contribute to local capacity-building, and equitably share the benefits arising from the use of local knowledge, practices, and genetic resources.<sup>8</sup>

### Comments

Why does this apply to "outside the country of residence"? Why not just say "Interact and collaborate with counterparts, for example by presenting seminars, conferring regularly with appropriate officials....etc." Why should a person be exempt from this expectation in their country of residence? This has a sort of north american-centric ring, as if we need to help people in other countries, but not our own. Also, I think this can and is taken too far. For example, in PNG where I work, some expect a first time visiting graduate student to present seminars, etc. I think people should be allowed to develop relevant expertise and *then* share it. But just because you are visiting a country does not mean, to me, that you have a lot to offer. Again there is a subtle assumption that the visitor *de facto* has something to offer, when often we visit other countries to learn.

<sup>8</sup> This clause recognizes Articles 1 and 8j of the Convention on Biological Diversity.

\*\*\*\*\*

I would also like to see a more formal request to increase capacity building. In other words instead of just giving a seminar, if budgets and permits allow it, we should encourage researchers to take in-country graduate students, undergraduates or para-professionals into the field to show them what we are doing. This research experience could serve to help reduce the inequity between developed and developing countries.

\*\*\*\*\*

Suggest change to: "When working professionally outside our country of residence, we will ask our in-country counterparts what we can do to further their goals. This may include sharing data, sharing publication authorship, providing reference materials, conducting training, presenting seminars, conferring..."

\*\*\*\*\*

I suggest either substituting the word 'co-authoring' for 'sharing' (if that is what the committee meant to imply), or adding 'coauthoring' to this series.

\*\*\*\*\*

Need a heavier focus on the role of conservation biologists in countries that are not their own - including the responsibility to examine and address threats arising from within their own nations rather than focusing efforts on putting plasters on the damages in other nations; in this context, the need to work not only with the "conservation biologists" of other nations - but the people in general of those nations.

\*\*\*\*\*

Make special mention of protecting the rights, promoting the welfare and respecting the customs and traditions of indigenous cultural communities (or whatever is the more pc term these days).

\*\*\*\*\*

Say something about respecting diversity cultural diversity and encouraging healthier human relationships through shared conservation values.

\*\*\*\*\*

Researchers should leave genuine and original data + report of any research conducted with their hosts be it individuals or institutions or human communities

\*\*\*\*\*

In 12 or 15: Two thoughts that are not included are our responsibilities to local peoples in our study sites; and the role of Traditional Ecological Knowledge

\*\*\*\*\*

A current major problem is the extraction of genetic resources and traditional use of genetic resources from third world countries. This is also strongly emphasized in the Convention on Biological Diversity (see extract from Articles 1 and 8 below). I strongly urge the society to consider this aspect and include this in either point 12 or as an additional point. CBD Article 1 advocates "...equitable sharing of the benefits arising out of the utilization of genetic resources..." Article 8j. "Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices")

\*\*\*\*\*

If SCB intends to include practitioners, then we must strive to seek out and include practitioners in our meetings and at every level or the bulk of the studies will be only academic exercises and have no relevance to “protection, maintenance, and restoration of life on Earth, including species, ecosystems, and the processes that sustain them.” Thus I suggest change to “When working professionally outside their country of residence, interact and collaborate with in-country counterparts, for example by presenting seminars, conferring regularly with appropriate officials, sharing publications, and involving colleagues and students in professional conservation biology activities and conservation practices.”

\*\*\*\*\*

Suggest: When working professionally outside their country of residence, willingly seek to interact and collaborate with in-country counterparts at all appropriate venues.”

\*\*\*\*\*

Add language urging conservationists to conduct their research in light of cultural sensibilities of the areas where they are working. Most of us try to be sensitive to different cultures when we are working there, but a formal recognition of this would go far to raising awareness of how our science can impact local cultures.

\*\*\*\*\*

The statement on "property right" needs to come out more strongly than it is stated. Especially in aspects of ethnobiology, researchers in a rush to publish quickly let out "secrets" without due credit to sources. Partners in research need to be given credit and as future benefits emerge, subjects / partners need to benefit appropriately.

