SMART

Field Data Collection with SMART and CyberTracker Classic

Overview

This training resource covers the use of CyberTracker Classic with SMART.

SMART Mobile

CyberTracker Classic is still supported, but it is recommended that users move to SMART Mobile as soon as they are able. SMART Mobile provides more functionality and is being actively maintained and developed.

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# 1. Automated data collection using CyberTracker (Classic)

Assuming that a SMART data manager has loaded CyberTracker and a configurable model onto the device (see: *SMART Technical Training Manual: Module 9: CyberTracker Plug-In and Smart Mobile*) for detailed steps), protected area staff can now begin to collect data from the field.

In the example presented we use a real data model from the Bangladesh Sundarbans Management Forest, one of the case studies for SMART implementation, demonstrating the use of CyberTracker Classic.

1.1 Preparing to record observations with CyberTracker (Classic)

To begin the process of recording data:
- Turn on the CyberTracker-equipped device
- Turn on the GPS on the device.
- Start the CyberTracker application by tapping on the CyberTracker icon on your home screen. You will see a screen that looks like the one below.
- Tap on the configurable data model which has been exported to the device. There may be several data models available so tap on the one that is designated for your patrol. In the example below the name is "Sundarbans."
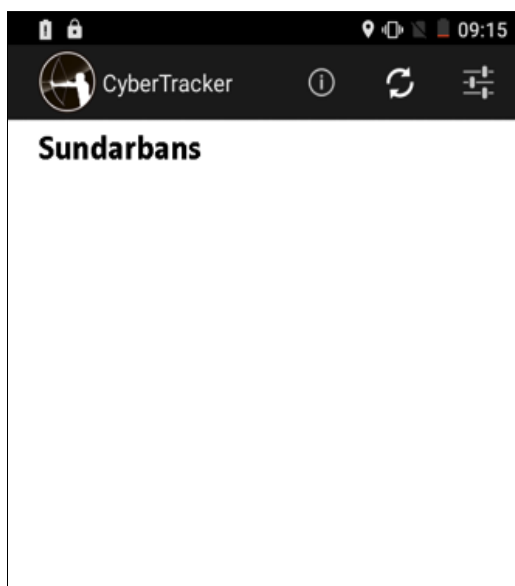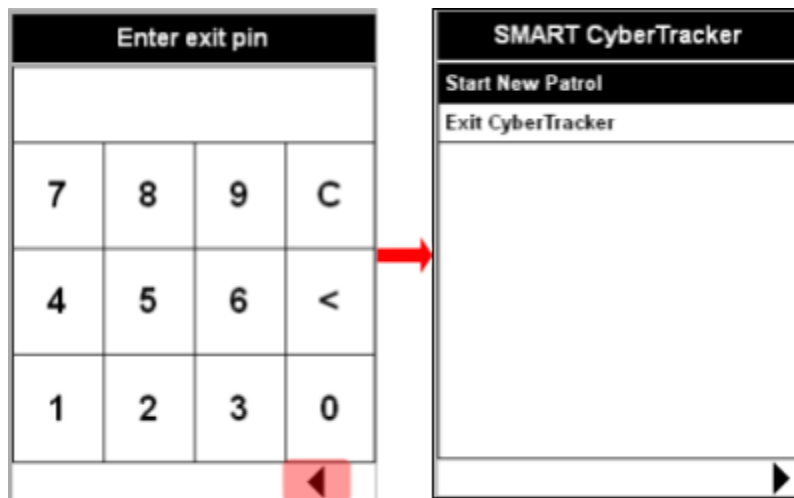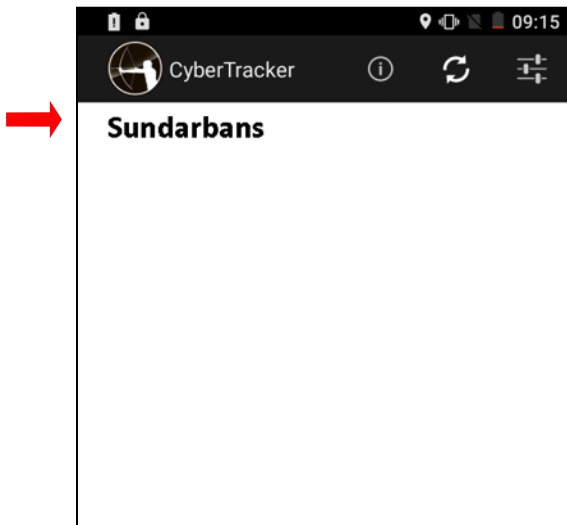
If CyberTracker starts with the screen as shown below, enter the default exit pin code "1234" or have your SMART data manager enter the correct pin code. See: *SMART Technical Training Manual: Module 9: CyberTracker Plug-In and Smart Mobile* for more details on pin codes and 'Kiosk mode'.


- Now you will see the screen below.
- Tap on "Sundarbans"

You should see one of the two screens below *(Note: To begin a CyberTracker patrol you will need to see the 2nd screen right side below as this means the GPS has acquired a satellite connection)*:

- If the 1st screen appears, tap on back arrow ▶ on the bottom of the screen. The 2nd screen should appear.

- Tap on **Start New Patrol** to 'Begin Patrol' and tap on **Forward** icon ▶ at the bottom right corner of the screen.
- Wait for the GPS signal to **Begin Patrol** (See **yellow** highlights in the display screen below).

