

Natural History Renaissance

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As humanity becomes increasingly alienated from the natural world, a self-reinforcing cycle of ignorance has been created. Fewer people learn about natural history, which in turn creates a generation with even fewer people who can teach natural history. We call for a change to break this cycle, a change that we hope will be furthered by the creation of the *Journal of Natural History Education*. *JNHE* seeks to serve as a mechanism for educators to share how the subject can be taught successfully, focusing on articles that describe natural history curricula or discuss issues relevant to natural history education. Like other professional journals, articles will be peer-reviewed. However, it will also follow newer traditions in publishing that we hope will facilitate communication of ideas; *JNHE* will be entirely on-line and open access, with no publication charges and with copyrights held jointly between the journal and the authors. We at *JNHE* are pleased to help foster a renaissance in natural history.

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It is our misfortune to live in an age of rapid biological decline. Ever since the emergence of *Homo sapiens* as a tool-using species, capable of altering natural communities and harvesting species past their abilities to regenerate, species extinction and degradation of habitats have become increasingly common. We have come to the point where we can now speak of living in the time of the sixth mass extinction event in the history of life on Earth with no sense of hyperbole (Jablonski 1991, Wilson 1992).

But this human-induced mass extinction progresses largely unnoticed--this age of biological decline is, not coincidentally, also an age of human indifference to the more-than-human world. Wild nature has been replaced by human-dominated landscapes, circumscribed by patterns and processes never before seen, the consequences of which have been to insulate humanity from other species and wilder landscapes. We now live in a world where it matters more whether it is Friday or Saturday than if it is autumn or winter, a world where ageless cycles of migration and hibernation, germination and seed dispersal too often go unnoticed.

People are less and less likely to have direct, intimate interaction with the natural world entwined into their lives. It is projected that in only a few years, more than half of the people on Earth will live in cities (United Nations Population Division 2005). This trend toward urbanization and alienation from the more-than-human environment will intensify in the future,

disproportionately affecting each new generation. As Richard Louv (2006) writes in *Last Child in the Woods*, "Our society is teaching young people to avoid direct experience in nature. That lesson is delivered in schools, families, even organizations devoted to the outdoors, and codified into the legal and regulatory structures of many of our communities... Well-meaning public school systems, media, and parents are effectively scaring children straight out of the woods and fields. ... [A]s the young spend less and less of their lives in natural surroundings, their senses narrow, physiologically and psychologically, and this reduces the richness of human experience."

This disconnection can be seen even among biologists, the people seemingly most likely to maintain intimate, respectful relationships with nature. Yet Douglas Futuyma (1998), in his 1994 Presidential Address to the American Society of Naturalists, noted that, when surveyed, a surprising number of that society's members equated an interest in natural history with being an unsuccessful biologist.

The consequences of this loss of connection are deeply significant on many levels--from the individual psyche to cultural and political patterns writ large. It leads to a narrowing of perspective of the scope of the world and its attendant diversity, moving us from an awareness of our interdependence with life to a belief that humanity is the measure and perhaps even the primary purpose of all things.

Even worse, this narrowing of perspective leads to a growing inability of people to engage in the issues that have led to our current path toward biological impoverishment. The loss of biological diversity can only be recognized by someone as a crisis if she has a relationship with nature that is personal and immediate. One does not have to have direct knowledge or experience with *every* natural environment to care about extinction and the loss of natural communities, but one is assuredly less likely to care if one has no direct knowledge of any place at all. And unless caring about the natural world becomes a societal value, what hope is there that we will find the will to protect what remains of it, and restore what we can to health (Trombulak and Klyza 2000)?

The causes of this alienation from the natural world are numerous and complex, but surely include increased urbanization, globalization, and reliance on passive entertainment. Never before in human history has it been so easy to spend one's entire life separated from nature. In some parts of the world, particularly the United States, western Europe, and Japan, increasingly one need not walk on soil, give attention to the movements of animals, or note the flowering and fruiting times of plants. Such a general statement is certainly not true for all people, but either as a result of personal choice or geographic location it is certainly truer now for more people than ever before in human history. Even people who otherwise view themselves as "in touch" with nature have come more and more to replace their active engagement with passive, disembodied observation via television and the internet.

