

# Data management: Why we use WIMS

- Multi-Agency
- Multi-Projects
- Government Objectives
- Multi-Functional

WIMS – **W**ater **M**anagement  
**I**nformation **S**ystem



## Multi-Agency



### Various Programmes



Timber  
harvesting

### National (Government agencies)

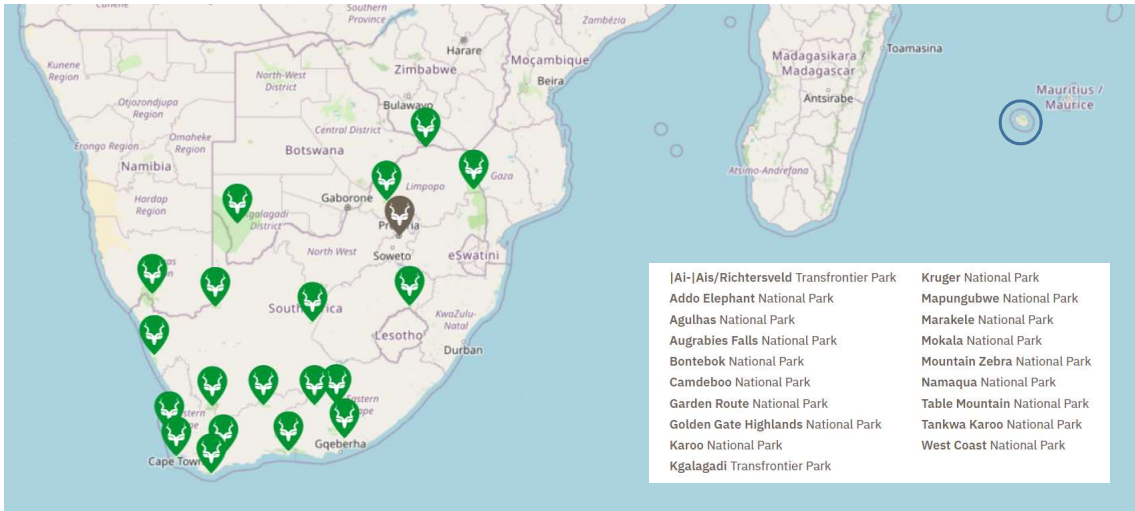


### Regional (Nature reserves, Municipalities)



### Local (Volunteer programmes, Private conservancies, Water Users Associations)

# Multi-Projects (SANParks)



# Current SANParks projects in WIMS

no	Project	30	24/25 WFW KNP Parthenium
1	24/25 WFE Addo	31	24/25 WFW Kynsna
2	24/25 WFE Camdeboo	32	24/25 WFW Mapungubwe
3	24/25 WFE Karoo	33	24/25 WFW Marakele
4	24/25 WFE KNP Monitoring	35	24/25 WFW Meerkat
5	24/25 WFE Mapungubwe	36	24/25 WFW Mokala
6	24/25 WFE Marakele	37	24/25 WFW Mountain Zebra
7	24/25 WFE KNP Marula Rehab	40	24/25 WFW Richtersveld
8	24/25 WFE Meerkat	41	24/25 WFW Tankwa Karoo
9	24/25 WFE Mokala	42	24/25 WFW TMNP EDRR
10	24/25 WFE Mountain Zebra	43	24/25 WFW TMNP HAT
11	24/25 WFE Namaqua	45	24/25 WFW TMNP North
12	24/25 WFE Richtersveld	46	24/25 WFW TMNP South
13	24/25 WFE Tankwa	44	24/25 WFW TMNP North Central
14	24/25 WFE Table Mountain	47	24/25 WFW TMNP South Central
15	24/25 WFW Addo North West	48	24/25 WFW Tsitsikamma Bloukrans
16	24/25 WFW Addo Tamarix	49	24/25 WFW Tsitsikamma Soetkraal
17	24/25 WFW Agulhas		24/25 WFW Tsitsikamma Storms
18	24/25 WFW Augrabies	50	River
19	24/25 WFW Bontebok	51	24/25 WFW West Coast
20	24/25 WFW Camdeboo	52	24/25 K2C Bush Clearing
21	24/25 WFW Farleigh East	53	24/25 K2C Parthenium
22	24/25 WFW Farleigh West	54	24/25 K2C Rehab
23	24/25 WFW Field Guards	55	24/25 K2C WFW
24	24/25 WFW Golden Gate Highlands	56	24/25 WFW Addo C WFW
25	24/25 WFW Goudveld	57	24/25 WFW Wilderness EDRR
26	24/25 WFW Gouna	58	24/25 WFE KNP Nkanatseni North
27	24/25 WFW GRNP HAT	59	24/25 WFE KNP Nkanatseni South
28	24/25 WFW Karoo	60	KNP Wetlands
29	24/25 WFW Kgalagadi	61	Golden Gate Wetlands
34	24/25 WFW KNP Nkanatseni South	62	Marakele Wetlands
38	24/25 WFW KNP Nkanatseni North	63	Mapungubwe Wetlands
39	24/25 WFW KNP Nkanatseni South	64	Agulhas Wetlands
		65	TMNP Wetlands