**Note:** You need to see the GPS coordinates like the right screen below.
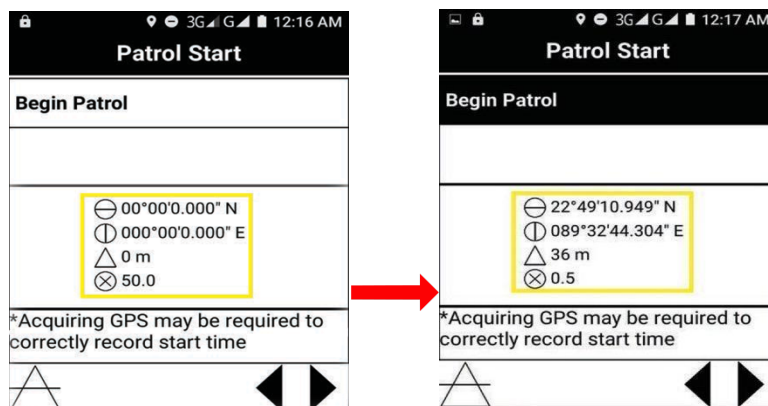
- Complete the Patrol Configuration screens to define the Patrol characteristics (See section 3.3.3 below for detailed steps for recording an observation in CyberTracker)
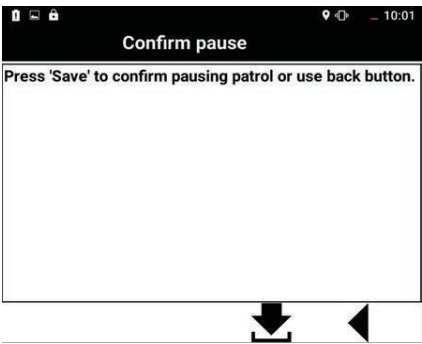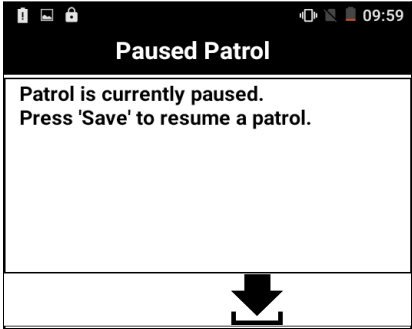
Note: *By tapping on the **forward arrow** ▶ at the bottom right corner of the screen you can skip optional sections. This may be enabled/disabled when setting up the configurable data model.*

1.2 Recording observations using CyberTracker

After the patrol configurations are entered you are now able to collect observation data.
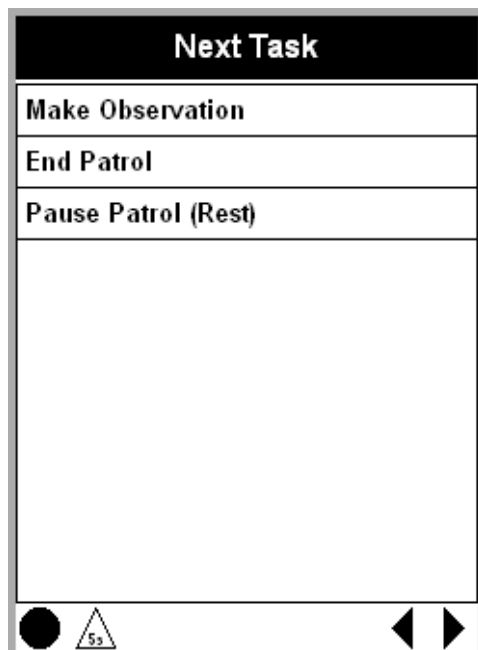
Make Observation	Loads the configured data model (in this example, **"Sundarbans")** to allow entry of observations
End Patrol	Ends the Patrol
Pause Patrol (Rest)	Stops recording track information during extended rest periods to avoid having the track information accumulate. This option should only be used during

	extended stationary rest periods. After selecting (tapping on) **Pause Patrol (Rest)**, you have to tap on **Save** icon ![save icon] to confirm Pausing Patrol. ![Confirm pause screen]
Resume Patrol	All **Paused Patrols** should be resumed by tapping on **Save** icon ![save icon] to start recording track information and collecting data. The track information will resume from the last recorded position. **Caution:** If you do not select Resume Patrol before restarting a patrol, the GPS tracklog will **not** be recorded. ![Paused Patrol screen]
⬤	Opens up the **Options** screen.
⚠ 5s	Displays the **time interval** when GPS track points are collected. If there is no number visible in the triangle, then the device **will not** record track information. Check the interval after installation of CyberTracker with a simulated patrol and make the necessary changes in **'Field Data > CyberTracker Properties > GPS (tab) > Track Timer'** in SMART on your computer and re-export the patrol to the smartphone or tablet.
◀	Back arrow to return to previous screen.
▶	Forward arrow to advance to next screen.
![save icon]	Saves the observation.

Skip GPS	If no GPS signal is available, you will be prompted to skip GPS collection and advance to the next screen. This will create a waypoint without recording location coordinates. During patrols **never skip GPS**.
Save As New Waypoint	Creates a new GPS waypoint location and assigns the observation to the new waypoint. If a waypoint is not saved, no observation data will be recorded.
Add to Last Waypoint	Assigns the observation to the previous waypoint. This should be used when multiple observations are recorded at a single location. For example, more than one observation (a person, snares, poacher's camp, etc.) are all observed together in the same location. Multiple observations at a single waypoint are referred to as an **'Incident'** in SMART terms.