\*\*\*\*\*

This statement is about how to do the job, and is not a value statement. It would be encompassed by a value statement that addresses respect and standards for professional colleagues and research subjects.

### **Statement 13**

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Draft: Treat colleagues and professional contacts respectfully and support fair standards of employment and treatment for those engaged in the practice of conservation biology.

Revised: Treat colleagues and professional contacts respectfully and support fair standards of employment and treatment for those engaged in the practice of conservation biology.

#### Comments

If SCB intends to include practitioners, then we must strive to seek out and include practitioners in our meetings and at every level or the bulk of the studies will be only academic exercises and have no relevance to “protection, maintenance, and restoration of life on Earth, including species, ecosystems, and the processes that sustain them.” Thus I suggest change to “Treat colleagues and professional contacts respectfully and support fair standards of employment and treatment for those engaged in the practice of conservation and conservation biology.”

\*\*\*\*\*

I suggest: Treat colleagues and professional contacts respectfully and support fair standards of employment and treatment for those engaged in the practice of conservation biology, regardless of their personal background or other affiliations, as long as those colleagues and professional contacts practice the same respect for others. The situation I'm trying to address here involves recent incidents (unfortunately I don't recall the specifics) where Israeli academics were prevented from speaking or otherwise participating fully in scientific exchanges solely because they were Israeli and the person(s) responsible for the scientific venues involved held anti-Israeli political views. As long as no one on any side of any political or other situation advocates violence or bigotry, this type of censorship and bigotry

deserves no place in the scientific (or any other) community. (You might want to look into the AAAS program on Scientific Freedom, Responsibility, & Law or their Science & Human Rights Program - that's just from a quick check of the AAAS website.)

\*\*\*\*\*

Add language that one should Avoid exposing colleagues to unnecessary risks which may be a (direct or not) threat to their lives or work using the media (radio, TV, written press) and behave in humane ways by treating colleagues as respectable human beings and maintain professional contacts and support fair standards of employment and treatment for those engaged in the practice of Conservation biology.

\*\*\*\*\*

Suggest: "Treat colleagues and professional contacts respectfully, and confine rebuttal, and negotiation of issues, to conservation biology principles." (Fair standards of employment should be universal, not specific to our discipline.)

#### Statement 14

Draft: Work to ensure that no colleague is unjustly deprived of their job, reputation, ability to publish, or scientific freedom as a result of their conservation efforts.

Revised: Work to ensure that no colleague is unjustly deprived of his or her job, reputation, ability to publish, or scientific freedom as a result of his or her conservation efforts.

#### Comments

This value should commit the Society to step in to controversial issues if a colleague's reputation is being attacked for political purposes. (See Scott Mills comments in regard to Statement #4).

\*\*\*\*\*

"Work to ensure that no colleague is unjustly deprived of their job, reputation, ability to publish, or scientific freedom as a result of their conservation efforts or their personal background or political/religious/etc affiliation." The situation I'm trying to address here involves recent incidents (unfortunately I don't recall the specifics) where Israeli academics were prevented from speaking or otherwise participating fully in scientific exchanges solely because they were Israeli and the person(s) responsible for the scientific venues involved held anti-Israeli political views. As long as no one on any side of any political or other situation advocates violence or bigotry, this type of censorship and bigotry deserves no place in the scientific (or any other) community. (You might want to look into the AAAS program on Scientific Freedom, Responsibility, & Law or their Science & Human Rights Program - that's just from a quick check of the AAAS website.)

\*\*\*\*\*

Please don't support the use of a plural pronoun (their) with a singular noun (colleague) antecedent, an all too common and incorrect usage. It grates like fingernails on a blackboard.

\*\*\*\*\*

the last clause "as a result of their conservation efforts." Seems unnecessary if you include the word "unjustly" earlier. One should work to ensure no colleague is *unjustly* deprived for any reason. Can one be justly deprived, etc for their conservation efforts? I'd probably delete the word 'unjustly.'

