College of Applied Biology

Principles of Stewardship Q & A

The *College of Applied Biology Act* sets out that one of the purposes of the College is to protect the public interest by upholding the principles of stewardship of aquatic and terrestrial ecosystems and biological resources. The responsibility of College members is to practice science-based stewardship within the tenets of the College Code of Ethics.

The College has identified six principles of stewardship to guide members' practice of applied biology. The principles together form the underlying goals that frame the work of College members. This Q & A document will be updated as required.

Q1: What do the principles of stewardship mean to me as a member of the College?

The *College of Applied Biology Act* defines "conduct unbecoming a practising member" as conduct of a member that:

(a) brings the college or its members into disrepute,

(b) undermines the scientific methods and principles that are the foundation of the applied biological sciences, or

(c) undermines the principles of stewardship of aquatic and terrestrial ecosystems and biological resources.

The *Act* is clear that the actions of College members must be consistent with the principles of stewardship. To emphasize this fact, the requirement of members to uphold the principles of stewardship is also mentioned in the preamble to the Code of Ethics for the College. The College has identified six principles of stewardship. Each principle identifies a facet of stewardship that, when combined, provide a framework to guide members' practice of applied biology. Members should consider how their actions/recommendations/reports are consistent with the high-level goals identified in the principles of stewardship.

Q2: Why don't the principles of stewardship include consideration of human socioeconomic implications?

Issues such as socioeconomic considerations and sustainable development are not included in the College principles of stewardship because: a) it is key that College members provide unbiased scientific advice in their area of expertise. By including socioeconomic considerations the science may be compromised; b) the majority of College members are not qualified to assess socioeconomic considerations; and c) although some members may make management decisions that require the assessment of socioeconomic impacts, they will not be considering only aspects of applied biology when they do so. Although the decision-maker might apply a socioeconomic lens when making the final management or project decision, the unbiased scientific foundation serves as the stable base for that decision.

Q3: Why aren't the terms 'cumulative effects' or 'climate change' specifically mentioned?

The concept behind the term 'cumulative effects' is included in the phrase 'combined incremental effects of environmental change or disturbance' in principles 2 and 4. The term 'cumulative effects' is widely used and therefore has different meanings to different people. To avoid association with definitions and protocols that might not be applicable to College members, the specific phrase 'cumulative effects' was not used.

The importance of considering the potential effects of climate change is included in principles 2 and 4 which mention the "combined incremental effects of environmental change or disturbance". Biological systems are constantly changing and new issues that may affect the structure and function of ecosystems are regularly identified. Referring to the concept of environmental change or disturbance is inclusive of a broad range of issues.

Q4: What if stewardship is not included in the scope of my contract/job?

The requirement of members to uphold the principles of stewardship as specified in the *Act* is part of being a professional and applies whether or not the contract or job specifically addresses all facets of stewardship. Where a member sees a biological situation that has the potential to negatively affect long-term ecosystem biodiversity, complexity, or resilience, the member has the obligation to notify the employer/client even where the issue is perceived to be out of scope of the specific contract/job.

Q5: If I follow the legal requirements (e.g., Riparian Area Regulation etc.) does it mean I've upheld the principles of stewardship?

Meeting legal requirements is required of College members (Principle 3 in the Code of Ethics). However, the College defines stewardship in a way that goes beyond minimum legal requirements. These principles of stewardship include consideration of potential effects at a temporal and spatial scale that may not be covered by minimum legal requirements.

Q6: When working on a project that may alter habitat, how can I uphold the principles of stewardship?

Some examples of ways a member can uphold the principles of stewardship include: confirming that the project is within their area of competence (Principle 2 in the Code of Ethics); clearly and objectively laying out the reasonably foreseeable implications of the proposed activities (Principle 3 in the Code of Ethics); suggesting alternatives that will minimize harm; identifying opportunities to maintain future options (e.g., suggesting habitat rehabilitation once the work is done; identifying pro-active mitigation opportunities; creating replacement habitat); answering questions clearly and assisting in the interpretation of the advice/report; and discussing the proposed work within the context of the surrounding area by considering the potential combined incremental effects of other projects or development in the area.

Where a member is tasked with implementing a pre-existing project plan the member is not relieved of their responsibility to uphold the principles of stewardship. Examples of ways members can uphold the principles of stewardship in that situation include: reviewing the project plan to determine whether it upholds the principles of stewardship; clearly articulating limitations of the plan to meet the principles of stewardship; notifying the employer/site manager in writing if the member identifies a previously unidentified risk or unintended consequence of the project plan; answering questions clearly and assisting in the decision maker's interpretation of the advice; and suggesting options to minimize or mitigate any potential harm.

Q7: When working on a project that is focused on a single species or group of species to the potential detriment of other species, how can I uphold the principles of stewardship?

Societal priorities and goals such as the decision to manage an area primarily for a single species or group of species are established at high management levels. College members may be involved in establishing these goals, but decisions on priorities are not restricted to the realm of applied biology.

The responsibility of College members developing or implementing a project plan is to provide unbiased scientific information and advice, consistent with the

principles of stewardship, on which decision-makers can base their management/project design decisions. For example this could include: clearly identifying any assumptions and limitations of data (Principle 1 in the Code of Ethics); identifying foreseeable potential risks and consequences both to the target species and other species that may be affected; identifying potential longer-term effects both geographic and temporal; and making suggestions to minimize or mitigate overall harm to other species that might be affected.

Q8: Does the reference to biodiversity/complexity in principle #2 indicate that maximizing biodiversity/complexity is an objective of stewardship?

No, the objective of stewardship is to have appropriate (natural and/or "healthy") diversity and complexity for that ecosystem in that area - not necessarily to have the greatest species richness or evenness (number of species or similar numbers of individuals across species) or complexity. Some ecosystems are naturally simple; increasing biological diversity or ecosystem complexity above the natural condition (for example through habitat modification) could harm the function of the ecosystem and does not represent good stewardship.

Q9: What is my responsibility when, based on the principles of stewardship, I provide advice to my client/employer, but my client/employer ignores my advice?

Where a client/employer ignores or does not follow the advice or recommendations of a member, the member must make the employer/client aware of the potentially adverse consequences that may result (Principle 3 in the Code of Ethics). They must also state any implications of their recommendations or alternatives in a clear, understandable manner (Principle 3 in the Code of Ethics). Discussion of these issues with the employer/client should occur in written form so that the member can document that they were duly diligent in this matter.

The recourses available to a member when their professional recommendations are not followed depend on the situation. Where the member simply disagrees with the actions of the client/employer, they are bound by any contractual agreements as to data confidentiality etc. (Principle 4 in the Code of Ethics). Where the actions of the client/employer are unlawful, the member is obliged to report the activity to the appropriate authority (Principle 4 of the Code of Ethics).

Q10: What is the responsibility to stewardship of a College member who is in a decision-making/manager position?

The member biologist/technologist is responsible for clearly identifying and reporting the potential outcomes and consequences of proposed scenarios. This information provides the science base for the decision-making process.

The College member who is also a manager/decision-maker is responsible for ensuring that the science is fully considered in the making of a decision. At this point other considerations may also come into play besides scientific input, including socio-economic issues. The decision-maker should be specific in how they considered the scientific input.