

Africa Regional Training Workshop

4th - 8th May 2013

Arusha, Tanzania

Technical Training Manual for SMART 1.0

Prepared by WCS on behalf of the SMART Partnership:















This manual was made possible by the generous support of the American people through the United States Agency for International Development (USAID) under the terms of Cooperative Agreement No. RLA-A-00-07-00043-00. The contents are the responsibility of the Africa Biodiversity Collaborative Group (ABCG) and do not necessarily reflect the views of USAID or the United States Government. This publication was produced by the **Wildlife Conservation Society** on behalf of ABCG.

Table of Contents

Module 1 – Setting up a Conservation Area	4
Module 2 – Map navigation and GIS	22
Module 3 - Patrols	34
Module 4 – Analysis: Queries and Summaries	75
Module 5 - Reports	113
Module 6 – Planning and Intelligence	140
Module 7 – Data Model Management	151
Module 8 – Administrative Tasks	160

Module 1 – Setting up a Conservation Area

Objective:

In this module, you will work through the creation and setup of a Conservation Area to the point that patrol information can be entered into SMART.

This will include:

- Starting SMART on your computer for the first time;
- Naming and describing the Conservation Area;
- Creating user accounts;
- Choosing a data model;
- Defining spatial boundaries;
- Creating a list of stations;
- Defining participating organizations and ranks;
- Creating employees;
- Defining patrol teams, transport types, objectives and mandates.

Detailed Steps:

Starting the SMART Application for the first time

Installing SMART is easy

- Create a folder called SMART Training on your hard disk
- On the USB key: open the folder 'Software Installation'
- Copy the set-up file: **SMART_v1_Training.zip** on to your computer and unzip.
- Copy the entire contents of the folder SMART Training into the folder you created on your hard disk
- In this folder, locate the file called **SMART.exe**.
- Right-click on the file.exe and select 'Create a shortcut'
- Copy and paste the shortcut link (SMART.ink) onto your desktop.
- Double-click on the shortcut to launch the SMART application

Create a new Conservation Area

SMART has the ability to manage multiple Conservation Areas (or protected areas) within a single database. You will start with an empty database and you will create a new conservation area.

• Launch the SMART application by clicking on the shortcut on the desktop

S	MART
Conservation Area:	ARUSHA - Training 👻
User Name:	
Password:	
	Exit Login

• Select on Advanced

Advanced Options	E
SMART Advanced Options	
Would you like to: Create a New Conservation Area Restore a Backup Import a Conservation Area	
Cancel Continue	

- Select Create a New Conservation Area
- Click Continue

Note: if SMART contains no databases, then SMART automatically opens at this page.

Conservation Area Properties

The Conservation Area properties are names and descriptors assigned to a specific Conservation Area. These properties can help users of the SMART software manage multiple conservation areas.

\varTheta 🔿 🔘	Create Conservation Area Wizard
Conservation Area	· É
Enter the information	on related to the conservation area.
Identifier:	SMART
Name:	Training
Description:	
Description:	Training Database
Designation:	
Default Language:	English (en)
	area specific data (data model etc.) must be supplied. Additional languages can be added later.
	< Back Next > Cancel Finish
Enter in the	a following information:

- Enter in the following information:
 - Identifier: SMART
 - Name: Training
 - Description: Training Database
 - Default Language: English (en)
- Click Next •

Note: Properties of the Conservation Area may also be modified later on, after initial Conservation Area creation (see screenshot below)

Defining an Administrative User

Creating an account for the primary administrator of a newly created Conservation Area is required, and the fields will need to be populated before the software will advance. After completing the form, the primary administrator's account will be created and can be used to make any changes within the newly defined Conservation Area.

🖲 Create Conservation	ı Area Wizard 🛛 💽 🔳	
Administrative User		
You must create one admin created later.	strative user here. Additional users can be	w
Id:	system-generated	
Given Name(s): 8		
Family Name(s): 6		
Conservation Area Start:	Wednesday, July 04, 2012	~
Birth Date:	Sunday , January 01, 1950	~
Gender:	💿 Male 🔵 Female	
Smart User		
Smart User Name: 0		
Smart Password: 🛛		
Re-Type Password:		
·		
< E	iack Next > Finish	Cancel

- Enter in the following information:
 - Given Name(s): smart
 - Family Name(s): smart
 - Conservation Area Start: Wednesday July 4 2012
 - Birth Date: Leave as default
 - Gender: Leave as default

Note: The ID field is automatically populated but will accept entered values if an employee has an existing ID.

- Under the Smart User section enter the following information:
 - Smart User Name: smart
 - Smart Password: smart
 - Re-Type Password: **smart**
- Click Finish

Note: After creating the primary administrator account the application will restart and bring you back to the initial start screen.

S	MART
Conservation Area:	SMART - Training
User Name:	smart
Password:	•••••
	Advanced
	Exit Login

- Enter in the log in information:
 - Conservation Area: SMART SMART Conservation Area
 - User Name: smart
 - Password: **smart**
- Click Login

Defining a Data Model

Upon initialization of a new Conservation Area, the primary administrator will need to define the data model to be used for the new Conservation Area.

This process can be accomplished by:

- Using the default data model¹;
- Start with a blank data model;
- Copying from an existing Conservation Area that has been previously initialized by that instance of SMART (you will only see this option if there is an existing conservation area in your database); or,
- Importing a custom data model (if a previously exported XML data model file exists).

¹ The default data model was developed by the SMART Partnership and represents best practices. If you are setting up SMART for the first time then we recommend you start with this model as a guide.



In the menu bar ...

• Click Conservation Area ... Data Model

For this exercise you will import a custom data model.

🐻 Initialize Conservation Area Data Model	
No data model has been defined. Please select the initial data model (further modifications can be made l	ater):
 Use the default data model Use a blank data model 	
Import a custom data model	
Import XML	
Finish	Cancel

- Select Import a custom data model
- Click Import XML ...
- In the Module 1 folder on your USB key select DataModel.xml
- Click Open
- Click Finish
- After the data model has finished loading click Close

Note: For further information on editing, modifying, importing/exporting and other elements of Data Models please refer to Module 6 - Data Model Management.

The Conservation Area now has a name and descriptors, a primary administrator and a data model but more work is needed to prepare it before patrol information can be entered.

Entering Agencies and Ranks

Employees working within a Conservation Area, and SMART users, may belong to a particular agency, and may have a rank within that agency.

As part of the initial setup of a Conservation Area, the list of Agencies and their associated Ranks is accessed through the menu "Conservation Area - Agency and Rank List ..."

Note: Agencies are defined first because Ranks are always associated with an Agency. Be careful to enter the agency names exactly as given below as we will be using them later!



In the menu bar ...

Click Conservation Area ... Agency and Rank List

logency and Rank List		_ D X
Agency and Rank for Employees.		
Language:		
English [en]		•
Agencies:		
Agency National Parks Department		Add Agency Delete Agency
Ranks:		1
Rank Ranger		Add Rank Delete Rank
Park Warden		
Import Export	Save	Close

- Click Add Agency
- Click on New agency
- Enter National Park Department
- Click Add Rank
- Click on New rank
- Enter Ranger
- Click two more times on Add Rank
- Replace New Rank with Patrol Leader and Park Warden
- Click Save
- Close

Note: All entries can be edited by clicking on the name and retyping in new values. Agencies and Ranks can be deleted by clicking the Delete Agency or Delete Rank button.

Entering Conservation Area Employees



In the menu bar ...

Click Conservation Area ... Employee List

The current Employee List contains the single administrator account that was created during the initialization of the Conservation Area. Additional employees of a Conservation Area can be entered individually, or through a bulk upload process.

🖻 Employee List 🛛 🖸 🖃 🔲 🔀									
Mai	nage the empl	oyees.							
Ente	er search term	s							
ρ	Id	Family Name(s)	Given Name(s)	Gender	Birth Date	Agency	Rank	Smart User Name	Smart User
Y	198000010	smart	smart	М	Apr 5, 1980			smart	ADMIN
<			1111						>
Ir	nclude Inactive	Employees							
	Edit	Create New	Import						
								Save	Close

The "Create New ..." button will bring up the same form that was previously used to create the primary administrator's account. New employees can be entered into the system using this form.

• Click Create New ...

Enter in the following employee information

- Given name(s): Choose the name of a ranger from your site
- Family name(s): Choose a name
- Conservation Area Start: <today's date>
- Birth Date: <choose a date>
- Gender: <choose one>
- Agency : National Parks Department
- Rank : Ranger
- Repeat these steps to add another 2 rangers, a patrol leader and a park warden.
- Save and close

Create an account for a new SMART user

To add a new SMART User, you also click on 'Create New'

- Click Create New and enter your own employee details
- Click the **Smart User** box
- Under the Smart User section enter the following information:
 - Smart User Name: Select a name
 - Smart Password: Select a password
 - Re-Type Password
 - Choose Smart User Level: ADMIN
 - Click Save

Importing Employees

The second method of populating the list of employees for a Conservation Area is to import an existing employee list.

The "Import..." function will import a CSV file and auto-populate the Employees List.

The CSV file must have the following format:

ID,GIVEN NAME,FAMILY NAME,BIRTHDATE(yyyy-mm-dd),GENDER(M/F), START EMPLOYMENT(yyyy-mm-dd),END EMPLOYMENT(yyyy-mm-dd),RANK,AGENCY

Note: If the Agencies and Ranks data has not yet been populated, then it will not be possible to assign an Agency or Rank to that employee at this point.

If the employee is also a user of the SMART software, the form will allow for the creation of a SMART account. The parameters for a username, password and account privileges are entered in at this point. Edits to employee details or SMART account settings can be done at any point but must be done via an administrator account.

• On the list of employees, click **Import** ...

🛞 Import Employees	
Import employee data from csv file.	
CSV File:	Browse
Includes Header Line (skip the first line when importing)	
The CSV file must have the following format: ID,GIVEN NAME,FAMILY NAME,BIRTHDATE(yyyy-mm-dd),GENDER(M/F),START EMPLOYMENT(yyyy-mm-dd),END EMPLOYMENT(yyy	vy-mm-dd),AGENCY,RANK
Im	port Cancel

- Check Includes Header Line (skip the first line when importing)
- Click Browse
- In the Module 1 folder select Employees.csv
- Click Open
- Click Import
- Click OK

After the import you should have all of the new employees entered into the database for this Conservation Area.

Manage	the employe	es.						
Enter sea	irch terms							_
Active	ID	Family Name(s)	Given Name(s)	Gender	Birth Date	Agency	Rank	-
Y	SMART11	Stokes	Emma	F	01-Jan-1980			-
Y	SMART12	Starkey	Ruth	F	01-Jan-1980			
Y	SMART13	Sepulchre	Cedric	M	01-Jan-1980			
Y	SMART14	Mbolo	Victor	M	01-Jan-1980			
Y	SMART15	Ekotouba	Dieudonne	M	01-Jan-1980			
Y	SMART16	Lambert	Denis	M	01-Jan-1980			
Y	SMART17	Ekodeck	Herbert	M	01-Jan-1980			
Y	SMART18	Lushimba	Alain	M	01-Jan-1980			
۰								5
Includ	e Inactive Emp	oloyees						
Create N	low F	dit Dolato	Import	Evport				
Create N	lew E	dit Delete	Import	Export				

Defining Conservation Area Boundaries

The final step in initializing a Conservation Area is to define the spatial boundaries. This is accomplished by uploading ESRI Shapefiles for the five (5) administrative divisions.

Note: Shapefiles are required to have an ESRI projection file (*.prj)



In the menu bar ...

• Click Conservation Area ... Define Area Boundaries

🖲 Define Conservation Area Boundar	ies	•	
Setup various conservation area boundaries.			
Conservation Area Boundary: Undefined	Load	Clear	Change Labels
Buffered Management Area: Undefined	Load	Clear	Change Labels
Administrative Areas: Undefined	Load	Clear	Change Labels
Management Sectors: Undefined	Load	Clear	Change Labels
Patrol Sectors: Undefined	Load	Clear	Change Labels
		Save	Close

Click corresponding Load button beside Conservation Area Boundary to begin the load process

Note: Not all five different zones will apply to all conservation areas.



Note: For the initial load of boundaries there are no features that will be overwritten. On future uses of this feature, the previously loaded boundaries will be replaced with the new selections.

- Click OK
- In the Module 1\Boundaries folder select CA.shp
- Click Open

As part of the definition process, the user is required to select an identifier field that will be used for display and querying purposes.

🛞 Area Identifiers	
Areas required identifiers attached to them to allow SMART to be able to reference thes	e areas.
O Defined Identifier Field	
ID	~
The maximum length of an identifier is 256. Identifiers that exceed this length will be	truncated.
O Use System-Generated Identifiers	
	Cancel

- Select Defined Identifier Field
- Choose ID

0

- Click OK
- Repeat the process for the remaining two boundary types for this particular Conservation Area
 - Buffered Management Area = CA_BUFF.shp
 - Defined Identifier Field = BUFF_ID
 - Patrol Sectors = **PS.shp**
 - Defined Identifier Field = ZONE

• Press Close

the top left hand corner of the map window

Note: If no fields exist it is recommended to create meaningful identifiers or select the option "Use System-Generated Identifiers"

Note: If you don't immediately see the map layers in the window then click on the Zoom to Full Map Extent icon in

SMART : SMART - Parc National SMART

File Conservation Area Patrol Query Report Planning Help

Smart smart
Layers
Smart a Boundary
Aministrative Areas

P Patrol Sectors
P Buffered Management Area

Entering Stations

Another part of the initialization process is defining the list of stations that are used by employees to start their patrols.



In the menu bar ...

- Click Conservation Area ... Station List
- Click Add
- Change New Station to HQ
- Click in the Description cell for **HQ**
- Type in **Headquarters**
- Add **two** more Stations using the same process:
- Name Description
 - Patrol Station 1
 - Fixed patrol post 1
- Save and Close

Station List Stations Manage the list of Double click to edi	stations related to the conservation are	a.
Language: English	[en]	-
Name HQ Patrol Station 1 Patrol Station 2 Fixed Post 1	Description Headquarters	Add Disable Delete
	Save	Close

Defining Patrol Types

Patrol Types help define the mode of transportation used for the patrols. The Patrol Types are defaulted to Air, Ground and Marine. The subtypes or "Transportation Options" define the various forms of transportation used for each of the three Patrol Types. The "Add" button will allow administrative users to add new Transportation Options for the three Patrol Types of Air, Ground and Marine.

🐻 Patrol Ty	pes & Transport Types	
Patrol Typ Manage th conservati	nes & Transportation Options The patrol types and patrol transport types for the on area.	
Language:	English [en]	•
Patrol Types	1	
Active	Patrol Type	Disable
Active	Ground	
Active	Marine	
Active	Air	
Transportati	ion Options:	
Active	Transport Type	Add
Active	Foot	
Active	Vehicle	Disable
		Delete
	Save	Close

- Click Patrol ... Patrol Types from the Main Menu Bar
- Select Patrol Type Ground
- Click the Add button
- Select the **New Transport Type**.
- Type in **Foot**
- Click the **Add** button to add another entry to Ground Patrols
- Type in Vehicle
- Click Save
- Click Close

Defining Patrol Mandates

Patrol Mandates state the general objective of a patrol and require the administrator to define the entries. These are assigned to each patrol in order to categorize patrols according to their objective.

🕞 Patrol Mandate 📃	
Patrol Mandates	
Manage the list of mandates associated with a patrol. Double click to edit.	
Language: English [en]	•
Mandate	Add
Surveillance	
Anti-poaching	Disable
Follow-up	Delete
Research and monitoring	
Save	Close

- Click Patrol ... Patrol Mandates on the main Menu Bar
- Click the Add button
- Select the **New Patrol Mandate**.
- Type in **Surveillance**
- Add **3** more Mandates
 - Anti-poaching
 - Follow-up
 - Research and Monitoring
- Click Save
- Click Close

Defining Patrol Teams

Patrol Teams state the specialty of the team, or the name of the team. Patrol Teams are assigned to each patrol in order to categorize them according to their specialty or team name.

To create a new patrol team:

- Click Patrol ... Patrol Teams from the main Menu Bar
- Click Add
- Click the New Team entry and type in Mobile Team 1
- Select the Mandate Enforcement
- Click Add
- Click the New Team entry and enter Mobile Team 2
- Select the Mandate Anti-poaching
- Click the New Team entry and enter Community Team 1
- Select the Mandate Research and Monitoring

- Click Save
- Click Close

🛞 Patrol Teams				
Teams Manage the list of	patrol teams. Double c	lick to edit.		
Language: English	[en]		•	Â
Team	Mandate	Description	Add	
Mobile Team 1	Surveillance	New Team Description		-
Mobile Team 2	Anti-poaching	New Team Description	Disable	=
Community Team	1 Research and mo	New Team Description	Delete	
				-
		Save	Close	

Managing Patrol Options

Managing Patrol Options allows the Administrator to specify a time period (in days) for how long after a Patrol was entered that the users can edit the Patrol information. -1 indicates that there is no time limit for editing patrols - they may always be edited.

Another parameter on this screen, is whether to collect distance and direction information. For example, a Conservation Area manager may wish to have rangers record an observation that was seen, say, "500 metres to the North-East".

For the purposes of this training module you will leave the default settings.

<End of Module 1 - Configuring a Conservation Area>

Module 2 – Map navigation and GIS

Objective:

This Module will instruct you on how to use SMART's mapping features. You will learn how to create custom maps, export maps, set Basemaps and access attribute information directly from the mapping windows.

- Icons and Navigation
- Adding Datasets
- Styling and Labeling
- Exporting Data
- Setting Map Projections
- Setting Basemaps
- Adding new layers
- Adding map legends

Detailed Steps:

Embedded in SMART in the Mapping, Patrol and Query perspectives are the mapping features that allow for the visualization of the spatial data used to manage the Conservation Area. Boundaries, GPS waypoints and observations, query results and other spatial data sets are all easily viewed within SMART's mapping framework.

File	Cor	nserv	ation	Area	Patrol	Query	Report
	4	A	-	2	16		
<u>କ</u> ୍ଟ ୮	ayer	5 🖾		Û	₽ Q) 🔟 🖌	

• Click the Map Perspective icon

The Map Perspective contains two main sections. On the right is the mapping window called SMART Map View and on the left are the boundary layers that were loaded into the Conservation Area in Module 1 (*remember only 3 were loaded*).

Icons and Navigation

Upon logging into the application as an administrator SMART will open the Map Perspective window. In this window will be displayed the five (5) previously loaded administrative layers in the Layers tab found on the left side of the screen. The icons above the layers list allow for reordering, restyling and zooming to the extents of the layers.



Ŷ	Moves the selected layer up
Ŷ	Moves the selected layer down
٢	Changes the style of the selected layer
⊿	Toggles whether the selected layer should be focused or not
A	Zooms to selected layers

- Turn layers **off/on** by clicking the checkbox next to a layer
- Move layers **up/down** by using the arrows or by dragging the layer
- Select Conservation Area Boundary and click **Zoom to selected layers** icon

Changing Styling

SMART has an extensive tool set for creating custom maps with user-defined colors and labels.



- Select only the Patrol Sectors layer in the map legend
- Click the style icon above the map legend on the left hand side

The Style Editor dialog box will appear. There are many styling features that are available but for this exercise you will adjust the border fill color, line size and create a label for the feature.

🛞 Style Editor			
pe filter text here 🔻	Polygons		Ŧ
Lines Points Polygons Simple Feature Theme XML	Polygons Rules list	Style Properties General Border Fill Labels Filter P enable/disable border Manual Field based width 10 - none - • opacity color graphics dash dash offset line cap butt • ine join • • • • • • • • • • • • •	
Import Es	xport	Defaults Revert Apply Cancel OK	

- Click the tab **Border**
- Click **color** to open the color selector
- Select the color **you want**
- Click OK
- Set the width to **3.0**

Polygons	⇔ • ⇔ •
Rules list Image: Style list Style list Image: Image	Style Properties General Border Fill Labels Filter Image: second state of the second st
xport	Defaults Revert Apply Cancel OK
	Polygons Rules list group 0 default rule Style list Style list Image: Contract of the state of

- Click the tab **Fill**
- Click **color** to open the color selector
- Select the color **you want**
- Click OK

🛞 Style Editor		
type filter text he 🔻	Polygons	$\langle \! \Rightarrow \checkmark \rangle \checkmark$
Cache Filter Lines Points Polygons Simple Feature Theme XML	Rules list	Style Properties General Border Fill Labels Filter Venable/disable labelling label dummy name opacity 100 - none - rotation 0 - none - font set font font set font font color - halo 0 - Wendor Options max displacement pixels auto wrap pixels
		Defaults Revert Apply
Import Ex	port	Cancel OK

- Click the tab Labels
- Click enable/disable labeling to activate labeling
- In the pull down of label select **name**
- Click Apply
- Click OK

Setting Map Projections

SMART uses geographic coordinates and WGS84 as default (i.e. decimal degrees). If you want to load spatial boundaries in a different projection and/or datum (e.g. UTM and/or WGS 1972) you can set this manually.

