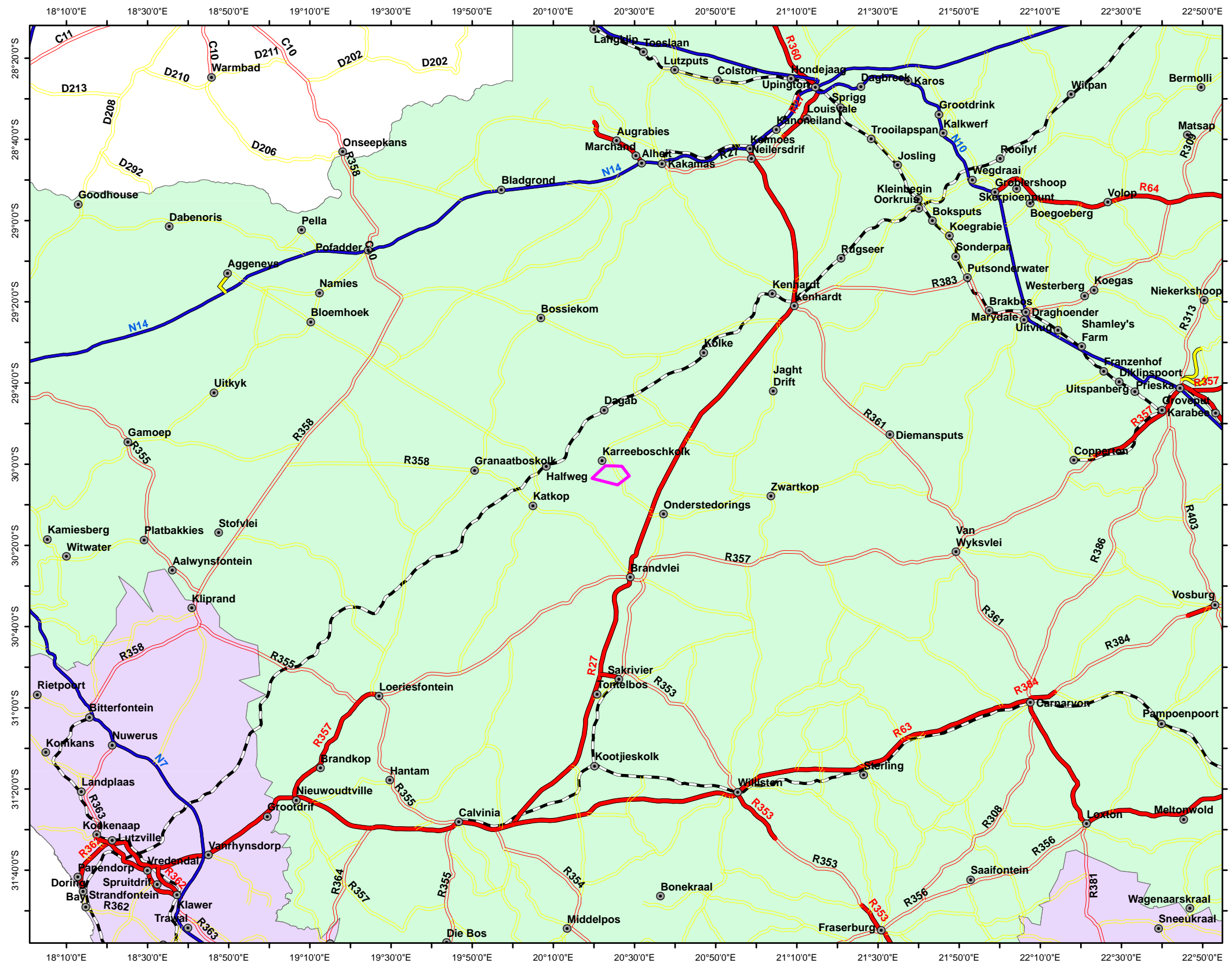
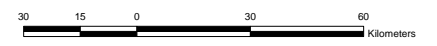


REGIONAL LOCATION OF VERDOORSTKOLK 342



LEGEND

- Towns
- ▭ Farm boundary VerdoorstKolk342
- Main tar
- Main untarred
- National
- Secondary tar
- Secondary untarred
- Railways
- Northern Cape
- Western Cape



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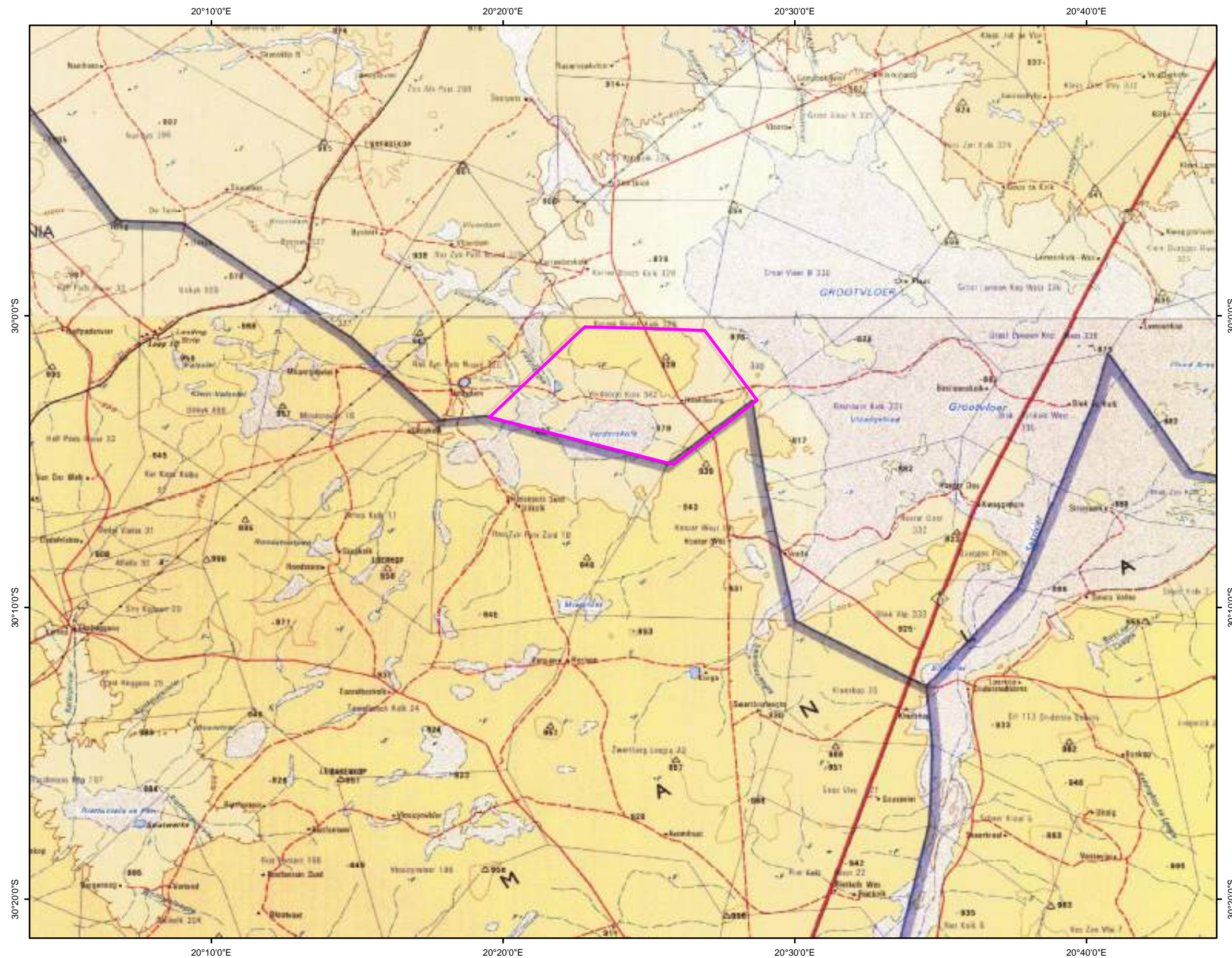
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 Projection: Decimal Degrees

Project:
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 Printed: 2017/11/28

File:
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 Location_regional_201711228_FN.MXD