## Government Objectives

- **Employment**
  - person days
  - equity targets
- **Skills Training - upskilling**
  - Sustainable livelihoods (small businesses)
- **Ecosystem Services**
  - Water
  - Rehabilitation
- **Biodiversity Impact**
  - Hectares cleared - NEMBA compliance

## Multi-Function – utility value

### **Contract Management (SMME)**

Person days estimation (*man days in forestry terms*)

Costing of tasks

### **Management Reporting**

Various standard reports

Customizable reports

*"You can't manage what you can't measure" Peter Drucker*

### **Auditing**

Provide data for auditing purposes (*money spent, person days delivered, equity targets*)

Ability to detect corruption (*e.g. "sweetheart tasks"*)

### **Long-term planning**

timeous follow-up clearing, through continuous assessment of invasions

update clearing requirements (*e.g. after wildfires, floods*)

### **Spatial Data Management**

Including online library for supporting documents (*timesheets, Identity document copies, etc.*)

# WIMS in detail



Water Information Management System



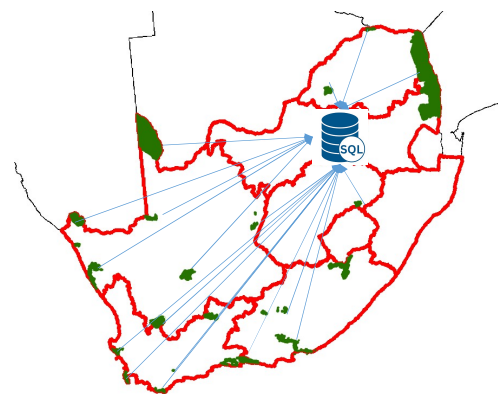
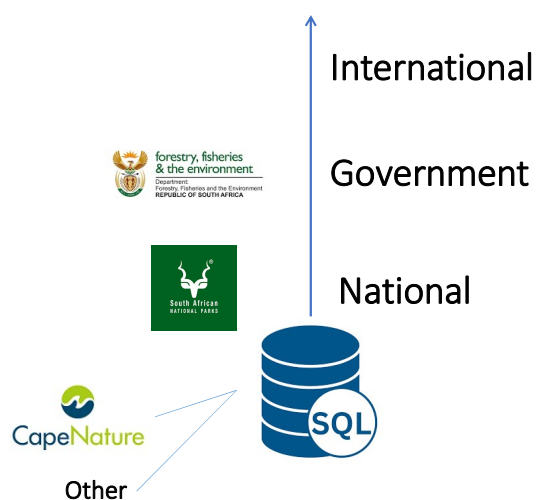
## Front End – Custom User Interface



## Back-end SQL Server (cloud based)



# WIMS in detail



Continued...