• Go to Conservation Area menu – Manage Projections



• You will see the default projection. Click Add



- Select WGS 84/UTM Zone 32S
- Click Ok
- Click Set default
- Save and Close

Projection List	
Map Projections Manage the list of projections available to the users.	
Conservation Area Projections:	
WGS 84 [EPSG: 4326][default] WGS 84 / UTM zone 32S [EPSG: 32732]	Add Delete Edit Set Default
Sav	Close

- In the bottom right hand corner of the map window, click the projection and select the default option
- You should then see your map coordinates displayed in UTM

843269.1518, 9925561.5713 1:1,166,465 👻 WGS 84 / UTM zone 32\$

Add new layers

• In the top right corner of the map, click on the Add layer icon

0

Data Sources			
Select a Data S	ource to import f	rom	
Files			
Map Decora	ation		
🏽 Smart Area	Connection Page	2	
🛗 Web Map S	erver		
🌐 🎬 Web Map S	erver Tile Cache ((WMSC)	

- Select Files
- Open **Module 2** on your USB
- Select the file **Roads.shp**
- Click Open



Save a Basemap

In the SMART Map View you will see the boundary files that are associated with the Conservation Area. In the upper right of the SMART Map View window are the map navigation icons.

	Saves the current map as a Basemap
	Selects a saved Basemap
	Pans/moves the map
Q	Zooms the map in
	Zooms to the full extent of all layers
6	Adds data layers to the map

• To save your first Basemap click the Save Basemap Icon

🐻 Save Basemap		and		×
Saves the current map as	a basemap that can be us	ed as basemap on other maps.		1
Oreate new basemap				
Basemap Name: [en]	SMART Map		Tran	slate
Overwrite existing baser	nap definition			
Select Existing Basema	p:			
			Save	:el

- Select Create new Basemap
- Enter SMART Map
- Click Save

Add a Basemap legend

Map decoration can be added to the maps (including legends, scalebars etc) to make them easier to interpret.

- Click on Add map layers
- Select Map Decoration
- Click Next
- Check Legend
- Finish

le Add Data
Resource Selection
Please select a resource.
▲ ▼ E Legend
Calebar
🔲 🌐 Grid
□ ► North Arrow
Resources Selected: 1
< Back Next > Finish

- Deselect all map layers *EXCEPT* Conservation Area, Buffered Management Area, Patrol Sectors and Roads
 - Rename the map layers by right-clicking on the map layer name:
 - Conservation Area = SMART National Park
 - Buffered Management Area = Park buffer zone
 - Patrol Sectors = Patrol Sectors
 - Roads = Main roads

🖅 Layers	🛛 🗘 🕀	•	⊿ 🕹 🗆 🗖	💹 SMART Map
	Conservation (Area F	Roundary	
	Management		Сору	Ctrl+C
V 🥖	Patrol Sectors	Ê	Paste	Ctrl+V
V 💋	Buffered Man Administrative	×	Delete	Delete
		۲	Change Style	
		2	Zoom to Layer	
			Rename	
			Operations	•
		4	Export	
			Properties	



- Create a new map called: SMART Map with legend •
- Save •

ſ	🛞 Save Basemap	and have a	_ 0 X
	Saves the current map as	a basemap that can be used as basemap on other maps.	
ſ	Oreate new basemap		
	Basemap Name: [en]	SMART Map with legend	Translate
	Overwrite existing baser	nap definition	
	Select Existing Basema	p: SMART Map	
		Save	Cancel

Setting a Saved Basemap

After a Basemap has been saved it can be set as the default for the entire session.



- From the menu select Manage Basemaps
- Select SMART Map
- Click Set as Default
- Click Save
- Click Close

<End of Module 2 – Map Navigation and GIS>

Module 3 - Patrols

Objective:

In this module you will work through the process of creating patrols in SMART. The goal of the module is to let you become familiar with creating, editing, and managing patrol data.

- You will be working to understand the following features in this module:
 - Creating a new patrol
 - Downloading waypoints
 - Downloading or generating tracklogs
 - Data entry
 - Viewing a patrol map
 - Multi-leg patrols
 - Exporting and importing patrols
 - Patrol filters

Detailed Steps:

Patrol Perspective

The SMART application allows the user to switch between perspectives. In this module you will explore options within the Patrol Perspective.



• Click the **Patrol Perspective Icon**, highlighted above in red

You will see that in the Patrol List View there are no patrols currently listed.

• To create a patrol click on the Patrol menu item Create New Patrol

Patrol	Help			
🋵 Create New Patrol				
🌆 Import Patrol				
🛵 Export Patrol				
🛵 Patrol Options				
🍫 Patrol Mandates				
🥠 Patrol Types				
扰 Patrol Teams				

The Patrol ID will be automatically populated with unique values unless the user enters a new ID manually.

Create New Patrol	
Patrol ID	
Set the patrol ID below. If you wish, you may use the default value that had be automatically generated.	een
Betrel ID: SMART 000001	
Patrol ID: SMART_000001	
< Back Next > Finish	Cancel

- Click Next
- For the window 'Patrol Plan' leave as 'None' selected an pass directly to the next window
- For Intelligence no intelligence motivated this patrol so leave blank and click Next

The default Patrol Types of Air, Ground and Marine are listed at this stage.

🖲 Create New Patrol	
Select the patrol type	
	Choose the patrol type: Air Ground Marine
	< Back Next > Finish Cancel

- Select Ground and click Next
- SMART will now reference the previously entered choices for Ground Patrols and populate a pull-down list with those values.
- Select Foot and click Next

This screen allows you to specify whether the patrol is armed.

🛞 Create New Patrol	
Identify whether the patrol was armed or not armed.	
Is this patrol armed? Ves No	
< Back Next >	Finish Cancel
• Select No and click Next

Once again, SMART references the previously entered values for Teams and Stations to populate pull-down lists.

Select

- Team: Mobile Team 1
- Station : HQ
- Next

Select

- Patrol Mandate : Surveillance
- Next

In the Patrol Objectives form you can type free form text to describe the objective of the patrol.

le Create New Patrol	
Enter the patrol objective.	
Patrol Objective:	
Responding to reports of illegal activities.	
< Back Next > Fi	nish Cancel

- Type in "Responding to reports of illegal activities."
- Click Next

In the Patrol Comments form you can type free form text to enter any comments related to the patrol.

🛞 Create New Patrol	
Enter any comments associated with the patrol.	
Patrol Comments:	
Found evidence:people encountered.	
< <u>Back</u> Next >	Einish Cancel

- Type in "Found evidence : people encountered."
- Click Next

The next screen is for entering the start and end date of the patrol.

Create New Patrol		
Select the start and	end dates for the patrol.	
Patrol Start Date:	Sunday , September 09, 2012	
Patrol End Date:	Monday , September 10, 2012	
	< Back Next > Finish	Cancel

- Enter start date of **9 Sep 2012** and end date of **10 Sep 2012**
- Next

Each patrol must have at least one employee associated with it. For this patrol, you will select three employees to be associated with the patrol.

• Click Add ->

Once the three names appear in the Selected Employees window

• Click Next

groups. At least one member must be selected elect members that participated in the patrol:			
Denis Lambert [SMART16] Desire Ngwa [196600143] Dieudonné Ekotouba [SMART15] Edgar Ambassa Ongono [SMART25] Emma Stokes [SMART11] Fortune Iyenguet [SMART22] Ghislain Akouma [197500140] Herbert Ekodeck [SMART17] Hilde Vanleeuwe [SMART23]	Add -> <- Remov	Achille Nsafoud (SMART20) Alain Lushimba (SMART18) Cédric Sepulchre (SMART13)	

Each patrol must be assigned a leader. SMART will populate the pull-down list with the three previously selected names.

- Select a patrol leader
- Click Next

SMART has the ability to manage multi-leg patrols. These patrols involve portions of the patrol splitting off into a separate group with their own leader and transport type. Later in the exercise you will create a multi-leg patrol. For this patrol you will keep the default setting.

🐻 Create New Patrol	
Identify whether the patrol was a multi-leg patrol.	
Is this a multi-leg patrol? No Ves	
A multiple leg patrol is identified by a change in patrol leader, or by a patrol splitting into	o multiple groups.
< <u>Back</u> <u>N</u> ext > <u>Fi</u> nist	n Cancel

- Select No
- Click Finish

SMART will now bring you to the Patrol Summary screen, which shows all of the values that you entered in the previous forms. Any of these can be edited by clicking the <u>edit</u> links next to the item.

🐻 SMART : SMART - Training				le la constante de la constante	
File Conservation Area Patrol Query Report Planni	g Intelligence Help				
🔟 夕 久 🔚 🗷 蔡 🗇 🛛 க					smart sm
🐓 Patrol List View 🏀	👂 🗖 🗐 🥠 Patrol_SMART_0000	01 🛛			
Patrol List View	Patrol_SMARI_00001 Patrol Information Patrol Type: Transportation Type Transportation Type Armed?: Mandate: Team: Station: Members:	Ground Ground Foot Surveillance Mobile Team 1 HQ t [Leader] Cedric Sepr Denis Lambert [SM/	Patrol ID: edit Objective: edit edit edit edit Comment:	SMART_000001 Responding to illega activities Evidence: people encountered	edit
양i Waypoint Info 영 역도 Layers Da	e Timer	C Dieudonne Ekotoub	<u>edit</u>		⊤ <u>edit</u>
	Patrol Data				
	Start Date: 09 Sep	otember 2012	End Date: 10 Sep	tember 2012	edit
	Day	Start Time	End Time	Distance Hou	urs
	09-Sep-2012 Sun	00:00:00	23:59:59	0 24h	0m
	10-Sep-2012 Mon	00:00:00	23:59:59	0 24h	0m
Load default layers to map	Summary 09-Sep-201	2 10-Sep-2012 Map Other	•		

• Click on the date tab Sep 9 2012

Waypoints

Waypoints can be entered into SMART in three distinct ways:

- Direct import from a GPS device;
- Import of a GPX data transfer file; or
- Manually entered.

🛞 SMART : SMART - SMART Conservation Area		• ×
File Conservation Area Patrol Query Report Planning	Help	
🔟 🤌 🗛 🔚 🦈 🤸	s	smart smaty
🐓 Patrol List View 🦾 🍫 🗖 🗖	SMART_000001 🕱	- 8
SMART_000001 [8/9/12 - 8/9/12]	Patrol Day: Thursday, Aug 9, 2012	^
	Start Time: 12:00:00 AM 😓 End Time: 11:59:59 PM 😓 Rest Minutes: 0 Total Hours Patrolled: 24.00	
	Distance Travelled (km): 0 <u>Set Track</u> <u>View TrackPoints</u>	
	Observations / Waypoints: Import Waypoints	E
V Layers X U V Waypoint	Waypoint Id Longitude Latitude Time Observation Comment Attachments	
Track		
Conservation Area Boundary		
Management Sectors Buffered Management Area		
 Administrative Areas Patrol Sectors 	Add Waypoint Delete Waypoint(s) Move Waypoint(s)	
	Summary Aug 9, 2012 Map	
	1	

• Click Import Waypoints ...

🖲 Import Waypoint Data	
Select the location where you wish to import waypoints from.	
Import waypoints from: O GPS Device O GPX File	
< Back Next > Finis	h Cancel

- Select **GPX File**
- Click Next

🛞 Import Waypoint Data	
Select the location where you wish to import waypoints from.	
Import All (and assign to correct day) Import Only waypoints for Aug 9, 2012 Select which waypoints to import for Aug 9, 2012	Browse
< Back Next > Finish	Cancel

- Select Import All (and assign to correct day)
- Browse to the folder Module 3 select **SMART_Mission1_wpt.gpx**
- Click **OK**
- Click Finish

SMART will read the GPX file and assign the waypoints to the appropriate date.

File Conservation Area Patrol Query Report Planning Help Patrol List View Image: Conservation Area Image: Conservation Area Patrol SMART_000001 Patrol SMART_000001 SMART_000001 [8/9/12 - 8/9/12] Image: Conservation Area Start Time: 12:00:00 Ah Distance Travelled (km): Observations / Waypoint Uservations / Waypoint Image: Conservation Area Boundary Image: Conservation Area Boundary Image: Conservation Area Boundary Image: Conservation Area Boundary Image: Conservation Area Boundary Image: Conservation Area Boundary Image: Conservation Area Boundary Image: Conservation Area Boundary Image: Conservation Area Boundary Image: Conservation Area Boundary Image: Conservation Area Boundary Image: Conservation Area Boundary Image: Conservation Area Boundary Image: Conservation Area Image: Conservation Area Image: Conservation Area Boundary Image: Conservation Area Image: Conservation Area Image: Conservation Area Image: Conservation Area Image: Conservation Area Image: Conservation Area Image: Conservation Area Image: Conservation Area Image: Conservation Area Image: Conservation Area Image: Conservation Area Image: Conservation Area							
Image: Simple Sectors Image: Simple Sectors <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>							
 Patrol List View SMART_000001 [8/9/12 - 8/9/12] Patrol Day: Thursd Start Time 12:00:00 AN Distance Travelled (km): Observations / Waypoint Waypoint Id Longitu 99:14154 99:14157 99:15131 10:19:12387 11:19:17:139 12:19:17:139 14:19:17:139 14:19:17:139 15:19:23825 16:19:23825 16:19:23825 16:19:23825 							smart sma
§ SMART_000001 [8/9/12 - 8/9/12] Patrol Day: Thursd Start Time: 12:00:00 Ah Start Time: 12:00:00 Ah Start Time: 12:00:00 Ah Distance Travelled (km): Observations / Waypoint Observations / Waypoint Waypoint Observations / Waypoint Waypoint Opservations / Waypoint Waypoint Opservations Waypoint <td>3</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>- 6</td>	3						- 6
Patrol Sectors Distance Travelled (km): Observations / Waypoint Observations / Waypoint Waypoint 99.1415 Waypoint 99.1415 Waypoint 99.1417	ay, Aug 9, 2012	9, 2012 d Time: 11:59:59 Pf	M 🚔 Re	st Minutes: 0	Total Hours	Patrolled: 24.00	
%a. Layers ⊠	0 Set Track s: Import Waypoints	Set Track View	TrackPoints				
1 99.1344 2 99.1417 3 99.1417 3 99.1417 5 99.1427 5 99.1431 Ø Ø Ø Waypoint Ø O conservation Area Boundary Ø Management Sectors Ø Buffered Management Area Ø Patrol Sectors Ø Patrol Sectors	ie Latitude	atitude Tin	ne	Observation	Comment	Attachments	
2 99:1417. 99:1427. 99:1427. 99:1427. 5 99:147. 5 99:147. 5 99:147. 5 99:147. 5 99:147. 5 99:147. 5 99:1521. 7 99:1522. 7 99:1632. 99:1632. 10 99:1632. 11 99:1763. 12 99:1763. 13 99:1763. 14 99:1763. 15 99:2382. 16 99:2382. 16 99:2382.	8897 15.52023869	15.52023869 8:04	4:07 AM	(None)	09-AUG-12 08:04:07	(None)	
3 99:1415 4 99:1477 5 99:1493 ✓ Waypoint ✓ Nonsequent ✓ Conservation Area Boundary ✓ Management Sectors ✓ Administrative Areas ✓ Patrol Sectors ✓ Patrol Sectors ✓ Patrol Sectors	4236 15.51764424	15.51764424 8:5	2:16 AM	(None)	09-AUG-12 08:52:16	(None)	
% Layers ⊠ 0 0 0 0 99.1427 % Layers ≅ 0 0 99.1432 6 99.1537 Ø ■ Waypoint 0 0 99.1601 7 99.1601 Ø □ Conservation Area Boundary 0 99.1632 10 99.16533 Ø □ Buffered Management Area 11 99.1739 10 99.16533 Ø □ Patrol Sectors 13 99.17633 13 99.17633 Ø □ Patrol Sectors 13 99.17633 14 99.23823 10 99.23823 15 99.23823 15 99.23823 10 99.23823 15 99.23823 16 99.23823	5147 15.517434189	15.517434189 9:3	0:12 AM	(None)	09-AUG-12 09:30:12	(None)	
Image: Sectors 5 9914493 Image: Sectors 9915301 Image: Sectors 7 9915321 Image: Sectors 8 9916321 Image: Sectors 9916321 9916321 Image: Sectors 9916321 10 9916321 Image: Sectors 10 9916321 11 9917931 Image: Sectors Image: Sectors 11 9917931 12 9917652 Image: Sectors Image: Sectors 13 9917652 14 9917652 Image: Sectors Image: Sectors 14 9917652 15 9923821 Image: Sectors Image: Sectors Image: Sectors 15 9923821 Image: Sectors Image: Sectors Image: Sectors 15 9923821 Image: Sectors Image: Sectors Image: Sectors Image: Sectors 16 9923821 Image: Sectors Image: Sectors Image: Sectors Image: Sectors 15 9923821 Image: Sectors Image: Sectors Image: Sectors Image: Sectors 15 16 16 16 16	443 15.525235645	15.525235645 10:	:07:45 AM	(None)	09-AUG-12 10:07:45	(None)	
*5. Layers 6 99.1531 Image: Solution of the second and the seco	5148 15.523813237	15.523813237 10:	:36:27 AM	(None)	09-AUG-12 10:36:27	(None)	
Waypoint 7 99.1567 W Track 8 99.1601 W Conservation Area Boundary 9 99.1632 Management Sectors 10 99.1587 W Management Area 11 99.1739 W Administrative Areas 12 99.17652 W Administrative Areas 13 99.17652 Management Area 14 99.27652 Management Area 14 99.27652 Management Area 14 99.27652 Management Area 15 99.23827 Management Area 16 99.23827 Management Area 16 99.23827	0457 15.521765286	15.521765286 11:	:06:49 AM	(None)	09-AUG-12 11:06:49	(None)	
♥ // Track 8 99.16011 ♥ // Conservation Area Boundary 9 99.1632 ♥ // Management Sectors 10 99.1632 ♥ // Management Sectors 10 99.1632 ♥ // Management Area 11 99.1793 ♥ // Administrative Areas 12 13 99.1765 ♥ // Patrol Sectors 13 99.1765 14 99.1765 16 99.23827 16 99.23827 16 99.23827	242 15.523058278	15.523058278 11:	:32:42 AM	(None)	09-AUG-1211:32:42	(None)	
Conservation Area Boundary 9 99.1632 Management Sectors 10 99.1632 Administrative Areas 11 99.17653 Administrative Areas 12 99.17653 Administrative Areas 13 99.17653 Administrative Areas 13 99.17653 Image: Administrative Areas 14 99.17653 Image: Administrative Areas 15 99.23821 Image: Administrative Areas 16 99.23821 Image: Administrative Areas 16 99.23821	4685 15.524718398	5.524718398 11:	:55:19 AM	(None)	09-AUG-12 11:55:19	(None)	
Imagement Sectors 10 99.1658 Imagement Area 11 99.1739 Imagement Areas 12 99.1736 Imagement Areas 12 99.1765 Imagement Areas 13 99.1765 Imagement Areas 13 99.1765 Imagement Areas 14 99.1765 Imagement Areas 15 99.23827 Imagement Areas 16 99.23827	8679 15.526812365	5.526812365 1:0	1:40 PM	(None)	09-AUG-12 13:01:40	(None)	
Image: Constraint of the sectors 11 99,1733 Image: Constraint of the sectors 12 99,1765 Image: Constraint of the sectors 13 99,1765 Image: Constraint of the sectors 13 99,1765 Image: Constraint of the sectors 13 99,1765 Image: Constraint of the sectors 14 99,1765 Image: Constraint of the sectors 15 99,2382 Image: Constraint of the sectors 16 99,2382	5399 15.528422026	1:2	5:09 PM	(None)	09-AUG-12 13:25:09	(None)	
Administrative Areas 12 99.1765; Patrol Sectors 13 99.1765; 14 99.1765; 15 15 99.2382;	5 15.536364298	15.536364298 2:1	3:41 PM	(None)	09-AUG-12 14:13:41	(None)	
Patrol Sectors 13 99.1765 14 99.1765 15 99.23851 15 99.23821 16 99.23821	0836 15.547801238	5.547801238 2:5	7:28 PM	(None)	09-AUG-12 14:57:28	(None)	
14 99.1765 15 99.2365 16 99.2382	0365 15.547825545	5.547825545 3:2	7:52 PM	(None)	09-AUG-12 15:27:52	(None)	
15 99.2385 16 99.2387	1976 15.547798388	15.547798388 3:4:	1:16 PM	(None)	09-AUG-1215:41:16	(None)	
16 99.2382	5319 15.658892719	5.658892719 6:1:	1:53 PM	(None)	09-AUG-12 18:11:53	(None)	
	5848 15.659488756	15.659488756 6:2	3:11 PM	(None)	09-AUG-12 18:23:11	(None)	
Add Waypoint Deleter	Waypoint(s) Move Wa) Move Waypoint	t(s)				

Add Waypoint - Allows for the manual creation of a waypoint

Delete Waypoint(s) - Deletes a selected waypoint

Move Waypoint(s) - Allows for a waypoint to be moved to a different day

Setting Tracks

As part of the patrol, Tracks allow SMART to make calculations based on the length of the patrol and to allow for visualization of the patrol's route.

Most GPS units collect Track information, and SMART has the ability to import Tracks in the same way as waypoints were imported. SMART can also calculate Tracks based on the available waypoint location and waypoint times.

