



# **Ecological Footprint Workshop**

## **Teacher's Manual**



**Redefining Progress  
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## TRAINING OBJECTIVES

Upon completion of the workshop(s), teachers and trainers will be able to:

- Understand the meaning of the Ecological Footprint and how it can be used as a teaching tool
- Identify and explain strategies for integrating the Ecological Footprint concept into high school social studies/history classrooms
- Correlate the Ecological Footprint to CA State Standards
- Facilitate discussions on the Ecological Footprint as related to high school social studies

Trainers will have the knowledge, skills, and resources to:

- Conduct a workshop that enables high school social studies teachers to complete the aforementioned objectives



## Main Concepts and Outcomes of the Ecological Footprint Teacher Training

### Concepts Covered in Part I: Ecological Footprint (EF) Content Knowledge:

- A. Human needs are dependent on natural resources, which are the source for all resources and serve as sinks for all wastes.
1. Humans depend on natural resources to meet their needs. The economy (human activity) is a subset of the ecosystem.
  2. The EF is a method for measuring our impact on the earth's resources. The EF quiz measures the environmental impact of an individual's consumption and waste production.
- B. The cumulative impact of humanity is overshooting the earth's biocapacity.
1. We use resources from around the world to meet our needs; likewise, the pollution and wastes we produce travel. The resources we use are classified as renewable or non-renewable.
  2. The cumulative global footprint is overshooting the earth's biocapacity. Cumulative impact, and the degree of overshoot, is a factor of population, affluence, and technology.
  3. Sustainability is meeting the needs of the current generation without compromising the needs of future generations. It means using renewable resources within their rates of regeneration, and developing renewable substitutes for non-renewables.
  4. The average per capita EF varies by country/region and standard of living.
  5. Regions with a large per capita footprint (North America) have a smaller share of the global population. Regions with low per capita footprints (ex: China) generally account for a larger share of the global population.
  6. The variable of population creates differences between **per capita** and **regional** footprints within a geographic location,
- C. The EF (individually and cumulatively) is influenced by governmental and economic policies (systemic and structural factors) and not just individual actions.
1. The food footprint, for example, is the result of resource-intensive **system** of production and distribution. This system is not inevitable, but is the product of past choices, social forces, and special interests.
  2. Having an impact on the footprint, then, will require us to consider policies at the local, national, and global levels in addition to taking action as individual consumers.

## **Outcomes for Part II: Curriculum Integration**

A. Teachers will be able to articulate the EF's relevance to their standards.

1. Teachers will identify how the EF provides opportunities to:

- compare and contrast ways of living across history;
- analyze the development of the economic, political, and social systems and structures that shape ways of living and the larger relationship between humans and the environment;
- meet concepts and skills in their specific California state standards; and
- provide students with solutions for reducing individual and global EFs.

B. Teachers will create a plan to integrate the EF into their teaching.

# Summary Sheet: Redefining Progress Ecological Footprint Proposal to the Environmental Protection Agency

“The Shadow We Cast:” Strengthening Environmental Education with the Ecological Footprint

## 1) Project Summary

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a) Organizations: **Redefining Progress (RP)** is a non-profit organization that works with a broad array of partners to shift the economy and public policy towards sustainability. As the international home of Ecological Footprint (Footprint) analysis, the world’s most popular measure of sustainability, we are frequently asked for materials and training to support educational use of the Footprint. Our **partners** in the project are **Creative Change Educational Solutions**, a non-profit organization providing curricula, training, and programs on sustainable development and ecological economics; and the **California Geographic Alliance**, a network of 5,500 educators that conducts workshops throughout the state.

b) Summary Statement: The Ecological Footprint is a scientifically reviewed framework for problem solving and critical thinking skills to help students understand cumulative environmental impacts. It is also a powerful tool for students to link the information they learn in the classroom to community issues and personal choices. This project is the third phase of RP’s education work. In the first phase, we researched current use of the Footprint as an educational tool with program development funds from the Packard Foundation. We found that many teachers currently use Footprint analysis in the classroom, but some important gaps in existing materials have hindered wider use. The second phase (to be completed by October 2004) is a partnership with Earth Day Network to develop and test lesson plans and other educational materials that fill these gaps. In this project, the third phase, RP will provide training for over 100 California teachers in grades 7-12 in the use of the newly developed learning materials. The project’s **goal** is to help teachers *develop teaching skills and knowledge* to integrate into their classroom instruction both the scientific and social aspects of humanity’s use of renewable resources, using the Footprint concept.

Our **objectives** are to: 1) Design full-day teacher training modules and guides for teacher-trainers to run workshops that give participating educators the background and skills they need to utilize the lesson plans and multi-media applications that will result from our curriculum-development partnership with EarthDay Network; 2) Prepare four teacher-educators from partner organizations to deliver teacher training; 3) Hold four teacher workshops around the state of California, teaching at least 100 geography and other social studies participant educators the skills they need to use and integrate the Footprint into their teaching, reaching at least 5,000 students. Participant educators will identify opportunities to use their new skills and develop ideas for linking Footprint instruction to community activities within schools and in their communities; 4) Support participant educators via an online community, with opportunities to exchange ideas and experiences with other educators; 5) Evaluate feedback from participant educators on the effectiveness of the module in improving their knowledge of the Footprint and skill levels in relating concepts to their current teaching topics. Use matching funds to update training materials based on their feedback; and 6) Disseminate Footprint-based lesson plans, supporting materials, and teacher training materials at a national education conference, through the Internet, and through partners’ existing networks.

c) Educational Priority: We will focus on improving participant educators’ knowledge and skills (EPA Priority #5) in teaching problem solving and inquiry based course work, using Footprint analysis as a tool. Participant educators will receive the materials, training, and support to successfully integrate Footprint analysis into lesson plans that pique students’ interests while challenging and improving their skills as problem solvers and critical thinkers.

d) Delivery Method: Lesson plans and other materials will be delivered to participant educators through professional development at workshops and a national conference. RP and partner organizations will also disseminate the materials to their networks and through their Internet sites.

e) Audience: Our primary audience is at least 100 geography and social studies teachers who reach students in the 7<sup>th</sup> to 12<sup>th</sup> grades. Inclusion in these subject areas will help speed the integration of environmental education into all fields of study, beyond the sciences. Each teacher will reach at least 50 students in their first year for a total of 5,000 students of diverse backgrounds. More students will benefit as teachers reach out to other teachers and continue to use their lesson plans in future years.