ABSTRACT

Native plants have been cultivated and utilized for thousands of years. From medicine and food to shelter and clothing, native plants have played an integral role in forming the indigenous religions, languages and cultures of Southern California. In recent years there has been a revival of indigenous culture with a focus on using native plants to teach about the languages and traditions of native people. The "Mapping Native Plants" application developed as part of this thesis work is a novel iPhone application that puts self-learning tools into the hands of the general public. Using the theory of Volunteered Geographic Information (VGI) this application will give the power of the map to the people and not just to scientists and other specialists. Users can geotag the location of native plants, learn the plants' native names, and read about how native plants have been used for thousands of years. Geotagging involves the user creating a geographic point in the map interface of the application that will represent the native plant of their choice. An enterprise geodatabase was created using Esri ArcGIS 10.1 for Server to store the native plant data and allow multiple users to create and edit their own geotags of native plants. The geographic data embedded in the application is a product of Esri ArcGIS Online's web map and feature services so that anyone can view the data and reference it in their own ArcMap projects. Results from usability, performance and laboratory testing show that the application is understandable, easy to use in the field, effectively developed to run at optimal speeds on the iPhone, and that all functions and tools work without error. The application is more than just a map that will show the location of native plants, it is a tool of self-education that will open a new perspective on the environment in the eyes of users and allow them to access a wealth of indigenous plant knowledge that has evolved and persisted for millennia.