• Click Set Track ... (see above screenshot for location)

🐻 Import Track Data	
Select the location where you wish to import tracks from.	
Import tracks from:	
< Back Next > Finish	Cancel

- Select Generate from waypoints
- Next
- Select Generate tracks from waypoints for all days
- Finish

lmport Track Data	
Select the days you wish to generate tracks for.	
 Generate tracks from waypoints for all days Generate tracks from waypoints for only Sep 9, 2012 	
<pre></pre>	Cancel

Note: It is at this screen where you can choose to have SMART **calculate** the Track based on the previously imported waypoints, if no GPS track data is available.

Patrol Day: Sunday, Sep 9, 2012

Start Time: 12:00:00 AM	🗧 End Tir	me: 11:59:59 PM 🚔	Rest Minutes:	0] 1
Distance Travelled (km):	21.66	Set Track View T	rackPoints		

Entering Observations

At this point, you should have configured your Conservation Area with an appropriate observation data model. Now comes the time to transfer the observation data collected in the field into SMART.

Waypoint Id	Longitude	Latitude	Time	Observation Com	ment At	tachments
1	99.134408897	15.52023869	8:04:07 AM	(None) 09-Al	JG-12 08:04:07 (N	one)
2	99.141744236	15.51764424	8:52:16 AM	(None) 09-Al	JG-12 08:52:16 (N	one)
3	99.141585147	15.517434189	9:30:12 AM	(None) 09-Al	JG-12 09:30:12 (N	lone)
4	99.14278443	15.525235645	10:07:45 AM	(None) 09-Al	JG-12 10:07:45 (N	lone)

- Double-Click the **Observation cell** for Waypoint 1
- Click the square button (highlighted above) on the right to bring up the observation data mod

🛞 Waypoint Observations - Waypoint ID: 1				
Observation Categories Select the category(ies) of observation made at t	he waypoint. More th	nan one category	can be selected he	re.
type filter text 0 item(s) matched		Camp	os (Human activity	
	< Back	Next >	Finish	Cancel

You are now going to start to enter observations – firstly for this first waypoint (a hunting camp that was burned down by the patrol team)

- Double-click on **Camps** to add it to the right-hand window
- Next

Haypoint Observations - Waypoint ID: 1		٢
Observation Details Enter the observation attributes for Camps - Hu	uman activity. Add multiple rows if required.	-
Camps	Page 1 o	f1
Type of threat:	Hunting	-
Status:	Active	•
Size of camp:	Small	•
Number of racks for drying or smoking meat:	1	
Patrol action - camps:	Destroyed •	•
	Update Observation Add Observation)

 Enter the observation details as follows: Threat = Hunting (Note : you can start typing 'hunting' directly in the text box, select 'Hunting' from the drop down list, then click Enter) Status = Active Size of camp = Small Number of racks = 1 Patrol action = Destroyed

Note : To navigate between the different observation attributes, use the tab key. To select from the drop down list for each attribute, use the left/right arrows and click Enter on the selection

- Click Next
- Click **Yes** when asked if you want to save your changes
- You can now preview the observation data to check it
- If you want to make edits click Edit in the upper right corner
- If not, click **Finish**

nmary					
view the observ servations and	ation data the Delete I	entered. Press 'N link to remove ob	ext' to enter another observation, use the Edit lin servations. Once complete, press 'Finish'.	k to modify	
Camps - Human	activity				<u>Delete</u> <u>Edi</u>
Type of threat	Status	Size of camp	Number of racks for drying or smoking meat	Patrol action -	camps
Hunting	Active	Small	1.0	Destroyed	
-					

You can now see the observation of a Camp (1) in the patrol window corresponding to Waypoint 1

Now you're going to fill in the observation data for the remaining waypoints

Note: The default value for all waypoints in SMART is 'none' which is equivalent to the 'Position' point in MIST.

Waypoint 2 - Direct observation of an adult male elephant

- Double-click in the observation cell for Waypoint 2 to open the data model
- Under Wildlife, double-click on Wildlife Direct Observation
- Next
- For Threat select 'none'
- IN the Species window, start to type 'Elephant'
- Select 'Loxodonta africana'
- Enter Number of adult males = 1
- Select Patrol Action = **Observed only**
- Leave the other attributes blank
- Click Finish
- Click Yes to save.

Waypoint 3 – Two hunters arrested by the patrol

- Double-click in the observation cell to open the data model
- Under Human Activity, double click on **People Direct Observation**
- Select Threat = Hunting
- Number of people = 2
- Armed? = Unarmed
- Origin = Village A
- Sex = Female
- Patrol action = Arrested
- Click Finish
- Click Yes to save.

Waypoint 4 – Large and active hunting camp with 3 drying racks. Destroyed by the patrol.

• Follow the steps under Waypoint 1

Waypoint 5, 6 - Position points

• Leave as default option 'none'

Waypoint 7 – A hunter (male, Village B) given a verbal warning by the patrol

• Follow the steps under Waypoint 3

Waypoint 8 & 9 : Position point

• Leave as default option 'none'

Go to the second patrol day by selecting the date tab for Sep 10, 2012

Waypoint 10 - Position point

• Leave as default option 'none'

Waypoint 11 – Fresh poached elephant carcass. Tusks still present and seized by the patrol

In SMART you are able to enter multiple observations for a single waypoint

For this waypoint (11), you will enter multiple observations (observation of a carcass and seizure of trophies – in this case tusks)

- Double-click in the observation cell to open the data model
- Under Wildlife, double click on Carcass and Trophies to add them both to the right-hand window
- First, we'll enter the details for the carcass
 - Threat = hunting
 - Species = **elephant** (start typing directly into the text filter to bring up the options)
 - Cause of death = **Poaching**
 - Age of carcass = **Fresh**
 - Age of animal = Adult
 - Sex of animal = Male
 - Site secured = Yes
 - Patrol action = Left at scene
 - Missing animal parts = No
 - [Leave the Type of Trophies blank, as none were missing]
 - Next
- Now you are going to enter the details for the two trophies that were found by the patrol and seized
 - Threat = hunting
 - Species = elephant
 - Type of trophy = Tusks
 - Number = **2**
 - Patrol action = **Collected**
 - Finish and Save

You'll now see two observations entered under Waypoint 11

Waypoint ID	Longitude	Latitude	Time	Observation	Comment	Attachments
10	11.70201961	-0.306531144	9:21:39 AM	(None)	10-SEP-12 8:21:39	(None)
11	11.701140599	-0.308386395	9:30:07 AM	Carcasse (1); Partie d'animale (1)	10-SEP-12 8:30:07	(None)

Select Waypoint 11 and check the details of the observation in the left-hand bottom corner of the patrol window under **Waypoint Info**

🐓 Patrol List View	/s 🆸 🗖 🗖	4	Patrol DM_00	0001 🔀					
		F	Patrol Day:	Monday, Se	ep 10, 2012				
			Start Time: 12 Distance Trave	:00:00 AM 🚔 E Iled (km): 0	nd Time: 11:59: <u>Set Track</u>	59 PM 🚽 Res	t Minutes: 0	Total Hours Pat	rolled: 24h 0m
ମ୍ଭ Waypoint Info 🛛 😭	Layers 🗆 🗆	Í	Observations /	Waypoints: Imp	ort Waypoints				
Waypoint ID: 11	Date Time: 9/10/12 9:30 AM		Waypoint ID	Longitude	Latitude	Time	Observation	Comment	Attachments
			10	11.70201961	-0.306531144	9:21:39 AM	(None)	10-SEP-12 8:21:39	(None)
Carcass - Animals		N	11	11.701140599	-0.308386395	9:30:07 AM	Carcass (1);	10-SEP-12 8:30:07	(None)
Action Taken - Animals	: Left At Scene		12	11.700291764	-0.310740955	9:39:40 AM	(None)	10-SEP-12 8:39:40	(None)
Age of Animal:	Adult		13	11.700575659	-0.311079416	9:43:06 AM	(None)	10-SEP-12 8:43:06	(None)
Age of Animal Carcass:	Fresh		14	11.700585466	-0.311198607	9:45:02 AM	(None)	10-SEP-12 8:45:02	(None)
Cause of Death:	Illegal		15	11.70122006	-0.313474881	10:00:02 AM	(None)	10-SEP-12 9:00:02	(None)
Sex:	Male		16	11.703191651	-0.316778272	10:13:50 AM	(None)	10-SEP-12 9:13:50	(None)
Species:	Loxodonta africana (African Elephant)		17	11.705150167	-0.319307428	10:30:03 AM	(None)	10-SEP-12 9:30:03	(None)
Threat:	Hunting & Collecting Terrestrial Animals		18	11.709664827	-0.319589647	10:45:15 AM	(None)	10-SEP-12 9:45:15	(None)
			19	11.711062593	-0.318269832	10:55:24 AM	(None)	10-SEP-12 9:55:24	(None)
Trophies - Animals			20	11.711145658	-0.31827067	11:04:38 AM	(None)	10-SEP-12 10:04:38	(None)
Action Taken - Animals	: Collected		21	11.711965995	-0.31511547	11:15:10 AM	(None)	10-SEP-12 10:15:10	(None)
Number of trophies:	2.0		22	11.706215255	-0.31257215	11:30:43 AM	(None)	10-SEP-12 10:30:43	(None)
Species:	Loxodonta africana (African Elephant)		23	11.705504721	-0.310813962	11:45:52 AM	(None)	10-SEP-12 10:45:52	(None)
Threat:	Hunting & Collecting Terrestrial Animals		24	11.707497183	-0.308461664	11:56:13 AM	(None)	10-SEP-12 10:56:13	(None)
Type of Trophy:	Tueke	/	25	11.707282271	-0.307665635	12:00:13 PM	(None)	10-SEP-12 11:00:13	(None)
Type of Hopity.			26	11.705511259	-0.303769642	12:15:08 PM	(None)	10-SEP-12 11:15:08	(None)
			27	11.7043305	-0.303374855	12:30:11 PM	(None)	10-SEP-12 11:30:11	(None)
		s	Add Waypoin	t Delete Waypo	pint(s) Move V	Vaypoint(s)			

Waypoint 12 : Position point

• Leave as default option 'none'

Waypoint 13 – A group of chimpanzees observed, composed of 1 male, 4 females and 2 juveniles

• Follow the steps under Waypoint 2 (selecting Species = Chimpanzee)

Waypoint 14 - Position point

• Leave as default option 'none'

Waypoint 15 – 15 set snares (wire cables) confiscated by patrol

• In the observation cell, you can take a shortcut to the data model by starting to type '**snare'** directly in the observation window:

Longitude	Latitude	Time	Observation	Comment	Attachments	
11.855052207	-0.376542499	10:33:53	Camps (1)	09-SEP-12 9:33:53	(None)	
11.825351771	-0.382635808	10:40:08	sn	09-SEP-12 9:40:08	(None)	
11.787460959	-0.369753158	10:49:19	a 🚯 Data M	odel		
11.787415193	-0.369752403	11:50:02	a 📕 Hur	nan activity		
11.755346954	-0.336953849	12:00:21	A 📲 🚽	Weapons and gear seiz	eed	
11.746627595	-0.313957259	12:10:01		Snares and traps	J	
11.733612176	-0.322081838	12:20:04				
11.709576901	-0.319280019	12:30:17				
11.702082558	-0.306723844	12:37:08				

- Select Snares and Traps form the drop-down list
- Click Enter
- Click 'Next' in the data model window (the observation Snares is already added)
 - Threat = hunting
 - Number of weapons/gear = 15
 - Type of trap = Metal cable snare
 - Set = Yes
 - Finish and save

Waypoint 16 - Position point

• Leave as default option 'none'

<u>Waypoint 17 – A poacher arrested by the patrol. The patrol also seized a military weapon, ammunition for the weapon, and 15kg of fresh buffalo bushmeat from the poacher</u>

You are going to enter 4 observations under Waypoint 17 :

1. Human activity – People – direct observation (for the poacher who was arrested)

2. Human activity – Weapons/gear seized –weapons/ammunition – military weapons (for the military firearm seized)

3. Human activity – Weapons/gear seized –weapons/ammunition – ammunition (for the ammunition seized)

4. Wildlife - bushmeat (for the fresh buffalo meat seized)

- Double-click in the observation cell to open the data model
- Add all the four categories listed above in the right-hand window

Waypoint Observations - Waypoint	2	
Observation Categories Select the category(ies) of observatior	nade at the waypoint. More than one catego	ory can be selected here.
type filter text		
0 item(s) matched		
 Weapons and gei Snares and train Weapons and Military with a Military with	 People - direct observations (Huma Military weapons (Weapons and am Ammunition (Weapons and ammu Bushmeat (Wildlife) 	n activity) imunition - Weapons and gear seized - Huma nition - Weapons and gear seized - Human ad

- Enter the details for each observation
- Finish

Waypoint 18 & 19 : Position point

• Leave as default option 'none'

Waypoint 20: Confiscation of 25m³ of illegally harvested wood (Ebony)

• Start to type Timber directly in the observation cell and select Cut Pieces form the drop down list.

Latitude	Time	Observation	Comment	Attachments
-0.376542499	10:33:53	Camps (1)	09-SEP-12 9:33:53	(None)
-0.382635808	10:40:08	(None)	09-SEP-12 9:40:08	(None)
-0.369753158	10:49:19	(None)	09-SEP-12 9:49:19	(None)
-0.369752403	11:50:02	Ti 📖	09-SEP-12 10:50:02	(None)
-0.336953849	12:00:21	🔺 🐻 Data M	lodel	
-0.313957259	12:10:01	a 🛔 Hu	man activity	
-0.322081838	12:20:04	4 👗	Timber	
-0.319280019	12:30:17		📕 Logs	
-0.306723844	12:37:08		Firewood	
			Cut pieces	
			📕 Tree stumps	
			Planks	
			Charcoal	

- Enter
- Click 'Next' to go directly to the details of the observation
 - Threat = Logging (you can start typing directly in the text filter)
 - Patrol action = Confiscation
 - Age of sign = **Fresh**
 - Tree species = **Ebony**
 - Volume = 25
 - Finish and Save

Waypoint 21 : Position point

• Leave as default option 'none'

Waypoint 22 : A fresh gorilla nest observed by the patrol

- Type 'Nest' directly in the observation cell to bring up the drop-down list: select Wildlife Indirect Sign Nest and click Enter
- For the observation details:
 - Threat = None
 - Species = Gorilla
 - Age = Fresh
 - Action = **Observed only**

Waypoint 23 : Position point

• Leave as default option 'none'

Waypoint 24 : A bottle of 1m³ of honey collected from the forest seen by the patrol

- Double-click in the observation cell to open the data model
- Add Human Activity NTFPs
- Threat = NTFP collection
- Enter the remaining details as necessary

Waypoint 25 : Position point

• Leave as default option 'none'

Waypoint 26 : A fresh spent gun cartridge seen by the patrol

- Double-click in the observation cell to open the data model
- Add 'Human Activity People Indirect Sign'
- Enter the remaining details as necessary

Waypoint 27: Position point

• Leave as default option 'none'

Waypoint 28 : A bushfire (12 ha burnt) set to flush out animals for hunting, observed by the patrol

- Double-click in the observation cell to open the data model
- Add 'Human Activity Bushfire'
- Enter the remaining details as necessary

Waypoint 29: Position point

• Leave as default option 'none'

Waypoint 30: An illegal fisherman given a verbal warning by the patrol and his fishing net confiscated

- Double-click in the observation cell to open the data model
- Add Human Activity People Direct Observation AND Human Activity Weapons/Gear Seized Fishing Gear
- Enter the details as follows:

eople - direct	observations - Huma	n activity								Delete
Type of threat	Number of people	Armed	Origin	Sex	Patrol action	n - people	Name	Age	Identify number	Phone number
Fishing	1.0	Unarmed	Village A	Male	Male Educated Simo			mith 23.0	1245765	07893444
Fishing gear - V	Veapons and gear seiz	ed - Human	activity							Delete

• Finish and Save

You can preview all the observations you have entered by selecting the waypoint of interest and viewing the **'Waypoint Info'** in bottom left-hand corner of the patrol window

SMART : SMART - Training							
File Conservation Area Patrol Query Report Planning Intellig	ence Help						
📓 🌶 🗛 🔚 🗟 😵 🛸 🐁							
Patrol List View 🐁 🐓 🗖 🖗 Patrol SMART_000001 😣							
≸ SMART_000001 [09/09/12 - 10/09/12]	Patrol Day: Start Time: 00 Distance Trave Observations /	Sunday, 09 :00:00 👻 End Iled (km): 0 Waypoints: Imp	-Sep-2012 Time: 23:59:59 Set Track ort Waypoints	Rest Mi	nutes: 0	Total Hours Patroller	d: 24h 0m
	Waypoint ID	Longitude	Latitude	Time	Observation	Comment	Attachments
	1	11.855052207	-0.376542499	10:33:53	Camps (1)	09-SEP-12 9:33:53	(None)
	2	11.825351771	-0.382635808	10:40:08	(None)	09-SEP-12 9:40:08	(None)
	3	11.787460959	-0.369753158	10:49:19	(None)	09-SEP-12 9:49:19	(None)
	4	11.787415193	-0.369752403	11:50:02	People - dir	09-SEP-12 10:50:02	(None)
	5	11.755346954	-0.336953849	12:00:21	(None)	09-SEP-12 11:00:21	(None)
	6	11.746627595	-0.313957259	12:10:01	(None)	09-SEP-12 11:10:01	(None)
	7	11.733612176	-0.322081838	12:20:04	(None)	09-SEP-12 11:20:04	(None)
	8	11.709576901	-0.319280019	12:30:17	(None)	09-SEP-12 11:30:17	(None)
	9	11.702082558	-0.306723844	12:37:08	(None)	09-SEP-12 11:37:08	(None)
👫 Waypoint Info 🛛 📴 Layers 📃 🗖							
Waypoint ID: 4 Date Time: 09/09/12 11:50							
Fishing gear - Weapons and gear seized - Human activity							
Length of net metres: 15.0							
Net mesh size: 12.0							
Number of weapons or gear: 1.0							
Type of fishing gear: Fishing net							
Type of threat: Fishing						1	i i
People - direct observations - Human activity	Add Waypoin	t Delete Wayp	oint(s) Move V	Vaypoint(s)			
Ane: 23.0 *	Ane: 23.0 * Summary 09-Sep-2012 10-Sep-2012 Map Other						

Adding Attachments

Attachments of any file type can be added to each waypoint via the observation window.

Observation	Comment	Attachments
Track		(None)
(None)		(None)

- Double-click the Attachment cell for Waypoint ID 11
- Click the square icon to launch the file attachment process

🔞 Waypoint Attachments	
List of attachments associated with this waypoint.	
Attachments:	
	Add Delete Open
	OK Cancel

- Click Add
- Browse to the folder Module 3
- Select the file **carcass.jpg**
- Click OK

Viewing Attachments

Attachments in SMART are opened by other applications that are installed on your computer.

🛞 Waypoint Attachments	
List of attachments associated with this waypoint.	
Attachments:	Add Delete Open
	OK Cancel

- Open the Waypoint dialog box
- Click on carcass.jpg
- Click Open

Importing Patrols

Now that you have worked through the process of creating a couple of patrols you will now import a few more patrols. Patrol exports/imports allows for multiple computers to be used to enter in the patrol information while allowing one or more computers to function as the central computer that imports all of the patrols.



- From the menu select Patrol Import Patrol
- Click Add
- Browse the folder **Module 3\Patrols** on the USB
- Select the two patrols **SMART_000002** and **SMART_000003**
- Click Import

After a successful import you should see more patrols in the Patrol Perspective window.

Note: To view all patrols, select the Patrol Filter and specify 'Include All Dates'



Patrol Perspective - Map

The initial map perspective is only one area where the mapping layers can be accessed. There are mapping windows in the Patrol and Query Perspectives which should all appear the same now that you have set a Basemap for the session.

• In the Patrol List View double-click the patrol **SMART_000002** (you may have to change the patrol filter to look for patrols from all dates)

Summary	Mar 17, 2012	Mar 18, 2012	Mar 19, 2012	Map	Other

• At the bottom of the screen select the **Map** tab



Note: In the bottom left-hand Layers window you may have to move the waypoints and track to the top of the legend to view it properly



• Using the Zoom icon so draw a box around the circle of waypoints for the patrol

In the lower left Layers window you will see the legend for the boundary layers as well as two new layers (Waypoint and Track)



As with the boundary layers the Waypoint and Track layer can be styled and labeled.

🛞 Style Editor	and the second se					- • ×
type filter text he 💌	Points					() ▼ () ▼
Lines Points Polygons Simple Feature Theme XML	Preview, Groups and Rules	Simple Style Errcle Style Properties General Border Rule name size rotation offset (x, y) maximum scale minimum scale	Fill defau	Labels lit rule Manual	Filter Image: Second	ssed
Import Ex	port		Defaults		Revert Cancel	Apply OK

- Select the layer **Waypoint**
- Click the Style Editor icon
- On the left select **Points**
- From the dropdown (above Style Properties) select circle
- In the General tab of Style Properties set size to 11
- In the Fill tab set color to **black**
- In the Labels tab
 - enable labeling
 - Set Field based labels to **observation**
- Click Apply, then OK



Information Tool

The map windows for the patrol and query perspective contain an extra icon that is not available in the map perspective mapping window.