Figure - Regional location

LOCATION OF VERDOORSTKOLK342 ito NEIGHBOURS



LEGEND

Farm boundary VerdoorstKolk342

1:250 000 Topographical sheets
from NGI:
2920
3020



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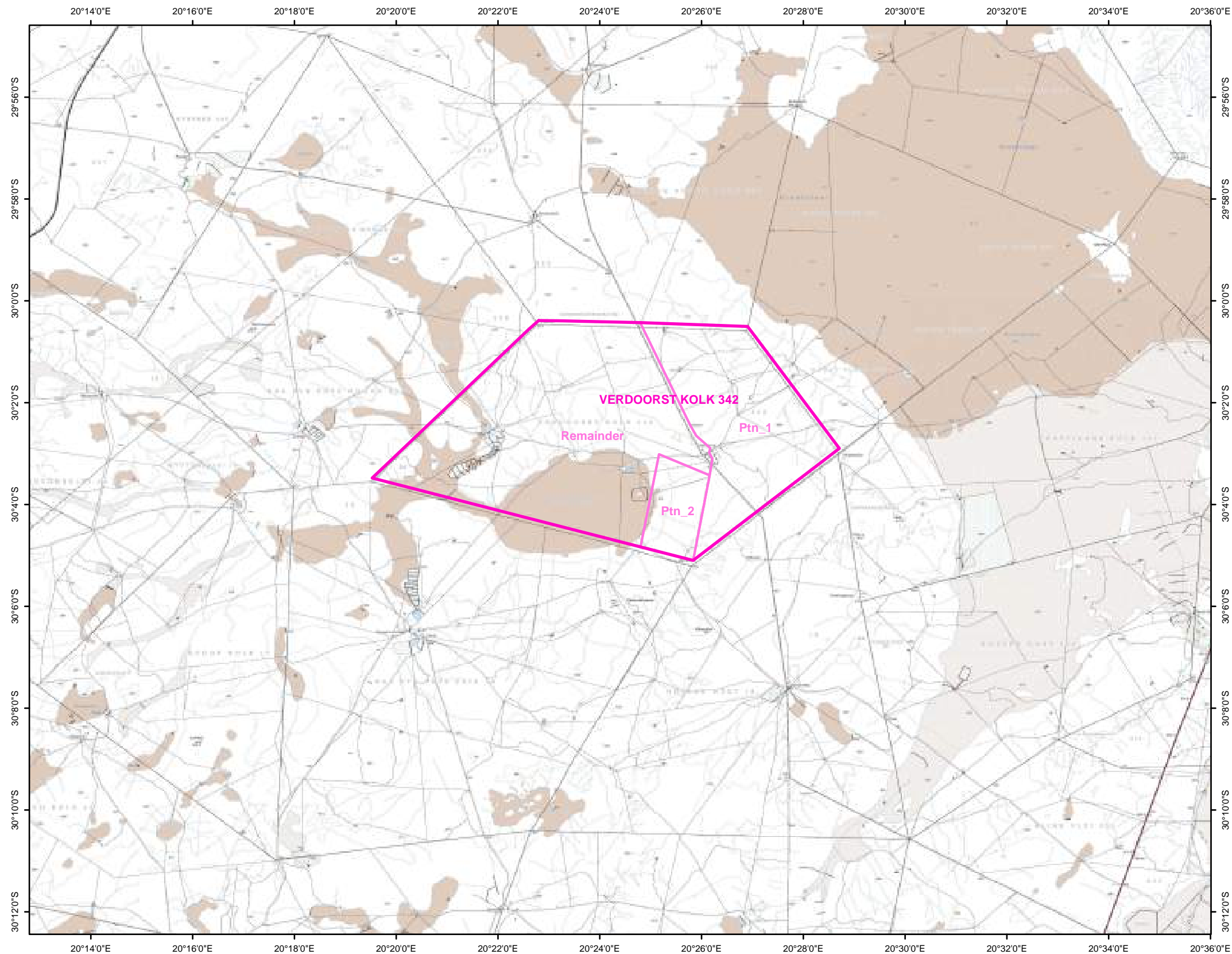
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Printed: 2017/11/24

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Location_local_20171124_n01_topo250k.mxd

Figure - Local location

LOCAL SETTING



LEGEND

- Farm boundary VerdoorstKolk342
- Farm Portions VerdoorstKolk342

1:50 000 Topographical sheets
from NGI:
2920CC
2920CD
2920DC
3020AA
3020AB
3020BA



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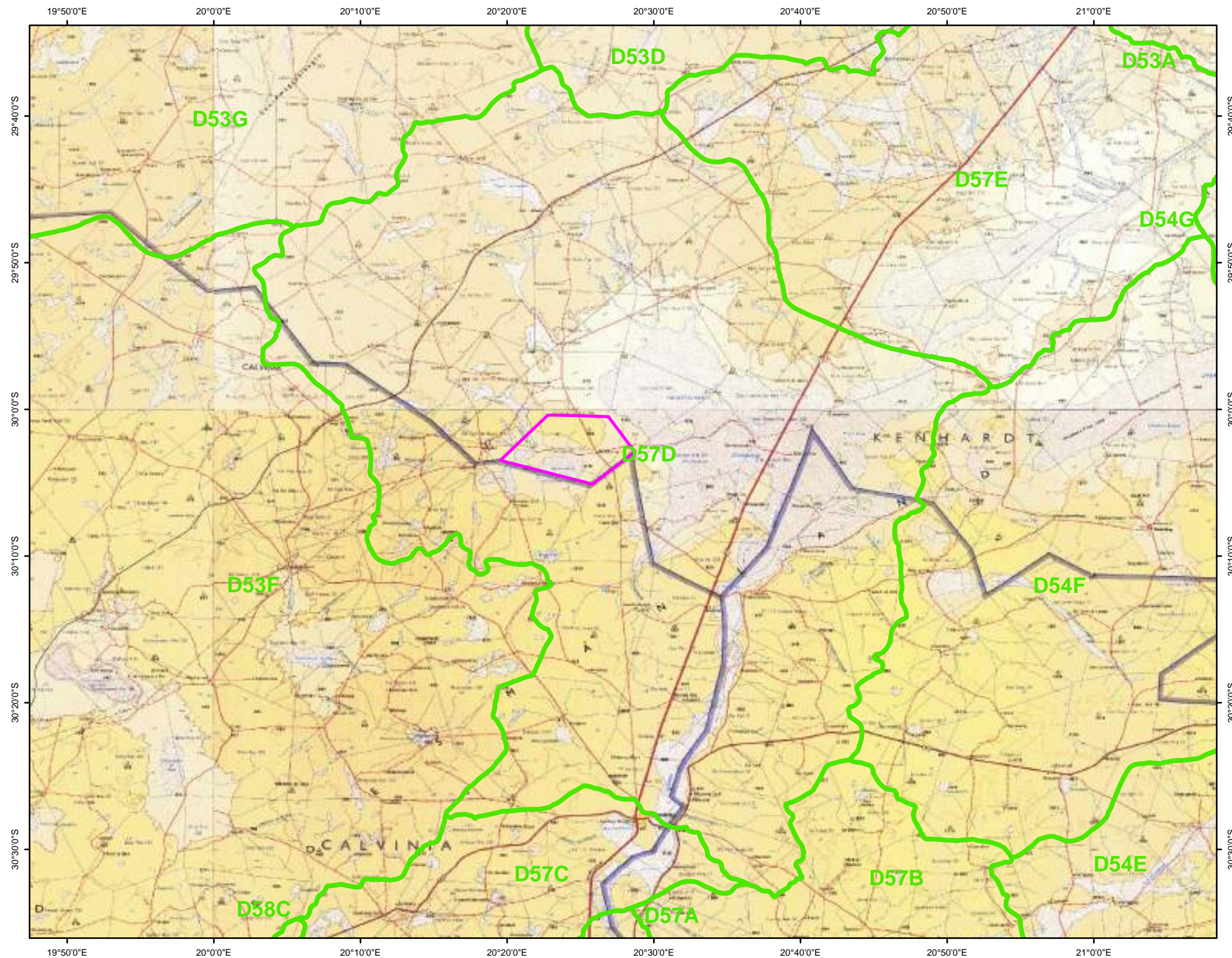
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Project:
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Printed: 2017/11/28



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Location_local_20171128_FN_topo50k.mxd