#### Statement 15

Draft: Protect the rights and promote the welfare of human subjects used in research, and obtain the informed consent of those subjects.

Revised: Protect the rights and welfare of human subjects used in research and obtain the informed consent of those subjects.

#### Comments

Seems pretty broad, "to protect rights and promote the welfare." I think it needs to be qualified that the actual research activities do not violate rights or damage the welfare. Having such a broad mandate for anyone involved in research is unattainable-- I could spend the rest of my life trying to promote the welfare of poor rural people I interview.

\*\*\*\*\*

Omit the comma.

\*\*\*\*\*

Merge 15 and 16 as: "Protect the rights and promote the welfare of all living subjects used in research, and obtain the proper permits/permissions for those subjects."

\*\*\*\*\*

"...human subjects used in research" sounds cold. Consider some more "humane" language.

\*\*\*\*\*

ALL species, not just animals, deserve ethical treatment. See *Respect for Nature -- A Theory of Environmental Ethics*, by Paul W. Taylor (Princeton University Press), for an excellent justification of a biocentric ethic.

\*\*\*\*\*

Suggest "Protect and promote the rights and welfare of research subjects, adhere to research agreements made with subjects and/or their communities, and involve only those who have been fully apprised of the quality, risks, and likely outcomes of the research and who have subsequently granted their prior informed consent to the research endeavor."

\*\*\*\*\*

Another lofty and unenforceable statement. To get the consent of human subjects used in research can often be impractical. If an SCB members is researching hunting pressure on a bush meat species in Africa, the researcher can't possibly be expected to obtain the informed consent of hundreds of hunters/poachers who may be affected by the research results should they suggest restrictions or outright protection of that species. I suggest this either needs to be re-worked to be practical, or done away with.

#### Statement 16

Draft: Be cognizant of and adhere to the highest standards for treatment of animals used in research.

Revised: Adhere to the highest standards for treatment of animals used in research<sup>9</sup> in a way that contributes most positively to sustaining natural populations and ecosystems.

#### Comments

The statement does not deal with plant studies. Moreover, "adhering to the highest standards for treatment of animals used in research" do not provide adequate guidance in many situations. What about the trade-

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<sup>9</sup> Some comments suggested that some person might consider the "highest standards" to be those of animal-rights groups that would not allow any use of animals in research, and that the statement does not recognize that conservation benefit can counterbalance the impact on individual research animals. The last clause addresses these concerns. This clause (taken from the IUCN Policy Statement on "Research involving species at risk of extinction") also addresses several comments asking for a statement reflecting these values.

off between knowledge (including studies) and conservation? Knowledge is necessary to implement the best conservation measures, but studies requiring capture, marking, or collecting could be unsafe for animals, plants or ecosystems. We are presently trying to find more information on these risks, but very few examples are reported in the literature (or they are very hard to find in bibliographic databases). I hope that the Society will contribute to this debate.

\*\*\*\*\*

I suggest "All research conducted on species threatened with extinction should conform to the "IUCN Policy Statement on Research Involving Species at Risk of Extinction", in particular "research programmes on threatened species that do not directly contribute to conservation of the species should acknowledge an obligation to the species by devoting monetary or other substantial resources to their conservation, preferably to sustaining populations in the natural environment."

The full IUCN statement is available at <http://www.iucn.org/themes/ssc/pubs/policy/riske.htm> The rest of the IUCN policy is also relevant, but it would get too wordy to include it all in the SCB values statement. It would be unfortunate (and a sad statement about SCB values) if the SCB values did not at least meet the standards agreed to by governmental and non-governmental members of the World Conservation Union.

\*\*\*\*\*

"Be knowledgeable of and comply with all laws, regulations and applicable international conventions (such as the Convention on Biological Diversity (CBD), the Global Plan of Action (GPA), and the TRIPS agreement of the WTO) including those regulating intellectual property rights, and encourage others to do so.