-	The map info tool allows for more information to be displayed in the mapping window.
8	
i	
\	
<u> </u>	
i	

- Click the Map Info tool to activate it.
- Click on a waypoint

• On the left the information will be shown in the Waypoint Info tab

👫 Waypoint Info 🛛	[₽] a- Layers	i	Information		
Waypoint ID: 1 Date Time: 09/09/1210:33				ne: 09/09/1210:33	
Camps - Human activ	Camps - Human activity				
Number of racks for drying or smoking meat: 1.0					
Patrol action - camps: Destroyed		estroyed			
Size of camp:		Small		nall	
Status: Active		ctive			
Type of threat:			Н	unting	

Note: At anytime during a session the SMART windows can be resized, undocked, and repositioned. If you wish to reset the SMART application back to its default window placement you will need to click the double green arrows just below the menus.

SMART : SMART - Sample Conservation Area				
File Conservation Area Patrol Query Report				
🛛 💹 🥠 🛕 🔚 🖼 🗖	6			

- Click the window reset icon to return to the default settings
- Click Yes

You should still be zoomed into the points and track for the patrol SMART_000001.

• To return to the full extent click the Zoom to Full Extent icon

Adding New Layers

- Select Files
- Open the folder Module 3
- Select the file **Topomap**
- Click Open

After the import process has finished the layer will appear at the bottom of the Layers list.



• Select the layer camps and move it below the Patrol Sector layer

Note: For better viewing options. Select Management Sector, Open Style Editor and under Fill reduce the opacity value to 30



Field practical – Data collection for Multi-leg Patrols

In this module, you will gain experience in recording observations, transferring GPS waypoints into SMART, and also entering the field observations.

You will be using the ARUSHA - Training Database for this exercise (Username/Password: smart/smart)

Note: this module is not intended to be a tutorial on the usage of your GPS device.

This will include:

- A field exercise to collect GPS data and record observations for a multi-leg patrol;
- Creating new patrols based on the field exercise;
- Transferring waypoint data directly into SMART; and,
- Entering in observations collected during the field exercise;

Multi-Leg Patrols

SMART has the ability to track multi-leg patrols. A multi-leg patrol occurs when a patrol group splits up into smaller groups. Each of the smaller groups can have its own patrol leader, patrol transport type and patrol pilot (if available). Groups can be recombined at a later date.

A multi-leg patrol is tracked as a single patrol in SMART with Legs identifying the components within the patrol.

In this exercise, you will divide up into 3 patrol teams.

In this example, for each patrol team, all the patrol members are together on foot for the first leg (Leg A). The patrol then splits into two – half the team continue on foot (Leg B) and half the team continue by vehicle (Leg C). The two then meet up again to finish the patrol together by vehicle (Leg D).



For each leg, you collect GPS points and record observation as for a normal patrol. You'll need a GPS and a data collection form.

For each observation and for each change in patrol leg, you need to:

- Mark a waypoint (keep the default waypoint number on the GPS).
- Record the observation and waypoint number on the data form.

Note: When you begin your 'patrol'. Set your GPS to also record an automatic tracklog. Set the time interval to record every 5 minutes. For Garmin 60Csx models, do NOT save the active track.

Note: As in MIST, make sure you take a position waypoint every 30 minutes even if you don't make any observations

When you are back from your patrol follow the steps below.

Creating a Multi-Leg Patrol

The process for creating a multi-leg patrol is very similar to the previous example. The initial steps in setting up a the patrol framework in the same until the step in creating the patrol leg divisions.

- Click on New Patrol
- Enter the type, transport, team, station and patrol mandate that you wish (for the transport type select the transport for the first leg)
- Select today's date for the start and end of the patrol
- Select your team (include the whole team)
- Select a team leader (for the first leg)
- Click **Yes** for a multi-leg patrol

🛞 Create New Patrol	- D X
Identify whether the patrol was a multi-leg patrol.	
Is this a multi-leg patrol?	
A multiple leg patrol is identified by a change in patrol leader, or by a patrol splitting into	multiple groups.
< <u>Back</u> <u>N</u> ext > <u>F</u> inish	Cancel

• Click Next

At this point, you are going to create a patrol split for the second leg. Other options are also possible (change of leader, change of transport).

🕞 Create New	Patrol			
Patrol Legs Setup Patrol L groups. Use t	.egs. Patrol legs are identified b he buttons below to add, remo	by changes in the patrol lead ve, or edit legs.	er or the patrol spli	tting into multiple
Patrol Start: 06	-May-2013 Patrol End: 06-May	-2013		
Leg	Start Date	End Date	Transport Type	Leader
1	06-May-2013 00:00:00	06-May-2013 23:59:59	Foot	Achille Nsafou [SMART20]
•				4
Change of T	ransport Change of Leader	Patrol Split Remove Leg	Edit Leg	
		< Back	Next >	Finish Cancel

- Select Patrol leg 1
- Click on Patrol split

Change of transport – Change transport type during patrol

Change of leader – Change patrol leader during patrol

Patrol split - Patrol splits into two (each has their own leader and transport type)

Edit leg – Change settings (e.g. name of leg)

You should use the following screenshot as reference to what features need to be changed when defining a multileg patrol.

Date and time of patrol split

Date of split : Today's date

Time of split : Time the group split into two after the first leg

Date groups rejoined : Today's date

Time groups rejoined : Time the group rejoined for the last leg

Settings - Group A

Transportation type : Foot

Members : Include only the members of the group on this leg

Group A leader : Select a leader

Settings – Group B

Transportation type: Vehicle

Members: Include only the members of the group on this leg

Group B leader : Select a leader

🖟 Patrol Split	
Select information for the patrol split.	
Date of Split: 06 May 2013	
Time of Split: 🔘 Start of Day 💿 Custom: 10	0:30:00 💌
Date Groups Joined: 06 May 2013	
	Group A Transportation Type: Foot
	Alain Lushimba [SMARTJ] Cedric Sepulchre [SMAR Group A Leader: Edgar Ambass
	Transportation Type: Vehicle
	Members: -> Emma Stokes [SMART11] Fortune Iyenguet [SMAR] Herbert Ekodeck [SMAR] + III +
	OK Cancel

• Click **OK** when you have finished

atroi Legs				
Setup Patrol Leg	gs. Patrol legs are identified l	by changes in the patrol lead	ler or the patrol spli	tting into multiple
groups. Use the	e buttons below to add, remo	ove, or edit legs.		
atrol Start: 06-N	May-2013 Patrol End: 06-May	/-2013		
Leg	Start Date	End Date	Transport Type	Leader
1	06-May-2013 00:00:00	06-May-2013 10:30:00	Foot	Achille Nsafou [SMART20]
1- Group A	06-May-2013 10:30:00	06-May-2013 15:24:59	Foot	Edgar Ambassa Ongono [S
1- Group B	06-May-2013 10:30:00	06-May-2013 15:24:59	Vehicle	Emma Stokes [SMART11]
1- End	06-May-2013 15:24:59	06-May-2013 23:59:59	Foot	Achille Nsafou [SMART20]
•	III			
Change of Tra	nsport Change of Leader	Patrol Split Remove Leg	Edit Leg	

• Click **Finish** to complete the multi-leg patrol

The summary screen of the patrol will allow for future edits, and also provides access to the tabs that bring up the waypoint and track imports.

Mandate	Anti-poaching		edit				*		
mandace	And potening	······································	cure						
Team:	(none)	!	<u>edit</u>						
Station:	(none)		<u>edit</u>				-	edit	
Members:	+ [Leader] Achille Nsafou [SMAR	T201						con	
	Alain Lushimba [SMART18]	Commer	Comment:						
	Cedric Sepulchre [SMART13]								
	🕆 Denis Lambert [SMART16]								
	🕂 Dieudonne Ekotouba [SMART1	5]							
	🛨 [Leader] Edgar Ambassa Ongono [SMART25]						-		
	🛨 [Leader] Emma Stokes [SMART					· ·	eait		
	📌 Fortune Iyenguet [SMART22]								
	📌 Herbert Ekodeck [SMART17]								
	📌 Hilde Vanleeuwe [SMART23]								
	📌 Nianga Leckosso [SMART21]								
	📌 Rebecca Atencia Fernandez [SN	/ART19]							
	📌 Ruffin Ambahe Delarue [SMAR	T24]							
his is a mult	-leg patrol. To change the patrol m	embers or transpo	ort type use the edit	button below	in the Patrol Data	a section.			
itrol Data									
Start Date:	06 May 2013		End Date:	06 May 2013				eait	
Start Date:	06 May 2013 Day	Start Time	End Date: End Time	06 May 2013 Distance	Hours	Transport	Leader	ean	
Start Date: Leg 1	06 May 2013 Day 06-May-2013 Mon	Start Time 00:00:00	End Date: End Time 10:30:00	06 May 2013 Distance 0	Hours 10h 30m	Transport Foot	Leader Achille Ns	af	
Start Date: Leg 1 1- Group A	06 May 2013 Day 06-May-2013 Mon 06-May-2013 Mon	Start Time 00:00:00 10:30:00	End Date: End Time 10:30:00 15:24:59	06 May 2013 Distance 0 0	Hours 10h 30m 4h 55m	Transport Foot Foot	Leader Achille Ns Edgar Am	af	
Start Date: Leg 1 1- Group A 1- Group B	06 May 2013 Day 06-May-2013 Mon 06-May-2013 Mon 06-May-2013 Mon	Start Time 00:00:00 10:30:00 10:30:00	End Date: End Time 10:30:00 15:24:59 15:24:59	06 May 2013 Distance 0 0 0	Hours 10h 30m 4h 55m 4h 55m	Transport Foot Foot Vehicle	Leader Achille Ns Edgar Am Emma Sto	iaf ba bke	

• Click the tab with today's date to access the waypoint dialog.

After accessing the day where the multi-leg patrol took place on SMART will have two separate dialogs for importing waypoints, tracks and the related observations. The process to complete the observations for a multi-leg patrol would be the same as a regular patrol but you will need to populate each leg individually. In populating the last patrol you gained experience importing waypoints and creating observations.

Note: For multi-leg patrols you will just need to make note that all the sections would require waypoints and tracks to be imported separately.

Patrol_ARUSHA_000001 🔀			- 6
Patrol Day: Monday, 06-May-2013	3		
▼ Leg: 1			
Start Time: 00:00:00 🚔 End Time: 10:30:0	0 🚔 Rest Minutes: 0 T	otal Hours Patrolled: 10h 30m	
Distance Travelled (km): 0 <u>Set Tra</u>	ick View TrackPoints		
Observations / Waypoints: Import Waypoints	5		E
Waypoint ID Longitude Latitude Tir	me Observation Comment	Attachments	
Add Waypoint Delete Waypoint(s) Mov	ve Waypoint(s)	5	
▼ Leg: 1- Group A			
Start Time: 10:30:00 🚔 End Time: 15:24:59	9 🚔 Rest Minutes: 0 T	otal Hours Patrolled: 4h 55m	
Distance Travelled (km): 0 <u>Set Tra</u>	ck View TrackPoints		
Observations / Waypoints Import Waypoints	<u>s</u>		
Waypoint ID Longitude Latitude Tin	me Observation Comment	Attachments	
ummary 06-May-2013 Map Other			

GPS Waypoint Import

The sections to follow will depend on which GPS device you are using. The immediate section is for users of the **Garmin 60CSx.** If you are using the Garmin **GPSmap 62** please refer to the section for that device. If your device is different than the two listed you should be aware of which section is appropriate for your GPS device.

Note: GPS units that functions as a mass storage device should use the section for the Garmin GPSmap 62.

Importing Waypoints using the Garmin 60CSx

This unit does not function like an external storage device. To access the waypoint and track information in the Garmin 60CSx, you will need to select **GPS Device**.

lmport Waypoint Data	
Select the location where you wish to import waypoints from.	
Import waypoints from:	
< Back Next > Finish	Cancel
• Select GPS Device	

• Click Next

lmport Waypoint Data	
Select the type of device.	
GPS Device Type:	
Garmin serial/USB protocol Import All (and assign to correct day) 	•
 Import Only waypoints for Nov 20, 2012 Select which waypoints to import for Nov 20, 2012 	
< Back Next > Finish	Cancel

- Select Garmin serial/USB protocol
- Select Import All (and assign to correct day)
- Click Finish

🖲 Impo	rt Successful	×
1	Waypoints successfully imported for 1 days.	
		ОК

• Click OK

Importing Waypoints using the Garmin GPSmap 62

The Garmin GPSmap 62 functions a little differently than the Garmin 60CSx and requires a few more steps before the data can be imported into SMART. The Garmin GPSmap 62 behaves like an external storage device and requires you to select the **GPX File** option when importing waypoints.



- Browse to the folder on your GPS called **Garmin\GPX**
- Select the file Waypoints_<today's date>.gpx
- Click Open

lmport Waypoint Data	
Select the location where you wish to import waypoints from.	
File: G:\Garmin\GPX\Waypoints_12-SEP-12.gpx ● Import All (and assign to correct day) ○ Import Only waypoints for Sep 12, 2012 ○ Select which waypoints to import for Sep 12, 2012	Browse
< Back Next > Finish	Cancel

- Select Import All (and assign to correct day)
- Click Finish

🐻 Impo	rt Successful	×
1	Waypoints successfully imported for 1 days.	
		ОК

• Click OK

A successful import will bring up the 8 waypoints collected during the field exercise.

Distance Travelled (km): 0 Set Track ... View TrackPoints...

Waypoint Id	Longitude	Latitude	Time	Observation	Comment	Attachments
1	28.3694017525556	-25.7834109965774	10:21:01 AM	(None)		(None)
2	28.3700238982436	-25.78358519737	10:25:59 AM	(None)		(None)
3	28.3704220714839	-25.7845308588158	10:35:59 AM	(None)		(None)
4	28.3700238982436	-25.7850783470212	10:37:59 AM	(None)		(None)
5	28.3691280084529	-25.7851032328487	10:38:59 AM	(None)		(None)
6	28.3688791501777	-25.7844064296782	10:41:59 AM	(None)		(None)
7	28.3690035793153	-25.7838091698177	10:42:59 AM	(None)		(None)
8	28.3693989687173	-25.7834120370018	10:45:59 AM	(None)		(None)

Observations / Waypoints: Import Waypoints ...

Importing Tracks using the Garmin 60CSx

Now that the waypoints are in SMART, you will need to import the GPS tracks.

Select the location where you wish to import tracks from.

 Import tracks from:

 GPS Device
 GPX File
 Generate from Waypoints

 < Back</td>
 Next >
 Finish
 Cancel

- Select GPS Device
- Click Next
| 🛞 Import Track Data | _ D _ X |
|--|----------------|
| Select the type of device. | |
| | |
| GPS Device Type: | |
| Garmin serial/USB protocol | - |
| Import All (and assign to correct day) | |
| Import Only tracks for Aug 13, 2012 | |
| Select which tracks to import for Aug 13, 2012 | |
| | |
| | |
| | |
| < Back Next > Finish | Cancel |

- Select Garmin serial/USB protocol
- Select Import All (and assign to correct day)
- Click Finish

Importing Tracks using the GPSmap 62

Now that the waypoints are in SMART, you will need to import the GPS tracks.



- Browse to the folder on your GPS unit called Garmin\GPX\Current
- Select the file current.gpx
- Click Open

🛞 Import Track Data	
Select the location where you wish to import tracks from.	
File: G:\Garmin\GPX\Current\Current.gpx Import All (and assign to correct day) Import Only tracks for Sep 12, 2012 Select which tracks to import for Sep 12, 2012	Browse
< Back Next > Finish	Cancel

- Select Import All (and assign to correct day)
- Click **Finish**

Entering Observations for Waypoints

The next step of the exercise is to populate the waypoints with observations, within SMART.

You will now use your field notes to populate the patrol data with the correct observations.

Waypoint Id	Longitude	Latitude	Time	Observation	Comment	Attachments
1	28.3694017525556	-25.7834109965774	10:21:01 AM	(None) 🛄		(None)
2	28.3700238982436	-25.78358519737	10:25:59 AM	(None)		(None)
3	28.3704220714839	-25.7845308588158	10:35:59 AM	(None)		(None)
4	28.3700238982436	-25.7850783470212	10:37:59 AM	(None)		(None)
5	28.3691280084529	-25.7851032328487	10:38:59 AM	(None)		(None)
6	28.3688791501777	-25.7844064296782	10:41:59 AM	(None)		(None)
7	28.3690035793153	-25.7838091698177	10:42:59 AM	(None)		(None)
8	28.3693989687173	-25.7834120370018	10:45:59 AM	(None)		(None)

- Start by clicking on the **icon** in the upper right of the observation cell for waypoint 1 to activate the observation form.
- Enter the observations from your data sheet
- Follow steps in Module 3.

<End of Module 3 – Patrols>

Module 4 – Analysis: Queries and Summaries

Objective

This Training Module will introduce you to the Queries Perspective in SMART. This feature in SMART is a powerful tool that lets the user perform a wide variety of different analyses. In this training module we will look at the following functionality:

- Creating a Simple Query Using Patrol Filters
- Creating Compound Queries Using Patrol Filters
- Creating Queries Using Data Model Filters
- Creating Queries Using Spatial Filters
- Understanding & Changing Query Properties
- Saving & Deleting Queries
- Exporting & Importing Queries
- Creating Simple Summaries
- Creating Complex Summaries
- Creating Gridded Queries

Detailed Steps:

In this Module you will start exploring some very powerful functions that allow for simple or complex queries and summaries to be developed and exported. Queries and summaries are tools used to extract patrol and observation information from the database. They each produce their own type of results and have different workflows to produce those results

Definitions

Query

A query displays raw records that are selected using filters. No summarizing (totals, etc.) is done. This allows users to view the raw patrol and observation data. Queries can be viewed in tables or on a map.

Patrol ID	Patrol Leg	Patrol Date	Time	Observation Type
102	1	Nov 3, 2011	9:34	Human Activity
102	1	Nov 3, 2011	10:23	Animals

Example: Show me all waypoints for Patrol ID 102

- **Patrol Query** Returns the patrols that were involved in the particular query. No observation information is retrieved from the database.
- **Observation Query** Returns the observations that were involved in the particular query.
- Gridded Query Spatial query that returns the observation or patrol effort values in the form of a grid

Summary

A summary summarizes the raw data and allows for grouping into different categories. Items that can be summarized are values such as total number of patrols, the total distance travelled, the total number of snare observations, etc. Groupings are categories such as management sectors, patrol types, patrol mandates, stations, teams, etc. Summaries can only be viewed as tables.

		,		5	, ,	
	January	February	March	April	Мау	June
	# of Snares					
Sector A		7	6		3	
Sector B	15	10	2	19	5	3

Example: Show me the total number of snares observed in each management sector for each of the last 6 months.

Query Components

A SMART query is a logical expression used to filter the entries in the database. SMART Filters include:

- Date
- Patrol
- Data Model
- Area

Operators are used to alter the logic of the query to allow SMART users to be able to build more complex queries. Operators include:

- AND
- OR
- NOT
- Brackets: ()
- Contains
- Not Contains
- Equals: =
- Less Than: <
- Greater Than: >
- Less Than or Equal to: <=
- Greater Than or Equal to: >=
- Less Than or Greater Than (Not Equal to): <>
- Click on the Query Perspective

🛞 SMART : SMART - Sample Conservation Area							
File Conservation Area Patrol Query Report							
N	4	4	i 📰 🐐	k 🔧	16		

File Conservation Area Patrol Query F	Report Planning Intelligence Help			
🔟 🅖 🗛 🔚 🖃 🕸 🔗 🙆	Դ → Ք 🗄 🖼			Smart Smart
😪 Saved Queries/Summaries 🛛 🗶 🗖 🗖	🔣 New Query 🙁	-		😪 Query Filter 🞏 Layers 📃 🗆
Conservation Area Queries	Querv: <no name=""></no>	1	ID:	type filter text
My Queries	Query: sto tume >			💪 Patrol Filters
	Date: Waypoint Date V Last 30 Days V [11-Mar-2013 - 10-Apr-2013]	query properti	ies	🥠 Patrol ID
				Armed
	Run Query			& Station
				T leam
				Patrol Type
				Transport Type
				Patrol Leader
				🛉 Patrol Pilot
				🐈 Patrol Member
	Tabular Results Mapped Results			Motivated by Intelligence
	A SMART Quere Definition		-	📰 Part of Plan
		Lal 🚛 👻		🐻 Data Model Filters
				Categories
				-2 ₃ Attributes
				Conservation Area Boundary
				Buffered Management Area
				Administrative Areas
				Management Sectors
				Patrol Sectors
				Operators
				()
				NOT
۰ III ا				Add to Query

Date: Waypoint Date 🔹 Last 30 Days 🔹	Filters the date of the query
Query: <no name="" query=""></no>	Used to change the name of the query
query properties	Changes the name of the query. Filters the fields returned in the query results
Tabular Results Mapped Results	Switches between tabular results and mapping results

Saved Queries/Summaries	Folders of saved queries
Conservation Area Queries My Queries	
🐓 Patrol Filters	Used to filter the results based on patrol information
🛞 Data Model Filters	Used to filter the results based on categories and attributes in the data model
💹 Area Filters	Used to filter the results based on the spatial boundaries of the Conservation Area
Operators () NOT	Operators of NOT and Brackets () used to change the logic of the query
Run Query &	Launches the query
	Clears the query
	Saves the query

Creating a Simple Observation Query Using Patrol Filters

For this example, you will build a simple query to extract which observations were made by a specific team.

