

Creating Environmental Stewards

Nonfiction Prompting a Sustainable Planet

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These days, I cannot imagine a subject more important than sharing books that celebrate nature and its worth—also relaying the importance of keeping our shared “home” healthy.

Such literature will encourage environmental stewardship, create a generation that recognizes and understands the value, yet fragility, of Earth’s resources, and propagate a general consensus as to the manner in which humanity must preserve, conserve, and protect such resources that ensures the well-being of all life forms.

Why should this issue and “green” literature take precedence in our collections, programming, and collaborative efforts? Without argument, present-day environmental warnings, reports, and statistics are overwhelmingly pessimistic; they cannot be ignored! As proof, consider and digest the bulleted list found below, each fact implying a major consequence for our planet, in and of itself:

- Species extinction rates are one hundred to one thousand times greater than the *natural extinction rate*.
- Global populations of fish, birds, mammals, amphibians, and reptiles declined by 60 percent between 1970 and 2014—in other words, an average drop of well over half in less than 50 years. There is no precedent for the current rate of loss of biodiversity and ecosystems, and this extends to all parts of the world.
- The world’s warm-water coral reefs, the most diverse marine habitats, may not make it until the end of the century. If trends continue, up to 90% of ALL coral reefs may disappear

by 2050. (Nearly 200 million people depend on coral reefs to protect them from storm surges and waves).

- On a global scale, the area of minimally disturbed forests declined by 92 million hectares between 2000 and 2013.
- Two hundred thirty nine million hectares of natural forest have been lost since 1990.
- The intactness of our global biodiversity (think, is there life on Earth?) has dropped from 57.3% in 2001 to 54.9% in 2012.¹

As can be discerned, one fact builds upon another, to the point that humanity may see a major shift in the planet’s ability to sustain *homo sapiens*, and indeed all life forms, by 2020. Also,

- Conservative estimates by the World Health Organization (WHO) show that climate change alone is responsible for over one hundred forty thousand deaths per year (estimates based on data for 2004), mainly of children in the poorest regions of the world. Several million individuals around the globe are at risk from changes in the earth’s ecological and bio-geophysical processes, including climate change, ozone



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depletion, biodiversity loss, land use change, and ecological degradation.²

Certainly, time is of the essence as we attempt to inculcate the upcoming generation in a lifestyle and mindset that will ensure humanity's (and our planet's) very survival. Part of this mindset, no doubt, will include an emphasis on social justice and equality in order that all peoples will be treated fairly with regards to the sharing of natural resources, food supplies, and clean water. In fact, Clark Wolfe, in *Intergenerational Justice, Human Needs, and Climate Policy*, posits, "Since protection from harm is a matter of basic need, and since significant climate mitigation can be accomplished without compromising the needs of present persons, climate policy is an urgent priority of justice... Where our present activities are not necessary for satisfaction of present fundamental needs, and put at risk the basic needs of future generations, then they are unjust."³

The Answer

The World Wildlife Federation states that "sustainability and resilience will be achieved much faster if the majority of the Earth's population understands the value and needs of our increasingly fragile Earth."⁴ This understanding is promulgated by education (parental and institutional) and information sharing. The United Nations Millennium Development Goal #7 reads: "Education helps ensure environmental sustainability: Education helps people make environmentally sustainable decisions."⁵

In fact, the 2016 UNESCO World Education Report propagates this theme across the globe: "Educated citizens have a greater ability to make informed decisions on how to use resources and preserve ecosystems."⁶ Cambridge's *Children, Their World, Their Education* notes, quoting Alexander and Hargreaves: "Children who were most confident that climate change would not overwhelm them were those whose schools had replaced unfocused fear by factual information and practical strategies for sustainability."⁷

What specific strategies are required? The North American Association for Environmental Education (NAAEE) considers the following outcomes critical:

- Young people must examine and clarify their values about and attitudes toward the environment, including the natural world and the human-built environment;
- Build skills to address environmental and social issues; and
- Undertake behaviors that help protect the environment and work toward a more sustainable future.⁸

I agree with these stances by the United Nations and NAAEE, but further argue that the literature needed to insure proper

outcomes, in association with these objectives, is at our very fingertips.