Figure - Local Setting

QUATERNARY CATCHMENTS



LEGEND

-  Farm boundary VerdoorstKolk342
-  Quaternary catchments

VerdoorstKolk342 is inside
quaternary catchment D57D.
D57D = 444383,922ha

1:250 000 Topographical sheets
from NGI:
2918
2920
3018
3020



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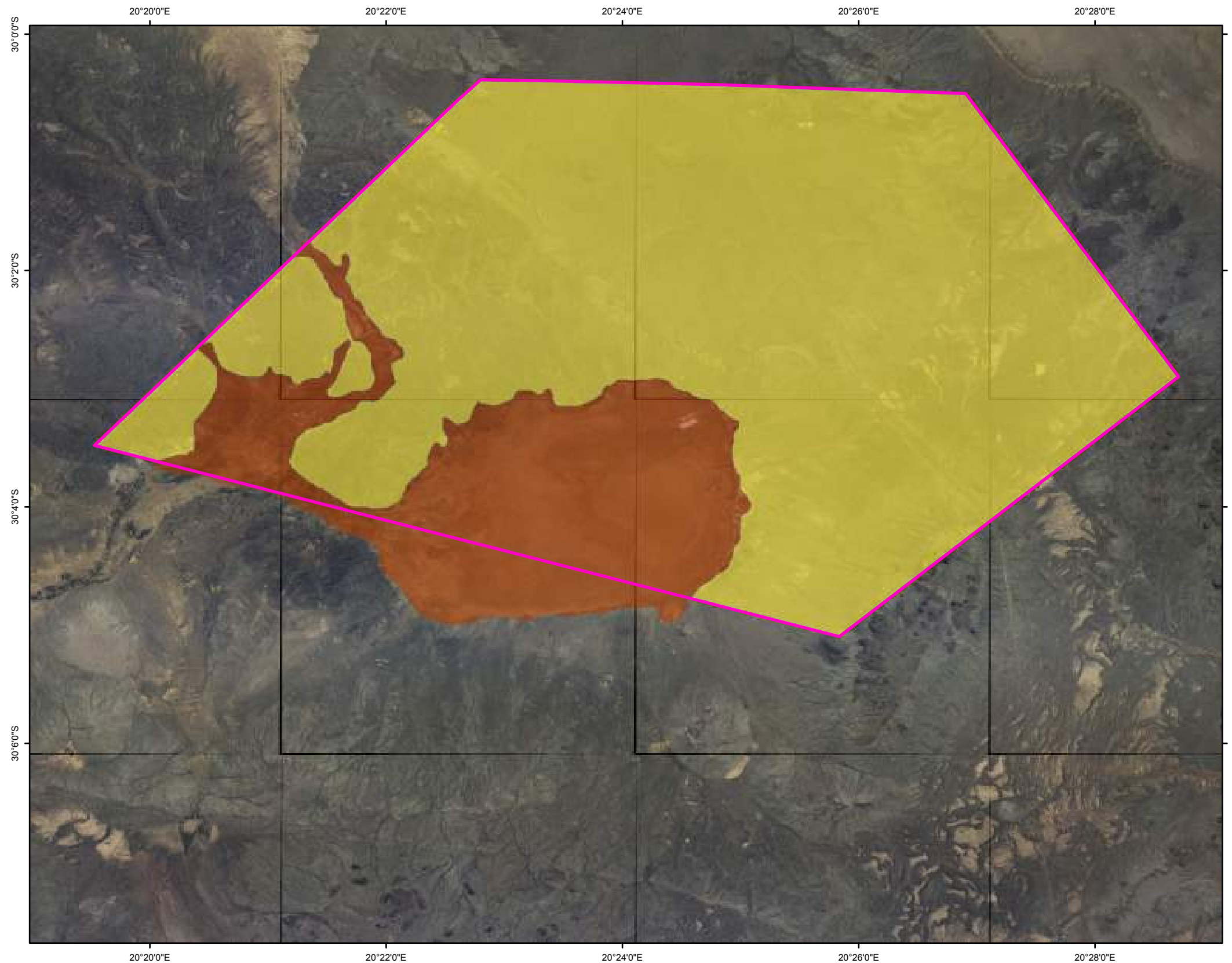
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Printed: 2017/11/28




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catchments_quaternary_topo250k_20171128_FN.mxd

Figure - Catchments

SOIL TYPES



LEGEND

-  Farm boundary VerdoorstKolk342
- Name**
-  Alkaline Saline - Sodic Soils
-  Mispah Soil Form – Orthic A (0-300mm)

1:10 000 Aerial Photos
from NGI taken 2014
3020AB no 1 - 15

Alkaline Saline – Sodic soils
Sample Results:
(Agricultural Research Council) ARC
% Clay Content - 70%
pH - 8.49
Na = 11800 mg/kg

Mispah Soil Form – Orthic a (0-300mm)
Soils with limited Pedological Development.
Shallow on hard or Weathering rock



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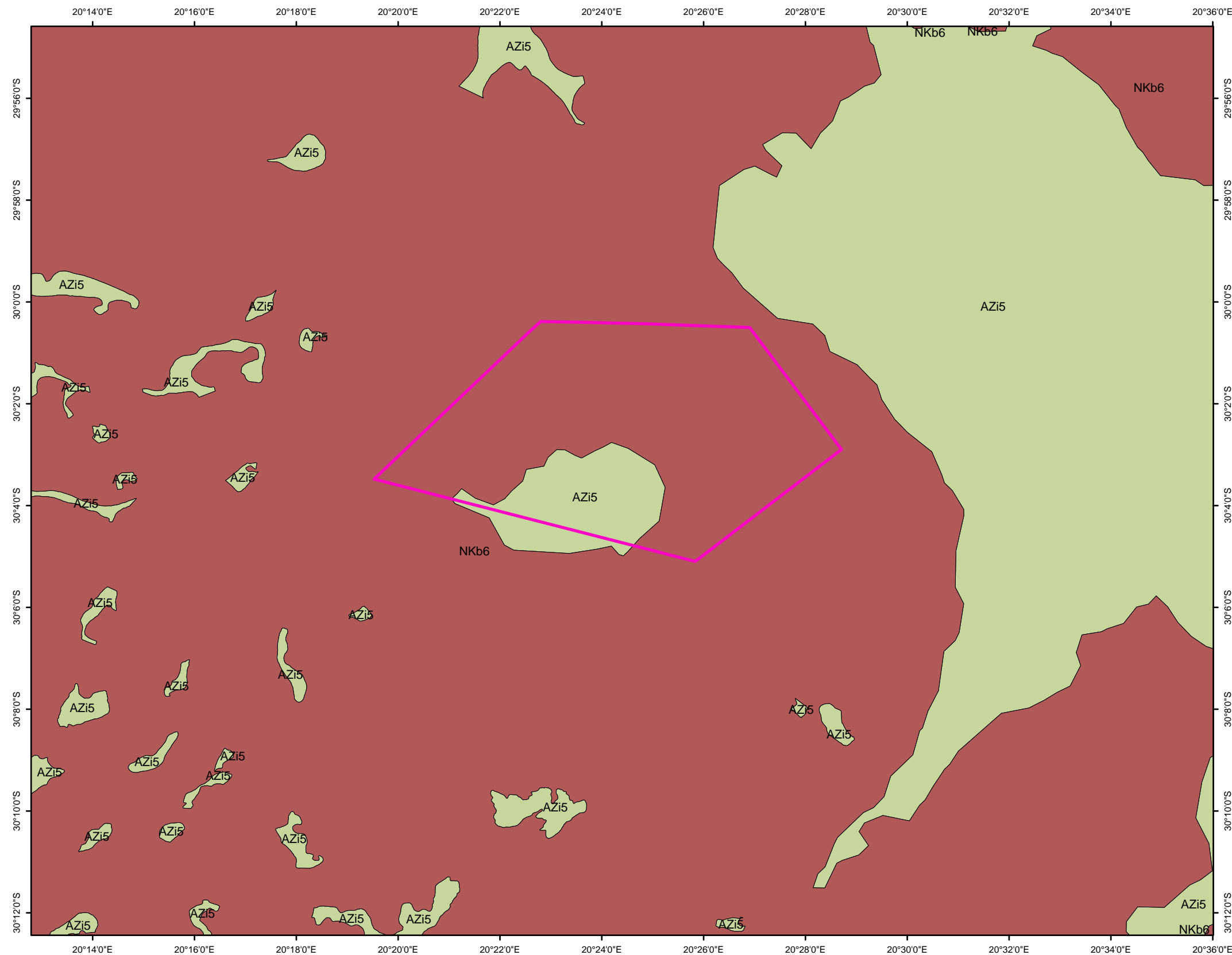
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Soil_type_shelton-kmz_20171128_FN.mxd

Figure - Soil types

VEGETATION of Mucina & Rutherford (VEGMAP2012)



Legend

Farm boundary VerdoorstKolk342

Vegetation type - MAPCODE13

- NKb 6 Bushmanland Basin Shrubland
- AZi 5 Bushmanland Vloere

VEGMAP2012
Released 2017/07/06

MAPCODE12
Code for a vegetation type.
Types added in 2006
correspond with codes in
Mucina and Rutherford (2006).
Vegetation types added in
subsequent versions have been
assigned new codes.
Follows BiomeCode+BioregionCode+Sequence.