Query: <No Name Query>

Date:	Waypoint Date 🗨	Last 30 Days 🔹	[Jul 28, 2012 - today]
Run C)uerv	Last 30 Days Last 60 Days	1
<u>Itan q</u>	<u>derym</u>	Month to Date	
		Last Month	
		Current Quarter	
		Last Quarter	
		Year to Date	
		Last Year	
		All Dates	
		Custom]

• Change the date setting to All Dates

Note: The default for the query dates are for the last 30 days. For these exercises you should change the setting to **All Dates** unless instructed otherwise.

• To start building the query, double-click on **Mandate** under Patrol Filters on the left-hand bar

Tabular Result	ts Mapped Results					
SMART Query Definition						
Mandate =	Anti-poaching 🔹					

• Select Anti-poaching



• To the right of the lower window, click on the green arrow to **Run Current Query**

🔀 *New Query 🛛							- 8
Query: <no i<="" th=""><th>Name ></th><th></th><th></th><th></th><th></th><th></th><th>ID:</th></no>	Name >						ID:
Date: Waypoint D	ate All Dates s: 93 Numbe	▼ r of Incidents: 78					query properties
Patrol ID	Туре	Patrol Start Date	Patrol End Date	Station	Team	Objective	Mandate 🔺
SMART_000002	Ground	Mar 17, 2012	Mar 19, 2012		Mobile Team 1		Anti-poachii [≡]
SMART_000002	Ground	Mar 17, 2012	Mar 19, 2012		Mobile Team 1		Anti-poachii
SMART_000002	Ground	Mar 17, 2012	Mar 19, 2012		Mobile Team 1		Anti-poachii
SMART_000002	Ground	Mar 17, 2012	Mar 19, 2012		Mobile Team 1		Anti-poachii
SMART_000002	Ground	Mar 17, 2012	Mar 19, 2012		Mobile Team 1		Anti-poachii
SMART_000002	Ground	Mar 17, 2012	Mar 19, 2012		Mobile Team 1		Anti-poachii
SMART_000002	Ground	Mar 17, 2012	Mar 19, 2012		Mobile Team 1		Anti-poachii
SMART_000002	Ground	Mar 17, 2012	Mar 19, 2012		Mobile Team 1		Anti-poachii
SMART_000002	Ground	Mar 17, 2012	Mar 19, 2012		Mobile Team 1		Anti-poachii
SMART_000002	Ground	Mar 17, 2012	Mar 19, 2012		Mobile Team 1		Anti-poachii
SMART_000002	Ground	Mar 17, 2012	Mar 19, 2012		Mobile Team 1		Anti-poachii
	Cd	M17 0010	M10 2012		MALDI TILL 1		A
Tabular Results M	apped Results						
SMART Query D	Definition						🔒 🖉 🔿 🗆 🗖
Mandate = Anti	-poaching	▼ ×					

You can see query results as either a TABLE or MAP

📉 *New Query 🔀	- 6
SMART Query Editor	↓ ↓ € 1
	10.6142, -0.012 1:1,317,580 👻 WGS 84
Tabular Results Mapped Results	

• To switch between **Tabular** and **Mapped** results, click on the two tabs shown

Note: The process of customizing the map's appearance and settings are the same in the Mapped Results windows as in other windows.

Saving a Query

▼ 💫 🖫 🖳	
📉 *New Query 🛛	

• Click on the icon 'Save As'

🐻 Save Query	
Select the new query name and location to save query.	
Query Name: Anti-poaching patrols	
Save Location:	
Conservation Area Queries	
Create New Folder	
Save	Cancel

- Enter Anti-poaching patrols as the Query Name
- Select My Queries
- Save

Query properties



• Click on query properties.....(Note: You need to be on the tab: Tabular results)

🛞 Query Prop	perties	
Select the qu	uery properties.	
Query Name: Creator: Reports: Output Colun	Anti-poaching patrols smart smart [195000020] none nns:	<u>Translate</u>
 Patrol IE Type Patrol St Patrol En Station Team Objective Mandate Armed) tart Date nd Date re e	4 III
V Patrol Le	eg ID e-Select All	-
	ОК	Cancel

- You can select/de-select the fields you want to display in the query table
- When you're finished click **OK**



• Save any changes

You'll now see 'Anti-poaching patrols' under My Queries in the Saved Queries/Summaries tab.



Conservation Area Queries and My Queries

The two base areas to save queries are Conservation Area Queries and My Queries.

- **Conservation Area Queries** Accessible by all user accounts except for Data Entry, but only Admin and Manager user levels can save and make edits.
- **My Queries** Accessible only by the user account that created them. All accounts except for Data Entry can save and make edits.

Note: Queries and Summaries saved under My Queries will only be accessible to Reports saved under My Reports. Queries and Summaries saved under Conservation Area Queries will only be accessible to anyone generating a report. (Note: Reports will be covered in Module 5).

Creating Compound Queries using Patrol Filters

In the previous example, you extracted all observations made on Anti-poaching patrols. For the next example, you will create a compound query to further filter the results by finding only the patrols which were one on foot.

试 *Anti-poaching	patrols 🛛						- 0	😡 Query Filter 📴 Layers 👘 🗖
Query: Anti-	poaching pat	rols					ID: 000014	type filter text
Date: Waypoint D Number of Record	late All Dates Is: 93 Numbe	• of Incidents: 78					query properties	
Patrol ID	Туре	Patrol Start Date	Patrol End Date	Station	Team	Objective	Mandate 🔶	🐉 Mandate
SMART_000002	Ground	Mar 17, 2012	Mar 19, 2012		Mobile Team 1		Anti-poachii 🗉	Patrol Type
SMART_000002	Ground	Mar 17, 2012	Mar 19, 2012		Mobile Team 1		Anti-poachii	Transport Type
SMART_000002	Ground	Mar 17, 2012	Mar 19, 2012		Mobile Team 1		Anti-poachii	Patrol Leader
SMART_000002	Ground	Mar 17, 2012	Mar 19, 2012		Mobile Team 1		Anti-poachii	Patrol Pilot
SMART_000002	Ground	Mar 17, 2012	Mar 19, 2012		Mobile Team 1		Anti-poachii	A Data Model Filters
SMART_000002	Ground	Mar 17, 2012	Mar 19, 2012		Mobile Team 1		Anti-poachii	
SMART_000002	Ground	Mar 17, 2012	Mar 19, 2012		Mobile Team 1		Anti-poachii	b ¹ / ₂ Attributes
SMART_000002	Ground	Mar 17, 2012	Mar 19, 2012		Mobile Team 1		Anti-poachii	A N Area Filters
SMART_000002	Ground	Mar 17, 2012	Mar 19, 2012		Mobile Team 1		Anti-poachii	Conservation Area Bound
SMART_000002	Ground	Mar 17, 2012	Mar 19, 2012		Mobile Team 1		Anti-poachii	Buffered Management A
SMART_000002	Ground	Mar 17, 2012	Mar 19, 2012		Mobile Team 1		Anti-poachii	Administrative Areas
€ 1000000000000000000000000000000000000	Council	Maa 17 0010	M10 2012		Makes Tasks 4		A	Management Sectors
Tabular Results M	apped Results							Operators
SMART Query E	SMART Query Definition							
Mandate = Anti	-poaching	▼ × AND	Transport	Type = Foot	- ×			

- Double-click on Anti-poaching patrols to open that query
- Double-click **Transport Type** in the Query Filter window on the right to add it to the query.
- In the Transport Type drop-down list, select Foot
- Select All dates
- Run the Query

Note: The number of records returned will have reduced



- Save a copy of the Query as Anti-poaching patrols on foot
- Save under My Queries

Creating a Simple Observation Query Using Data Model Filters

Queries created using the Data Model Filters allow for specific information about observations to be accessed. Data Model queries can be on specific attributes or based on categories that contain those attributes. If a category is chosen, all of the sub-categories and related observations for those sub-categories are also returned.

Using Categories

The next query will return all direct observations of gorillas

• Select Query – New Query – New Observation Query



• Select All Dates

Query: <No Name Query>



- In the Data model filters, Double-click on: Wildlife Direct Observation Species
- Enter 'elephant' in the text filter window on Species

🔣 *New Query 🛛		💫 Query Filter 📴 Layers 📃 🗖
Query: <no name=""></no>	ID:	type filter text
Date: Waypoint Date Last 30 Days (Mar 8, 20)	ties	Patrol Filters Patrol ID
Rup Quepr		Armed Station
Kun Query		tt Team
		Mandate
		Patrol Type Transport Type
		Patrol Pilot
		📍 Patrol Member
		🐻 Data Model Filters
		Lategories
		Human Activity
		Animals
		Direct observations
		hreat Creation
		¹ 2 Number of Adult Males
Tabular Results Mapped Results		¹ ₂₃ Number of Adult Females
		¹ 2, Number of Young
SMART Query Definition		¹ 2 ₃ Number of Age or Sex Unknow
Species (Direct observations - Animals) =		Action Taken - Live Animals
		Indirect sign
elephan 🖳		Carcass
A MAMMALIA		Irophies Ruchmeat
PROBOSCIDEA		L Threat
▲ ELEPHANTIDAE		4 III >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
▲ Loxodonta		Add to Query
Run Query		
Tabular Results Mapped Results		
SMART Query Definition		
Species (Direct observations - Animals) = Loxodonta	a africa	ana (African Elephant) 🔫 🗙

Using Attributes

Queries based on attributes will return results across all categories in the entire data model for any observation where that attribute value was used.

For this example, you will create a simple Data Model Attribute query to extract all observations where elephants were recorded (not just direct observations).



- Operators
 - Create a new Observation Query
 - Save as Elephant Observations under My Queries
 - Under Data Model Attributes find and double-click on Species
 - Enter 'elephant' in the text filter



- Select All Dates
- Run Query
- In the query properties, select only
 - Patrol ID
 - Observation Category 0
 - Observation Category 1
 - Species
- ОК
- Sort data by **Observation Category 1** by clicking on the column header

Compound Queries using Operators

Using Operators allows for more complex queries to be built. The logic for Operators is the same in SMART as it would be when building a mathematical equation.

SMART Query Definition	
24 SWHICH Query Deminion	u <i>v</i> -
Type of threat = Hunting \checkmark	

Tabular Results Mapped Results			
SMART Query Definition		۵	
Type of threat = Hunting • × OR • Type of threat = Logging • ×			

This query will return both observations of hunting and observations of logging

Tabular Results Mapped Results		
SMART Query Definition	🔡 🖉 🏓	
(× Type of threat = Hunting • × OR • Type of threat = Logging • ×) ×	AND -	
Mandate = Anti-poaching		

This query will return observations of hunting or logging but only if they were made by Anti-poaching patrols

Note: Once components in the Smart Query Window have been included, they can be repositioned by dragging and dropping or removed by clicking the "x" in the upper right of the feature.

Invalid Query

SMART will only allow valid queries to be run. If a query is incomplete or invalid, the green Run Current Query icon will be unavailable and there will be a Query error warning at the bottom of the screen.



Creating Queries using Area Filters

Area filters allow for results to be filtered using the administrative boundaries associated with the Conservation Area.

For this example, you will build an observation query to extract all hunting observations in Patrol Sector 1

- Create a New Observation Query
- Double click on Type of Threat in the list of attributes
- Enter 'hunting' in the filter text window
- Select hunting and click Enter



- Select All dates
- Run Query and view Mapped Results
- Now add the **Patrol Sector 1** to the Query



Tabular Results Mapped Results			
SMART Query Definition	Ø	٩	
Type of threat = Hunting × AND × 1 [Patrol Sectors] ×			

Run the Query and view the results again under Mapped Results

Note: Only the observation in Patrol Sector 1 are returned

Patrol Queries

Up to this point, all queries have been Observation Queries and the results returned are of the individual observations. The process of building a Patrol Query is the same as the Observation Queries but the results will return which patrols were involved and not the individual observations.

For this query you will build a query to see which patrols were involved in encounter with poachers



- Select New Patrol Query
- Select All dates
- Save query as Poacher encounters under My Queries

- a 🚯 Data Model Filters
 - 🔺 📥 Categories
 - 🔺 📕 Human activity
 - People direct observations
 - People indirect sign
 - Camps
 - Weapons and gear seized
 - Transport
 - 🖻 📕 Timber
 - NTFPs
 - Domestic animals
 - Bushfires
 Type of threat
 Wildlife
 Ecological features
 - Position
 - . 1. . . .
 - Double-click under Categories on People Direct observations
 - Double-click on Type of Threat and select Hunting in the query window

Tabular Results Mapped Results			
SMART Query Definition		٩	
People - direct observations - Human activity × AND × Type of threat (Human activity) =	Hunting	Ŧ,	

• Run the Query

In the Query Properties for a Patrol Query you will see that the available fields are fields related to the patrols and not of the observations.

🖲 Query Prop	perties	
Select the qu	uery properties.	
Query Name:	Poacher encounters	Translat
Creator:	smart smart [195000020]	
Reports:	none	
Output Colum	nns:	
Patrol ID)	
🔽 Туре		
V Patrol St	art Date	
🛛 📝 Patrol Er	nd Date	
V Station		
🔽 Team		
🛛 📝 Objectiv	e	=
🛛 📝 Mandate	2	
🛛 📝 Armed		
🛛 📝 Patrol Le	eg ID	
🔽 Leader		
📝 Pilot		
🛛 🔽 Patrol Le	eg Start Date	
V Patrol Le	eg End Date	-
Select All	e-Select All	
	ОК	Cancel

In the Mapped Results view the Tracks of the various patrols are returned and mapped. No waypoint information is returned.



Note: Your results will likely not show the patrol tracks as a thick black line. The color and thickness of the line can be edited using the same tools as the other layers (by selecting the Layers tab on the right-hand side)



Exporting Query Results

Exporting results as a Shapefile **Available only for queries and not summaries**

A query export of the file type Shapefile will produce a Shapefile of the results that are viewable in the Mapped Results tab. This Shapefile can be used for creating new maps or to distribute to others or to import into ArcGIS

• After running a query click on the Export Icon and select Shapefile (*.shp)

🐻 SMART : SMART - SMART Training Database		
File Conservation Area Patrol Query Report	Planning Intelligence	Help
🔟 🖉 🗛 🌆 🖃 🏘 🥩 🔥 🔒 🗸	3 🗄 🖼	
🗞 Saved Queries/Summaries 🛛 🗶 🗖 🗖	Poacher encounters 🛛	- 8
 Conservation Area Queries My Queries Poacher encounters [000012] 		
		741601.9077, 9988617.91 1:1,852,621 ▼ WGS 84 / UTM zone 32S

Summaries

Summaries are built placing Value Options and Group By Options into the Smart Query Definition windows. The Group By Options are used to provide an aggregation of the Value Options.



The simplest of Summaries can be a single Value option with no Group By Options, and there is no end to how complex a summary can be. However, some combinations of Values and Group Bys are not permissible and SMART will not allow the summary to be run until the error is resolved.

Simple Patrol Summaries

For this example, you will build a simple summary to calculate the total number of patrols entered into the system for this Conservation Area.

Que	ery Report Planning Help	0	_	
R	New Query	•	3	New Observation Query
	Export Ouery/Summary		<u>R</u>	New Patrol Query
n.	Import Ouery/Summary		EG,	New Summary Query
.	····· ···· ···························		R.	New Grid Summary Query
	Save	Ctrl+S	1	
	Save As			
ל <u>נ</u> וטטט	013]			

- In the Query menu, select **New Summary Query**
- Select All Dates
- Group By Options
 - Patrol Group Bys
 - Data Model Group Bys
- ▲ X Value Options
 - 🔺 🦆 Patrol Values
 - 🛵 Number of Patrols
 - 🔆 Number of Days
 - Number of Nights
 - H Distance (km)
 - Number of Hours
 - ₩ Number of Employees
 - 扰 Person Hours
 - 🎌 Person Days
 - b 🐻 Data Model Values

Under Patrol Values, double-click Number of Patrols to add it to the Summary Values window

4	Smart Query Definition				٠	
	Group By and Values Filter					
	Group Bys		X Values			
	Row Headers	🛗 Column Headers	Number of Patrols <u>Compute Rate</u> ×			

• Run the Query

The SMART summary will display the total number of patrols for this Conservation Area

X Values



- Return to the Value Options and add Distance (km) to the query
- Add Distance (km) a second time to the query window

Building on the complexity of the summary you will add the **computed value of Number of Patrols per Kilometer travelled.**

🛞 Encounter Rate	
Encounter Rate	
Select the encounter rate to compute	
Distance (km)	•
Distance (km)	
Number of Hours	
Number of Days	
Person - Days	
Person - Hours	
Number of Patrols	

- On the lower Distance (km) click **Compute Rate** ...
- Select Number of Patrols from the pull down list
- Click OK
- Run query

📆 *New Query 🛛								
Summary: <no name="" summary=""></no>								
Date: Waypoint Date Custom Between 1/ 1/2008 And								
Number of Patrol	Distance (km)	Distance (km) per Number of Patrols						
195.0	4114.9921875	21.10252403846154						

Simple Data Model Summaries

As with the queries there are options to build up summaries of Patrol Values, Data Model Values or a combination of the two.

This example is a simple data model summary to count the total number of observations that are under the category of Hunting.

- Clear the current Summary
- Add Data Model Values Count 'Hunting'
- Keep the date range as **All Dates**
 - i ype or intrastructure
 - Type of mineral
 - Type of NTFP
 - Type of poison
 - Type of pollution
 - Type of saltlick
 - ⊿ ⊢ Type of threat

None

- b Urban and rural development
- Agriculture
- Mining and energy production
- Access routes
- Biological resource use
 - Hunting NTFP collection Logging Fishing
- Then select **Date Model Values Categories Count 'Human Activity'** and double-click to add it to the query
- Select '**Count Incidents'** (this will count the number of unique waypoints, rather than the number of observations)

💫 SMART Query Definition	📙 🖉 🌳 🗖 🗖
Group By and Values Filter	
🛃 Group Bys	X Values
Row Headers	Count Incidents Human activity Compute Rate
Type of threat - Level1 <u>Filters</u> × Hunting	
Select all dates	
Run Query	
📰 *New Query 🛛	
Summary: <no name="" summary=""></no>	
Date: Waypoint Date 🔹 All Dates 💌	
Count Incidents Human activity	
Hunting 24.0	

• Add other threats to hunting in the query window

SMART Query Definition		📙 🖉 🌳 🗖 🗖
Group By and Values Filter		
🛃 Group Bys		X Values
Row Headers Type of threat - Level1 <u>Filters</u> Hunting NTFP collection Logging	Column Hei	Count Incidents Human activity <u>Compute Rate</u> X

• Re-run the query

💫 Query Filter 🔚 Layers	
type filter text	
a 🛃 Group By Options	
a 🍫 Patrol Group Bys	
🐓 Patrol ID	
🛃 Station	
tt Team	
🧔 Mandate	
🦆 Patrol Type	
🐕 Transport Type	
👚 Patrol Leader	
👷 Patrol Member	
Date	
 IEI Data Madal Casua Dua 	

- Double-click Mandate in the Group By Options Patrol Group by
- Drag Mandate under 'Column Headers'
- Re-run the query

SMART Query Definition				\	
Group By and Values Filter					
🛃 Group Bys		X Values			
Row Headers Type of threat - Level1 Filters Hunting NTFP collection Logging	Column Headers Mandate <u>Filters</u> ×	Count Incidents Human activity Compute Rate	×		

🚟 *New Query 🔀

ID:

Summary: <No Name Summary>

summary properties...

				_
Date:	Waypoint Date	-	All Dates 🔻	,

	Surveillance	Anti-poaching	Follow-up	Research and monitoring	
	Count Incidents Human activity				
Hunting	1.0	14.0	9.0		
NTFP collection		1.0			
Logging		4.0	2.0		
Fishing	1.0	2.0			

Grouping by Date

You can also group-by date - this allows you to report observations by month or year



- Select Group by Options Patrol Group By Date Month
- Double-click to add to the query

SMART Query Definition 🔚 🖉 🌩 Group By and Values Filter Group Bys X Values × Row Headers Column Headers Count Incidents Human activity <u>Compute Rate...</u> Type of threat - Level1 Filters... Mandate Filters... Hunting NTFP collection Logging Month

• Re-run query

📆 *New Query 🛛	3					<u> </u>			
Summary: <no name="" summary=""> ID:</no>									
Date: Waypoint D	ate 🔹 All Dates	•				summary properties			
		Surveillance	Anti-poaching	Follow-up	Research and mor				
		Count Incidents H	Count Incidents H	Count Incidents H	Count Incidents F				
Hunting	3/2012		14.0			*			
Hunting	4/2012								
Hunting	5/2012					=			
Hunting	6/2012								
Hunting	7/2012								
Hunting	8/2012								
Hunting	9/2012	1.0							
Hunting	10/2012								
Hunting	11/2012			9.0					
Hunting	12/2012								

Filters

Filters provide a simple way to filter summary results



Mandate <u>Filters...</u>

• Click on Filters next to Mandate



- Deselect all except Anti-poaching
- Re-run the query

Saving summaries

Summaries are saved in the same way as queries. Save the summary query you just created as 'Number of threats by anti-poaching patrol' under My Queries

Exporting summary query results

Comma Separated Values (CSV) table

A query export of the file type Comma Separated Values (CSV file) imported into other spreadsheet or database software (e.g. Excel), to recreate the results that are seen in the Tabular Results view.