As librarians serving youth patrons, we must do all that is necessary to place these books in the hands of our nation's youth. We must discover, collect, use, and share these texts, for as Mickenberg and Nel argue, "Children's literature...has been and continues to be an important vehicle for ideas that... promote environmental stewardship..."⁹ Appropriately, let us consider several "key" means of completing such crucial tasks and roles.

Fostering Awareness

First, which source tools assist librarians in finding and accessing quality, environmentally-based children's literature (as a means of encouraging sustainable life practices)?

Since 2005, The Nature Generation has sponsored an annual Green Earth Book Award—the nation's first environmental stewardship award for children and young adult books. Themes found in the 2017 winners include the devastating effects of coal mining, sea turtle rescue, and seed preservation. A self-explanatory winner in 2018 included the young adult nonfiction title *Geoengineering Earth's Climate: Resetting the Thermostat* by Jennifer Swanson. Librarian Pam Spencer Holley, author of the ALA's *Quick and Popular Reads for Teens*, said, "One of the beauties of the Earth Book Award is that it recognizes an author who is writing about a topic that is of vital importance to our Earth, yet, it's an area that, until recently, received little attention."¹⁰

Other avenues for finding quality children's literature promoting environmental stewardship amongst our youth include:

- The National Council of Teachers of English (NCTE) Orbis Pictus Award for Outstanding Nonfiction for Children, awarded since 1989. The 2018 winner was *Grand Canyon* by Jason Chin and a 2018 recommended book was *If Sharks Disappeared* by Lily Williams.
- The American Library Association's Robert F. Sibert Informational Book Medal. First presented in 2001, this award honors books written and illustrated to present, organize, and interpret documentable, factual material. While the award encompasses all nonfiction, many years the books selected speak to environmental concerns, as well as social sustainability, such as the 2017 winner authored by Congressman John Lewis, *March, Book Three*, winner of the National Book Award. As Lewis said, the purpose of the book is to encourage young people to "...stand up, to speak out and to find a way to get in the way when they see something that is not right, not fair, not just."¹¹
- Another award that asks children and young adult readers to consider planetary environmental and social justice issues is the Jane Addams Children's Book Award, sponsored by The

Jane Addams Peace Association (founded following WWII to end and avoid wars and establish lasting peace). Presented since 1953, these acclaimed books may be searched by the following nature/climate-bent subjects: access to water, ecological solutions, impacts of poverty, natural disasters, non-violent activism, science or technology as a tool for social change, voting rights, and young people as activists.

- The acclaimed Scientists in the Field series introduces children and young adults to “adventure with a purpose,” such purpose being the preservation of endangered species, rehabilitating ecosystems, and introducing unsustainable human practices. Books in the series, such as *The Tarantula Scientist* and *Tracking Trash* have consistently earned distinguished honors, such as the Sibert and the Boston Globe-Horn Book nonfiction award. *Tracking Trash*, in fact, delves into the environmental impact of “human-made cargo,” as it spills into our oceans.
- To address social justice issues in greater depth, utilize those titles found at the website www.socialjusticebooks.org/booklists/. Providing more than fifty listings of social justice books for children and young adults, themes directly tied to environmental issues include Changemakers, Economic Class, Environment, Librarian#Resists, Labor, Organizing, and Voting Rights.

Delivery and Programming

Second, how might we utilize these works of children’s literature to their greatest effect in our nation’s children’s and young adult services libraries, also encouraging collaborative efforts with nearby school libraries?

Such works will raise awareness of past and present practices that harm our planet and its creatures; allow children to stand in awe of Earth’s natural beauty, while also understanding its fragile nature; offer potential solutions which will be instituted by these readers, budding environmentalists all; and engage youth by the means of creative narratives that allow the reader to vicariously join adventures as broad-ranging as a trip to the Amazon jungle or the forests of Puerto Rico.

