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The Half-Earth Educator Ambassador Teaching Tools

Lesson Plans that Inspire Next-Generation Environmental Stewardship



E.O. Wilson regarded research and education as cornerstones for a new way of understanding the beautiful intricacy of our planet and how we can best steward its enduring stability.

The E.O. Wilson Biodiversity Foundation's Half-Earth Educator Ambassadors program supports educators who wish to help students better understand and protect global biodiversity. The Half-Earth Educator Ambassador Teaching Tools are based on the science of the Half-Earth Project Map, which uses thousands of data points to inform what network of places should be prioritized for conservation so that no species is left behind. Through biodiversity-focused educational materials aligned to state and Next Generation Science Standards (NGSS), the teaching tools connect students with the natural world and create transformative moments that help them imagine how they can make a difference in protecting the Living Earth.

What Half-Earth Educator Ambassador Teaching Tools are available?

There are a variety of lesson plans, learning activities, and resource materials, including design challenges, multi-day activities, and short projects, utilizing species images and data, video discussions, and more. Topics include classroom-friendly GIS mapping; explorations of charismatic species, like hummingbirds and dragonflies; and concept-building activities to understand key biodiversity concepts such as species range, species richness, and species rarity. The teaching tools portal includes clear lesson objectives and downloadable classroom materials for diverse learners, including Spanish Language content.

What's the Impact of Half-Earth Educator Ambassador Teaching Tools?

Our lesson plans connect the complexity and wonder of biodiversity with the demands and realities of K-12 and community college curricula. Lesson materials are being used in all 50 states, with over 16,000 downloads in 2025 alone.

Teachers regularly share stories of students engaging deeply: asking questions about local creatures, imagining themselves as stewards of their environments, and exploring science careers once thought out of reach. Our lesson plans are designed to be more than documents: they are catalysts for curiosity and care.

Half-Earth Educator Ambassador Teaching Tools

Our teaching tools are aligned with both state standards and Next Generation Science Standards and are created by a team of expert teachers and E.O. Wilson Biodiversity Foundation staff. Each lesson is crafted to foster an understanding of biodiversity through locally relevant, engaging topics, and we strive to ensure our content is accessible to all learners.

- In-demand lesson plans include topics such as "Bio-acoustics, Bats, and Biodiversity" and "Listening to the Oceans: Soundscapes of Coral Reefs."
- "Half-Earth in U.S. States," the most downloaded resource, helps students explore the biodiversity of their own communities.
- "Using the Half-Earth Project Map" supports educators seeking to build data literacy, equipping students to analyze ecological data and understand large-scale conservation efforts.

What's a Half-Earth Project Map Design Challenge?

Using design challenges, students become conservation decision-makers, using the same professional data tools as scientists to propose evidence-based conservation strategies for their state or region. Using data from the Half-Earth Project Map and other provided resources, students examine biodiversity patterns and key species that make specific places worth protecting.

Design Challenge at a Glance

- **Explore:** Teachers select a geographic area and provide students with visual, sortable species data cards featuring photos; range maps; species protection scores; and endemism percentages.
- **Analyze:** Students examine existing protected areas alongside human land use (agriculture, development, energy, transportation).
- **Propose:** Students identify high-biodiversity areas with minimal human impact, then compare their solutions against professional biodiversity maps from the Half-Earth Project Map.
- **Defend:** Through iterative design and scientific discourse, students refine and justify their conservation proposals.

Why Teachers Love It

- ✔ **Customizable** – Adaptable to any geographic scale or taxonomic group
- ✔ **Data Literacy** – Students trace links to original observations and studies
- ✔ **Critical Thinking** – Human impact layers spark evidence-based discussions
- ✔ **Actionable** – Shows students how citizen science informs real conservation
- ✔ **Interdisciplinary** – Integrates math, science, social studies, and literacy
- ✔ **Student Agency** – Learners make authentic decisions using professional tools
- ✔ **NGSS Aligned** – Three-dimensional lesson adaptable from grade 3 to 12.



By visualizing species distributions and the importance of biodiversity, the map inspires collective action at all levels. In Virginia, for example, Half-Earth Educator Ambassadors led students in using real biodiversity data to plan for a new wildlife preserve.

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The E.O. Wilson Biodiversity Foundation's mission is to reimagine the way we care for our planet. The Foundation's major initiative, the Half-Earth Project, is working to inspire informed collective action to save the biosphere.
Visit www.eowilsonfoundation.org to learn more.

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