- After you have run the summary query, click on the Query Export icon and select **Comma Separated** Values (*.csv).
- Save the fie on your computer
- Locate the file and open with **Excel** to see the results.

Exporting and Importing Query templates

Once a query or summary is created, it can be exported out to an XML file that can be used by another Conservation Area. Importing pre-existing queries and summaries allows for standardization of analysis and reporting (this is covered in the next module)

Query Definition

A query export of the file type Query Definition will produce an XML text file that can be distributed to others, allowing them to import the query into their Conservation Area.

Using the menu or the export query icon kyou can export queries and summaries.

🛞 Export the current query.				x
Select the export format				4
Select the export format:				
Comma Separated Values (*.csv) Query Definition (*.xml)				
< Back	Next >	Finish	Cancel	

Creating a Grid Query



SMART Query Definition	🔡 🖉 🏓 🗖
Grid and Value Definitions Filters	
Grid Definition	X Grid Value
Projection: WGS 84 / UTM zone 32S [EPSG: 32732]	Count Observations
Grid Size: 1000 m	
Grid Origin: (0, 0)	

Tabular Results

The default view is for the list of tabular results. This table shows the grid co-ordinates and values of how many observations were found within that grid cell. The output includes all grid cells patrolled during that period, so if a grid cell was patrolled and found no observations it will have a value of 0. The table also includes the denominator value (e.g. distance patrolled) if there is one selected (see encounter rates below). For most users, the Tabular Results will not be as important as the Mapped Results.

Mapped Results

As with other types of queries the results can be viewed in tables or in a map. The results for this type of query are displayed as a raster or grid layer.

		Le
Tabular Results Mapped Results		
Smart Query Definition i Information		
Grid and Value Definitions Data Filter		+
Grid Definition	X Grid Value	i

The Mapped Results screen now shows a number of grid cells of varying color where grid cells were patrolled and where observations from the query can be found. The color of each grid cell corresponds to the number of observations recorded within the cell.



Change the map style of gridded queries

In the previous modules, you explored different options for changing the style of points, lines and polygon layers, Now, you are going to modify the style for a gridded query result layer.



- Click on the Layers tab (next to the Query Filter on the window on the right).
- Select the layer Gridded Summary (null)
- Click on the icon to change the style of the layer Style
- Select Simple Band Raster Styling (on the left-hand menu-bar)

Note : Don't modify the first line (0-9999 – no data).

🛞 Style Editor					
type filter text he 👻	Single Band	ed Raste	er Styling		⇔ -⇒ -
Cache Raster Color Mask Simple Raster Single Banded Raster S Single Band Rasters XML	Theming Styl Color Palette Compute In	le: Color : tervals	Ramp		▼ ▼
	Color	Opacity	Value	Label	Add
		0.0% 100.0%	-9999.0 0.0 9.0	-no data-	Remove
					Add NoData
4 III >	Reverse Cole	ors Forn	nat Value		OneClick Export
			Defaults	Revert	One click Apply
Import Exp	ort			Cancel	ОК

- Click **Add** twice to add **2** more intervals
- Change the values for the intervals at four equal intervals between the minimum and maximum value (for example if the minimum is 0 and the maximum is 9, change interval values to **0**, **3**, **6**, **9**).
- Under Colour Palette, select the colour ramp that you like
- Click Apply
- Click OK

🐻 Style Editor					
type filter text he 💌	Single Ba	nded Raste	er Styling		⇔ → ⇔ →
Cache Raster Color Mask Simple Raster Single Banded Raster S Single Band Rasters XML	Theming S Color Pale Compute	Style: Color tte: Greer Intervals	r Ramp ns: light to da	ark green	• •
	Color	Opacity 0.0% 100.0% 100.0% 100.0%	Value -9999.0 0.0 3.0 6.0 9.0	Label -no data-	Add Remove Sort Add NoData
4 III +	<u>Reverse C</u>	Colors Forr	nat Value		OneClick Export
Import Exp	ort		Default	s Revert Cancel	Apply OK

Add a legend

- Next to the map, click on the icon Add Map Layer
- Select 'Add Map decoration'
- Click Next
- Check 'Legend'
- Click Finish
- Load the Basemap **'SMART Map with Legend'** that you created in Module 2 by clicking on the map icon



• Rename the query, by right-clicking on the query layer and selecting 'Rename'



• Save the query as 'Human Activity Observations' under My Queries

Encounter Rate Grids

You can also directly calculate encounter rates (e.g. number of observations/unit effort) in each grid cell.

• Click Calculate Rate next to Count – Human Activity

💫 SMART Query Definition		🔛 🖉 🌳 🗖 🗖
Grid and Value Definitions Filters		
Grid Definition		X Grid Value
Projection: WGS 84 / UTM zone 32S [EPSG: 32732]	•	Count Observations
Grid Size: 1000	m	
Grid Origin: (0, 0)		

• Select Distance (km) and click OK

Encounter Rate	
Encounter Rate Select the encounter rate to compute	
Distance (km)	•
	OK Cancel

The query will now calculate the number of hunting observations/km patrolled.

- Run the query
- Save the query as **Encounter rate of human activities** under My Queries

Filtering a Query

A filter can be applied to the gridded summary. For grids, there are two types of filter:

Value Filter : Filters the numerator/observations (ie. number of human activity observations)

Rate Filter : Filter on the denominator/unit of effort

- You can now calculate the **encounter rate of hunting observations** (i.e. only human activity observations filtered by hunting) **by km patrolled** (for all patrols, not just those where hunting was observed)
- Click on the Filter tab
| 📙 🖉 🌩 🗖 🗖 |
|--------------------|
| |
| X Grid Value |
| Count Observations |
| per |
| Distance (km) |
| Change Rate |
| |

- Double-click on Human Activity Type of Threat to add this under the Value Filter
- Type 'hunting'
- Leave Rate filter blank (you want to include all patrols without any patrol)
- Run the Query

A SMART Query Definition				Ø	٩		1
Grid and Value Definitions Filters]
Value Filter	<u>Clear</u>	Rate Filter	Clear	Copy	Value	Filter	
Type of threat (Human activity) = Hunting							

• Save as 'Hunting observations/km' under My Queries

Patrol effort grids

Grids can also be created for different measures of patrol effort (distance patrolled in each grid cells, number of patrol days in each grid cell).

- Create a new gridded summary query
- Set Projection to UTM 32S and grid size to 1000m
- From Patrol Values, select Distance

SMART Query Definition	
Grid and Value Definitions Filters	
Grid Definition Projection: WGS 84 / UTM zone 32S [EPSG: 32732] Grid Size: 1000.0 m Grid Origin: (0, 0)	X Grid Value Distance (km) <u>Compute Rate</u> ×

- Select All Dates •
- **Run Query** •

🗟 New Query 🕅 Observations chasse par km 🛛 🕅 *New Q

Query: <No Name Gridded Summary>

Date: Waypoint Date 🔹 All Dates 🔹								
Number of Records	: 191							
Tile X ID	Tile Y ID	Value						
806	9979	0.02277931327						
754	9976	8.70627488870						
776	9990	1.00554699936						
744	9994	0.54048233199						
806	9978	1.08443460262						
754	9977	1.30742139152						
806	9977	1.08443114649						
754	9978	0.40648141511						
806	9976	0.38036032126						
754	9979	0.18728162833						
770	9988	0.37516092872						
758	9992	0.26106299080						
778	9989	1.04913946447						
758	9991	2.46925250686						
755	9975	0.57819538372						
758	9990	0.43944988547						

The tabular results show the distance patrolled in each grid cell

The mapped results shows patrolled coverage as a function of patrol distance patrolled in each grid cell

• Save the query as Patrol Coverage by Distance under My Queries

Importing Queries and Summaries

Queries and Summaries are imported into SMART using a previously exported query saved as an XML file. To demonstrate this, you will import a few queries and summaries into a custom folder in the Conservation Area Queries.



- From the menu select Import Query/Summary ...
- Browse to folder Module 4\ Queries
- Select Elephant carcasses observations.xml
- Click Open
- Click Next

lmport a query defintion	
Select import destination.	
Destination Folder:	
 Conservation Area Queries My Queries 	
Create New Folder	
< Back Next > Finish	Cancel

• Select Conservation Area Queries

Finish

Under **Conservation Area Queries**- you'll now see the new query (you might need to expand the arrow under Conservation Area Queries)



- Double-click on the query to see how it was created
- Run the query

In the Query folder there are a number of queries and summaries you can import into SMART

• Import the rest of the queries under Conservation Area Queries, and run each to see the results



Note: You'll need some of these queries to create the Reports in the next module

<End of Module 4 – Queries and Summaries>

Module 5 - Reports

Objective:

This module will guide you through the process of creating, editing and populating a SMART report. SMART reports are highly configurable and allow for a wide range of standardized reporting. The information on the reports can be dynamically generated based on the results of SMART queries and summaries. A major component of SMART is its mapping ability, and SMART reports allow maps to be included and customized to suit the report.

- Understanding the Components of the Report Editor
- Configuring Data Access
- Creating Master Page templates
- Building a Report
- Running a Report
- Exporting Reports

Detailed Steps:



• From the menu select New Report

🛞 Create Report	
Create a new report	
Report Name: Training Report	
Save Location:	
Conservation Area Reports	
Save	Cancel

- For Report Name type **Training Report**
- Select the **Conservation Area Reports** folder as the location
- Click Save

Switching Between Report List and Report Editor

After creating the first report SMART will display the Report List screen and toolbars

To run, export or manage reports you will need to be using the Report List screen.

The icon to return to the report list screen is available on the default SMART icon bar.



Report List Toolbar

The report toolbar has icons for creating, editing, running, exporting and deleting reports.

File Conservation	Area Patrol	Query	Repo	rt Plannin
💹 🤌 🗛 🌆	🖬 🕸 🗟	16		
🖪 Report List 🛛	>	٦.	68	•
🖌 🛅 Conservati	on Area Report	s		
📃 Trainin	g Report [00000)1]		
🚞 My Report	S			

×	Deletes the selected report(s)
	Creates a new report
	Edits the selected report(s)
	Runs and exports the selected report(s)
•	Runs the selected report(s)
	rn to the Benort editor select the Edit Benort icon

• To return to the Report editor select the Edit Report icon

Components of the Report Editor

The Report Editor consists of a few basic components, which contain their own functionality and have their own purpose.

You probably won't use all of them. Below we explain some of the components that you will probably use most often.

😳 Palette 🛛 😫 Data Explorer 🏛 Resource Explorer			MyFirstReport_0	00001.rp	tdesign 🖂 🔤	
> Pointer Select)	·	$\cdots + 1 + \cdots + \cdots$	2
🔍 Rectangle Select		5				
🗁 Report Items	0	.D				
ab) Label		1				
A Text		1				
ab Dynamic Text		-				
🗐 Data		:				
🌇 Image		1				
Grid		:				
≣ List						
Table		:				
In Chart		÷				
🔚 Cross Tab		:				
💹 Smart Map						
🗁 Quick Tools		÷				
S Aggregation		÷				
Relative Time Period		1				
		÷				
E Outline 🛛		:				
My First Report						
Data Sources		:				
Data Cubes		5				
(a) Report Parameters		:				
Variables		-			144.6	
Body MasterPages		Lay	out Master Pag	e Script	XML Source	
M Styles		Ø	Property Editor -	Report	×	
Embedded Images		Pro	operties			
Libraries		G	eneral		General	
Scripts		D	escription		Author	
		С	omments		Created by	Eclinea RIPT Designer Version 2.7.2 v20120212 Ruild < 2.7.2 v20120214-14085
		U	ser Properties		Dath	C\Program Files (v86)\SMART\cmart\data\filestore_52-20_4620_126_1027671_118_05-2_12226
		N	amed Expression	s	Title	My First Report
		R	esources			ing macheport
		A	dvanced		Themes:	None
					Report Orientation:	Left To Right

Design Window

The Design Window is where the components of the report are organized. This window does preview what the final report will look like as reports are generally based off dynamic data. The window allows for the layout of the objects to be added and customized as to content, size and style.

The **Layout and Master Page tabs** at the bottom are the two tabs that most users will mainly use. It is highly recommended not to make any edits in the Script or XML Source tabs, unless you are an advanced user who understands the risks of directly editing the code used to generate the report.

Property Editor

This window is used to edit the properties of the objects that have been loaded into the Design Window. The Property Editor options will change if you move between the Layout and Master Page tabs.

Report Properties (Master Page tab)

Used to specify general properties of the report's master page.

📝 Property Editor - Ma	ster Page 🖾						
Properties							
General	General						A
Border	Name:	NewSimpleMasterPage					
Margin							
Header/Footer	Header height:	0.5	in	 Background color 	Auto	-	
Comments	Footer height:	0.5	in	Orientation:	Auto	-	
Advanced				onentation			
	Width:	8.5	in	т Туре:	US Letter	▼	
	Height:	11	in	v			

Outline

The Outline is used to organize the objects that are used to build and organize your report. Objects and Elements are imported into the outline, and allow for easy access to these components when reports are designed in the Design Window.



Data Sets - Linked to existing tables in the database (employees, stations, agencies and ranks, etc...) or to saved queries and summaries.

Body - When objects of the report are brought into the Layout Editor these objects will be visible in the Body section. Objects can be selected directly in this folder, moved around, deleted or edited through exposed parameters.

Embedded Images - Any images to be included in the report must first be included in this folder.

Resource Explorer

The Resource Explorer is where the Shared Resources of the library are accessed. Here is where you can save common report elements that are used in multiple reports, for example logos.



Report Items



- Label generally single line objects used for report titles or object labels.
- **Text** open text boxes allowing for static text to be typed into the report.
- Dynamic Text text based off custom or predefined variables or functions
- **Data** items in this data section have to be pre-loaded in the Outline or Library before they will appear.
- **Image** items in the image section have to be pre-loaded in the Outline or Library before they will appear.
- **Grid** grids allow for layout objects to be organized into rows and columns.
- **List** insert flexible format presentation of data set rows in header/detail & footers.
- Table insert column presentation of data set rows in header/detail & footers.
- Chart used to insert charts into the report
- Cross Tab inserts aggregated data in row and column format
- Smart Map inserts maps into the report

Configuring Data Access

In the first module you configured the Conservation Area to have a number of predefined elements allowing for the creation of patrols. Before reports can be created, data access also needs configuring. *The following steps will guide you through setting up access to tables, queries/summaries and images.*

Adding Embedded Images



- Using the mouse right-click over the Embedded Images in the Outline
- Select New Embedded Image
- Browse to the folder Module 5 \ Images
- Select smartwiz.png
- Click Open

	B	variables		
	B	Body		
\triangleright	Ъ	MasterPag	es	
\triangleright	<u>A</u>	Styles		
4	2	Embedded	Imag	es
		🔈 smartw		
⊳	R.	Libraries		New Embedded Image
	8	Scripts		Rename
			×	Delete
			ot	Cut
			D	Сору
			Ē	Paste
				Export to Library

- Using the mouse right-click over **smartwiz.png**
- Select Export to Library...

lexport Elements to Library		23
Select the target Library or create a new target.		•
🗁 Shared Resources		
mart.rptlibrary		
New File Name:		
ОК	Cance	:I

- Select Shared Resources ... rptlibrary ... smart.rptlibrary
- Click OK

Note: This image will now be available for other reports you want to create (you won't have to add it again each time)

Adding Queries and Summaries

80	Out	tline 🖾		
⊿		My First	t Report	
	\triangleright	🍙 Data	a Sources	
		👼 Data	a Set-	
		🗑 Data	a Cu	New Data Set
	\triangleright	🙀 Rep	ort	New Joint Data Set
		Vari Bod	y 💼	Paste

- In the Outline right-click over **Data Sets** and select **New Data Set**
- Under Data Set Type, choose SMART Queries Data Set
- Next

🐻 New Data Set	
New Data Set	2
Define the data set's name, source, and type	
Data Source Selection	
type filter text	
SMART Data Source	
SMART Data	
Data Set Type:	
SMART Queries Data Set	-
Data Set Name:	
Data Set	
	· · · · · · · · · · · · · · · · · · ·
< Back Next > Finish	Cancel

- Select: Patrol coverage km
- Finish then OK
- Repeat the process to also add:
 - Patrol effort by transport type
 - Patrol effort by Patrol ID

🔞 New Query Dataset	
New Query Dataset Pick the query to create data source from.	
Select SMART Query:	
 Conservation Area Queries Arrests [000019] Elephant carcasses - observations [000003] Illegal logging observations [000006] Observations of hunting camps [000006] Patrol coverage - km [000007] Patrol effort by Patrol ID [000008] Patrol effort by ranger [000009] Patrol effort by transport type [000010] Snare observations [000011] Trophy seizures [000012] 	
< <u>B</u> ack <u>N</u> ext > <u>Finish</u>	Cancel

Create Report Title

Place a grid (1 row x 3 columns) to organize the layout of the report title on the page:



- Under Report Items, double-click Grid (No columns = 3, No rows = 1)
- Use the mouse to increase the row height of the grid

In the Report Outline, you can see the Grid you have added under **Body**. We're now going to add a title in the middle cell of the grid, and a logo in the left-hand cell.



Add an Image

We're going to add the embedded image we added earlier into the left-hand grid cell

• Under Report Items, select Image et drag it into the left-hand cell of the grid

🛞 Edit Image Item			×
Select Image fron	n: O URI Image file in shared resources Embedded image Dynamic image		
Embed image int	o the report		
		Add Imag	e
	Insert	Canc	el

- Select Embedded Image smartwiz.png
- Click Insert
- Re-size the image so it fits in the cell

Adding Report Title as a Label

You are now going to add the title.

ile Conservation Area Patrol Query Report Planning	Intelligence Help	
🔟 🖉 🗛 🔚 🗟 🌾 😂 🐁 🔛 🖳		smart sma
😳 Palette 🛛 😫 Data Explorer 🏛 Resource Ex 🖓 🗖	🔝 *RapportFormation_000001.rptdesign 🛛	- 6
Pointer Select		<u>, ·</u>
al Label al Label al Dynamic Text	SMART	
📔 Data 🔛 Image 🔛 Grid		E

- Under **Report Items select Label** and drag it into the middle cell of the grid
- In the text editor type something like: Monthly report for SMART National Park
- Click Ok

L

• In the **Property Editor**, at the bottom of the screen, modify the text size and font style to **Bold 18**, and align the title in the centre of the grid cell. You can also change the background colour

🖬 Property Editor - Label 🛛									
Properties Highlights									
General	General	<u>A</u> ,							
Padding		A							
Border	Font: Serif								
Margin		=							
Hyperlink	Color: Black T Background color: Auto T								
Page Break	Whitespace: Auto No Wrapping Normal Preformatted	+							

	Monthly Report for SMART National Park	
SMART		

Note: Now you have added some elements - you need to save the report



• In the menu bar of icons – click on the large disk image to Save

Adding reporting dates as dynamic text

Now we are going to add dynamic text, which will create the **reporting dates** each time the report is run (this will show the time period selected for the report)

