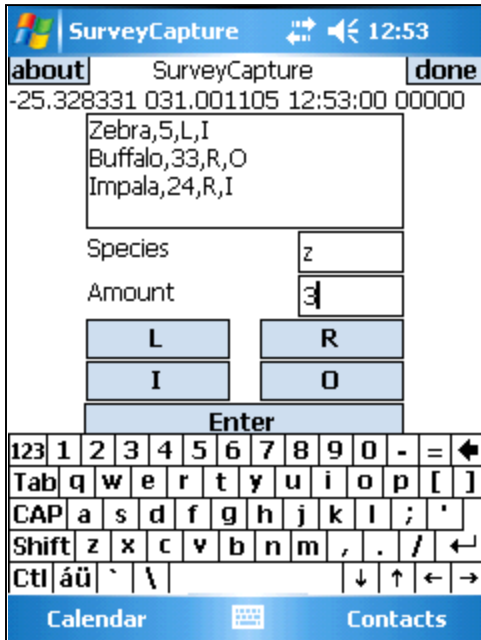


SurveyCapture

A Pocket PC-based Data Capture Program



SurveyCapture

by Petri Viljoen

Summary: Tool for capturing real-time survey data with GPS. Can be used for aerial, ground or surface water-based surveys.

Requirements: Pocket PC (PDA/PPC) with Win Mobile 2003 / Win Mobile 5. GPS (GPS standalone bluetooth or integrated with PPC)

Last Update: June 2007

Description

SurveyCapture was developed to allow rapid, real-time survey data entry under a variety of field conditions. It is primarily intended to be applied as a wildlife survey tool but it can also be used for a number of other field applications.

SurveyCapture is based on an earlier successful, real-time handheld computer and GPS system which was developed for aerial wildlife censuses in South Africa's Kruger National Park¹. **SurveyCapture** incorporates numerous improvements while utilising the advantages of the latest PPC and GPS devices.

Features:

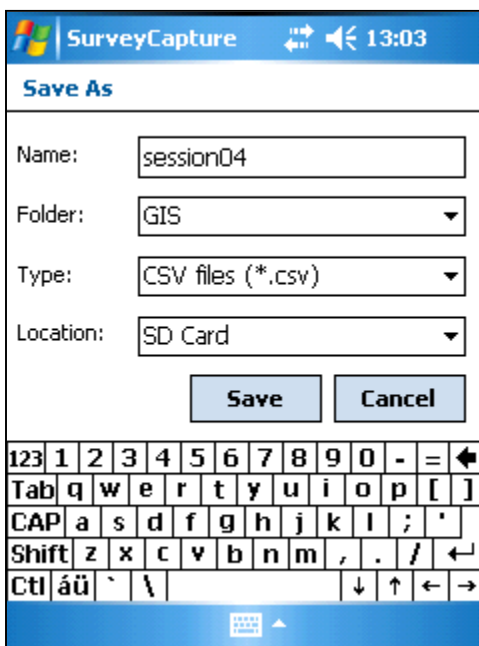
- Rapid data entry with stylus or keyboard (detachable thumb keyboard / IR or certain bluetooth keyboards) with minimal screen taps or keyboard entries.

¹ Viljoen, P.C. & Retief, P.F. 1994. The use of the Global Positioning System for real-time data collecting during ecological aerial surveys in the Kruger National Park, South Africa. *Koedoe* 37, 149-157.

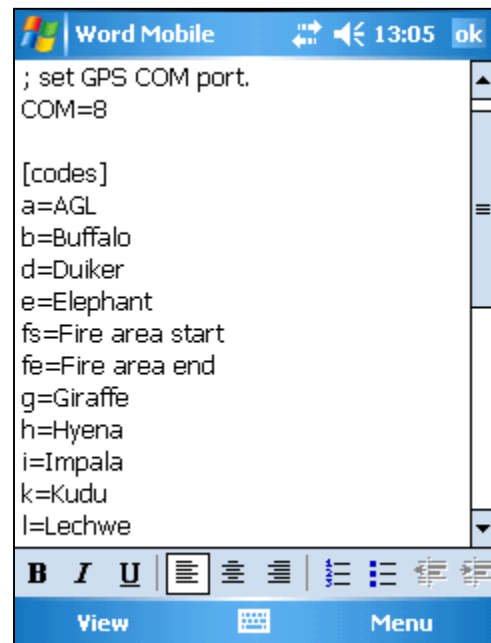
Viljoen, P.C. & Retief, P.F. 1994. The use of GPS for real-time data collecting during aerial surveys in the Kruger National Park, South Africa. *Southern African GPS User Group Newsletter* 10, 2-4.

Also reviewed in: Hunting, D. 1994. ADC helps preserve wildlife. *ID Systems* 14 (11), 26-33.