# The WIMS Workflow

## 1. Load Information into WIMS

1. Planned Deliverables
2. Baseline Information

## 2. Capture Contract Information

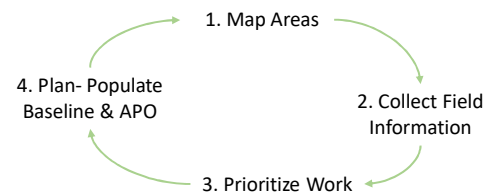
1. During active contract
2. Completed contract

## 3. Export and Process Data

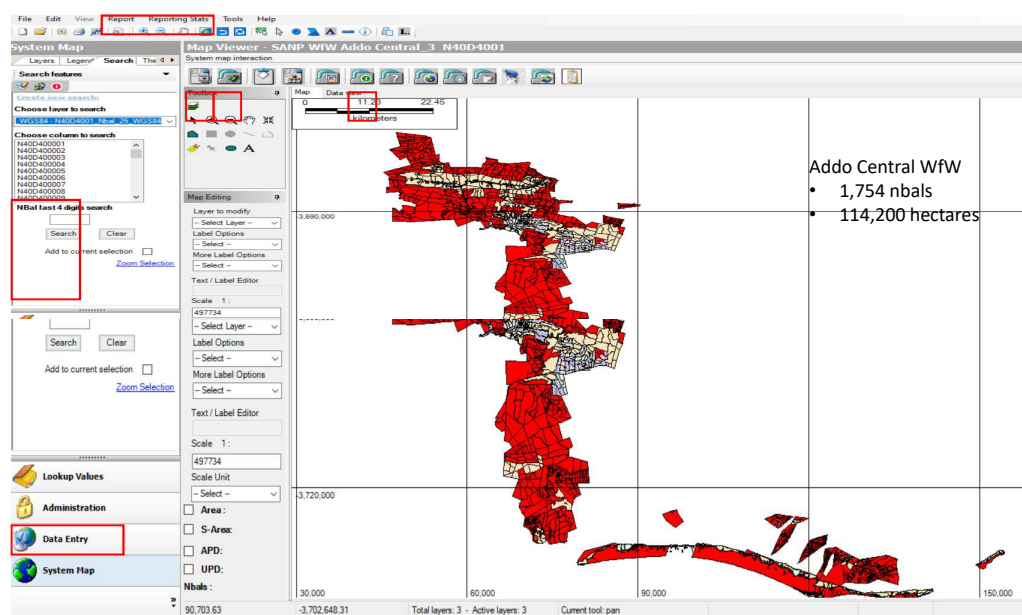
1. WIMS Reports
2. Custom Scripts

## 4. Share Information

1. ArcGIS Pro
2. ArcGIS Online



## Around 100 Projects

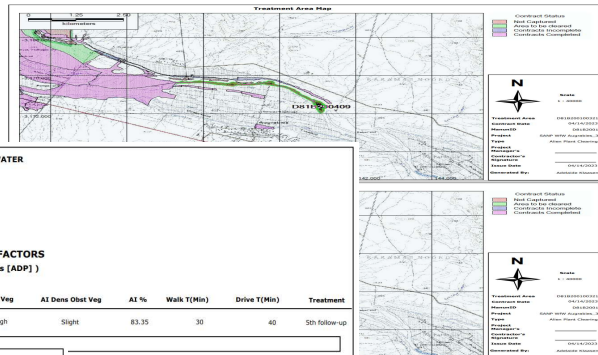






## Example of a WfW Alien Clearing Contract

## Spatial Map



## Nbal Physical Descriptions

**WORKING FOR WATER**

Project: SANP WW Augrabies\_3  
 Treatment Area ID: D818200100321  
 Land Owner: N/A  
 Issue Date: 2023/04/14  
 Generated By: Adelaide Klaassen

**ENVIRONMENTAL FACTORS**  
 (Affecting adjusting Persondays (ADP))

Nbal ID	Approx. flat area	Slope	Slp_Area	AI UFC	AI Ht Obst Veg	AI Dens Obst Veg	AI %	Walk T(Min)	Drive T(Min)	Treatment
D818200409	30.78	15	31.87	Easy	Knee High	Slight	83.35	30	40	5th follow-up
<b>TOTAL:</b>	<b>30.78</b>		<b>31.87</b>							

**Part D (Page 2.2)**  
 Attached as Part D of this quotation.

Project manager's initials: \_\_\_\_\_ Contractor's initials: \_\_\_\_\_

## Species information

**WORKING FOR WATER**

Project: SANP WW Augrabies\_3  
 Treatment Area: D818200100321  
 Generated By: Adelaide Klaassen