1.3 Detailed Steps for Recording Observations in CyberTracker

Note*: The detailed steps below reference the specific example data model, 'Sundarbans' – at each site, the information will differ depending on the configurable data model used.*

Practical exercise
- Tap on Data Model "**Sundarbans**" (or the equivalent on your device) at the top of the screen. Then tap on **Forward** icon ▶ at the bottom right corner of your screen.
- Tap on **Start New Patrol** at the top of the screen and wait for GPS signal (see **yellow** highlights in the example under 3.3.1). Once the GPS signal appears, tap on the **Forward** icon ▶.

- Tap on **Begin Patrol** then on **Forward** icon ▶.
- Tap on "**Yes or No**" for arms then on **Forward** icon ▶.
- Tap on a "**Team**" then on **Forward** icon ▶.
- Tap on a "**Station**" then on **Forward** icon ▶.
- Tap on a "**Mandate**" then on **Forward** icon ▶.
- Tap on **Forward** icon ▶ to skip **Objective**.
- Tap on **Forward** icon ▶ again to skip **Comments**.

Note: You can tap on an empty part of the screen to bring up the keyboard so you can type in Objectives or Comments.

- Select "**Team Members**" then tap on **Forward** icon ▶.
- Select "**Team Leader**" then tap on **Forward** icon ▶.
- Select "**Make Observation**" then tap on **Forward** icon ▶.

- Select "**Position**" then tap on **Forward** icon ▶.
- Select "**Patrol Start**" then tap on **Forward** icon ▶.
- Select "**Save As New Waypoint**" then tap on **Forward** icon ▶.
- Tap on "**Save**" icon ⬇ (the Arrow pointing down into a box) on the left side of **Forward** icon ▶ to capture your GPS location and save your data.
- Wait for the **GPS coordinate** to be 100% completed (see left figure below). Now "**Next Task**" screen appears, and you are ready to record another observation (see right figure below).

To end the patrol, you have to take a **Patrol End Waypoint**. For this, tap on **Make Observation** > tap on **Forward** icon ▶ > tap on **Position**> tap on **Forward** icon ▶ > tap on **Patrol End** > tap on **Forward** icon ▶ > tap on **Save as New WayPoint**> tap on **Forward** icon ▶ > tap on **SAVE** icon ⬇ and wait for **GPS to be completed 100%**.

Note: For using CyberTracker/SMART Mobile for advanced patrolling, such as multiple leg, split, transportation change and/or leadership change during a patrol, please refer to Field Practical: Data Collection for Multi-Leg Patrols (see: *SMART Technical Training Manual: Module 3 Patrols, page 74)*

<u>Practical exercise</u>

Use the example below to "**Make Observation**" of the **Position** of where the patrol ended and then stop tracking by completely finishing the patrol using "**End Patrol**".

- Select "**Make Observation**" then tap on **Forward** icon ▶.
- Select "**Position**" then tap on **Forward** icon ▶.
- Select "**End Patrol**" then tap on **Forward** icon ▶. (See right figures below)
- Select "**Save As New Waypoint**" then tap on **Forward** icon ▶.
- Tap on "**Save**" icon ⬇ (the Arrow pointing down into a box) on the left side of **Forward** icon ▶ to capture your GPS location and save your data.
- Wait for the **GPS coordinate** to be 100% completed (see left figure above). Now "**Next Task**" screen appears, and you are ready to "**End Patrol**" completely.

Next Task

Make Observation

End Patrol

Pause Patrol (Rest)