\*\*\*\*\*

I think there is a huge risk in using the very vague term "highest standards." What an animal rights person might consider that to be would probably horrify most scientists. If we're going to venture into this minefield, why not just say something about adhering to standards set by various professional societies?

\*\*\*\*\*

Would the Society be open to criticism that it is being hypocritical in not holding its members to the truly highest standards (ie, the U.S. standards) all around the world. I realize the implications of this for scientists working in other countries, and also that these are only recommendations at this point, not mandatory. And again, I am not real hard-nosed about this point. I just want to make sure the committee gives this a hard look, so that the final product is as ethical and defensible as possible.

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As it stands, one is not certain whether SCB is implying that an SCB member will adhere to the highest standards in the world or the highest standards of the country he or she is operating in. Perhaps "Be cognizant of and strive to implement the world's highest standards for treatment of animals used in research, adhering at minimum to the highest standards of the country in which she or he is operating." This should ensure accountability for responsible work while acknowledging the challenging reality of field work in diverse parts of the world.

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Suggest: "Understand and adhere to the highest standards for treatment of animals used in research."

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I suggest using "high" instead of "highest" standards. "Highest" is a matter of great debate. For sea otters, we are currently weighing the recommendation of a panel to use mink as a surrogate species for otters in contaminant and immune function research. PETA's highest standards would preclude any live-

animal research at all. We're not sure how we will proceed, but there will be a large audience of animal rights activists that perceive "highest" standards to be those of PETA.

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I recommend the addition of one point that offers protection for the natural environment when we are conducting research directly in areas that could be impacted (e.g., by genetic contamination). Such a point could read as follows: "When conducting research within or adjacent to natural areas, ensure that the research does not compromise native species, ecosystems, or processes."

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“Seek to protect ecological systems from damage during research activities.”

\*\*\*\*\*

Drop "Be cognizant and". It would seem you have to be cognizant of something if you are going to adhere to it. Stating "highest standards" is rather vague. The highest standards recognized by some animal welfare groups might not be attainable. Perhaps you should say "highest standards required by appropriate governing bodies (eg university ethics panels, government regulations, etc.)."

\*\*\*\*\*

Suggest language such as “Research on animals should not involve any activity that is lethal, injurious, or unduly cause distress. Use benign alternatives to invasive research techniques whenever possible. Promote the welfare of the animals involved and avoid causing the degradation of habitats or supporting ecosystems."

This is a serious matter as I have seen many statements advocating invasive or lethal research to address conservation issues, e.g., lethal studies on Minke whale (“scientific whaling”) citing the need to study the feeding behavior of whales in the name of the conservation of fish stocks, or to assess the detrimental effects of pollutants on whales.

\*\*\*\*\*

Perhaps also add a statement to the effect: “Avoid unnecessary duplication of research that involves invasive methodology on animals. Publish data promptly in mainstream journals, to allow colleagues access to your work and help them to avoid such duplication” There are currently several invasive studies being conducted in my field which effectively looking into the same issue (often funded by the same body).

\*\*\*\*\*

Although standards are not the same around the world, SCB needs a stronger statement of animal welfare. As a society with a peer reviewed journal, the society should be able to uphold papers to a high standard of animal treatment at least in research accepted for publication.

## **General Organization**

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Organize by subject, e.g., Conservation ethic: #1, #3, #4, #5, #9, #14; Research ethic: #10, #13, #15, #16; and Publication ethic: #2, #7, #11

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There appear to be 4 main subjects in the statement: use of information: 1-3; responsibility: 4-5; services: 6-9; research: 10-16. I think a slightly different emphasis in the order of these subjects is advisable, in which responsibility should come first. As most conservation biologists are researchers, the logical order would be: responsibility, research, use of information, services.

\*\*\*\*\*

The use of the word "their" throughout makes this less of a personal commitment than it should be. Rather than, "To meet this goal, we encourage all conservation biologists to," I would like to see, "To meet this goal, as conservation biologists we agree to..." Then, change "their" to "our" or the proper equivalent.