**DESCRIPTION OF WORK**  
 (as marked on attached map)

Nbal ID	Species	Age	Density	Method	Herbicide	Rate	Litres	UPD	APD	Area	PD/ha	Notes
D818200409	Mosquito	Young	5.00	Lopping / pruning	Choppyard 90 + Triclopyr	8.00	12.75	36.63	62.05	31.87	1.95	
D818200409	Castor-oil Plant	Adult	5.00	Cut and Spray	Choppyard 90 + Triclopyr	40.00	63.74	25.55	43.28	31.87	1.36	
<b>TOTAL</b>									<b>62.18</b>	<b>105.33</b>		
<b>Persondays</b>												
<b>Area</b>												
<b>APD / Ha</b>												
<b>UPD / Ha</b>												

**Total Active Ingredients:**  
 Choppyard 90 + Triclopyr (as active salt) 270 g/L SL : 76.49 Litres

**KEY**

- NbalID = Identity number for Nbal
- Rate = Litres of product per closed hectare
- PD/ha = Persondays per hectare
- UPD = Unadjusted Personday
- APD = Adjusted Personday

Project manager's initials: \_\_\_\_\_

## 2. Capture Contract Info

## Contract Info

OK Cancel Refresh Employees Resources Dayworks Add/Edit Notes

**Treatment Area :**

Contract Issue Date: 27 March 2023  
 Funding: EPWP (Poverty Relief)  
 Contractor: \_\_\_\_\_  
 Contract Type: \_\_\_\_\_  
 Contract Number: G10M200100351  
 IA Tender No: \_\_\_\_\_  
 Multiple Invoices: ☐ Invoices ☐ Invoice Completed  
 Treatment Area: G10M200100351  
 Quoted Contract Duration (Days): \_\_\_\_\_  
 Total Contract Value: \_\_\_\_\_  
 Contribution by Land Owner: 0  
 Quality Control Sheet: ☐  
 Contract Verified: ☐  
☒ Alien Plant Clearing Contract

Tender Approved by Manager: 25 July 2023  
 Tender Submitted for Order No: 25 July 2023  
 Order Number: \_\_\_\_\_  
 Order Number Date: 25 July 2023  
 Actual Start Date: 25 July 2023  
 Actual End Date: 25 July 2023  
 Invoice Date: 25 July 2023  
 Tender Submitted to Finance: 25 July 2023  
 Batch Date: 25 July 2023  
 Pay Date: 25 July 2023  
 Payment Code: \_\_\_\_\_  
 DEA Pay Date: 25 July 2023  
 Additional Days: \_\_\_\_\_  
 Motivation: \_\_\_\_\_

## Employees

OK Cancel Batch Add Add Person Timesheet Remove Person Reset Persondays

Project Name: SANP WW West Coast  
 Contract Number: G10M200100164  
 Order Number: 169580  
 Contractor Name: KB Daughters Trading

Start Date: 02 August 2016  
 End Date: 05 September 2016  
 Quoted Contract Duration (days): 20  
 Contract Number: \_\_\_\_\_

Days Key  
 1 = Present  
 2 = Absent  
 3 = IOD  
 4 = Unallocated Day  
 5 = Camping Rain D

Name	ID Number	Function	MONTH	D1	D2	D
Gavin Wilfred Adrian Papier		General Labourer	August	0	1	0
Nathalie Natalia Maans		Herbicide Applicator	August	0	1	0
Warren William Jansen		General Labourer	August	0	1	0