Sundarbans

Position

Human Activity

Animals

Fishes

Crabs

Position Type

☐ Patrol Start

☑ Patrol End

☐ Pause

☐ Restart

☐ Transport Change to Fiber Boat

☐ Transport Change to Foot

☐ Transport Change to Launch

☐ Transport Change to Speed Boat

☐ Transport Change to Trawler

Save Observation

Save As New Waypoint

Add To Last Waypoint

GPS - 30% complete   16:53 ok

Fix | Sky | Compass

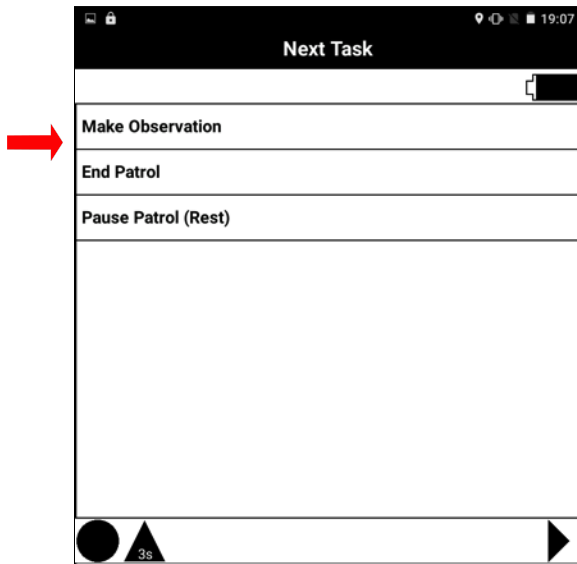**3D GPS**

⊖ 22°49'10.824" N
① 089°32'44.957" E
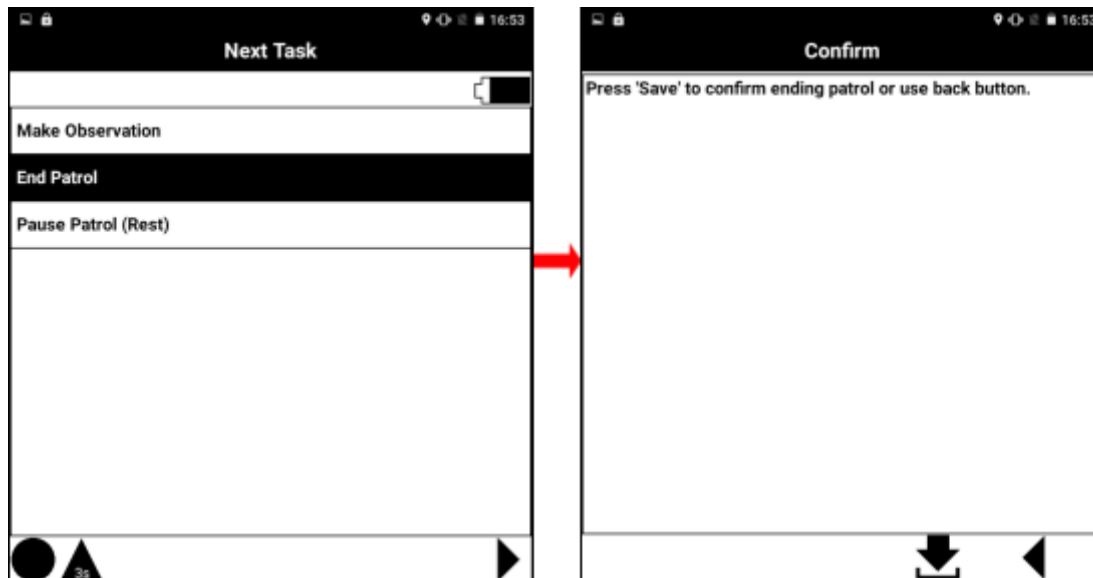△ 20 m
⊗ 0.6
⊞ 5/13/17
◷ 16:53:11
⇒ 0.00 km/h
◬ 265°

Save As New Waypoint

Save as new point (GPS will take a new point now)

Continue to the next page

- Now tap on "**End Patrol**" on the display screen and then on **Save** icon ⤓ to capture your GPS location and save your data. Wait until the **GPS is completed to 100%.**

- To exit from the Cyber Tracker application, if necessary and you have the permission to do so, select "**Exit Cyber Tracker**" then tap on the **Forward** icon ▶ and enter **1234** (if numeric pad appears) This password may be changed by Administrators in the "**CyberTracker Properties**" under the "**Field Data**" tab in SMART.
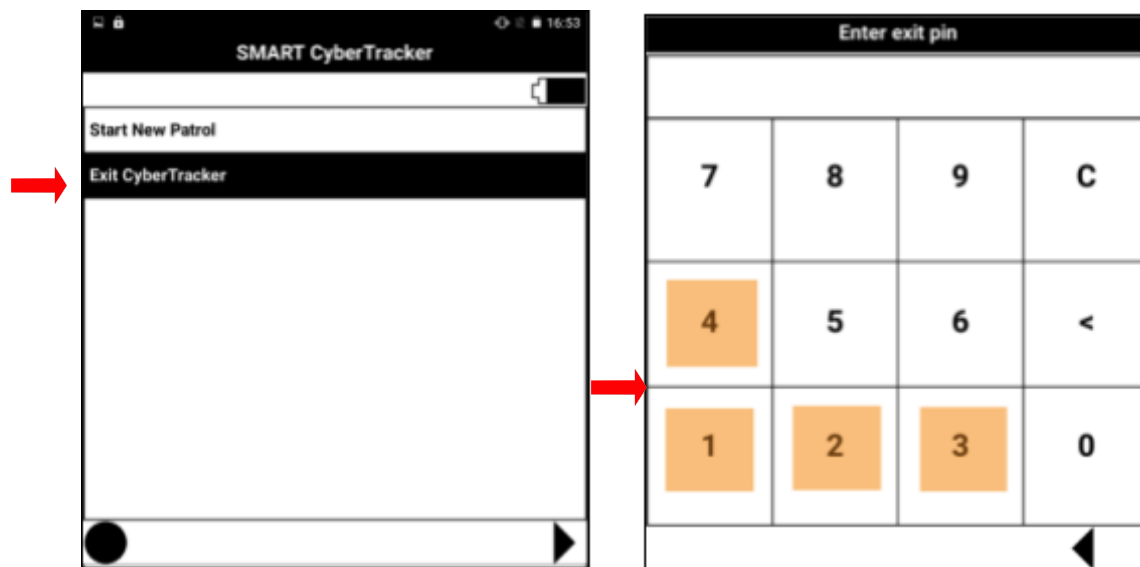
- Press the power button ⏻ once to turn off the smartphone or tablet to save battery power. **Be careful not to turn off the device completely by holding the button for too long!**

  Note: For recording any data you need to select the **observation** type on the top of the screen every time, then tap on the **Forward** icon ▶.

- To take a photo, you will need to tap on the **screen** with the tip of your finger 👆 when it asks **Tap to Capture**, then face the camera towards the subject and tap on the **screen** to record a photo, then tap on the **Forward** icon ▶ to save the photo.

  Note: *you need to have allowed photos to be taken when designing your configurable model – see: SMART Technical Training Manual, page 210.*

- If you want to take more photo then tap **Yes** and repeat the process, otherwise tap **No**. Then tap on **End Observation Group>** tap on **Forward** icon ▶ and then on **Save** icon ⬇.

