TAGFINDER: A DECISION AID & FIELD REFERENCE FOR TAGGING STUDIES

JP Alexander[1], Sarah Hirsch[2], Tony Tucker[2], Kristen Mazzarella[2]

[1]www.turtlegeek.com, [2] Mote Marine Laboratory

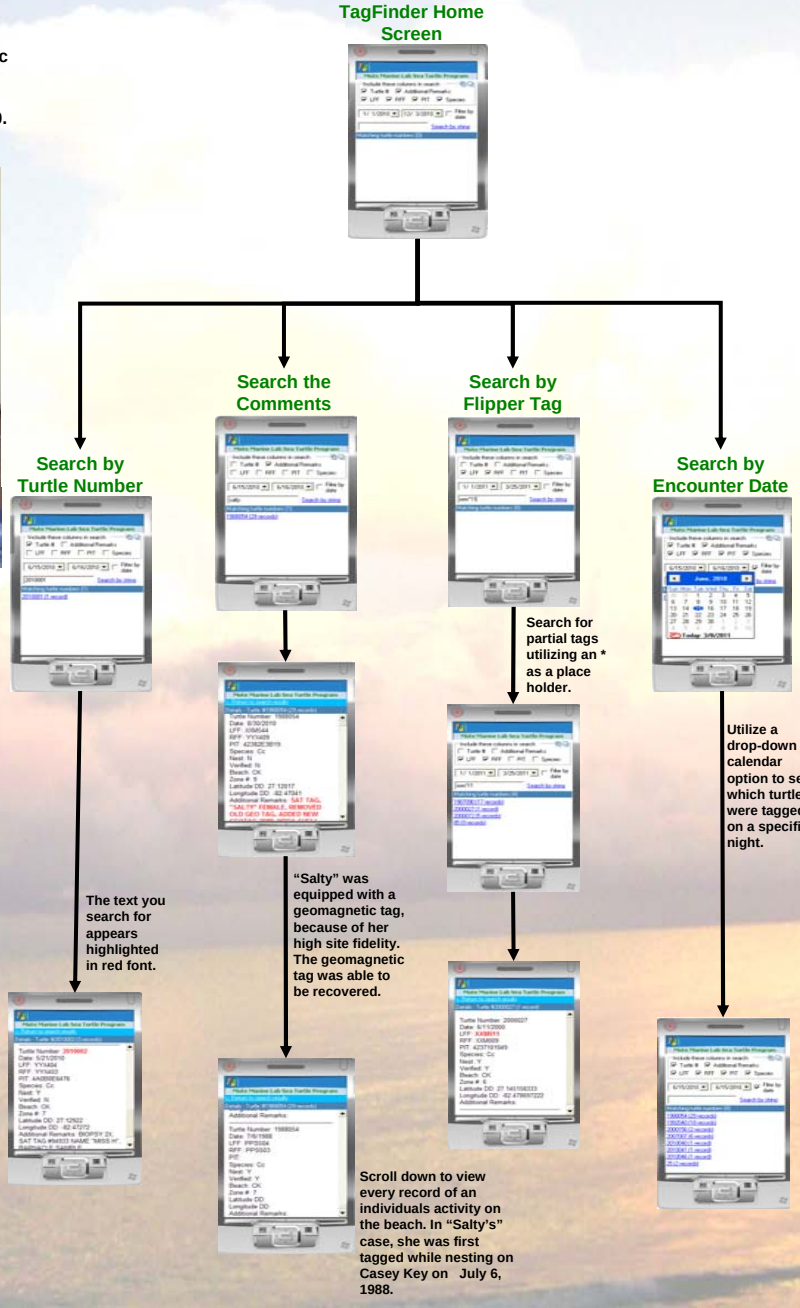
TagFinder is a computer program designed to facilitate queries of a previously uploaded sea turtle database, or a selection thereof, while in the field. Having portable access to a turtle tagging history in the field can be a crucial aid to tagging studies. For example, a female's prior encounter history can determine whether a female is a viable candidate in a tracking study or a good prospect for attachment of datalogger devices. TagFinder can also aid searches for partial tag numbers in cases where only a partial tag number was readable thus minimizing human error in reading and recording tags.

The host portion of TagFinder leverages Microsoft ActiveSync to coordinate the transfer of sea turtle tagging history data from a parent database in Microsoft Access to an HP iPAQ Pocket PC (Fig. 1). The handheld device runs on Windows 5.0.

Figure 1. The HP iPAQ is docked in a cradle and plugged into the computer via a USB cable. ActiveSync automatically detects the device. TagFinder, the host program, coordinates the transfer of selected parent databases to the HP iPAQ.

TagFinder accepts two databases of tagging information onto a handheld device: an archival database and an interim database to be downloaded. Thus, one can search a previous nesting history or the records of the current season. This interim database is kept separate from the archival database for QA/QC purposes and can be downloaded to the handheld on a daily or weekly basis. Both databases will require the same fields.

Using the handheld device, a field worker queries a selected database field to review all of the matching sea turtle tag history records. As currently implemented, a user-specified set of fields within the uploaded database can be searched, including a unique ID for the turtle (Turtle Number), left front flipper (LFF) tag, right front flipper (RFF) tag, passive integrated transponder (PIT) tag, species, Nest/NNE, beach seen on, zone number, longitude, latitude, and a remarks field. Additionally, records can be filtered by encounter date.



TagFinder assists real-time decisions on whether a turtle is a good candidate for carrying expensive tags. A turtle's site fidelity, the number of clutches laid in the season, and tag history can be examined to determine if the female has a high probability of re-encounter which is crucial in the ability to retrieve expensive tags (Fig. 2). TagFinder is also a valuable tool in QA/QC measures by ensuring that flipper and PIT tags were read and recorded correctly.

Figure 2. Bioacoustic (A), geomagnetic (B), Argos satellite (C – covered in red anti-fouling paint), and VHF radio (D) tags are attached to the shell of "Salty" a remigrant loggerhead turtle, first seen in 1988. After this nesting interval, all tags were removed, except for the satellite tag.

As a developmental project, the TagFinder application was derived from Mote Marine Laboratory's tagging database structure. However, many of these standard fields would be shared by any tagging project. Thus, the application offers a starting framework for tagging projects elsewhere that may wish to adapt it. Databases that run on Microsoft Access, OpenOffice, or a SQL Server should be cross compatible and are therefore viable candidates for TagFinder. Any handheld device running on Windows Mobile 5.0 should be capable of running TagFinder.

Field testing of TagFiner is set for the 2011 nesting season. Further investigations are required for battery life, screen brightness, and restrictions on use based on environmental conditions (such as sand and rain). Future developments include selection of display columns, and possible coordination with other projects in the region. If more memory or faster processing speed are desired, TagFinder would possibly need to be modified to run on a newer handheld device running Windows Mobile 7. TagFinder is freely available for download and testing at www.turtlegeek.com.

As this tool is developed further, other suggestions based on your inputs at ISTS may be incorporated. Thanks for leaving a note in the suggestions box below.