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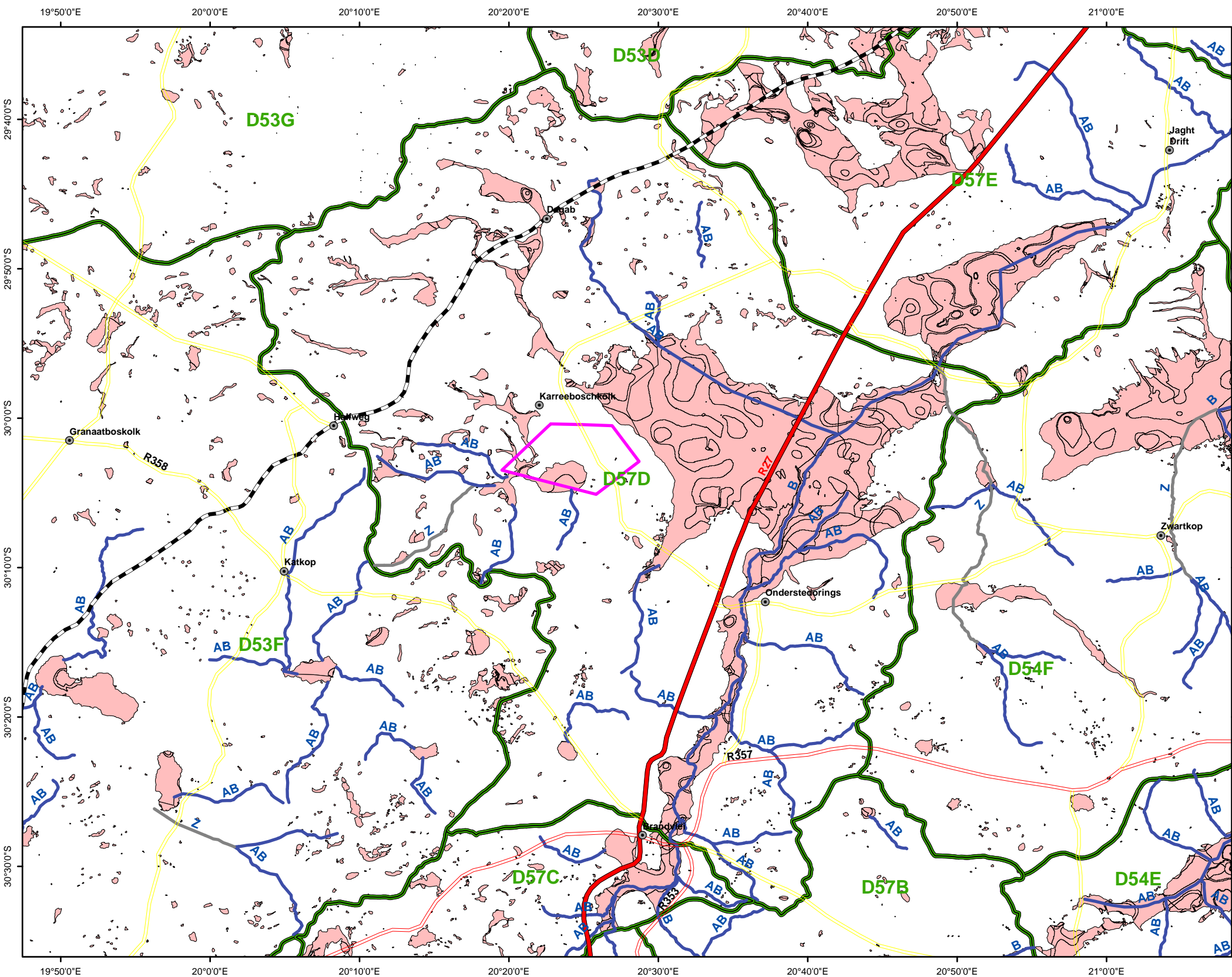
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Project:
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Printed: 2017/11/28

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Vegetation_VegMap2012_SANBI_20171128_FN.mxd

Figure - Vegetation

WETLANDS VEGETATION GROUP & RIVER CONDITIONS OF THE NATIONAL FRESHWATER ECOSYSTEMS PRIORITY AREAS PROJECT (NFEPA)

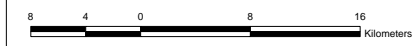


LEGEND

- Towns
- Main tar
- Main untarred
- Secondary untarred
- Railways
- River Condition - NFEPA**
- A; AB; B 73 River segments in quaternary catchment: AB = 57
- C B = 11
- D Z = 5
- E; EF
- Z
- Foreign
- ▭ Farm boundary VerdoorstKolk342
- ▭ Quaternary catchments
- VegetationGroup - WETVEGGRP**
- ▭ Nama Karoo Bushmanland
- ▭ Upper Nama Karoo

No NEFA Flagship rivers in D57D catchment.

River condition used by NFEPA:
 A = Unmodified, Natural
 B = Largely Natural With Few Modifications
 AB = A or B Above
 A or B is considered intact and able to contribute towards river ecosystem biodiversity targets.
 C = Moderately Modified
 D = Largely Modified
 E = Seriously Modified
 F = Critically/Extremely Modified
 EF = E or F Above
 Z = Tributary Condition Modelled
 As not intact, according to natural Land Cover



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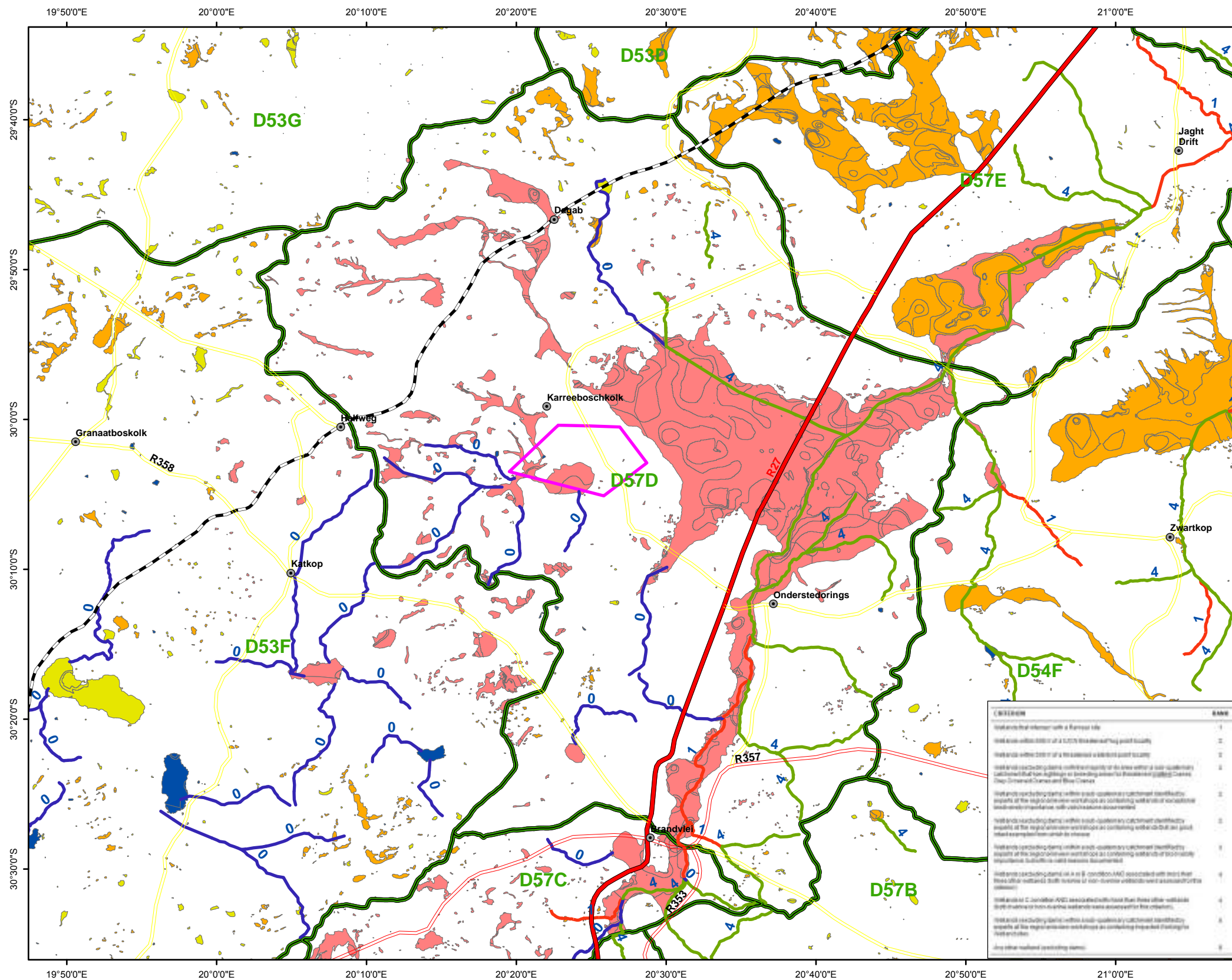
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Project:
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 Printed: 2017/11/28