- When asked to **Type in Text**, tap on an empty part of the display screen to bring up the keyboard.

- If you want to go back one step, tap on the **Back** icon ▶ .

  Note: For recording multiple observations in a single waypoint (also known as an 'Incident') follow the instructions below:

- Start making a single observation about a **live animal sighting** (e.g., Spotted Deer).

- Tap on **Make Observation.**

- Tap on **Animal** and then on **Forward** icon ▶.

- Tap on **Live Animal** and then on **Forward** icon ▶.

- Select Species "**Spotted Deer**" and tap on the **Forward** icon ▶. Then follow next steps one by one as appears on the screen.

- Tap on **Save As New Waypoint.**

- Tap on the SAVE icon 📥 to Save the Observation.

- For recording another observation (e.g., live wild boar) under the same waypoint, tap on **Make Observation** and repeat the process and at the end tap on **Add To The Last Waypoint.**

- Tap on the SAVE icon 📥 to Save the Observation.

 Note: You will need repeat the process for recording all species you see in the same location.

1.4 Importing CyberTracker Patrols into SMART

After completing the data collection on each day or leg of a patrol, you will import the recorded patrol information into the SMART database from the CyberTracker equipped device. Unlike importing data from the GPS, an import of field data via CyberTracker will bring the GPS tracks and waypoints and all the associated observations including photographs recorded into the database simultaneously.

- Connect the CyberTracker equipped device with the computer using a USB cable and if this device is a smartphone, PDA or Tablet, ensure the device is set to 'Transfer Files'.

  Note: See Frequently Asked Questions below for more details on troubleshooting issues with device connections.

- Open the SMART software and open the conservation area using its username and password.

- From the menu on the top of your computer screen select **Field Data,** click on **CyberTracker** and then click on **Import** (see below), then **Import From Device**.
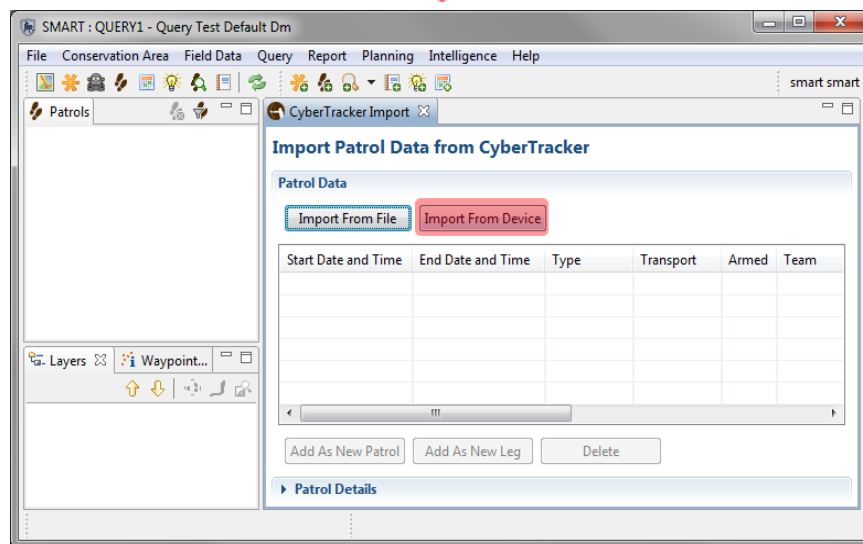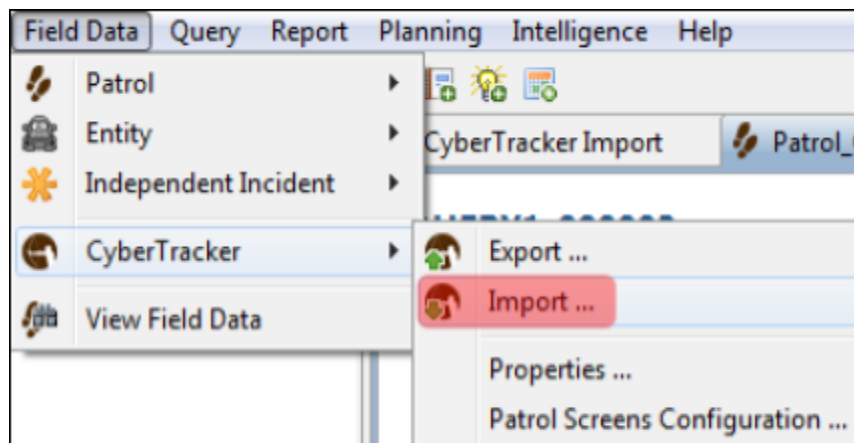
- Now you will see the screen below. Select a single patrol, then click on **Add,** then **Add as new patrol.** Click **OK.**
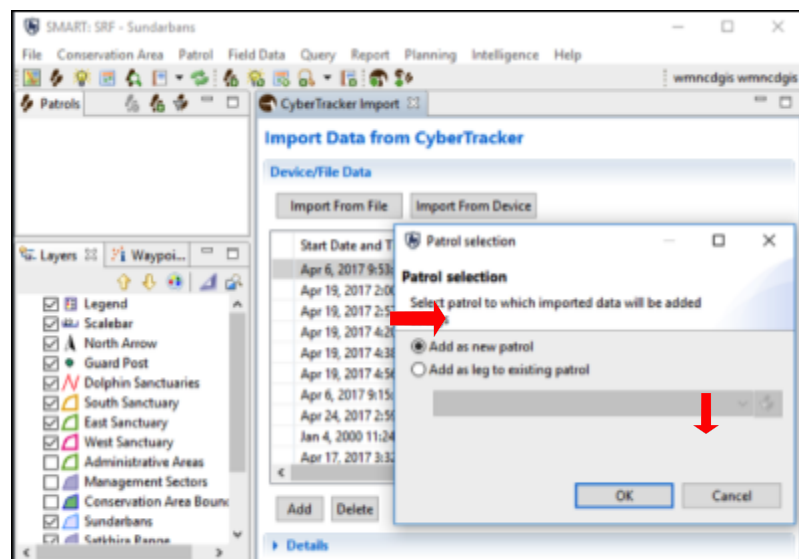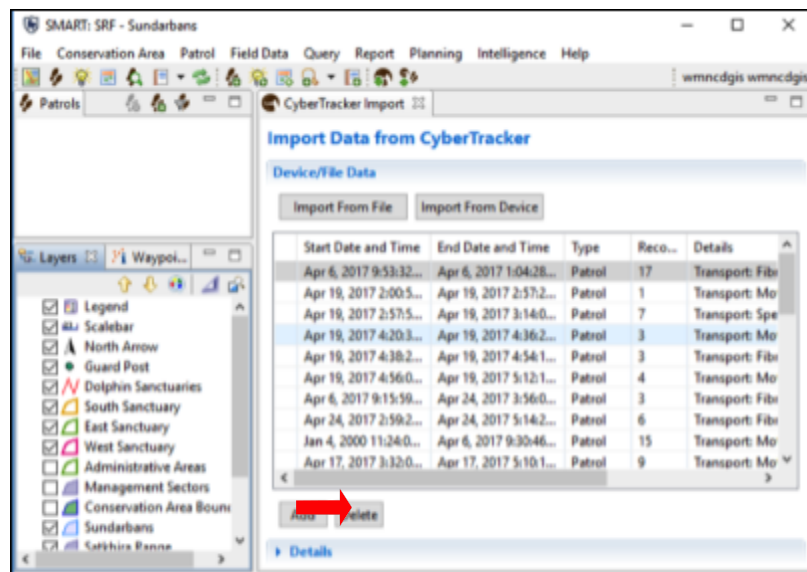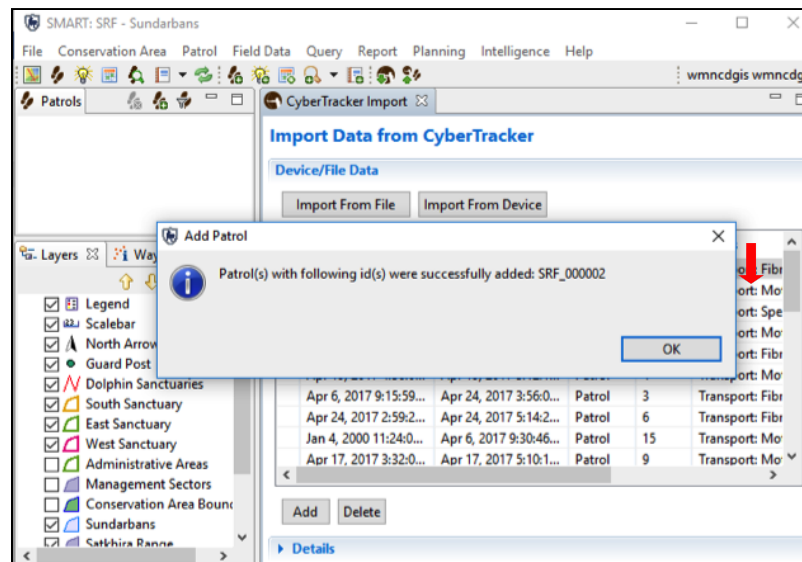
Note:

- **Add As New Patrol –** Creates a new <u>patrol</u> from the selected CyberTracker data. You will always add your patrol as a new patrol in the database by using **Add as New Patrol** option.
- **Add as a New Leg** – Creates a new patrol <u>leg</u> from the CyberTracker data. If you conduct a multi-leg patrol, you will add CyberTracker data from different legs by using **Add as a New Leg** option.
- **Import From File** – If the CyberTracker patrols were not assigned in SMART after import and disconnecting the device, the files are located in the CyberTracker folder for that particular Conservation Area. If you select this option, SMART will access the folder automatically and allow you to assign these patrols.
- **Delete –** Deletes the selected imported CyberTracker patrols. (**Note:** You will never delete anything, except maybe practice or accidental patrols). **Important:** Deleted patrols cannot be recovered.

**Important:** Once a patrol has been imported, it is <u>automatically</u> deleted from the device.

Note: You can review the patrols and observations by double clicking on the patrols from the patrol list on the left side in the window. Then you can see the summary of your patrol effort and map of your patrol route.
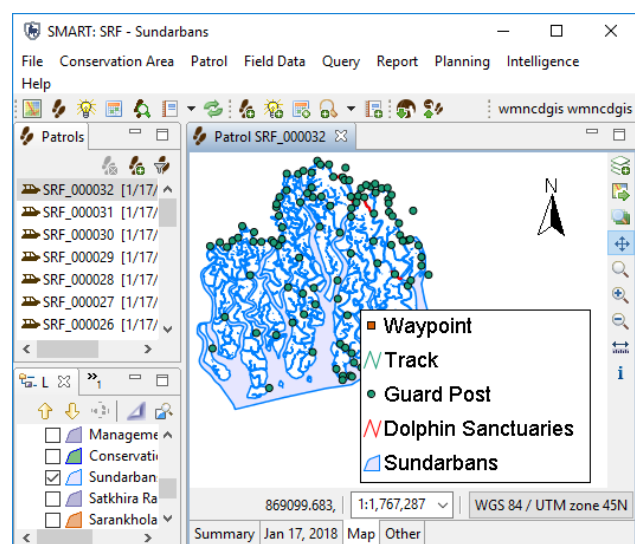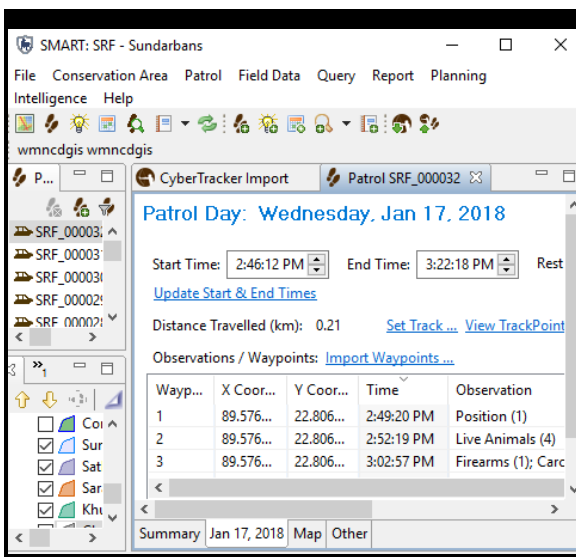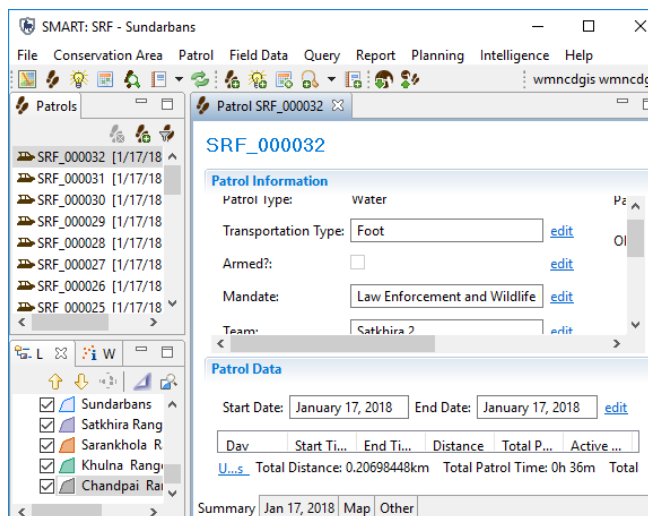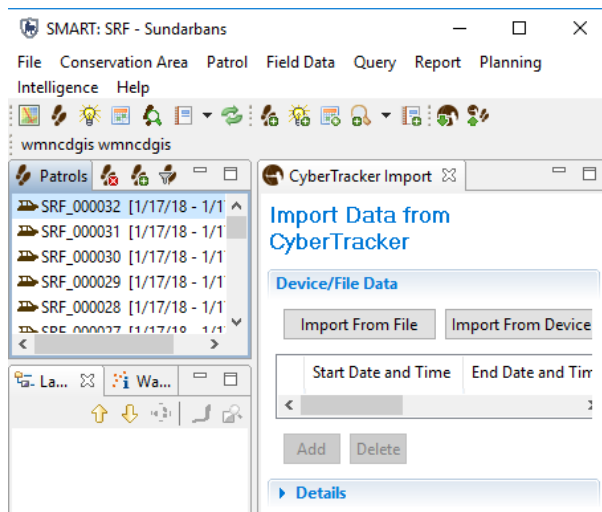
1.5 Exporting patrol data for sharing

After importing the CyberTracker patrol data to SMART you will export the patrol to a separate folder in your computer which you may need to do to share data between computers:

1. Create a folder in your computer with the name of your team-CyberTracker equipped device or phone number-date of patrol. Example: Chandpai1-CT7G2-21April2017.
2. Open the SMART software > click on **Patrol** on menu bar > click on **Export Patrols** > select the **patrol** or **multiple patrols** you want to export from the drop-down list by clicking on them (a tick mark will appear in front of the selected patrol) > click on **Browse** > Select the folder you created (Example: Chandpai1-CT7G2-21April2017) > Click on **OK** > > click on **Export**.
3. The patrol data may be shared via USB or email with data manager for importing into another SMART database.
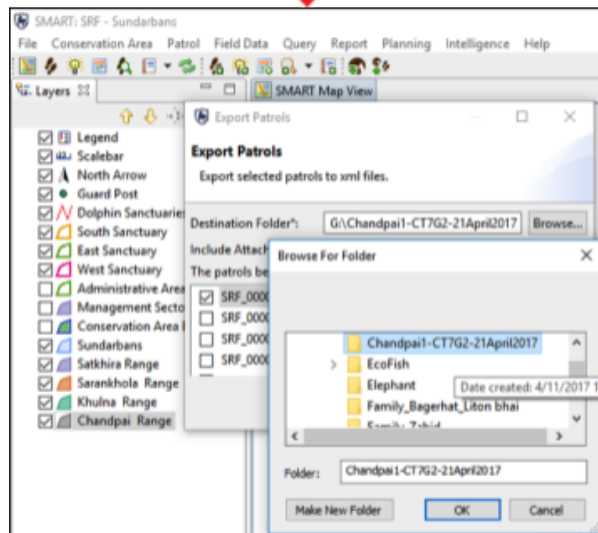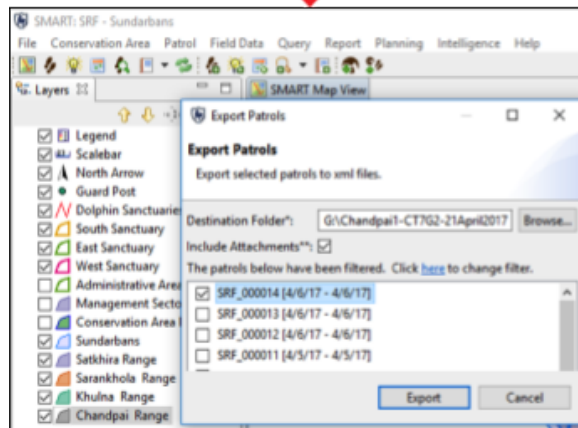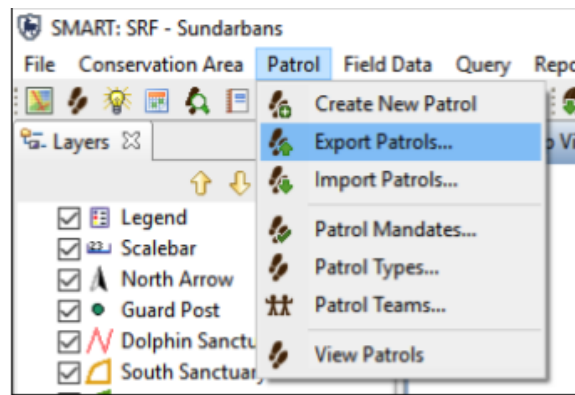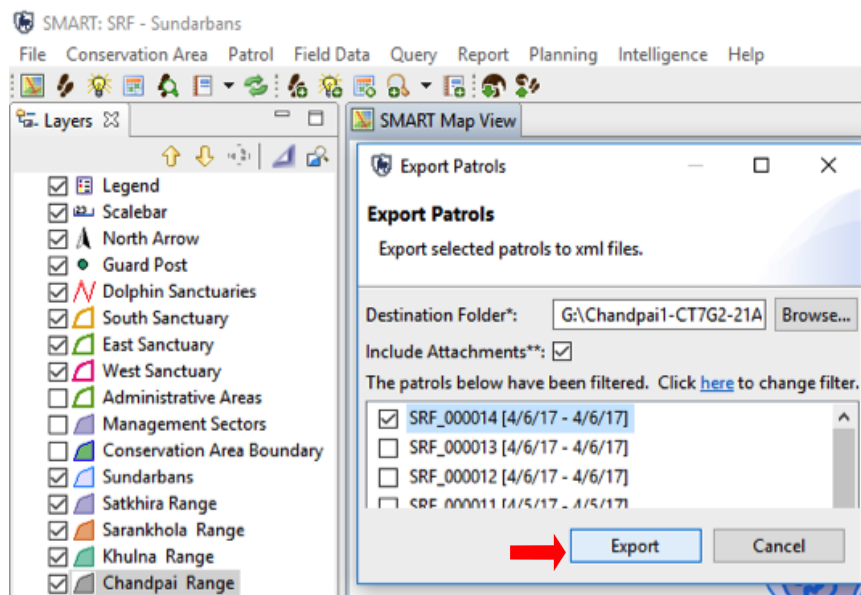
2. Special applications

Here we have discussed the use of SMART Mobile/CyberTracker for patrol data collection. Mobile data collection is also available for special applications such as ecological monitoring via the ecological records plug-in and for information gathering via the Profiles plug-in. Methods for data collection using these plug-ins are discussed in separate training handbooks.

2.1 Mobile Data Collection using SMART Connect

SMART Connect is an add-on online operating environment for SMART. It leverages real-time connectivity to greatly enhance speed of data transfer from the field, sharing of SMART data, maps and reports at national level, and the possibility of integration with a wide variety of other mapping, analytical and data collection platforms.

To configure your mobile device with the Connect configuration
- Select **Conservation Area > Configurable model >** *'Name of model'*.
- Click edit to inspect the categories and attributes associated with the model
- Check to make sure the SMART Mobile settings follow what you see below by selecting **'Field Data->CyberTracker Classic->SMART Connect Properties'** in SMART.

For more information on how to use SMART Connect together with your mobile data collection devices (see: *SMART Technical Training Manual: Module 13: Connect Plug-in*).

At sites that have implemented SMART Connect, field teams can potentially upload patrol data in up to real-time across cellular or WIFI-enabled networks using handheld devices, with data made available to managers via dashboards. For example, the Philippines Department of Natural Resources and Environment (DENR) has centralized the collection of forest-threat data across more than 200 community and provincial offices. This has worked in such a way that daily updates on patrol effort are possible.

SMART Partners

The SMART Partnership is a group of global conservation agencies, conservation organizations, and individuals that share a mission to conserve biodiversity, reduce the impacts of illegal extraction and trade of natural resources, strengthen law enforcement related to biodiversity conservation and strengthen overall management of conservation areas.

SMART Values

- Freely available and open source

- Responds to needs and feedback from front-line users

- Scalable and customizable to a wide variety of locations and contexts

- Packaged with an extensive support and training network

- Commitment to long-term funding and support through the SMART Partnership

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SMART