For example, in Susan Roth’s 2014 Sibert award-winning title *Parrots over Puerto Rico*, readers learn that, prior to colonialism, millions of Puerto Rico’s signature green parrots inhabited El Yunque National Forest, yet, due to unsustainable practices, such as extensive hunting, trapping, and logging, by 1967, only twenty-four such parrots remained in the wilds of this territory.¹²

Readers also discern how Europeans mistakenly brought invasive species to the forests, inhibiting the well-being of the green parrot: black rats, honeybees, and predators such as the pearly eyed thrasher. Children realize the practical and aesthetic consequences of this near-extinction: the opportunity to witness the beauty of the parrot itself, the loss of its song

Table 1. Cause and Effect Timeline (*Parrots over Puerto Rico*)

Initial human involvement – Habitat destroyed to rebuild homes after hurricanes, used for food, kept as pets	Hunters and Planters from South America arrive – clearing forests for agriculture
1 million parrots instead of millions	Numbers of green parrots drop into the hundreds of thousands

within the forest, yet, most importantly, the loss of seedlings to preserve the forest floor (parrots spread seeds when culling fruit), and the resulting predator/prey imbalance.

On the positive engagement side of the coin, however, readers can imagine trekking into the El Yunque and Rio Abajo National Forests, to join scientists gathering eggs and building nesting boxes, biologists in the coalition-led US/Puerto Rico Parrot Recovery Program.

Inquiring youth also learn how such recovery programs operate, in essence “watching” scientists provide safe-haven habitats, both in the wild and in captivity; return parrots to the forest upon rehabilitation; and create aviaries in alternative locales within the Commonwealth of Puerto Rico.

Utilizing this text, a responsive activity might include asking emerging readers to create a timeline in which they document the reduction in numbers of Puerto Rico’s green parrots in relation to the introduction of human activity, events, and migration patterns, an example provided in table 1.

And a most recent and pertinent point of discussion associated with this title involves a recent disastrous natural occurrence. Due to the devastating effects of Hurricane Maria (2017), parrot recovery efforts underwent a drastic setback and a great loss in the still fragile green parrot population. Read <https://www.atlasobscura.com/articles/did-puerto-rico-parrots-survive-hurricane> and ask young patrons to complete a similar chart, as above, in association with just this *one* natural disaster. Young stewards will, by association, understand the fragility of any species as they reflect upon the loss of Puerto Rican green parrots as the result of a major hurricane.

Next, as a group, compare and contrast the status of parrot species worldwide, raising awareness as to endangered parrot types, the consequences to associated ecosystems, and the practices that detrimentally affect healthy populations. As a guide, use <https://www.parrotfunzone.com/explore-parrots/parrots-in-the-wild/endangered-parrots>.

As a second “adventure,” allow higher elementary patrons to join author and true-to-life National Oceanic and Atmospheric Administration scientist Sophie Webb on an expedition at sea in *Far from Shore: Chronicles of an Open Ocean Voyage*, a 2012 Orbis Pictus recommended title.

Webb’s text informs young readers that shorebirds (which Webb is responsible for monitoring) serve as a “canary in a coalmine,” warning scientists as to potential threats to life

Table 2. Think-Tac-Toe Example (*Far from Shore*)

Based upon the map on page 14, and the text, describe what makes the ecosystem exciting	Explain why the 100m zone depicted on the graph at page 13 is an ideal location for mammal life	Based upon the graph at page 25, and the text, write your opinion as to why the dolphin population is not increasing
Determine why scientists need to track “zones of probability” as found on the graph at page 46?	Based upon all the drawings of marine mammals in the book, choose the one you would most like to encounter and explain why	Write a letter to the chief NOAA scientist telling him which part of the ship you would like to work in, based upon the text and the drawing on page 9
Based upon the text, and pages 53 and 71, explain how a biopsy of a marine animal occurs on open seas	Find what borders (countries) dolphins most like to swim near based upon the graph at page 58	Based upon all the drawings of sea and shorebirds in the book, choose the one you would most like to encounter and explain why

forms along our ocean’s shorelines and within the ocean itself. Today’s youth will be introduced to the catalyst for the threats as well—plastic and plastic bags, oil pollution, entanglement in fish lines, cigarette lighters and butts, combs, and balloons. A portrayal of the trauma and stress marine life endures as a result of catch-and-release practices is narrated, too.

Reader engagement is fostered by Webb’s accounting of her four-month adventure over the tropical Pacific Ocean. Young adventurers will imagine riding the waves upon a 22-foot boat, complete with marine mammal and shorebird scientists and oceanographers. They will encounter spotted and spinner dolphins (whose populations are decreasing), and the least known and most mysterious of marine mammals, the Curvier’s whale. Unique scientific methods will also be envisioned, to include obtaining biopsies of dolphin tissue with crossbows.