\*\*\*\*\*

While I support what is stated and find no fault with it, I find myself feeling a little let down by the statement. I wanted to be inspired and I wasn't. I also belong to the Wildlife Society and support their efforts most of the time, but don't really expect that group to inspire me. I have higher expectations for the SCB. The SCB statement/list appears geared more to science and research, even if disseminating info and encouraging its use in management decisions, than to making the hard decisions in the real world of conflicting values. I would move items 4, 5, 9, and 14 to the top of the list. These traits resonated most with me.

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Move item 5 to the end of the list and move number 9 up in the list. Item 9 is very important and would convey that importance better if it appeared earlier in the list. As for item 5, if it is moved to the end, it will apply to all the responsibilities outlined in the list. As such, it will have to be changed to read, "Avoid actions or omissions that might compromise these responsibilities, and respect the competence and judgement of the professional community."

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Clauses 6 - 16 are not specific to conservation, or the SCB. They are a general encouragement to behave ethically. As such, they come across as either so universal as to be unneeded, or so obvious that their presentation implies an assumption of corrupt intent on the part of SCB members? Do they carry more weight than would a clause that said 'Be honest and nice', or one that said 'Heed the ten commandments'? To me, they do not. I feel that these clauses 6-16 very much dilute the impact of what would otherwise be a fine and relevant statement of values.

\*\*\*\*\*

The current version is too long and too lofty (and hence unenforceable should it come to that). It includes 2 types of statements, those that are qualitative and speak to values and intentions (good), and those that are quantitative and imply possible sanctions if measurable standards are not met (challenging, to say the least). The latter type has substantial implications that are left unaddressed in this statement as written. This needs to be concise so they will be read, quoted easily (think how newspapers like short rather than long letters to the editor!), and so they will demonstrate unanimity and a sense of focus. I suggest that the 16 bullets can be grouped into 3 broad themes; 1) SCB members should maintain and promote the highest scientific and professional standards (points 1, 2, 7, 10); 2) SCB members should maintain and promote the highest ethical and moral standards in working with colleagues and research subjects (points 6, 8, 9, 11, 12, 13, 14, 15, 16); and 3) SCB members should maintain personal standards and behaviour that are seen in public as creditable to their profession and conservation efforts in general (points 1, 4, 5, 6). I suggest that the 16 points drafted heretofore could be re-worked so as to be condensed into these broad thematic categories, perhaps with 2-3 bullets each.

### **Should we adopt a BINDING code?**

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The statements should be BINDING on SCB members rather than leaving it open at the moment. My reason is that if it is not made to bind, members will not be keen in discussing the whole statement. The intention is not to discipline anyone who violates the values and hence why not make it binding for people to be extra conscious about how they go about their work?

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There in "bully pulpit" value in such a statement, and it should published periodically in ConsBio or web page, etc. I think enforcement is virtually impossible. It is true that TWS has had few challenges, despite their certification program. But, in one egregious, a flat-out bad one, they were forced to back off because of the threat of a law suit. They might tell the story a bit differently, but that is the essence of the case. It points out that member-supported societies don't have the budget to be fighting court cases and enriching lawyers... Will our Statement stop bad behavior? NO. But it makes overt that we expect more from ourselves, our fields of study, our colleagues, and our students. Humans are not, and have never been perfectible, so that is probably the best we can do.

\*\*\*\*\*

Establish consequences for serious departures from these standards. Otherwise SCB membership is morally indistinguishable from any other institution having norms without consequences. If this is the case you/we are wasting our time! You may wish to consider a 2 tiered structure of principles and criteria with this being the first stab at principles. This might be the short list of principles. The advantage is to suggest that the statement of values (proinciples) as a first step and details will be added later including a penalty clause

### **Proposed New Statements:**

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“Include conservation biology ethics when making fiduciary decisions in organizational settings.” I have often seen the value of money and the growth of endowments and/or the obtaining of grants and funding become values that over ride conservation considerations. Thus the wide application of values and knowledge are needed in this sphere, as well at in actual "on the ground" functions. The wording suggested could clearly be improved upon.