## During Issue and In-field stage

Timesheets  
 Equipment  
 Transport  
 Teams

## Completed Contract

Timesheets  
 Actual Pdays  
 End dates



## Resources

Resources

OK Cancel Refresh Add Resource Delete Resource Batch Add Resources

**Treatment Area : G10M200100164**

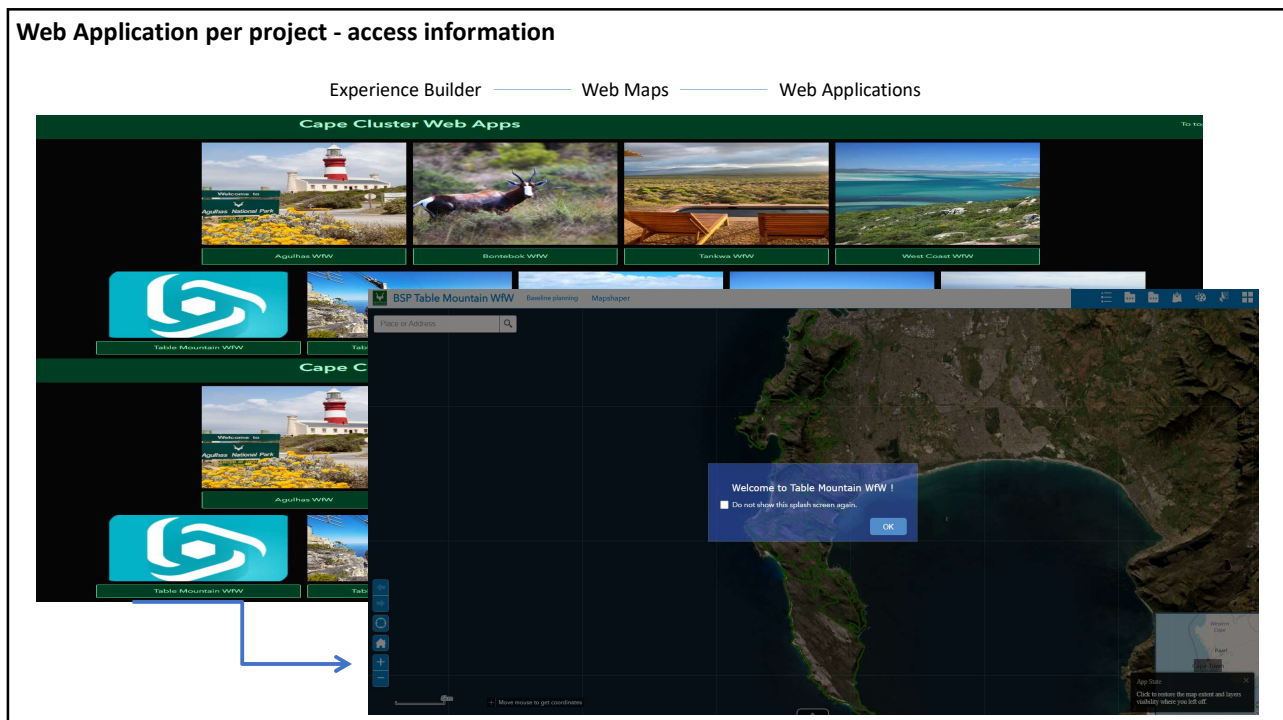
Resource Type	Description	Unit	Planned Route	Planned Quantity	Planned Days
Equipment	Total Equipment	day	<input type="checkbox"/>	0	1
Personnel	Peer Educator	day	<input type="checkbox"/>	0	1
Personnel	General Labourer	day	<input type="checkbox"/>	0	1
Administration	Services rendered	day	<input type="checkbox"/>	0	1
Clothing	Total PPE	day	<input type="checkbox"/>	0	1
Personnel	Herbicide Applicator	day	<input type="checkbox"/>	0	1
Transport	Bakkie ft.	day	<input type="checkbox"/>	0	1
Personnel	Safety Officer/Ref.	day	<input type="checkbox"/>	0	1
Personnel	1st Aid Officer	day	<input type="checkbox"/>	0	1
Personnel	Contractor	day	<input type="checkbox"/>	0	1
Contractor Costs	U/P	day	<input type="checkbox"/>	0	1
Contractor Costs	Profit	day	<input type="checkbox"/>	0	1



