

## Connecting College Students with K-8 Students to Create Sustainable Schools Prisca Moore

### Abstract

This article describes the Australian Sustainable Schools Initiative (AUSSI) and its impact on schools in Victoria, Australia. The AUSSI professional development leads to creating school-wide sustainable communities involving teachers, students, parents, and community members. Dr. Prisca Moore, Associate Professor at Carthage College, brings the lessons she learned from working with the Centre for Education and Research in Environmental Strategies (CERES) and the AUSSI back to her partnerships with Professional Development Schools for Carthage students learning to be science teachers.

“IF EVERYONE LIVED LIKE ME, WE WOULD NEED 11.6 PLANETS!” said a Carthage College student in her Science Methods course after calculating her Ecological Footprint. “Keep reading,” called out another student as she read aloud, “the website says “IN COMPARISON, THE AVERAGE ECOLOGICAL FOOTPRINT IN YOUR COUNTRY IS 24 ACRES PER PERSON. WORLDWIDE, THERE EXISTS ONLY **4.5 BIOLOGICALLY PRODUCTIVE ACRES PER PERSON.**” Wow, we’re taking up too much space!” This simple activity of calculating individual

#### Figure 1: Calculating Eco-Footprints

*How well are we doing? One way to answer that question is for individuals and schools to calculate their ecological footprint. The Ecological Footprint tracks how much individuals, cities, regions, nations or humanity as a whole consume and compares this amount to the resources nature can provide. More precisely, it shows how much biologically productive land and water area a given population occupies to produce all the resources it consumes and to absorb its waste. Eco-footprint helps us to understand that the impact of the human population on the planet is becoming increasingly large. Our eco-footprint also helps us understand that a small proportion of the population is consuming a large amount of the resources with approximately 20% of the global population consumes 80% of resources. The eco-footprint helps us to calculate the land required support our lifestyle and compares it to the capacity of the planet.*

*From [http://sustainability.ceres.org.au/files/eff\\_footprint.htm](http://sustainability.ceres.org.au/files/eff_footprint.htm)*

eco-footprints served as the beginning for education students in Dr. Prisca Moore’s Science Methods course at Carthage College to participate in ongoing Professional Development School (PDS) partnerships with Racine Montessori School (RMS) and St. Mary’s Catholic School in Wisconsin. Calculating eco-footprints is the first step for the teachers, parents and students participating in the Australian Sustainable Schools Initiative (AUSSI). (More information on Eco-Footprints from the Earth day Network and Redefining Progress website is presented in Figure 1). While on sabbatical in Australia, Dr. Moore, Associate Professor of Education at Carthage College, had the opportunity to work with Sustainable School Facilitators (SSFs) from the Centre for Education and Research for Environmental Strategies (CERES) in Melbourne, Victoria. She was so impressed by the AUSSI professional development and the school-wide changes which evolved from a school’s participation in the AUSSI that she was determined to bring the lessons learned back to her partnership with Professional Development Schools for Carthage students learning to be science teachers.

In a “Sustainable School”, the entire faculty agreed to engage in long-term professional development as they change their school into a model of ecological sustainable practice. There are 5 modules or resources themes in the SSI. All participating schools began the process of becoming a Sustainable School by completing the mandatory core module: *Schools becoming Sustainable*. This core module was designed to assist the schools to set up a plan and the curriculum to suit local needs. The additional four modules completed by each school address major issues associated with education for sustainability: (1) *Waste Wise Schools* (water and litter mineralization and recycling); (2) *Energy Wise Schools* (energy conservation, renewable energy and reduction in greenhouse gas emissions); (3) *Water Ways for Schools* (water conservation); and (4) *Biodiversity and School Grounds* (increasing biodiversity in and improving the appearance of schools). School faculty members were given the freedom to choose the order they wished to work through the modules as well as the time frame. Most schools worked through the five modules in approximately four years. There were no pre-determined sequence of projects or activities but rather each school set its own goals and developed its own evaluation plan. Typically schools set their own measurable outcomes with the aim of reaching the following goals:

- Reduce waste to landfill by 50%
- Reduce Litter in the schoolyard by 50%
- Reduce water use in the school by 20%
- Reduce energy use in the school by 15%
- Expand the area of gardens by 25%
- Increase biodiversity in the school ground by 50%
- Decrease greenhouse gas emissions from the school by 15%

The SSI did not “re-invent” the wheel by attempting to develop its own curriculum for each module but rather built on existing curricula utilizing resources from the larger community including organizations such as EcoRecycle Victoria, Sustainable Energy Authority Victoria, EPA, Environment Australia, and Greening Australia. A list of Australian instructional resources for projects related to all four areas of sustainability education can be found on **Figure 2**.