😳 Palette 😫 Data Explorer 🗰 Resource Ex 🛛 🏳 🗖	🔝 Training
~~~~	)
<ul> <li>Shared Resources</li> <li>smart.rptlibrary</li> <li>Data Sources</li> <li>Data Sets</li> </ul>	₽
<ul> <li>Data Cubes</li> <li>Report Parameters</li> <li>Report Items</li> <li>Label - CA Name Label in Pink</li> </ul>	
MasterPages     MasterPages     Add-to Report     Add-to Report     Add-to Report     Add-to Report     Add-to Report     Add-to Report     Add-to Report	Ma
Construction analysis Construction analysis Construction analysis Construction analysis Construction analysis Construction analysis	Property Properties

- Click on the **Resource Explorer** tab in the top left of the screen
- Expand smart.rptlibrary, and under Report Items find Dynamic Text Reporting Dates
- Right-click Dynamic Text Reporting Dates and select Add to Report



#### NOTE: Never edit the Dynamic text - this is filled in automatically when the report is run

When adding objects to the Design Window the application will add the object directly below the last object, leaving little space between objects. If more space is desired between objects, a grid with the dimensions of 1x1 can be added and resized to provide the desired amount of empty space.

- Add a grid with the dimensions of **1 column and 1 row** to the layout
- Select and resize the grid to the height you want
- Save the report

	Monthly Report for SMART National Park	
SMART	params["Start Date"].value + " to " + params["End Date"].value	

In Report Outline under Body, you can now see the structure of the elements you have added.



### Adding query and summary tables

• In the Report Outline under Datasets select 'Patrol Effort by Patrol ID' and drag it into the Report Layout



Number of days - text without square brackets means you can edit the text as you wish

**[Number of days]** – text in square brackets should NOT be edited. This will automatically be populated from the SMART database when the report is run

• Using the **Property Editor** in the lower window, change the text, font and other properties of the column headers as you wish

🔝 *TrainingRe	port_00000	1.rptdesign	3												
		• 1 • • • •	••• 2		• • 3 •		4 ·	5		6	• 7 • •	••••	, •		
Mon					onthly Report for SMART National Park										
- 	SMART pai					params["Start Date"].value + " to " + params["End Date"].value									
	hea	ader_0	Num	ber of Days	: N	umber of Nig	ghts	Number of Hou	rs	Distance (km)	Numb	er of Employees			
:	[header_	<b>0]</b> ter Row	Numbe	r of Days]	[N	umber of Nigh	itsĵ	[Number of Hours	5]	[Distance (km)]	[Numb	er of Employ]			
·	Dama Cari	VMI Com													Ŧ
Property Edi	tor - Row	8	ce										Ē	3 - 1	3
Properties Ma	p Highlig	hts													
General		General												A	
Border Page Break		<u>H</u> eight:					-	<u>B</u> ackground color:		Auto		<b>~</b>			1
Visibility		<u>V</u> ertical alig	nment:	Auto			Ŧ	S <u>t</u> yle:	Nor	ne		<b>•</b>			
Bookmark	Bookmark														
User Properties	User Properties <u>F</u> ont:			Serif			Ψ.	Size:	10	-	points				
Named Expres	sions	<u>C</u> olor:			Black		•	BIUS	¥][						
Auvanceu		Wh <u>i</u> tespace	3	Auto (	🔘 No W	rapping 🔘 N	Vorma	al 🔘 Preformatted							

- Select the whole data table (click on the **Table** tab directly below the table)
- In the Property Editor select **Border** on the left
- Add borders to the table as you wish
- Save the report IMPORTANT !

Now that you have added some data, you can run the report to see what it looks like.



• Click on the Report icon to return to the main report screen



• Select Training Report and click on the icon to Run the Report

Q	Report Parar	meters	
	Enter the requ	ired report param	eters.
ſ	Report Date R	ange	
	Date Range:	All Dates	<b></b>
	Start Date:	1/ 5/2007 📃 🗸	
	End Date:	10/26/2012 🔍 🗸	
			Continue Cancel

- Select All dates
- Continue

Wait for the report to run – it will show in the window on the right



• Top return to edit the report, click on the icon Edit Report

### Adding maps to the report

In Module 4: Queries and Summaries you explored the options for viewing the results of the queries with both a table and map view. In this report, you have added the table results and now it is time to add mapped results.



- Add a grid (1x1) directly under the patrol effort table
- Under Report Items drag the icon for SMART Map into the layout window
- Re-size the map and make it fill the width of the page

The map object has been added and resized and now you will need to have the map object reference a Basemap and dataset.

📝 Property Editor -	Property Editor - SMART Map 🛛									
Properties MapLay	/ers									
Basemap: SMART	T Map with legend	•								
Map Bounds: (r	map extents)	CRS	: WGS 84		<u>Set Bou</u>	inds <u>Clear</u>				
Map Layers:										
Report Dataset	Lay	yer Name		Style				Add		
								Delete		
								Move Down		

- In the Property Editor window switch tabs from Properties to Map Layers
- Select SMART Map with legend from the pull-down list
- Click Add

The Add Layers button brings in query results overtop of the saved Basemaps.

*Note*: More than one query result can be added to the report's map object.

🖲 Add Layer	X
Select the dataset to add to the map	
Patrol coverage - km [000007]	-
	OK Cancel

- Select Patrol coverage km
- OK

You will now add a style to the map layer.

🛿 Property Editor - SMART Map 🛛						
roperties MapLayers						
Basemap: SMART Map with legend 🔹						
Map Bounds:     (map extents)     CRS:     WGS 84     Set Bounds     Clear						
Map Layers:						
Report Dataset	Layer Name	Style		Add		
Patrol coverage - km [000007]	Patrol coverage(km)	default		Delete		

- Under layer name click to rename the query in the legend
- In the Style cell click the **icon** on the right to bring up the Style Editor
- Change the style settings following the same process for gridded queries in Module 4
- Save the Report IMPORTANT !
- Now return to the Report screen and run the report.

File	Cons	ervat	tion A	rea	Pat	rol	Qu	ery	Report	Help	
1	4	4	屭	3	1	6		H	<u>a</u>		

		Number of Nights	Number of Hours	Distance (km)		Number of Employees
SMART_000001	2	1	47.9994444444	26.91482925415039	3	
SMART_000002	3	2	71.9991666666	13.223772048950195	0	
SMART_000003	3	2	71.9991666666	151.281494140625	0	
		Patiol coverage (e	n)			

### **Changing View Extents for the Map**

The default view extents for a newly added map object is the entire area of the Basemap. At times you might find it useful to change the view extents to highlight a specific portion of the Conservation Area.

• Return to Edit Mode

Property Editor - SMART Map 🛛						
Properties MapLayers						
Basemap: SMART Map with legend						
Map Bounds: (map extents) CRS: WGS 84 <u>Set Bounds</u> <u>Clear</u>						
Map Layers:						
Report Dataset	Layer Name	Style		Add		
Patrol coverage - km [000007]	Patrol coverage (km)			Delete		
				Move Up		

- Select the SMART Map in the Report Layout
- Click on Map Layers in the Property Editor
- Select Set Bounds
- With the zoom tool, define the area you want to appear in the map



- Click Bounds
- Save Report
- Re-run the report

### Adding Charts to the Report

Charts add another option of visualization option for SMART reports. Adding charts to SMART follows the same process as other Report objects.

Now you're going to add a bar chart that shows the number of patrols by different means of transport:

🗁 Report Items
abl Label
<u>Æ</u> ≣ Text
ab Dynamic Text
Data
🎦 Image
III Grid
List
== Table
In Chart
Cross Tab
Smart Map
🔁 Quick Tools
S Aggregation
🔛 Relative Time Period

• Under Report Items, select Chart and drag it into the Report Layout window

After placing the chart object in the report designer window SMART will open a dialog wizard to guide users through the steps to set up a chart. The default chart is a Bar chart, which will be the one used in the following example. Other chart types are available and can be selected in the "Select Chart Type" window on the left.



• Keep default settings and click Next

The chart structure has been created but no data has been assigned to populate the chart. The next couple of steps are to define the data source for the chart and assignment of the X and Y components of the chart.

II New Chart					×	
New Chart Select the data to display in the chart	t and bind it to the series.					
Select Chart Type 🖪 Select Data	🙀 Format Chart					
ci	hart Preview					
Value (Y) Series:* Series 1 ∑ ▼ row["Number of	$ \begin{array}{c} 2 \\ 1 \\ -1 \\ 2 \end{array} $	Chart Tit	le	Series 1	Optional Y Series Groupir	
	Foot	Vehi	cle			
	Category (X) Series:*	row["header_0"				
Sele	ct Data					
	Inherit Data from Container	Inherit Colum	ns only		+	
	Use Data from	Patrol effort by	/ transport type [00	0010]	\-	
Data Preview         Use the right-click menu or drag the column into series fields.         Show data preview         Number of Employees per Number of Patrols						
	mber of Hours per Person - D mber of Nights	ays			Filters	
Nu	Number of Patrols					
<b>3</b> Per	son - Days per Number of Pat	trols			Parameters	
1 hea	ider_U				+ Data Binding.	
(?)	< Back	Next >	Finish	Cancel	Apply	

- 1 In the section **Select Data** 
  - a. Check Use Data from
  - b. Select Patrol effort by transport type in the drop down menu of data sets
- 2 In the Data Preview window below, select **Number of patrols** and drag it under **Value Y Series**
- 3 Select Header_0 (Patrol ID) and drag it under Category X Series
- 4 Click Next

Series					
Color By: Value Series 🔻					
Series	Title	Туре	Z Order V	isible Stacked	Translucent
Value (Y) Series	Number of patrols	Bar Series	⊸ 0 🚖		

• For the title of Series Y : Number of patrols

New Chart		
New Chart	by d	-f
Fine tune your chart	by u	eı
[ Select Chart Type	<b>R</b> 5	Se
⊿ Series		
Value (Y) Serie	5	
⊿ Axis		
X-Axis		
Y-Axis		
Title		
Plot		
Legend		
I		

- In the left-hand menu bar, select **Title** for the chart
- Enter Number of Patrols by Transport Type as Chart Title
- Finish



- **Re-size** the chart in the Report Layout
- Save Report
- Re-run report



# Monthly Report for SMART National Park 2012-03-17 to 2013-04-11

Patrol ID	Number of Day	s Number of Nights	Number of Hours	Distance (km)	Number of Employees
SMART_000001	2	1	47.9994444444	26.91482925415039	3
SMART_000002	3	2	71.9991666666	13.223772048950195	0
SMART_000003	3	2	71.9991666666	151.281494140625	0



Number of Patrols by Transport Type



### **Exporting Reports**

Reports can be exported in a variety of formats (e.g. PDF, Word document etc), which then can be used for easy distribution or importing into other applications. In addition to being able to export/import patrols, queries and summaries, SMART can export report definitions that can be imported into another installation of SMART. This feature allows for a template to be built and then distributed to other databases or offices to reduce the effort in creating new reports and to ensure standardization.

#### **Report Definition**

A Report Definition zipfile is a complete package that allows for other installations of SMART to import the report and its dependencies. A report can contain images, queries and other report objects and the report definition file bundles these together to make for easy importing into another system.



• In the Report List right-click the mouse to bring up the Export Report option

🖲 Export		
Export Report	: My First Report	
Export Format:	Report Definition (.zip)	~
Output File:	xls (.xls) pdf (.pdf) postscript (.postscript) doc (.doc) odp (.odp) html (.html) ods (.ods) ppt (.ppt) odt (.odt)	
(	Report Definition (.zip)	

• At the bottom of the list select **Report Definition (.zip)** 

🖲 Export		
Export Report	: My First Report	
Export Format:	Report Definition (.zip)	~
Output File:	Module 6\MyFirstReport.zip	Browse
		Export Cancel

- Browse to Module 6
- Save the Training Report.zip
- Export
- **OK**

### **Importing Reports**

After the report has finished exporting, you will import the report definition back into your installation of SMART and rename the report. Imported reports will also import any queries, summaries and other report objects if they do not currently exist.



- Under the Report menu, select **Import Report**
- Browse to Module 6
- Select TrainingReport.zip that you just exported
- Open

Note: SMART will warn you that a report of the same name already exists.



- Click Create New
- ОК

🖲 Create Report	_ 🗆 🔀
Create a new report	
Save Location:	
<ul> <li>⊕ Conservation Area Reports</li> <li>⊕ ⊡ User Reports</li> </ul>	
Save	Cancel

- Select Conservation Area Reports
- Click Save

You'll now see two reports in the Report List. You can change the name of the second report by righ-clicking and selecting 'Rename'. You can then modify as you wish.



### <End of Module 5 - Reports>

# Module 6 – Planning and Intelligence

This module will guide you through the process of developing plans and to record incoming intelligence from patrols or external sources. Plans allow for a set of targets to be assigned to a patrol or series of patrols and to keep track of available and active rangers. In the second half of this module you will learn the process of tracking intelligence records from information gathered from previous patrols, general public, informants or CET.

# **Objective:**

- Creating parent and child plans;
- Developing numeric, administrative and spatial targets;
- Linking plans to patrols;
- Evaluating plans targets;
- Recording intelligence records;
- Associating intelligence records with patrols;

# **Detailed Steps:**

### **Developing Plans**

A plan allows for specific targets and goals be assigned to a Conservation Area, station, team or series of patrols. A plan is created through the use of a similar wizard used to create patrols. After a plan has been created it can be associated with a patrol or series of patrols which then uses the track information to calculate the success or failure of defined targets.



Click Add a New Plan icon

At this point the Plan wizard will appear and guide you through the steps to create a plan. Plans can be generated completely from scratch or by using an existing plan as a template. For this first example you will create one from scratch as there are no existing plans to use as a template.

- Select Create a new plan from scratch
- Select Plan Type: Patrol Plan

Plans can be set to Patrol Plan, Conservation Area Plan, Station Plan and Team Plan. This allows for grouping of plan types.

- Leave default of Unavailable Rangers set to "0"
- Next
- Select No parent plan
- Next
- Leave default Plan Id
- Set Plan Name: Distance Targets
- Provide a description of the plan
- Next
- Select a Team and Station
- Next
- Leave defaults for Plan Dates
- Next

🐻 Create New Plan		
Plan Targets		
Add plan targets by selectir Target" to remove a target.	ng the "Add Target" button. Use the "Edit Target" to edit the selected target	and "Delete
Plan Targets:		
Target Name	Summary	Add Target
		Edit Target
		Delete Target
	< Back Next > Fi	nish Cancel

### **Target Types**

Numeric - targets include distance covered by the patrols and duration of the patrols

Administrative - user specified criteria for creating targets

Spatial - locations within the Conservation Area that need to be visited by the patrols

### **Creating Targets**

🐻 Create Target		
Plan Target		
Create a new plan target		
Target Type: 🔘 Numeri	c 🔘 Administrative 🔘 Spatial	
Numeric Target Type:	Distance Travelled (meters)	•
Operator:	>	•
Target Value: 🛽		
Target Name:	Distance Travelled (meters)	
Target Description:		*
		Ŧ
	Save	Close

- Leave the default of Target Type as **Numeric**
- Leave the default Numeric Target Type as **Distance Travelled (meters)**
- Set Target Value = 10
- Leave the default Target Name as **Distance Travelled (meters)**

[SMART_000]	001] 🛛								- 8
[SMART_	000001]								
									translate
▼ Plan Summ	nary								
Plan ID:	SMART_000001			]	Plan Type:	Patrol Pla	in		<u>edit</u>
Plan Name:				]	Unavailable Employees:	0			<u>edit</u>
Description:				<u>edit</u>	Parent Plan:	<none></none>			<u>edit</u>
				_					_
Start Date:	April 12, 2013				Station:	<none></none>			
End Date:	April 12, 2013			<u>edit</u>	Team:	<none></none>			edit
Patrols: None	e								
*child plan's p	atrol								
▼ Targets									
Plan Targets	•								
Total Targets	Complete: 0/1								
Target Nam	ie	Summary				Target 9	Status		
Distance Tra	avelled (meters)	[Numeric] Distance Tr	avelled (meters) > 10.0			Incomple	ete (0.0)	-	
									<u>edit</u>
									<u>manage</u>
									<u>refresh</u>
Child Plan Ta	irgets								
Total Targets	Complete: 0/0								
Plan	Target Name		Summary				Target Status		
									<u>refresh</u>

edit - edits the selected plan target

manage - opens dialog to add new targets

refresh - refreshes validation checks on patrols associated with these targets.

Now you will add two new target types to cover the remaining two options of Administrative and Spatial.

**Note**: It is not required to have all target types entered for a plan. Also...multiple entries of a single target type can be entered for a single plan.

- Click manage (see above highlights for location)
- Create a new target of type **Administrative**
- Enter in for Target Name: Made Arrest
- Enter in for Target Description: Arrested Poachers
- Leave default for Target has been achieved as unchecked
- Save

Administrative targets can be defined and described as required by the administrators and planners of the Conservation Area patrols. SMART does not automatically evaluate the pass/fail of Administrative patrols. When an administrative patrol target has been achieved the check box for "Target has been achieved" will be manually selected.

- Create a new target of type **Spatial**
- Provide a Target Name and Target Description

🐻 Create Target

#### Plan Target

Create a new plan target

		Ψ.
Points:0		
Add Delete	Coordinates   1:2,515,377 -	WGS 84

Spatial targets involve entering the location of where the patrols are required to visit for the target to be successful. The Distance for Completion (meters) parameter is how close to the exact coordinates the patrol needs to be before the target location is successful.

**Note**: This parameter is set by default to 250 meters. It can be manually changed on this screen or the default value for the Conservation Area can be set by the menu selection of "File – System Preferences". In System preferences the entry for "Smart Plan Configuration" is the location of this default value.

- Provide a Target Name
- Leave the default value of Distance to Completion (meters) set to 250

Smart has to options for selecting point locations for Plan targets. If the exact location is known then the values can be entered on the left.
Points:	0
X:	
Y:	
	Add Delete

If the exact location is not known then the Smart patrol planner can enter in location using the mapping interface using the add

Plan Point icon.



- Select the Add Plan Point Icon
- Add a few points in the mapping window
- Save and Close
- Create a new spatial target using the coordinates (X=11.2828, Y=-0.2144)
  - Provide your own name and description, leave the default distance to 250 meters

## **Linking Patrols to Targets**

#### ▼ Targets

#### Plan Targets

### Total Targets Complete: 0/4

rotal rangets complete. of i			
Target Name	Summary	Target Status	
Distance Travelled (met	[Numeric] Distance Travelled (meters) > 10.0	Incomplete (0.0)	۲
Made Arrests	[Admin] Made Arrests	Incomplete	۲
Poacher Sightings	[Spatial] Poacher Sightings (3 point(s))	Incomplete	
Single Location	[Spatial] Single Location (1 point(s))	Incomplete	

**Note**: The status circles on the right are all showing red indicating a failed target. This is because there are no contributing patrols to these targets.

Now that a plan has been created and has targets assigned the next step is to associate the plan with a patrol.

- Return to the patrol perspective
- Double-Click on patrol (SMART_000002) to open it

**Note:** Remember to change the patrol date filters to see all the patrols in this Conservation Area.

tart Date: March 17, 2012		End Date: March	19, 2012	
Day	Start Time	End Time	Distance	Hours
17-Mar-2012 Sat	8:16:28 AM	3:17:49 PM	4.8168793	7h 1m
18-Mar-2012 Sun	8:40:45 AM	2:48:45 PM	4.174289	6h 8m
19-Mar-2012 Mon	9:03:58 AM	5:07:24 PM	4.2326026	8h 3m

Summary 17-Mar-2012 18-Mar-2012 19-Mar-2012 Map Other

• Click the **Other tab** at the bottom of the Patrol Summary window

5 Patrol_SMART_000002 🖾	
▼ Reported Intelligence	
No intelligence was reported by this patrol.	<u>create</u>
▼ Motivation Intelligence	
This patrol was not motivated by intelligence.	<u>edit</u>
▼ Plan	
There are no plans associated with this patrol.	edit
Summary 17-Mar-2012 18-Mar-2012 19-Mar-2012 Map Other	

Now to link this patrol with the plan created in the previous steps.

- Click the **edit link** to the right of the Plan sub-section
- Select the plan that was previously created
- Save and Close

At this point you now have your plan linked to a single patrol.

**Note**: It is possible that multiple patrols can contribute to achieving the plan targets. For this exercise you will evaluate the success of the patrol by having it linked to a single patrol.

- Return to the **Planning Perspective**
- Double-Click your plan to open it

▼ Targets

#### Plan Targets

Total Targets Complete: 0/4

Target Name	Summary	Target Status	
Distance Travelled (met	[Numeric] Distance Travelled (meters) > 10.0	Incomplete (0.0)	
Made Arrests	[Admin] Made Arrests	Incomplete	
Poacher Sightings	[Spatial] Poacher Sightings (3 point(s))	Incomplete	۲
Single Location	[Spatial] Single Location (1 point(s))	Incomplete	۲

You should still see the target status indicators set to red.

• Click **refresh** to recalculate the target validations

The distance travelled target and the manually entered location status should change to Completed with the indicator color changing to green. Depending on the locations of the spatial targets entered using the mapping window that target could have changed to green as well.

The [Admin] target will only change when the status for that target is manually changed.

- Click manage to open the dialog to add, edit or delete targets
- Select the [Admin] target "Made Arrests" and click edit

🖲 Update Target: Made	Arrests	
Plan Target		
Administrative		
Target Name:	Made Arrests	
Target Description:	Arrested Poachers	
Target has been achieved:	2	
		Save Close

- Click the check box for "Target has been achieved:"
- Save and Close
- Repeat the **Save** and **Close** for the following window
- Refresh the status of the patrols

The [Admin] "Made Arrests" target should have changed from Red to Green.

- Create a new plan that is a child of this plan
- Follow the previous workflow but select to use the previous plan as the parent plan

Note: If errors are encountered when entering dates, ensure the dates of the child plan fall within the range of the parent plan.

🖲 Create New Plan	- 🗆 🛛
Parent Plan	
A parent plan allows you to group patrol plans into team, station and conservation area plans. Create the conservation area plan first, then select it in this window when creating each each patrol, station or team	
🔿 No parent plan	
⊙ Use the following plan as the parent	
Click <u>here</u> to change the plan filter.	
[SMART_000001]	
< Back Next > Finish	Cancel

- Create some new targets and link this plan to the other patrols
- Validate the plan targets to see if any of the targets have been achieved
- To see the child and parent plans together reopen the first plan and click refresh (to the right of the child plan window).

Note: The distance calculations for the master plan take into account the total distance travelled by the child plans.

### **Creating Intelligence Records**

Intelligence records are pieces of information that has been gathered through previous patrols or by external sources. Information from intelligence records can be used by Conservation Area managers to help plan future patrols.

😸 SMART : SMART - SMART Training Database						
File Conservation Area	Patrol Query	Report	Planning	Intelligence	Help	
💹 🥠 🗛 🌆 🖃 🔯	🛸 指					
🕸 Intelligence List View	× 🚯 👬 🗖					
Create New Intelligence Record						

To create a new intelligence record:

- Use the menu Intelligence Create new Intelligence Record (or)
- Keep the default date for **Received Date**:
- Next
- Set Intelligence Source: Patrol
- Select a Patrol ID (if no patrols are listed adjust the time filter to show All Dates)
