

# Editorial

My decision that **Davidsonia** should become an occasional on-line journal reflects the uncertainty that often faces small-niche journals. Authors working in systematics and descriptive ecology who are funded by the major research agencies seem to be increasingly obliged to publish in so-called top journals or not at all. Horticulture and Natural History are perceived to be low impact and therefore of less importance. The continuing demand for sound research in biodiversity has been redirected to more studies of mechanisms that explain species relationships. This clearly is important to our understanding of how our activities impact local and global ecological processes, biodiversity etc.

My view is that smaller, on-line, peer-reviewed journals can provide an essential service by rapid publication of reports of range extensions and even confirming and/or clarifying past studies. **Davidsonia** and other local and international journals of natural history and other work are often closely linked to resources available at botanical gardens. They can and should support the reporting of new natural history. Some rebranding will give direction to smaller and local natural history societies, museums, and botanic gardens so that they can continue to thrive and grow. In this digital age, taxonomists have begun this process by using new and emerging online technologies combined with major efforts to 'barcode' biodiversity. Botanical gardens can reach out to seize the next generation of budding naturalists.

If the number of professional naturalists continues to decline, there will be a serious loss of expertise in the community of professionals who are often asked to provide analysis of environmental impacts of all forms of development. The increasing emphasis for natural resource development in a country like Canada often requires mining, oil and gas companies to present environmental impact studies that require ecological consulting companies to undertake environmental assessments. In western Canada two major fossil fuel pipelines are planned and a third is operating and planning expansion. All are intended to deliver partly refined fossil fuels from Northeastern British Columbia and Alberta through north and central British Columbia to tanker terminals on the Pacific coast or to carry similar resources to the refineries on the Gulf Coast of the USA. Opposition to the Canadian project comes from environmental groups and several First Nations, and in the USA from environmental groups and the people whose water supply is in the aquifer below the pipeline as it passes through Nebraska. Support is also coming from some First Nations who have financial commitments to the projects.

Unfortunately some of the environmental impact assessments have been challenged because of alleged conflicting interests between the industry and their consulting partners. Some environmental impact studies undertaken by the pipeline companies are the subject of re-evaluation. Politicians seem to expect that any new Canadian study will support the project from Alberta to Kitimat, BC, and it seems unlikely that contractual obligations for the pipeline operators will be valid when the inevitable accidents and leakages occur. Setting aside the likelihood that government will approve the project, the challenge to those charged

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with assessing the scientific soundness of the impact studies is to deliver studies that will have been conducted using the current scientifically sound best practices of systematics, ecology, risk and engineering. Fortunately BC and Alberta have professional regulatory bodies in biology that can deal with any unprofessional conduct by consultants, but the public has a right to know that the best practices are applied by consultants as they address scientifically answerable questions, including formal reporting of the natural history of the sites. The resource developers often ask complex questions for which the consultant's answers require a sound understanding of systematic biology as well as proper design of ecological analyses. Successful environmental impact companies have skills that deliver the answer to the questions as asked, e.g. what are the local environmental risks, without necessarily asking the ecologically sound questions that can provide risk assessments.

At the end of any studies, the consultants will have accumulated substantial amounts of information about species present, but much of this information, it is argued, belongs to the contractor and therefore cannot be placed in the open scholarly journals. There may well be an ethical requirement to release such data in the public interest and to put that information into the natural history and local journals such as **Davidsonia**.

It is unfortunate that the public trust in the quality and perception of environmental impact studies is presently low. Open access and peer review of the findings, methods, and data associated with environmental impact assessments is essential. This would increase reliability of predicted impacts and perhaps lead to actions to reduce environmental accidents that would increase industrial and public benefit and get the attention of regulators before at least the most predictable damage has been done.

Individuals who practice as ecological consultants usually have post-graduate training in some aspects of organism identification and biological analysis of ecosystems. It is an integral part of professional responsibility to practice in an open environment that invites and responds to a critical peer-review process. It is also a professional responsibility to make findings and data available through provincial and publicly available databases like the CDC. These consultants certainly know about reference collections housed in the local museums or university biology departments. They and their employers must be encouraged to make their work, which is usually undertaken using tax-deductible funds, fully available in peer-reviewed publications so that we can increase our understanding of systematics and ecosystem changes. Sound science does not mean negative impact statements, but it does enhance the credibility of the protagonists in the processes of environmental assessment. Competence in any aspect of science, including natural history undertaken by both amateurs and professionals, requires continuous field activity and efforts to remain up-to-date with the local environmental knowledge. Natural history societies and botanical gardens that 'publish' their science have an enormous opportunity to maintain and increase our understanding of biodiversity.