Abstract
A postulate of conservation biology is that biotic diversity has intrinsic value (Soule 1985). A quarter century after the discipline’s inception, many conservation biologists still contend that society’s investment in conserving biodiversity is justified by its intrinsic value (Van Dyke 2008, Nos 1994, Callcott 1986). However, others have challenged whether intrinsic value is meaningful or useful for decision-making (Justus et al. 2009). I addressed this challenge by empirically testing three hypotheses about intrinsic value in conservation biology. First, intrinsic value is a foundational concept within conservation biology. This predicts that conservation biology textbooks will universally accept intrinsic value. My examination of the current field of conservation biology textbooks and foundational documents (n=14) confirms this prediction. Second, intrinsic value is not reducible to physical properties, a requirement of science. I tested the prediction that intrinsic value originated in religion and remained metaphysical in conservation biology by searching back from current scientific literature to classical ethics ca. 2390 BP. Results confirmed an independent analysis by Van Dyke (2003). Third, future conservation professionals are adopting the prevailing view that intrinsic value is real. I surveyed University of Toronto conservation biology students (n=58) and discovered that 65% view intrinsic value as an objectively real property, and 80% are unclear about the subjective nature of value. Therefore, my research confirms the hypotheses that intrinsic value is a foundational concept within current conservation biology, and is accepted by future conservation biologists even though it is not a scientifically legitimate concept. The discipline of conservation biology is thus vulnerable to the challenge that it is a non-scientific enterprise.

Methods
H1: Intrinsic value is a foundational concept within conservation biology.
H2: Intrinsic value is not reducible to physical properties, a requirement of science.
H3: Future conservation professionals are adopting the prevailing view that intrinsic value is real.
1. Analysis of conservation biology textbooks and foundational legal and academic documents (n=14): Conservation biology textbooks and foundational documents will universally accept intrinsic value.
2. Literature search from present back to ca. 2390 BP to trace intrinsic value origins: Intrinsic value originated in religion and remains metaphysical in conservation biology.
3. Survey of University of Toronto conservation biology students (n=58) for their views on biodiversity valuation: Data exploration and analysis done with Predictive Analytics Software (PAS)

Prediction: Future conservation professionals are adopting the prevailing view that intrinsic value is real.

Results
1. Analysis of ten conservation biology textbooks and four foundational documents indicates that acceptance of intrinsic value is universal in conservation biology.
   - Society of Conservation Biology emphasizes intrinsic value in its statement of principles.
   - Convention on Biological Diversity and Millennium Ecosystem Assessment accept intrinsic value.
   - Conservation biologists prioritize the scientific method, but acceptance of intrinsic value is ubiquitous: it is a foundational concept of the discipline.

2. A comprehensive literature search revealed two distinct uses of intrinsic value: metaphysical and non-metaphysical.

<table>
<thead>
<tr>
<th>Metaphysical Intrinsic Value</th>
<th>Non-Metaphysical Intrinsic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metaphysical usage in science</td>
<td>Non-Metaphysical usage in science</td>
</tr>
<tr>
<td>Metaphysical usage in society</td>
<td>Non-Metaphysical usage in society</td>
</tr>
<tr>
<td>Metaphysical usage in art</td>
<td>Non-Metaphysical usage in art</td>
</tr>
</tbody>
</table>

Breakdown
- Both “intrinsic” and “extrinsic” values of biota are subjective: 12 respondents
- Both “intrinsic” and “extrinsic” values of biota are objectively real: 10 respondents
- “Intrinsic” value is subjective, but “extrinsic” value is objective: 8 respondents
- “Intrinsic” value is objective, but “extrinsic” value is subjective: 28 respondents
- Just twelve respondents (20.7%) identified values as subjective. 17.2% felt that all values are objective, and 62.1% felt that some values are objective and others are subjective. In all, 79.3% of respondents were unclear about the subjective nature of value.

Discussion
- Conservation biology is vulnerable to the challenge that it is a non-scientific enterprise.
- Intrinsic value originated in religion and remains metaphysical in conservation biology.
- Acceptance of intrinsic value by conservation biology textbooks indicates the centrality of this concept to the discipline.
- Textbooks reflect the dominant discourse of a discipline and shape the views of future professionals in the field.
- Intrinsic value is accepted by future conservation biologists even though it is not a scientifically legitimate concept.

References