This informational text is perfect for practice in writing interpretive narratives rich in effective technique, descriptive details, and step-by-step sequencing. For example, use the charts, graphs, diagrams, timelines, and animations in *Far from Shore* to interpret data clearly and concisely, choosing three such incidences within the text to develop greater understanding.

The Think-Tac-Toe example in table 2 provides ready-made choices, and such an intriguing reader response tool may be compiled for any and all quality nature-based works of children’s literature, even shared in public/school library collaborative efforts. Such collaborative associations will no doubt improve if these tools are created and shared county-wide via youth programming outreach. (See table 2.)

Or use the video *The Majestic Plastic Bag* to discuss the literary terms sarcasm and/or irony as these concepts are presented in *Far from Shore*.

A final example of an award-winning text lending itself to the objective of creating young environmental stewards, by means of collaborative planning and programming, is Phillip Hoose’s *Moonbird: A Year on the Wind with the Great Survivor, B95*. In this 2013 Sibert honor title, patrons develop an intimate connection with B95, a red knot shore bird tagged for scientific observation in 1995, recaptured at least three times, and spotted, miraculously, again, in 2014. Readers marvel at

this scientific miracle in the face of data revealing that 80 percent of red knot shorebirds disappeared during Moonbird’s lifetime, all as a result of food sources being disturbed and disrupted by human activity (for example, along the shoreline of Delaware Bay, rubber tire pollution was destroying the red knot’s food source).

The adventure encountered by the young reader is none other than Moonbird’s annual flight pattern. The shorebird flies from the Rio Grande, to Brazil, to Delaware, to the Arctic, to Quebec, back to northern Brazil, and to South America’s southernmost tip, Tierra del Fuego (Argentina). Patrons become friends with the avian world’s consummate athlete, a bird that tackles an eighteen-thousand-mile-circuit each and every year.

Learners can draw evidence from the text to support analysis, reflection, and research, explaining the relationships among historical, scientific, or technical events, ideas, or concepts. A RAFT strategy (Role, Audience, Format, Topic) allows young scientists to choose writing queries conducive to such higher-order thinking tasks, fitting perfectly into programming themes or partnership efforts. See table 3 for an example.

The responsive activity suggested above will certainly help in the development of young people who examine and clarify values about, and attitudes toward, the natural environment, all the while acquiring skills leading to the resolution of ecological issues. For, as Mickenberg and Nel state, carefully chosen children’s literature texts and related service-based activities truly “explain to children the true consequences of pollution, resource depletion, decreasing biodiversity, unrestricted development, and lost animal habitats.”¹³

Reading Promotion

John Dewey stated that children need books that present models of “action that gets to the heart of the matter.”¹⁴ Reading promotion activities, field trips, and associated events deliver such opportunities for action modeling. And, as Kudryavtsev relates: “many education programs combine experiential and instructional approaches, which we think is an effective strategy to nurture place meaning and strengthen place attachment,” such attachment contributing to “pro-environmental behaviors.”¹⁵

Table 3. R.A.F.T. Example (*Moonbird*)

Role	Audience	Format	Topic
Student	Author	Letter	Explain what adventure most impressed you – whether of the scientist or the moonbird – and why
B95	Student	Telegrams	Write telegrams from B95 explaining the conditions upon landing at his stopping points
Student	Friend	Friendly account	Write an explanation of B95’s journey to a friend unaware of this amazing athlete
Student	Tri-athlete	Letter	Write a letter to an Olympian tri-athlete explaining why Moonbird is an inspiration
Scientist	Public official	Letter	Write a detailed letter as to why the Moonbird’s habitat must be protected by law
Student	Parents	Memo	Write your parents a memo as to why it is important for the family to take walks and make observations of birds within your community
Self	Self	Diary entry	Write down your thoughts as to what action you wish to take to support and protect B95 and his kin
Student	Scientist	Observation	Write a detailed observation as to a scientific career that fits your psychological “habitat” or learning style and interests

Thus, reading promotion plans must be instituted on a wide-ranging basis, for “attention to the sense of place literature may enrich an already vibrant place-informed scholarship in environmental education.”¹⁶

First, consider Sy Montgomery’s *Kakapo Rescue: Saving the World’s Strangest Parrot*, the 2011 Sibert Medal-winner. In this text, children are introduced to New Zealand’s kakapo parrot, a flightless and night active bird whose feathers smell like honey. If left to natural causes, kakapos can live from seventy to one hundred years. Readers learn that in 1995, only fifty-one such birds remained in the wild, though their biological constitution may someday help humanity understand how to fight “bad” bacteria (their honey-smelling wings could hold the secret to “good” bacteria, serving to ward-off life-threatening bacteria).