Thus, a self-reinforcing cycle of ignorance is created. People come to ignore nature, losing an awareness of what is going on and what is at stake, feeding more disconnection and further loss and endangerment. The disconnection expands across generations, as those who might otherwise transmit their knowledge and awareness on to those younger than them have no knowledge about the natural world to share. As less is learned, less can be taught, until even the knowledge about *how* to transmit the knowledge becomes a rarity.

We call for a change. We are natural history educators who refuse to stand by and watch this cycle of alienation from the more-than-human world spiral downward further without making every effort we can to offer a more hopeful vision. We have practiced the craft of natural history education, working to educate our students about the intricacies and beauties of the natural world. We believe that our efforts are a direct attempt to resist the forces that work to alienate society from the natural world because we know some of our

students will go on to teach others. Thus, a cycle of ignorance breeding ignorance can be replaced by a cycle in which sharing knowledge leads to more sharing.

Yet we also know that efforts such as ours are not enough. The natural history educators of today are too few in number, and too isolated from each other, to do much more than slow the decay of collective knowledge about the natural world. And evidence shows that we are losing ground (Louv 2006). More and more primary and secondary schools in the U.S. are reducing, even eliminating, field trips from their curricula, including trips to the native ecosystems of the places where their students live. More and more colleges and universities are reducing their curricula in the organismal, ecological, and earth sciences, restricting field experiences to advanced classes and, by default, fewer students. As diversity in the natural world erodes, the ability of our country's educational system to show people what we are losing erodes. For whatever reasons, we are eliminating one of our best tools for connecting people with the world at the very time we need it the most.

Something more must be done. This country is still full of dedicated and knowledgeable teachers of natural history, yet as our numbers become fewer, it becomes harder to learn from each other, harder to find the strength and conviction that comes from a shared sense of community and purpose. We need a resource that better allows us to share our knowledge and learn from each other how we can be better educators. We need a resource that allows newer educators to identify and bridge the gaps in their own knowledge created by the deficiencies in their own teachers and schools. We need to rebuild an educational culture where attention to the natural world is not only allowed, but is encouraged. We need a community where we hone our abilities to convey wisdom and respect, awareness and appreciation for the natural world.

In short, we need a renaissance in natural history education.

The Journal of Natural History Education

There is, of course, no single answer to the question of how such a renaissance can be cultivated. Ultimately, it will require a lot of answers to all the questions that emerge from the initial question "How can we improve natural history education?" An obvious place to begin, however, is to develop a mechanism to share our knowledge about how natural history can be taught. We need to hear each other's voices and draw inspiration from each other's stories.

Therefore, it is with a great deal of hope and expectation that we announce the creation of the Natural History Network, and its new publication, the *Journal of Natural History Education*. The focus of *JNHE* is to provide a forum dedicated to the presentation of ideas and information on the following topics:

- Descriptions of natural history curricula;
- Reviews of practical issues related to the teaching of natural history; and
- Discussions about the philosophy of natural history education.

First, let's be clear on what we mean by "natural history." Although many definitions have been proposed over the years (summarized by Fleischner 2005), we have adopted an inclusive view that natural history is about the more-than-human world, an understanding of which is approached through "a practice of intentional, focused attentiveness and receptivity ... guided by honesty and accuracy" (Fleischner 2001). This journal will publish any article that fits within this broad definition.

JNHE has no restrictions on the level of education discussed. K-12, undergraduate, graduate, general public, continuing education for practitioners, targeted adult audiences ... all levels are important, and discussions about how to approach natural history education for any of these audiences are welcome. Content of the journal will range from the applied to the philosophical, but will focus entirely on the principles and practice of natural history education.

The articles published in *JNHE* will be of two types: (1) descriptions of curricula, and (2) analyses or syntheses of ideas related to teaching natural history. Details about the specific characteristics expected for each of these types are given on the journal's web site (www.naturalhistorynetwork.org/about.htm). In general, however, the expectation is that articles are written with an intention to share information and experiences that will make it easier for teachers to replicate good educational practices and overcome challenges to improving natural history education. Emphasis, therefore, will be less about promoting specific programs and schools and more about sharing ideas and practices that work.

One aspect about article content deserves special mention: assessment of results. As practicing biologists ourselves, we are well aware of the importance of presenting data to support conclusions. Whether or not an educational strategy works is difficult to assess unless it can be demonstrated to work empirically.