- A *Code Reference File* contains abbreviated codes for objects to be recorded. For example: by entering “z”, “b” and “te” **SurveyCapture** will record “Zebra”, “Buffalo” and “Transect End” if specified in the *Code Reference File*. This *Code Reference File* can be editing by the user to suit specific survey needs. *Code Reference Files* can also be archived for record purposes.
- The active GPS port is also selected in the *Code Reference File*.
- Each data entry is automatically combined with the most recent GPS data. **SurveyCapture** utilises a buffer for this purpose so that there is no need for the program to first acquire GPS data when data entries are made.
- Notes or comments can be entered at any time. Such entries are also captured with GPS data which include a time stamp.
- GPS coordinates are captured in Geographic WGS84 format.
- Data output is to a standard CSV file suitable for direct import into MS Excel. The output destination is user selectable. Output can be to any selected folder (PPC main memory or SD card).
- **SurveyCapture** has been designed to be very robust. No entered data will be lost even during a program crash or system failure as the program also utilises a temporary data file where every data entry is stored.



Saving a data file

Example of a *Code Reference File*

Code Reference File Example:

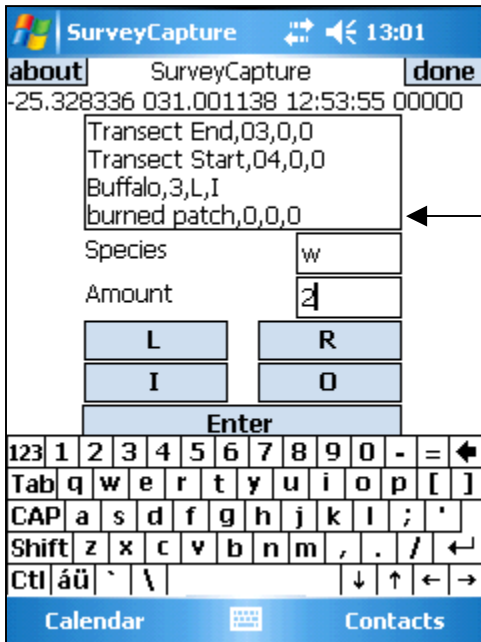
ts	:Transect Start		← Alphanumeric data strings captured during data entry on the PPC
i	:Impala		
b	:Buffalo		
z	:Zebra		

↑
Codes for stylus/keyboard entry on the PPC

The *Code Reference File* is a simple text file which can be edited by the user.

Data Entry

- Data entry sequence
 1. 1st variable (ie species): alphanumeric characters (combining information from the Code Reference File)
 2. 2nd variable (number): alphanumeric (1-3)
 3. 3rd variable: single character
 4. 4th variable: single character
- Screen display
 1. Prompt for 1st variable (alphanumeric entry)
 2. Prompt for 2nd variable (alphanumeric entry)
 3. Prompt for 3rd variable (one of 2 choices)
 4. Prompt for 4th variable (one of 2 choices)
 5. Enter button
 6. Coordinates (most recent from GPS, also to confirm that GPS is operational and that the GPS data stream is functional), plus ground velocity (km/hr)
 7. The 4 most recent data entries are also displayed



Dynamic display of current latitude, longitude, time & ground velocity. The data recorder was stationary in this case (ground velocity = 0).

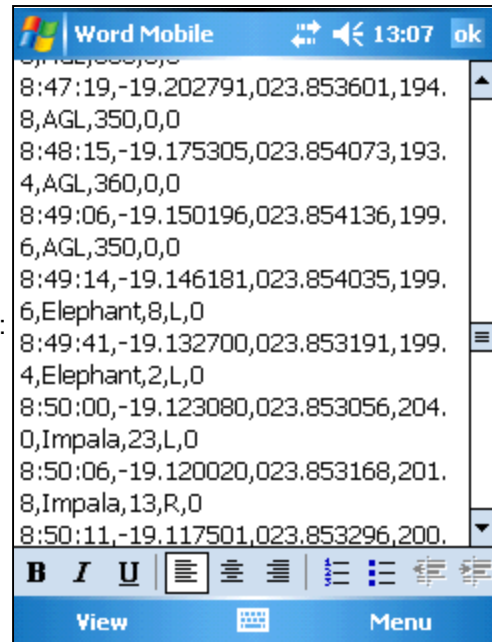
The 4 most recent data entries displayed and an example of a general comment entered ("burned patch").

Captured Data String Example:

08:47:19, -19.2027910,023.853601,194.8, AGL,350,0,0

↑
Captured GPS Data:
 Time
 Latitude
 Longitude
 Ground velocity

↑
PPC Entered Data:
 1st variable
 2nd variable
 3rd variable
 4th variable





HP iPAQ hx2790 PocketPC and bluetooth Holux Slim240 GPS

Notes - Hardware

SurveyCapture was developed for the HP IPAQ hx2400 / hx2790 PPC series and the bluetooth Holux Slim240 GPS. It has been tested on other hardware platforms and should be compatible with most recent Win Mobile 2003 / Win Mobile 5 PPCs and bluetooth GPS devices.

SurveyCapture

Concept Design & Development: Petri Viljoen

Programming:

HawkStone Online Commercial Developments

Route 21 Corporate Park Irene Ext, Gauteng, South Africa.

Tel: +27 (0)12 345 9260; Email: info@hawk-stone.com

All rights reserved. No part of the SurveyCapture program, including the functionality and data handling concepts, may be copied or reproduced.

For more information please contact:

Petri Viljoen

Conservation Air Patrol
PO Box 3124, White River 1240, South Africa

petri@conservationair.org / pcviljoen@gmail.com
Mobile: +27 (0)82 3380896