File:
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Figure - Wetlands & Rivers (NFEPA)

WETLANDS RANK & RIVER STATUS OF THE NATIONAL FRESHWATER ECOSYSTEMS PRIORITY AREAS PROJECT (NFEPA)

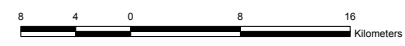


LEGEND

- Towns
- Main tar
- Main untarred
- Secondary untarred
- Railways
- FEPACODE**
- 0, No Status 73 River segments in Quaternary Catchment
- 1, FEPA No status 0 = 28
- 2, FishFSA FEPA 1 = 7
- 2, FishCorrid Upstream 4 = 38
- 3, Phase2FEPA
- 4, Upstream
- Farm boundary VerdoorstKolk342
- Quaternary catchments
- Wetlands - RANK**
- 2
- 4
- 5
- 6

No NEFPA Flagship rivers in D57D catchment.

Summarizes the FEPA River Status using a numerical code, where:
 1 = Freshwater Ecosystem Priority Area (FEPA)
 2 = Fish support area or fish corridor
 3 = Phase 2 FEPA
 4 = Upstream management area
 In instances where several of these map categories overlapped, the status took the following order of precedence: "FEPA", "Phase2 FEPA", "Fishfsa" or "Fishcorrid", and then "Upstream management area"



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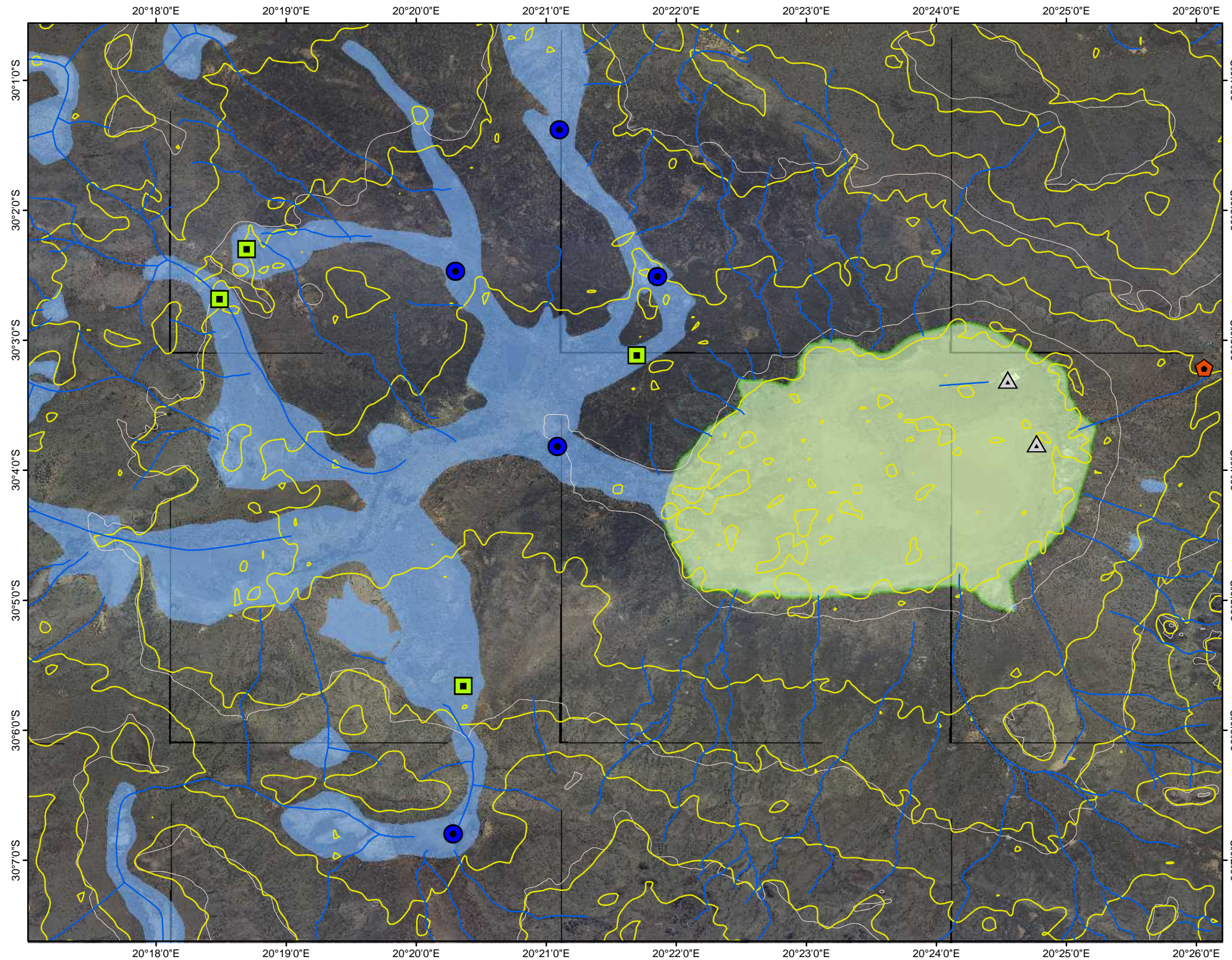
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 Printed: 2017/11/28

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Figure - Wetlands & Rivers (NFEPA)

WETLAND ECOLOGY

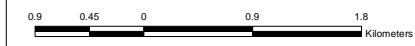


LEGEND

- Landuse features
- Agriculture
 - ▣ Cattle farming
 - Dam
 - ▲ Salt works
 - Drainage lines
 - 10m Contours
- 20m Contours 1:50k HEIGHT**
- 860.0 - 940.0
- Wetlands:
- Depression Salt pan
 - Depression Valley floor