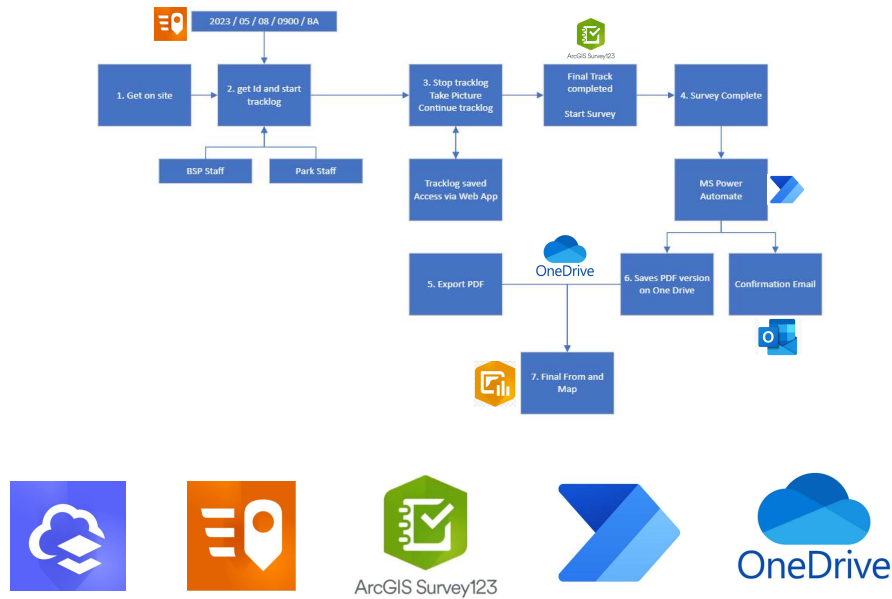




## Web Application per project - access information



## Field Inspection Workflow



## How it works

**Field Inspection tracklog**

Project Name

Location Tracking

Capture tracklog

Contractor Name\*

BSP Representative\*

Inspection date and time\*

Inspection type\*

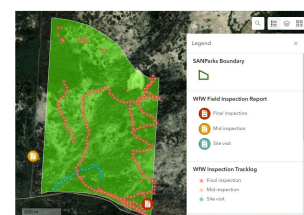
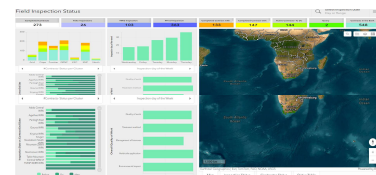
☐ Site visit ☐ Mid inspection ☐ Final inspection

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WWF (field_42) REPORT				
Contract number	S19441_241			
Mid numbers	S19441_241			
Project name	S19441_241			
Contractor	S19441_241			
Partial payment no	S19441_241			
Inspection Date	September 5, 2023 10:02 AM			
Partial Payment Info				
Partial Contract	Partial number	Contract total number of partials		
	S19441_241	3		
WWF Final Inspection REPORT				
Total sloped to	Contract number	S19441_241		
Total person d	Mid numbers	S19441_241		
	Project name	Aphus WW		
	Contractor	S19441_241		
	Partial payment no	S19441_241		
	Inspection Date	September 5, 2023 10:02 AM		
	Partial Contract	Partial number	Contract total number of partials	
		S19441_241	3	
	Planned vs Actual			
	Total sloped hectares	Planned	Completed	
	Total person days	381	381	
	1. Quality of work performed			
	1.1. All sites plants treated / cleared			Yes
	1.2. Complete area treated / cleared			Yes
	2. Treatment method conforming to norms and standards			
	2.1. Acceptable (to person)			Yes
	2.2. Acceptable (to stump, fill or ring-barking line)			Yes
	2.3. Acceptable (to stump, fill or ring-barking line)			Yes
	3. Management of biomass material according to site specifications			
	3.1. Removed (to person)			Yes
	3.2. Windows (to person)			Yes
	3.3. Remains removed from infrastructure			NA

