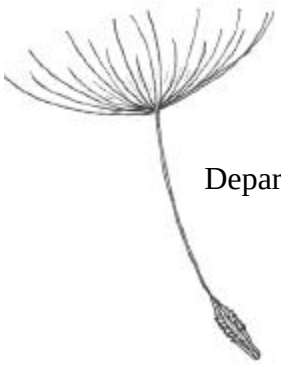

Cyberweeds: The Virtual Dandelion

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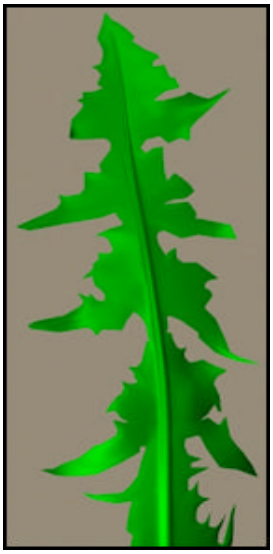
http://www.ppws.vt.edu/~sforza/cyberweeds.html

The Virtual Dandelion is a teaching application for the visualization of several key aspects of weed biology using the CAVE[tm] technology at Virginia Tech and VRML for the web. Dandelion (*Taraxacum officinale*) was chosen for this project because of its widespread recognition as a common weed in urban landscapes, its unique structural form, and its specialized adaptations to an intensively managed environment.



The CAVE[tm] (**C**ave **A**utomated **V**irtual **E**nvironment) provides an immersive environment for visualization, which may enhance a viewer's perception and retention of the information presented. This may be particularly important in teaching scientific or technical material containing complex concepts and a highly specialized vocabulary. In addition to being immersive, the CAVE is interactive. An electromagnetic sensor updates the scene according to the position and movements of the user. The user interacts with the virtual environment using various control devices including a wand controller, gloves, and LCD stereo glasses.

VRML, pronounced either "vee-are-em-ell" or "VER-mul", is an abbreviation for Virtual Reality Modeling Language. VRML is the standard for interactive 3D objects on the internet. VRML worlds are viewed with a VRML browser, which is built into most of the standard internet browsers or it can be added as a plug-in for older browsers. A detailed description of VRML can be found at the VRML Repository, http://www.sdsc.edu/vrml/.

The material covered by this teaching application is intended to serve as a lecture supplement on weed biology and will include the following topics:

- Natural history of the dandelion
- General morphology, growth, and development
- The origin and evolution of the weedy nature of dandelion
- Genetic aspects of weed evolution using the dandelion as an example of apomictic reproduction and a "general purpose genotype"
- Adaptations to frequently disturbed environments
- Management practices

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