Aerial photos of 1:10k series 2014 NGI 3020AB no 01-15

Salt pan area = 1584.945ha



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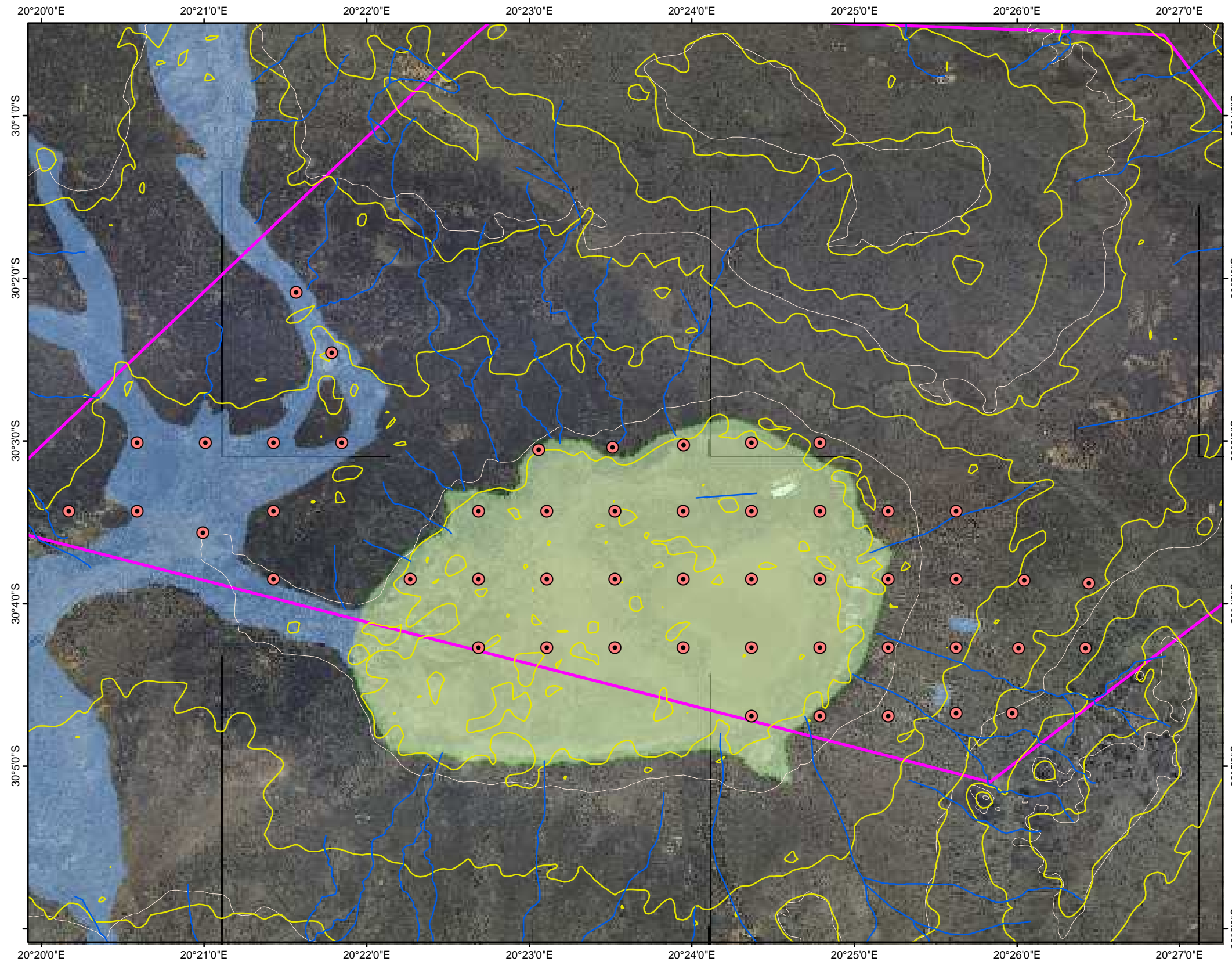
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Project:
VerdoorstKolk342 PRA BA
Printed: 2017/11/28

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Figure - Wetland Ecology

WETLAND IMPACT ASSESSMENT - PRIMARY BOREHOLES

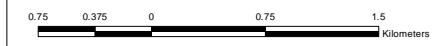


LEGEND

- Primary boreholes
- Drainage Lines
- 10m Contours
- 20m Contours 1:50k**
- HEIGHT**
- 860.0 - 940.0
- Farm boundary VerdoorstKolk342
- Depression Salt pan
- Depression Valley floor

Aerial photos of 1:10k series 2014 NGI 3020AB no01-15

Salt pan area = 1584.945ha



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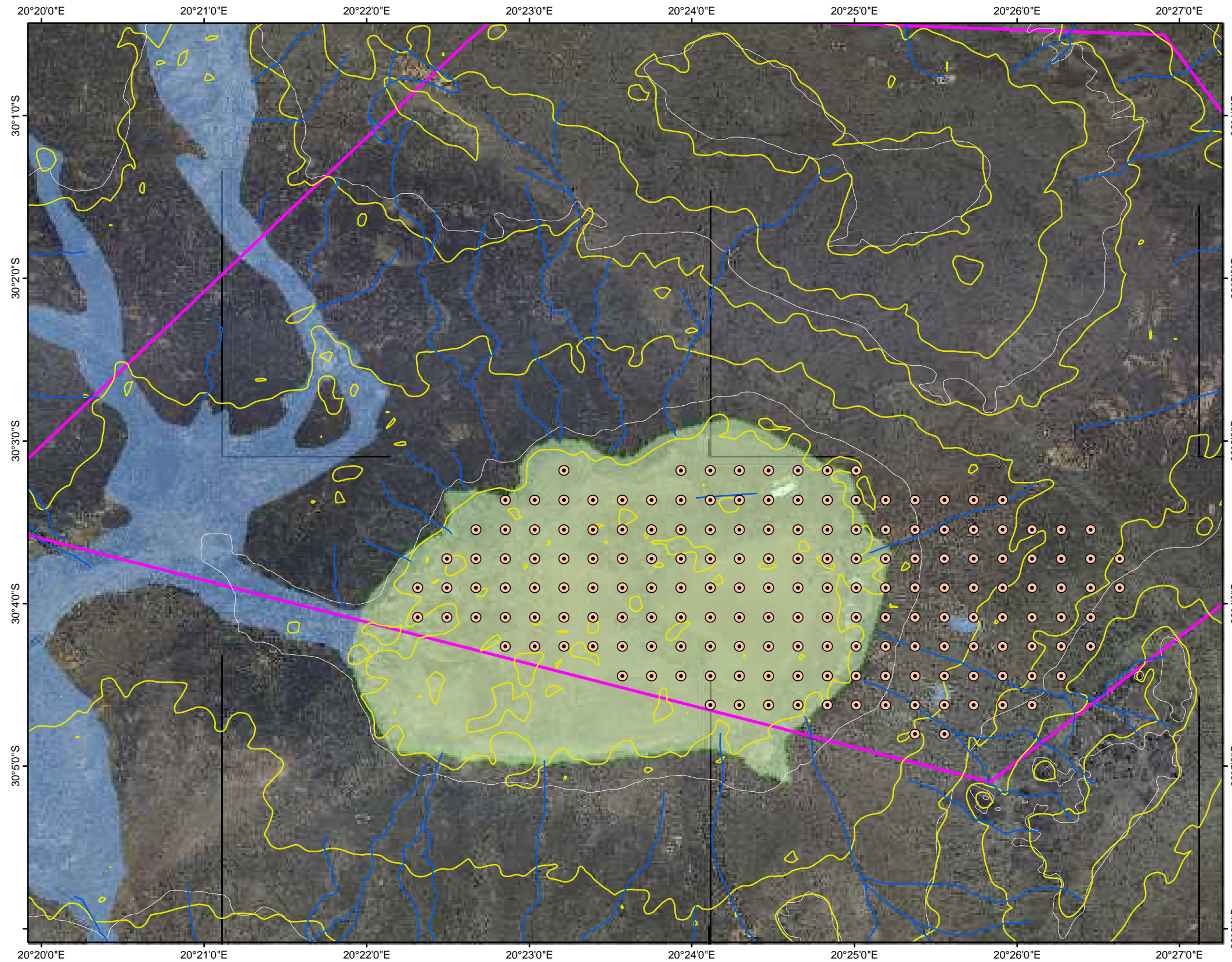
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File:
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Figure - Wetland Impact Assessment

WETLAND IMPACT ASSESSMENT - SECONDARY BOREHOLES



LEGEND

- Secondary boreholes
- Drainage Lines
- 10m Contours
- 20m Contours 1:50k
- HEIGHT
- 860.0 - 940.0
- ▭ Farm boundary VerdoorstKolk342
- ▭ Depression Salt pan
- ▭ Depression Valley floor