---

### ***Figure 2: Australian Resource Websites***

#### ***Australian Sustainability Resources:***

CERES Sustainability Hub at <http://sustainability.ceres.org.au/index.ph>

Gould League at <http://www.gould.edu.au/>

Environment Portal at <http://www.environment.gov.au/>

Ollie’s World. <http://www.ollierecycles.com/index.html>

#### ***Ecological Footprint Websites***

Ecological Footprint Quiz from Redefining Progress at <http://www.myfootprint.org/>

Planet Slayer. <http://www.abc.net.au/science/planetslayer/>

Eco-Footprint Calculator: School at <http://www.epa.vic.gov.au/projects/eco-footprint/schools.asp>

Bobbie Bigfoot at <http://www.kidsfootprint.org/BobbieIndex.html>

---

## **Taking the AUSSI from Down Under to Wisconsin**

In reviewing the results of the 2004 Evaluation Report, the role of the Sustainable School Facilitators (SSFs) was critical particularly in the initial phases of collecting and analyzing baseline data and creating action plans. Additionally the SSFs played a key role in connecting the schools with curricular resources from government and organizations. Thus, Dr. Moore knew that she would have to prepare herself and her college students to serve as facilitators to her Professional Development School partners to help them develop their own knowledge about sustainable practices and incorporate the study of sustainability into their ongoing science curriculum.

Applying these findings to integrate AUSSI in Carthage's PDS Partnerships provided exciting new learning opportunities for cooperating teachers, college students, and elementary and middle schools students. Their commitment to work towards becoming Sustainable Schools provided a unique focus that brought together the education students and the experienced teachers as they all worked together to form Sustainability Teaching Teams to create and nurture sustainable school communities.

This new "Sustainability" focus required building background knowledge for all team members with opportunities for Dr. Moore and her students to help connect the cooperating teachers to community agencies and experts who could act as guest speakers and provide advice and curricular materials. Dr. Moore brought in experts from the Environmental Science program at Carthage and located professional development opportunities for herself and the lead teachers at the Professional Development Schools with the Earth Partnership for Schools Program and the Water Action Volunteers program. The Carthage students spent a great deal of time locating and evaluating resources and curricular materials on-line and within the community as class projects which they then to share with their cooperating teachers (see Figure x for US and Wisconsin Websites for School Audits and Instructional Materials). Then Dr. Moore, the Carthage students, and cooperating teachers all participate planning how to engage the students in gathering, analyzing, and reporting data about the use of resources in the school and an examination of the school grounds. This data collection has helped the schools to identify their successes in developing conservation habits and pinpoint areas of need. Based on these results the schools determined which resource theme (energy, waste, water, or biodiversity) they wished to focus on with waste and the greening of and improving biodiversity on school grounds and communities becoming the instructional priorities.

In the past year, Carthage students have worked in Sustainability Teams with cooperating teachers to implement school wide projects and make noticeable improvements in their schools. At Racine Montessori School (RMS), Sustainability Team teaching projects have included initiating a school-wide "Waste-Free Wednesday" lunch program and with middle school students teaching the elementary school students about waste reduction and composting by working with them to create worm bins to compost food scraps. Now each classroom in the school has its own food bin beside the recycling bins! Additionally, students and faculty from the Carthage Environmental Science program worked with RMS students to create a Native Wisconsin Prairie Maze on the school grounds. At St. Mary's Catholic School, Carthage students have worked in Sustainability Teams to guide the middle school students in developing a recycling program for their school. The middle school students scripted and create videos full of creative skits to teach key issues about the need for recycling for sustainable communities which were given to each elementary classroom to kick off the recycling program.

These projects represent just the initial year of applying the practices of AUSSI to create a new and powerful model for colleges and local agencies to collaborate with schools focusing on student-lead initiatives and a whole-school commitment to creating a sustainable community. In the coming years, Carthage students will continue working with elementary and middle school students each year to

develop their environmental literacy and their sense of stewardship to their community and then apply what they learned from these teaching experiences as they move into new schools and districts. “Imagine ... a generation of innovative and motivated young people, who instinctively think and act sustainably.” (Enviroschools Foundation, <http://www.enviroschools.org.nz/> ). Through this partnership, imagination is becoming reality.