



Briefing Statement

Date: May 14, 2010

Title: Smart Phone Application (SPA) for Visitor Education and Citizen Science

Issue: Development of a software application for free download to mobile smart phone devices with the intent to provide education and citizen science data gathering for specific species.

Background/Discussion

Citizen scientists have long played an important role in biological monitoring. With the advent of smart phone technology, it is now possible to equip the public with tools necessary to both collect mobile data that contributes to our resource understanding and educate the user about the species whose data they are collecting. The threatened desert tortoise (*Gopherus agassizii*) is a perfect species for such a smart phone application (SPA) because the tortoise holds a captivating charisma for many and its identification is rarely confused. The Army-funded Mojave Desert Ecosystem Program (MDEP) is the Mojave Desert ecosystem data repository and will provide the systems and support to manage the SPA's data collection. A local firm with ties to a local public community college will develop the SPA and provide an opportunity to engage youth in the SPA's development and testing.

Proposed Action

The SPA will be developed for use on the Apple iPhone, Google Android, and the RIM Blackberry. Once the software has been approved and deployed using the three phone systems' catalog services, users/visitors will be able to obtain the SPA through their provider's online catalog. In conjunction, the Desert Managers Group (DMG) Desert Tortoise Information and Youth Education (DTIYE) program will develop marketing material that promotes and educates users/visitors on how to obtain and use the SPA. Mojave National Preserve, which receives about half-million visitors annually, will pilot the SPA and its associated marketing. Upon completion of testing, the SPA and its marketing will expand to include the range of the Mojave population of desert tortoise.

Goals of the smart phone application (SPA) would be the following:

1. The DMG DTIYE will develop a three to five-question survey that engages the visitor on various facts about the tortoise. The SPA users will be strongly cautioned not to approach a tortoise and not to attempt to handle a tortoise in anyway.
2. Upon completing the survey, the SPA would allow the user to create a record by taking a photo of a tortoise along with the option of adding their name and any info they wish to provide about their trip and their discovery. Date, time, and GPS coordinates will be automatically added to each record.

3. An Army-provided server at MDEP will store the transmitted records in a database that provides two future applications of the data.
4. The first application of the data would publish the visitor's findings on a DMG public facing website (e.g. californiadesert.gov) so that the public can share in the adventure of others who have spotted a very rare species. This provides a goal for the visitor to achieve if they encounter the species and diverts them from other more typical actions like disturbing the animal or worse yet stealing the animal. The website would only reflect a general area where the tortoise was located and the information the user volunteered.
5. The second application of the data will establish a presence/absence database of tortoise sightings available to government agencies or qualified researchers. Any personal data will be segregated from the critical items of date, time, location, and photo and not available in this database.

Cost requirements

We estimate the cost to the government for development of this SPA software package is \$35,000. Both the MDEP and the Mojave Natural Preserve will provide their services in-kind and would support the SPA operation for an indefinite amount of time.

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