Discerning a “sense of place” via descriptions of Codfish Island off the coast of New Zealand, children read about a differing topography, ecosystem, and geological locale. But they also are introduced to a culture completely different than their own. Based in these readings, librarians may plan a programming activity in which the national symbol of New Zealand, the kiwi bird, is highlighted along with the kakapo. As patrons create kiwi or kakapo crafts, they may also be introduced to the reasons New Zealanders are referred to as “kiwis” (see <https://theculturetrip.com/pacific/new-zealand/articles/why-are-new-zealanders-called-kiwis/#>); the similar fate of the kiwi (population also dwindling—<http://nzconservationtrust.org.nz/Kiwi+Projects.html>); and the respectful (and therefore sustainable) manner in which indigenous cultures in New Zealand have been embraced by the national government.¹⁷

For young adult readers, share yet another work written by Phillip Hoose, *The Race to Save the Lord God Bird*. Relaying the story of the now extinct red-billed woodpecker, nicknamed the Lord God Bird for the exclamation observers used upon viewing the magnificent avian, Hoose presents a story of what *not* to do when a species is faced with possible extinction. He explains how unsustainable hunting practices, habitat destruction, and corporate greed all contributed to the demise of this incredible, myth-inducing woodpecker,

whose territory once spanned twenty-four million acres (from Memphis to Little Rock) and whose appearance and presence was striking: a lightning-bolt-shaped, white streak down the back, white patches on the wings, and a call sounding like a tin horn.

Certainly a reading promotion event could be planned for an entire community in which a local Congressional representative is invited to a youth services event for the purpose of discussing conservation efforts on a local, national, and global scale, also delving into how best, legislatively and via community organization efforts, young people may take action to prevent additional losses of this magnitude and encourage “place-based scholarship.”

Last, but not least, allow young readers a “growling” good time as they join an expedition, within the pages of Sy Montgomery’s *Saving the Ghost of the Mountain*, to the Himalayan Highlands in search of the endangered snow leopard. Unfortunately, centuries-long human cultural and food-based practices have contributed to the demise of the snow leopard, to include a belief the snow leopard’s bones are medicinal in nature, the domestication, herding, and shepherding of goats and sheep (which prevents the proliferation of the wild goat, the ibex, the snow leopard’s major food source), and the desirability of the snow leopard’s coat (fur coat production).

A quintessential field trip might be arranged in association with a community read of this quality children’s nonfiction material, such as a trip to a nearby reputable zoo that houses big cats. Ask zookeepers to address the current status of snow leopards and big cats in their natural habitats, also addressing why most such animals need to remain in the wild (not in the zoo) as a benefit to natural habitats.

Or, as a book discussion group, collect pennies and adopt a snow leopard to assist the efforts of the World Wildlife Federation’s Snow Leopard Trust.¹⁸

Indeed, these summarized and highlighted literary works, conducive to reading promotion efforts, help children’s and youth services librarians instill a “sense of place in

environmental education that will draw not only on environmental psychology but also on critical theory, anthropology, cultural geography, and other frameworks and studies.”¹⁹

Based in scientific evidence that details the current unfortunate state of our planet’s health, and/or nature’s current inability to sustain mammal, marine, plant, avian, invertebrate, and reptilian life in a healthy manner, today’s youth require an immersion into works of quality children’s literature that promote and encourage environmental empathy. Resulting environmental education service delivery, as well as reading promotion responses/programming/collaborative efforts based in these materials, will assist in raising a

generation aware of the environmental challenges that must be faced, understood, internalized, and resolved, for the continuation and preservation of not only wildlife, marine life, and birds of the air, but also for the well-being of our own species.

Such efforts should concentrate on engaging readers in vicarious scientific adventures and reader response activities, all the while building an intellectual skill base amongst twenty-first-century learners responsive to the resolution of complex environmental problems, and creating within the next generation a “sense of place” conducive to empathetic responses to the wonders of life, known collectively as “nature.” &

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