Aerial photos of 1:10k series 2014 NGI
3020AB no01-15

Salt pan area = 1584.945ha



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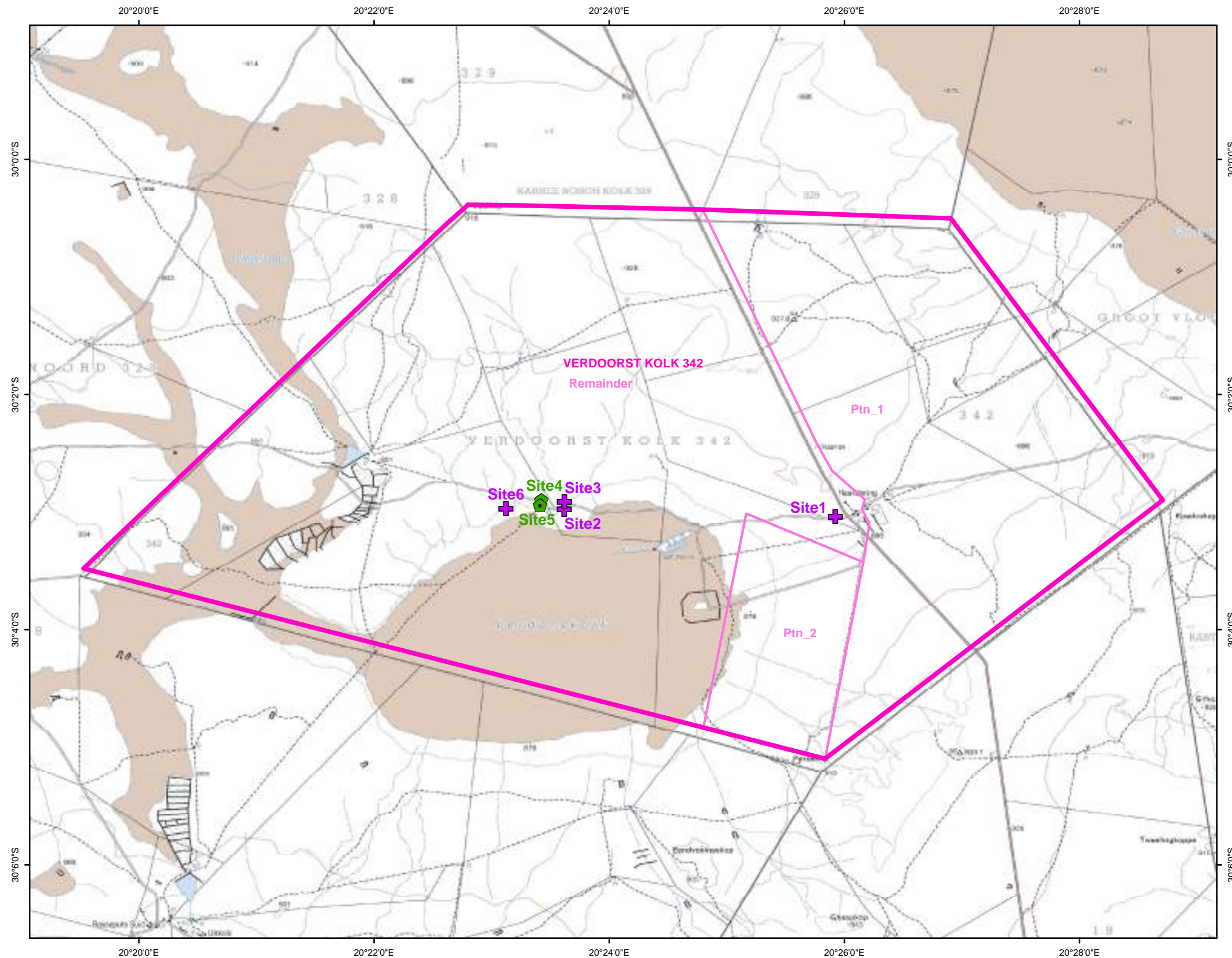
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Printed: 2017/11/28

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wetland_impactassessment_wetlandborders&caroline_boreholes_20171128_FN_Secondary.mxd

Figure - Wetland Impact Assessment

CULTURAL AND HERITAGE SITES



LEGEND

Heritage Sites - TYPE

- + Graves
- Historical Site
- Farm boundary VerdoorstKolk342
- Farm Portions VerdoorstKolk342

1:50 000 Topographical sheets
from NGI:
2920CD
3020AB



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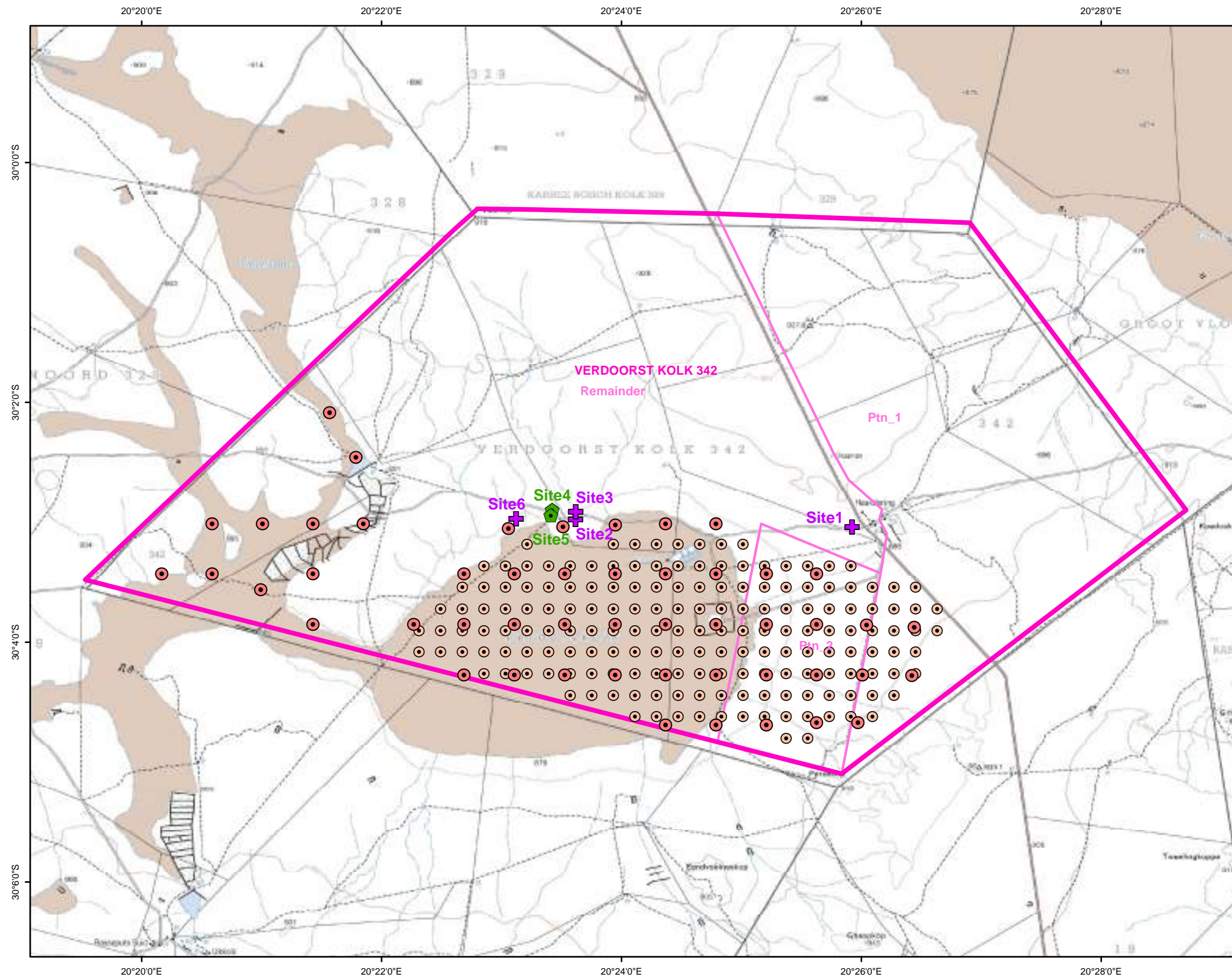
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Printed: 2017/11/28

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archaeology_Cultural&HeritageSites_20171128_FN
mxd

Figure -Cultural & Heritage Sites

CULTURAL AND HERITAGE IMPACT ASSESSMENT



LEGEND

Heritage Sites - TYPE

- + Graves
- Historical Site
- Primary boreholes
- Secondary boreholes
- Farm boundary VerdoorstKolk342
- Farm Portions VerdoorstKolk342