- Next

Patrol - gathered directly by a previous patrol

Public - from an unassociated public member

Informant - a person with some ties to the Conservation Area

CET - Community Extension Team (i.e. the separate Forest Department/ NGO team working with local communities)

#### **Note**: Only the Patrol choice will require a link to an existing patrol.

#### Intelligence is relevant for multiple days

If the incoming intelligence is to cover activity that spans multiple days then in this step you should check the box and enter in the appropriate dates. For this exercise you will accept the default day.

🖲 Create	New Inte	lligence					_	
Intellige Enter the	e <b>nce Dat</b> e e relevant	<b>es</b> date(s) for this	s intelligen	ce:				
🔲 Intelli	gence is r	elevant for mu	ltiple days					
Date:	April	-15-13						
		< Back		Next >	Fin	iish		Cancel

- Accept the default day
- Next
- Type in a Short-Form Name and a Description of the new information

### Example:

Short-Form Name: Night Poaching

Description: Rangers interviewed captured poacher and was informed of a night poaching raid in the North-West to happen on the 15th of May.

- Click **Next** to move to the Intelligence Location window
- Enter in a **point** (coordinates or with map) for a location in the **North-West**
- Next
- If there are documents (photos, reports, etc...) then attach them to the intelligence record
- If no additional documents are available then click Finish
- Review the intelligence records and if necessary make changes using the **<u>edit</u>** links next to the entry

### **Querying Patrols with Plans and Intelligence Records**

Plans with links to patrols can be queried with a Patrol Query with Patrol Filters. The patrol filter "Motivated by Intelligence" is to query out any patrols associated with Intelligence Records. The patrol filter "Part of Plan" is to query any patrols that were associated with Plans.

• Return to the Query Perspective and build/run a couple queries using these two filters...

### <End of Module 6 – Planning and intelligence>

# Module 7 – Data Model Management

# **Objective:**

This Training Module will instruct you on how to manage the Observation Data Model within the SMART system. In this module, you will learn how to create, disable or delete categories and attributes in line with best practices and principles of data modeling.

# **Detailed Steps:**

To access the observation data model:

Conservation Area	Patrol	Help
Conservation A	rea Prop	erties
Agency and Rar	nk List	
🚨 Employee List	τ	
🚺 Station List		
Define Area Bou	undaries	
📄 Data Model		
💢 Delete Conserv	ation Are	a

• From the Conservation Area menu, select Data Model ...

### **Data Model Overview**

The SMART data model structure is based on a tree structure, comprised of nodes (Categories) and a series of 'leaves' or custom attributes that can be associated to any number of the tree's categories.

**Note:** For users familiar with MIST: in SMART, Categories correspond to Observations and Observation types in MIST, and Attributes correspond to Observation Remarks in MIST

Categories are denoted as:



Attributes are denoted by values (Numbers, lists, text) :

Type of transportation ¹2₃ Number of transport items ^AB_C Registration number Patrol action

## Add a Category to the Data Model

At any level in the data model, new categories can be created, edited, disabled or deleted. In the example below, you're going to create a new category 'Forest clearance', under Human Activity

🐻 Data Model	
Data Model Manage conservation area data model.	
English [en]         type filter text	Add Category       Add Attribute       Disable       Delete         Properties       Name:       Human activity       Image: Human activity         Key:       humanactivity       Image: Can have multiple observations         Image: Can have multiple observations       Edit
	Save

- In the data model tree, select "Human Activity"
- This will enable the action buttons in the top right
- Click on Add Category

🕞 Categor	/	
Create a r	ew category.	
Language:	English [en]	•
Name:	Forest clearance	
Key:	forestclearance	Change
	Can have multiple observations	
		OK Cancel

- Create a new category called 'Forest clearance'
- Keep checked "Can have multiple observations"
- **OK**

**Note** : The **Key** is created automatically in SMART. Its not recommended to change this unless you're sure you know what you're doing!

### **Attribute Types**

SMART supports attribute types of Numeric, Text, List, Tree and Boolean. Usage of the attribute types will depend on the nature of the observation information collected in the field. Examples and recommended usages of attribute types are:

Numeric - widths, lengths, amounts, numbers of animals, people or items
Text - specific names that cannot be preloaded into a list
List - names of items where the list is known and the list is not too long
Tree - a collection of attributes that can be arranged in a hierarchical or logical format such as animal species
Boolean - any situation that can be answered with a Yes or No

### **Creating New Attributes**

In the category 'forest clearance', you're now going to add two attributes:

Area cleared in hectares (numeric attribute) Species planted (list attribute)

- The new 'Forest clearance' category will now appear under Human Activity
- Select it and then click on Add Attribute in the upper right of the window

🐻 Data Model Data Model Manage conservation area data model. English [en] • Add Attribute Add Category Disable Delete type filter text Properties 🔺 🛞 Data Model ٠ Name: Forest clearance 🔺 🛔 Human activity People - direct observations Key: forestclearance People - indirect sign Can have multiple observations Camps Weapons and gear seized Ξ Transport Timber NTFPs Domestic animals Bushfires Roads and infrastructure Minerals Pollution Forest clearance H Type of threat Infraction 🔺 📕 Wildlife Edit b 🌡 Wildlife - direct observation Mildlife indirect clan Export To XML ... Save Close

le Add Attribute	
Add a new attribute	
Would you like to: Create a new attribute Add existing attribute(s) Select the attribute(s) to add:	
AB Length [ablength] AB Spread at Tips [abspreadattips] Action Taken [actiontaken]	E

- Select Create a new attribute
- Next

🚯 Create At	tribute	
Create a ne	ew attribute.	
Туре:	NUMERIC	•
Language:	English [en]	•
Name:	Area_ha	
Key:	area_ha	Change ≡
Required:		
Aggrega	ations: 👽 Average 🔍 Maximum I Minimum I Sum	
Minimum	Value:	
Maximum	Value:	
	Finish	Cancel

- Create a new attribute as follows:
  - Type = "Numeric"
  - Name = "Area_ha"
  - Check all options under « Aggregations »
  - Finish
- The new attribute "Area_ha" will now appear under the category Forest Clearance in the data model tree
- Click **Save** (in the bottom right of the window)

You're now going to select a second attribute of a different type (a list of different species planted in the cleared area)

- Select the category 'Forest clearance'
- Click on Add Attribute
- Select Create a new attribute
- Next

	Create	Attribute		_ 0 <b>_</b> ×	(
	Create a	new attribute.			-
	Туре	: LIST		•	<b>^</b>
l	Language	English [en]		•	
l	Name	Species planted			
	Кеу	speciesplanted		Change	
ļ	Required	:			Ε
	Values:	Bananas [bananas] Manioc [manioc] Beans [beans]		Add Edit Disable Delete	
					÷
			Finish	Cancel	

- Type = "LIST"
- Name = "Species Planted"
- Values = "Banana", "Manioc", "Beans" (add them individually by clicking on Add)
- Finish

# **Using Existing Attributes**

In addition to creating new attributes, you can also re-use existing attributes

R Add Attribute	
Add a new attribute to Forest clearance	
Would you like to:	
Create a new attribute	
Add existing attribute(s)	
Select the attribute(s) to add:	
Patrol action - camps [actiontaken_camp]	
Patrol action - direct observation [actiontaken_liveanimals]	
Patrol action - people [actiontaken people]	

- Select the category 'Forest clearance'
- Select Add Attribute

- Select Add existing attribute
- In the list of attributes, select :
  - Patrol action camps
- Finish

In the category Forest Clearance, you will now see the three new attributes under the category



### **Disabling and Deleting Attributes**

Categories, attributes or values within attributes can all be deleted from the data model, or disabled.

**Deletion** - Completely removes the feature from the data model. This can only be done if there are no dependencies. A dependency can be a child category, attribute, recorded observation or query/summary. If no dependencies exist, the feature can be completely removed from the data model.

**Disable** - If dependencies exist or the administrator does not wish to fully remove the feature, it can be disabled. Disabling removes the ability to record any observations based on the disabled feature, but does preserve the ability to perform analysis on the feature.

**Note:** If you aren't sure whether to disable or delete – you should always just **DISABLE**. You can always re-enable it later on.

### **Disabling / Enabling Categories**

Disabling / Enabling categories is a much easier process because it does not require that all dependencies be disabled before proceeding with the higher level category. It also allows for reintroduction if the need arises.

- Select the category Pollution
- Click on **Disable**

🐻 Data Model	
Data Model Manage conservation area data model.	
English [en]         type filter text         Image: Data Model         Image: Data Model	Add Category Add Attribute Disable Delete Properties Name: Pollution Key: pollution ⑦ Can have multiple observations Edit
	Save

Pollution is now greyed-out in the model. You'll no longer be able to see this as an option during data entry.

You can re-activate it by clicking on 'Enable'

- Domestic animals
- Bushfires
- Roads and infrastructure
- Minerals
- Pollution
- Forest clearance
  - H Type of threat

### **Modifying Existing Attributes**

You can modify existing attributes by adding (or disabling) values (for example if the current list of values is not relevant for your site)

You're going to modify the list of attributes under the category Human Activity – People - Indirect sign.

- Select the category: Human Activity People Indirect Sign
- Select the attribute **Type of human sign**
- Click on Edit in the right-hand lower corner of the screen

🕞 Data Model	
Data Model Manage conservation area data model.	
English [en]         type filter text         Image: Data Model         Image: Data Model	Add Category       Add Attribute       Disable       Delete         Properties         Type:       [LIST       •         Name:       Type of human sign       •         Key:       typeofhuman sign       •         Required:       •       •         Values:       Trail [trail]       •         Footprint [footprint]       •       •         Machete cut [machetecut]       •       •         Litter [litter]       •       •         Other [other]       •       •
	Save Close

- Click Add
- Enter ' Charcoal furnace'
- Save
- Finish
- Save the data model by clicking on Save in the lower right-hand corner of screen

**Note:** When you have modified the data model you can then share it with other conservation areas in order to standardize the list of observations. Click on 'Export to xml' and save the file.

### <End of Module 7 – Data Model Management>

# Module 8 – Administrative Tasks

# **Objective:**

This Training Module will introduce you to a number of administrative functions to ensure a productive working environment in SMART. During this module, you will look at the export/importing capabilities, backing up and restoring of a conservation area, along with other best practices that will ensure a minimal amount of downtime if disaster strikes.

- Changing Your Username and Password
- Importing and Exporting Patrols
- Exporting and Importing Intelligence Records
- Exporting and Importing a Conservation Area
- System Backup
- Configuring Automatic Backups
- Backing up and Restoring the Database

# **Detailed Steps:**

Previous modules that you have worked on have focused on one particular portion or perspective within the SMART application. This module will explore many perspectives but with a focus on creating backups and other safeguards to protect your conservation area(s).

### **Changing Username and Password**

The following steps are to change the password for the account that is logged into and active.



• From the File menu select Change Password ...

🚯 Change username pas	ssword.			23
To change your passwo	ord enter your current password and your new passw	vord.		
Username:	smarter		Cha	ange
Current Password:	•••••			
New Password:	•••••			
Re-type New Password:	•••••			
	Save		<u>C</u> lose	:

- Click Change...
- Type in smarter
- Click OK
- Type in
  - Current Password = smart
  - New Password = **smarter**
  - Re-type New Password = **smarter**
- Click Save
- Repeat the process and change it back to **smart**

### **Changing Username and Password of Other Accounts**

If a non-administrator account has forgotten the username or password an Administrator account can log into SMART and change the account settings for that employee.



- From the menu select Conservation Area Employee List
- Select one of the employees

🕟 Update Employee: 195000010				
Id:	195000010			
Given Name(s):	dataentry			
Family Name(s):	dataentry			
Conservation Area Start:	Monday , March 24, 2008			
	Inactive			
Employment End:	Wednesday, October 10, 2012			
Birth Date:	Sunday , January 01, 1950			
Gender:	Male  Female			
Agency:		-		
Rank:		•		
Smart User				
Smart User				
Smart User Name: da	taentry			
Smart Password: ••	•••••			
Re-Type Password: 💽	•••••			
Smart User Level: DAT	A_ENTRY	•		
	Save Cance			

- Check SMART User
- Enter the SMART User name : dataentry
- SMART password : dataentry
- Under SMART User level: select DATA_ENTRY
- Save

**Note**: The Update Employee window can be used to update all aspects of a particular employee including Agency, Rank, Smart User Level.

## **Exporting and Importing Patrols**

SMART's ability to Export and Import patrols allows for multiple data entry computers and collating into a master system.

Note: For users familiar with MIST, Import/Export patrols in SMART corresponds to Data Replication in MIST

- Change to the **Patrol Perspective**
- From the Patrol List View double-click the Patrol **SMART_000003** (select **all-dates** in the filter if you can't see the patrol), you need to open the patrol before you can export it.
- On the Patrol Menu select **Export Patrols**

Export Patrols		- • ×
Export selected patrols to	o xml files.	
Destination Folder*:	\\psf\Home\Desktop\SMART_HKK_Nov2012\Supportingfiles\Module 9\Patrols	Browse
Include Attachments**:		
Only the last 20 patrols are	shown. Click <u>here</u> to see all patrols	
Training [11/21/12 -	11/21/12]	
SMART_000002 [9/1/	12 - 9/3/12]	
SMART_000004 [8/23	2/12 - 8/27/12]	
SMART_000003 [8/9/	12 - 8/14/12]	
SMART_000001 [8/9/	12 - 8/9/12]	

- Browse to Module 8 on the USB key
- Select SMART_000003
- Leave as default the box for 'Include Attachments'
- Click Export
- OK
- Check in Windows Explorer that the file was correctly exported to Module 8 on your USB key.

To test the import process, you will need to delete the Patrol SMART_000003 before you import it.



• On the main Patrol menu select Import Patrol

F Import Patrols	
Import Patrol Data Select the patrol file(s) to import.	
Patrol File(s):	Add Remove
Import	Cancel

- Click on Add
- Browse to the file **SMART_000003** that you exported to Module 8 on your USB key
- Click Import

## **Exporting and Importing Intelligence Records**

The exporting and importing of Intelligence records allows for distributed information gathering that can be combined at a later date in a central system. Since Intelligence records can be tied to Patrols it is important to understand how the export and import process works for linked patrol and intelligence records.

An exported patrol will retain links to plans and intelligence records. If the patrol is imported into a Conservation Area that already contains the plans and/or intelligence records then the links are re-established.

If the patrol is imported into a Conservation Area that does not contain the plans or intelligence records then the link will remain broken until the plans and/or intelligence records are imported.

If Intelligence records with links to a patrol is imported and the linked patrol already exists the link is re-established. If an imported intelligence record has a link to a patrol that does not exist the type of patrol is still set to "Patrol" and the link to a patrol has to be set automatically.

Intelligence Help			
蕕	Create New Intelligence Record		
	Export Intelligence		
	Import Intelligence		
蓹	View Intelligence Records		

- In the Intelligence Perspective select an Intelligence Record
- From the File menu select Export Intelligence
- Browse to the folder **Module 8**
- Check the **box** next to the Intelligence record
- Check Include Attachments if necessary
- Click Export

Importing an Intelligence record involves selecting a record or records and completing the import process. If an Intelligence record with the same name already exists Smart will warn the user about potential duplicate entries.

## **Exporting a Conservation Area**

The exporting of a Conservation Area will export all of the components of a particular Conservation Area. This function not only allows for the archiving of a Conservation Area, but also for distribution and sharing.



• From the File menu select Export Conservation Area

🛞 E	xport Conservation Area			x
Exp	ort Conservation Area			
Se	ect the file to export the 'SMART Conservation Area' conservation area t	о.		
File:	am Files (x86)\SMART\smart\data\backup\SMART_SMART_20120807.b	ak.zip	Brow	vse
	Export	Ca	ancel	

- Click Browse...
- Browse to the folder Module 8
- Keep the default file name
- Click Save
- Click Export

## Importing a Conservation Area

Now you're going to import a new conservation area in your database. SMART can manage multiple conservation areas in a single database, but you can only log in to one at a time.

- First, logout of your current Conservation Area
- In the main menu, select File Logout

SMART will now restart automatically and bring you to the main login screen

<b>S</b>	MAR	
Conservation Area:	ARUSHA - Training	•
User Name:		
Password:		
		Advanced
	Exit	ogin

• Click Advanced

Advanced Options	
SMART Advanced Options	
Would you like to: Create a New Conservation Area Restore a Backup Import a Conservation Area	
Cancel	

- Select Import a Conservation Area
- Continue

SMART will ask you if you want to backup the current database:

Confirm Restore				
?	Would you like to backup the o area?	current database b	efore importing you	ur conservation
		Yes	No	Cancel

• Click No



- Browse to Module 8
- Select the file SMART.bak.zip
- Click Import
- When the import is complete, click **OK**

You'll now see a new conservation area listed in the login screen

- Select the new SMART Conservation Area
- Enter
  - Username = smart
  - Password = smart
- Login

### **Backup System**

In the previous example you exported and then imported a single Conservation Area. The Backup System function will create a backup file of the entire database and backup every Conservation Area managed by that database.

Note: if you have multiple conservation areas in the database, this will back-up everything in one step



#### • In the File menu select Backup System

🖲 В	ackup SMART System	_ 🗆 🖾
Bac	kup SMART System	
Sele	ect the file to backup the system to.	
File:	Module 8\Backup_System\SMART_20120905.bak.zip	Browse
		Backup Cancel

- Browse to the folder Module 8
- Keep the default file name
- Click Backup
- Once the process has completed click **OK**
- Browse to the folder Module 8 to ensure that the file has exported correctly

**Note**: the filename is nearly the same as the Conservation Area export file with the exception that no specific Conservation Area names are included in the export filename.

At this point you will not need to restore the entire database, but the following screenshot is a reminder of where the import would take place.

*Note*: the backup file can be imported through the SMART Advanced Options screen.

Advanced Options	
SMART Advanced Options	
Would you like to: Create a New Conservation Area Restore a Backup Import a Conservation Area	
Cancel Continue	

## **Configuring Automatic Backups**

Remembering to perform regular backups is critical to ensuring that data can be recovered in the event of a system crash. SMART has the ability to automatically perform regular backups to a specified folder.



• In the File menu select Configure Automatic Backup...

**Note**: The frequency (and file location) for the Auto-Backup Configuration will be left up to the individual administrators.

SMART System Automatic Backup Settings		
Auto-Backup Configuration		
Each time the application is closed, the automatic bac specified time has passed and a backup is warranted.	kup system checks to see whether the If so, the system will perform a backup.	
How often would you like the system to perform an aut Every -1 days*	omatic backup?	
* Enter -1 to turn off auto-backup. Enter 0 to perform	m an auto-backup every time the applic	ation is closed.
When should automatic backup files be deleted? Delete files older than 30 days		
Where should automatic backup files be placed?		
C:\Program Files (x86)\SMART\SMART_Backups		Browse
	Save	Cancel

- Set the backup for every 2 days
- Leave the default delete threshold and backup location
- Close the Application.

You should notice a short backup process that occurs before the application finally closes, this process may take much longer for large databases with many patrols, Basemaps and attachments.

• Log back in and change the autoback-up configuration back to -1 to disable auto-backups

### Delete a conservation area

• You can delete an entire conservation area by selecting **File – Delete Conservation Area** from the main menu.

Warning – you should always do an export or backup before doing this to avoid losing you're your data!

### **User Levels Permissions and Restrictions**

Throughout the technical training modules all examples have been performed through the Administrator account, which has full access to all SMART functions. Other SMART accounts have different access permissions allowing Administrators to assign an appropriate user level to employees.

### **Data Entry**

The data entry user level has the most restrictions in place. The menu bar and icons available have been customized to include only the features required for the account to enter patrol data.

The data entry user level can enter create, export, import patrols, and create system backups after patrol information has been completed.



### Analyst

The analyst user level is designed for employees to create, export, import, run queries and reports. The analyst user level cannot create, alter or delete any queries or reports that have been saved in the Conservation Area Queries (or) Reports. This user level can run, create, alter or delete reports saved in the My Queries or My Reports folders. An analyst account cannot enter patrol data or export/import patrols.

### Manager

The manager account can make full changes to the patrol, query, report or planning modules. A manager account cannot make changes to the data model, update Conservation Area or patrol parameters.

### Administrator

The administrator account has full access to all functions and options in SMART.

### **SMART Help**

SMART's help system can be accessed directly through the menu bar. The Help Contents section

Help	
0	Help Contents
<b>%</b>	Help Search
۲	About Smart

• To access the Help Contents from the menu select Help Contents

Contents of SMART can be accessed through the Help tree (right) or by directly entering in key words into the Search bar.



### **SMART Help Search**

SMART Help search can be viewed through a side window to allow for regular viewing of the application.



• To access the Help Contents from the menu select Help Contents

In the window on the left the Help Search functions are available. Direct keyword searching is entered in the Search expressions: field. Browsing of the help tree is available through the Contents link.



### <End of Module 8 – Administrative Tasks>