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I missed seeing any reference to balancing human community concerns with biodiversity concerns. This issue is hinted at but I think we should clearly state something that indicates that we are more than a 'nature' group. Yes, we aim to protect biodiversity on earth, and perhaps some people assume we are also talking about protecting human communities, but I think the values statement is a good forum to clarify our vision of sustainable human communities as part of the matrix of biodiversity on earth.

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“Support the right to a clean and healthful environment for all people, as well as their right to participate at all levels of the policymaking process as equal partners; their right to self-representation and autonomy, and their right to political, cultural and economic self-determination.

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“Develop a working understanding of the policy process within which many conservation decisions take place. Foster good government and an open policy development process that seeks input from affected parties.” (Suggest as following #1)

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It would be nice to add one that acknowledges that we are only human - we are not required to become over stressed or over worked in order to do all these things.

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“Affirm our profession as a scientific and social endeavor and urge the Society to revisit, reconsider, and, if necessary, revise these standards on a regular basis.”

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Recognize the right of every species on earth to exist.

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Take every conceivable step to reconcile basic human needs with the conservation of the living world.

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"Recognize that biodiversity has intrinsic value" as acknowledged in the Convention on Biological Diversity." This could also be used as the logical lead into the statements 3 (endorsing the precautionary approach) and 16 (the treatment of animals).

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"Seek out and use the best available information for determining action while being forthright about the limitations of the information."

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“Strive to resist political or social pressures that would lessen the conservation effectiveness of your professional actions.”

### **Other comments**

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One area in which I feel may or may not have been dealt with well is the science involved with the interactions between wildlife and people, and the embodiment in all major treaties and conventions of a commitment to sustainable use. There are remarkable scientific challenges in this arena, being addressed by conservation biologists. The multidisciplinary elements just occur at a higher level - the same basic scientific principles apply to solving the problems. It is in the "human" side of conservation biology that I wondered whether the values are based on a somewhat purist view of where we need science the most - at the front line. The consequences of not addressing this problem are profound - the following quote is very real and frightening. (Salzman, 1995. Scientists and Advocacy. Conserv. Biol. 9:709-710): “Science is not going to be the deciding factor, or even a major player in the debate but rather the values, opinions, and politics of the players. Scientists will increasingly find that the issues will not be argued on their merits, and that the introduction of scientific evidence will simply be ignored.” I won't go into this area in more detail here, because it may have been thought about and rejected. Some of the areas of ethics are really ones of declaring vested interests - payment for consultancy work is often considered a vested interest, but how many scientists have a vested interest in an endangered species remaining endangered, even after it is clear that a population has recovered – vested interests need to be declared, not avoided!

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I didn't see an emphasis on conservation of genetic diversity. "Conservation" is too vague, and leads to misunderstanding.

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Have the document reviewed by a expert/ person trained in environmental law. Perhaps this has already been done (I do not know all the individuals on the panel). Because the document will inevitably develop and become the basis of punitive measures against violators, early "heads up" on legal issues seems prudent.

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I'm wondering if this statement has implications about advocacy -- I'm covering a paper that says most environmental interest groups and the "informed" public think scientists should actively advocate for specific natural resource policies they prefer, but that most ecological scientists and managers don't.

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It should be stated that conservation efforts must consider the use of the biological resources in a sustainable way. It is important to include the USE of the resources as a conservation strategy. In my

experience on conservation of native forests in Chile and in general everywhere among developing countries, extensively PRESERVING natural ecosystems is impossible. Parks will cover no more than 10% of the land, but the rest of the territory is likely to be conserved only letting the local communities to use it.

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Besides supporting 'active dissemination of information' the statement should suggest SCB members 'engage in the public debate' on biodiversity conservation 'through public forums'. The need for unbiased scientific comment in today's political process surrounding conservation issues is even more pressing than in the past.

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Association of Professional Biologists of British Columbia has a Code of Ethics that you may wish to consider.