1:50 000 Topographical sheets
from NGI:
2920CD
3020AB



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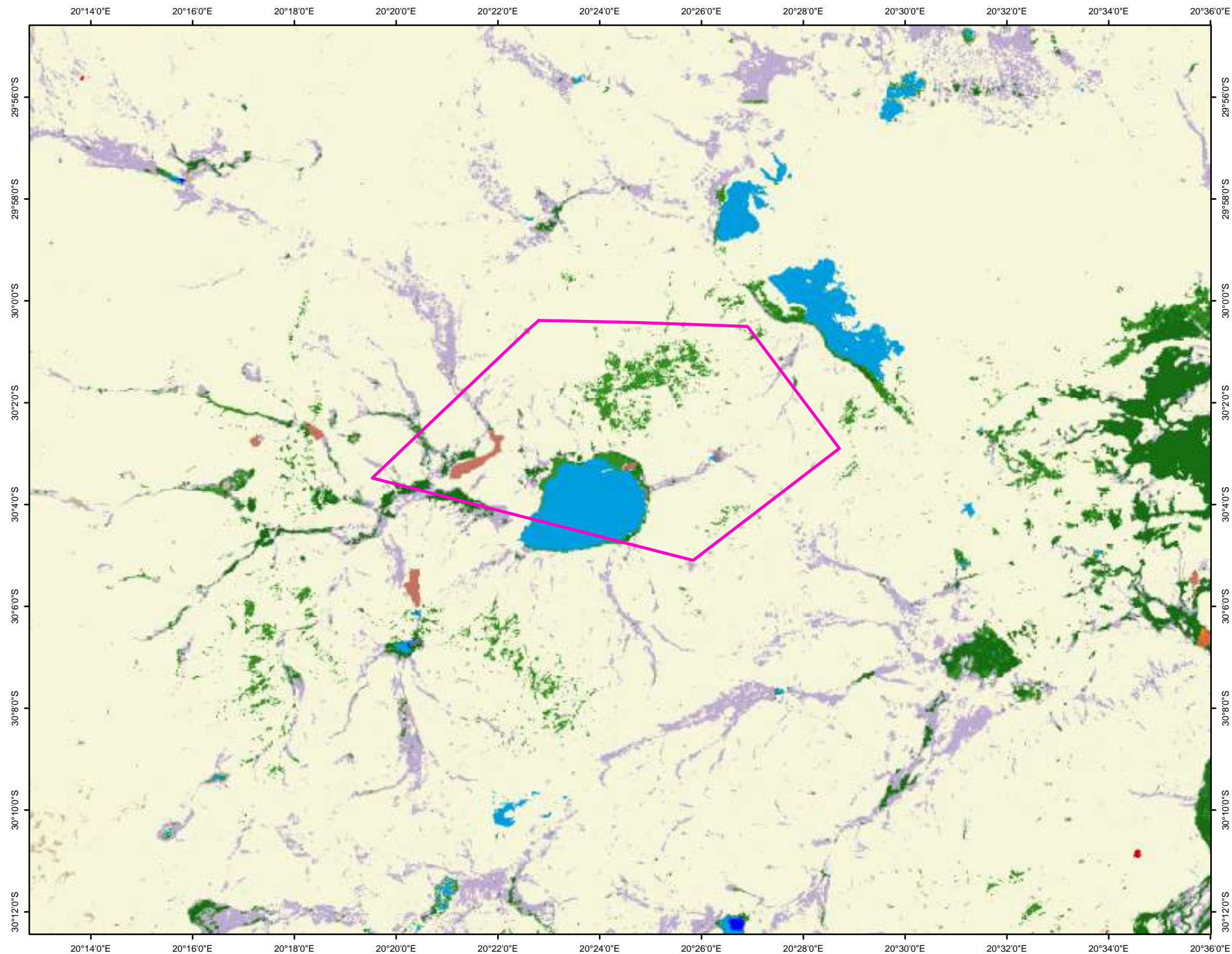
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archaeology_Cultural&Heritage_ImpactAssessment_20171128_FN.mxd

Figure -Cultural & Heritage Aseessment

LANDCOVER



Legend

Farm boundary VerdoorstKolk342

Landcover - Class_Names

- Bare none vegetated
- Cultivated comm fields (high)
- Cultivated comm fields (low)
- Cultivated comm fields (med)
- Grassland
- Low shrubland
- Mines 1 bare
- Plantation / Woodlots young
- Plantations / Woodlots mature
- Thicket /Dense bush
- Water permanent
- Water seasonal
- Woodlan/Open bush

Owner Copyright: GeoTerralimage

Dataset source
Landsat 8 multispectral imagery of
April 2013 - March 2014
Data released 2015/02/04

Landcover - refers to the observed physical surface of the earth, including various combinations of vegetation types, soils, exposed rocks, water bodies.

Landuse - refers to the purpose to which land is committed, including the production of goods (such as crops, timber and manufactures) and services (such as defence, recreation, biodiversity and natural resources protection).

http://www.ruraldevelopment.gov.za/phocadownload/spatial_Planning_Information/NLUSW/international_perspective26_27june13.pdf



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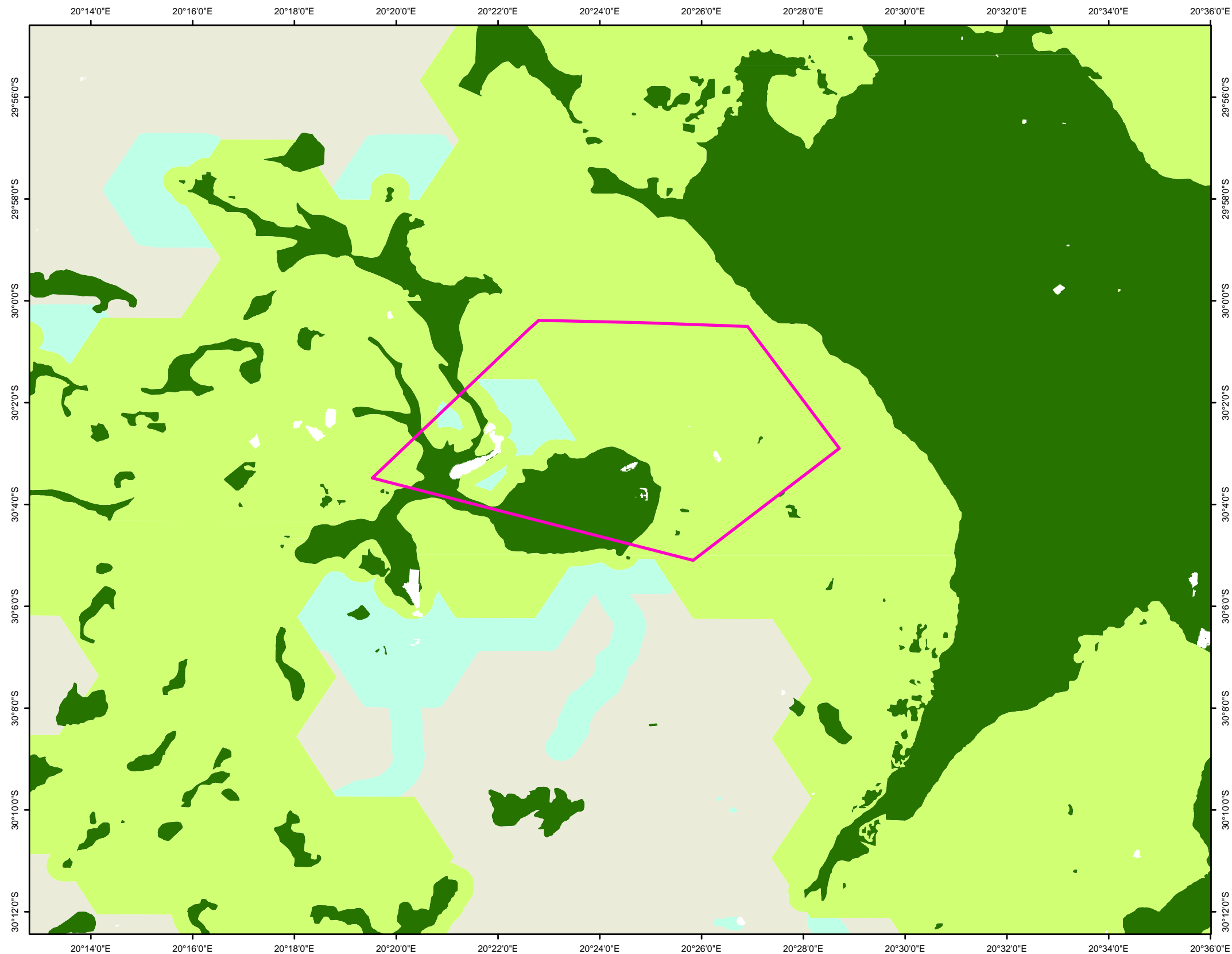
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Landcover_DEA2014_20171128_FN.mxd

Figure - Landcover

CRITICAL BIODIVERSITY AREAS



Legend

Farm boundary VerdoorstKolk342

Northern_Cape_CBA_Map

Categories - CBA_Cat

- Protected Area
- Critical Biodiversity Area One
- Critical Biodiversity Area Two
- Ecological Support Area
- Other Natural Areas

Owner Organisation
Northern Cape Department of
Environment and Nature Conservation

Data released 2016

Purpose:
The Northern Cape CBA Map identifies biodiversity priority areas, called Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs), which, together with protected areas, are important for the persistence of a viable representative sample of all ecosystem types and species as well as the long-term ecological functioning of the landscape as a whole.



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Biodiversity_Critical_DEA2016_20171128_FN.mxd

Figure - Biodiversity Critical