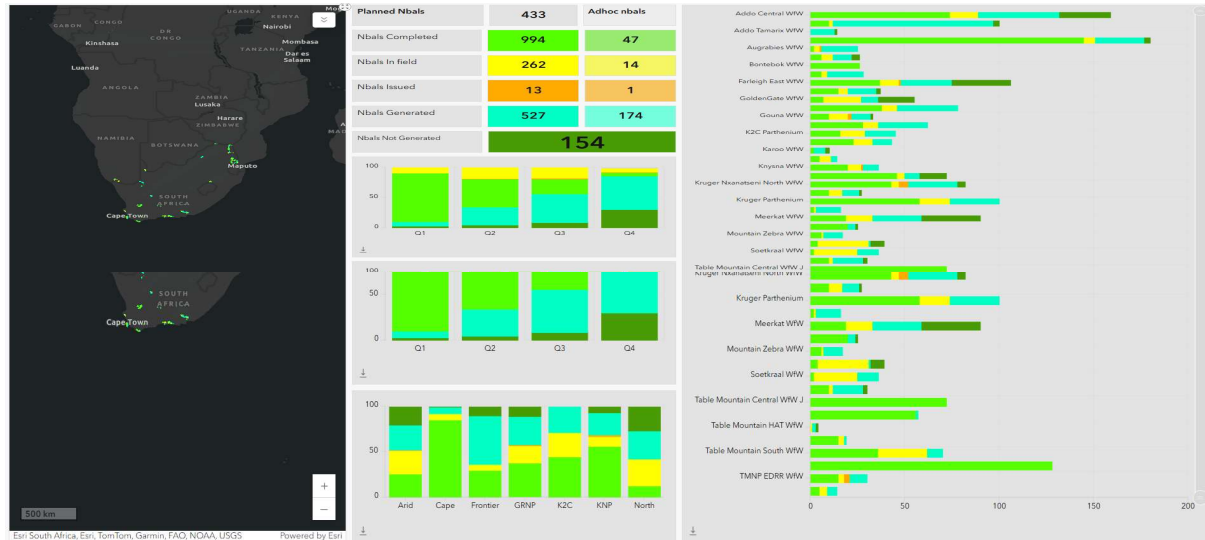
## The benefits

- Data saved on AGOL, One-drive and Email Copy
- PDF report email to Project Manager and Administrator
- Dashboard to view Live Progress
- Web App to view data
- Field Inspection data linked To other datasets

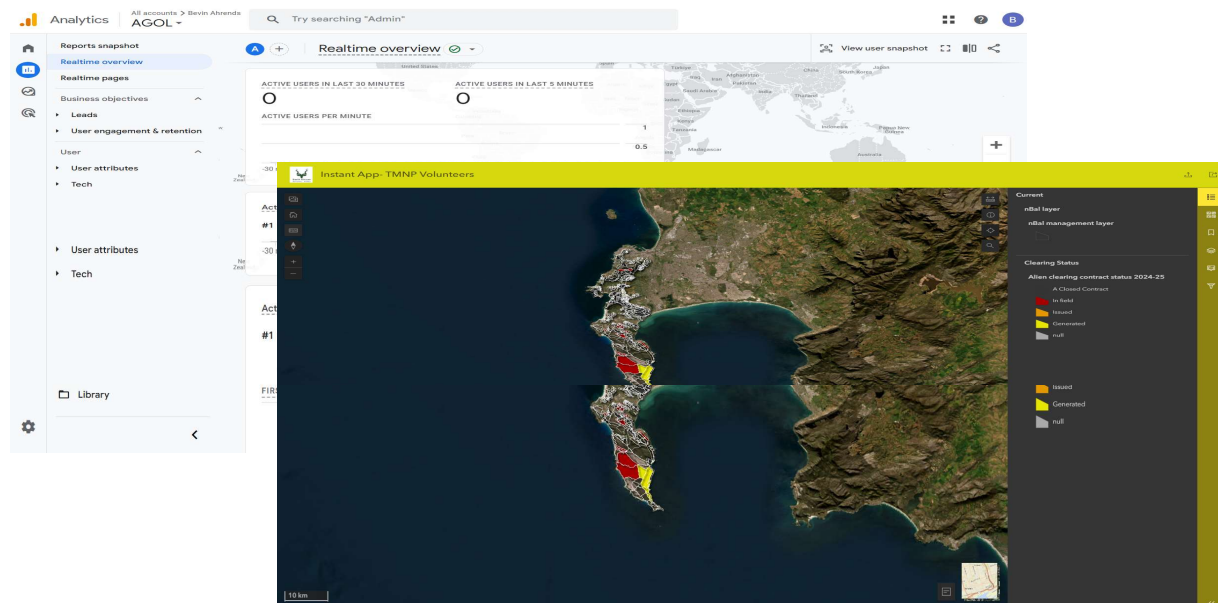


## Interactive Dashboards

Tracking progress – on a National Scale



## Extend service to External Parties



DEMO

#### Conclusion

WIMS and AGOL works for us because...

Centralized system

Centralized system

#### Looking to the future

Online Handheld

Online/Consolidated Planning Tools

Expand on the data base to include other activities – Wetlands, rehab, footpaths...

Expansion on reports

Links with field data collections tools

Visualisation of data

Improvements on field management/compliance tools - apps

Maintenance and advancements