However, we also recognize that conducting a valid experiment on pedagogical effectiveness is vastly more problematic than on some aspect of biology. The challenges involved in creating valid replicates and generating large sample sizes (while at the same time trying to keep class size small) are daunting and often insurmountable. The ethics associated with creating a control group, where a potentially effective teaching tool is intentionally withheld from a group of students, are far from clear.

Thus, adhering to a strict construction of what constitutes a valid assessment is a barrier to sharing information, and therefore *JNHE* intends to take a more flexible approach. While asking authors to provide some assessment of their curriculum—in essence giving readers some reason to believe that the educational approach proposed is effective—we will not require that the assessment take the form of a statistical comparison. Authors interested in what kinds of assessment might be worthwhile are encouraged to look at articles published in *JNHE* or to talk with the editor to get a sense of what works.

The publishing philosophy of *JNHE*

We want to have the journal strike a balance between being broadly accessible to all educators, both as readers and as authors, and having high professional standards for both content and presentation. Every aspect of the journal has been carefully crafted to maximize both accessibility and quality.

The following elements of the journal help to achieve these goals, and we believe when taken together set us apart from all other journals being published today:

Entirely electronic. All aspects of production are completely electronic, from submission to review to publication to archives. This approach has numerous advantages, particularly with respect to access, timeliness, cost, and environmental impact. Steps for submitting an article for review are described in detail at www.naturalhistorynetwork.org/submission.htm.

Peer-reviewed. Each article, upon receipt, is reviewed by the editor for appropriateness for *JNHE*. If an article is on a topic of interest to the journal, the article is sent to two professionals in the field for evaluation and comment. Because the Natural History Network (the parent organization that produces *JNHE*) seeks to grow a community of practitioners where none has existed before, the list of peers who we know we can call upon for critical yet constructive reviews will grow over time. But readers and authors can be assured that each article published in *JNHE* has passed a level of review and

revision equal to or exceeding that found in other professional journals.

Open access. Access to the journal is free. All articles published by the journal are available in their entirety to any individual anywhere in the world as long as they have access to the internet. Complete articles can be downloaded as pdfs and distributed without violation of copyright laws as long as proper citation credit is given to the authors and the journal.

No publication charges. Most journals levy page charges on authors in order to offset the costs of staff, printing, and distribution. While page charges usually can be waived, it still imposes an extra step and psychological barrier to publishing. *JNHE* explicitly does not levy page charges. By keeping its entire operation on-line and relying on a small but dedicated staff of volunteers, the costs of operation are able to be covered entirely by donations from people who believe in the goals of the journal. Therefore, money is not, and will never be, a barrier to sharing one's ideas and experiences.

Minimal requirements for manuscript format. All journals have a specific format required for submitted articles, and authors are expected to submit manuscripts in that format or risk having the paper rejected without review. *JNHE* is no exception to this practice. However, our required format has been designed to achieve two goals. First, we believe it eliminates all of the arcane formatting standards that have their historical roots in the need for typesetters to convert text to printed paper. Second, it is designed to make it easy for the volunteer staff to reformat manuscripts for publication.

Copyright held jointly by authors and JNHE. Authors do not need to relinquish copyright of their own work to the journal, eliminating the need to get permission to copy or distribute their own creations. The only requirements are that (a) any additional distribution of an article includes proper credit being given by including the complete citation for an article, and (b) no changes to the published article be made.

Conclusion: A Call for Collaboration

Our purpose in creating this journal is to give natural history educators a place to let their voices be heard more widely. Individually, we touch a few lives, hopefully giving our students, readers, and listeners more insight about the world that is their home. We ourselves are transformed by the educational process, deepening not only our own understanding but our own abilities as educators. But collectively we can do more.

By coming together as a community, we can share our experiences and share our strengths. We can help more teachers take the initial steps toward building meaningful education about the natural world into their curricula, and we can help more teachers do what they are already doing, only better.

A community requires participation, however. This journal is not the goal itself, but a means to achieve the true goal: a new generation of citizens that understands and appreciates the natural world outside its door. This renaissance in natural history is not only necessary, but possible. Each of us can do our part to reach it by making the commitment to engage in this community, learn from each other, and pass our experiences on. We are pleased that the *Journal of Natural History Education* is now available to help make that possible.

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