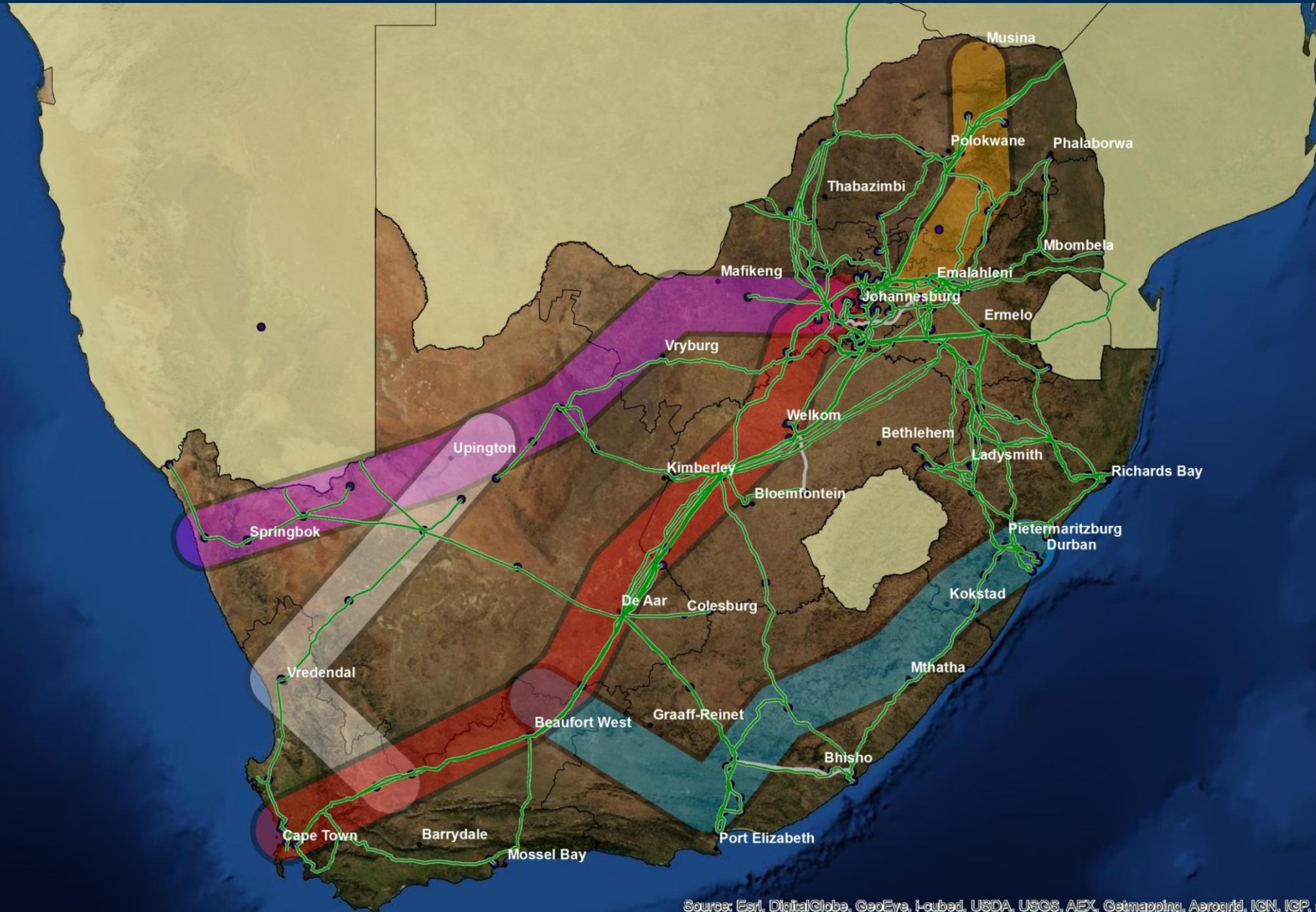


Review of the EGI constraints matrix

Feedback to the Expert Reference Group

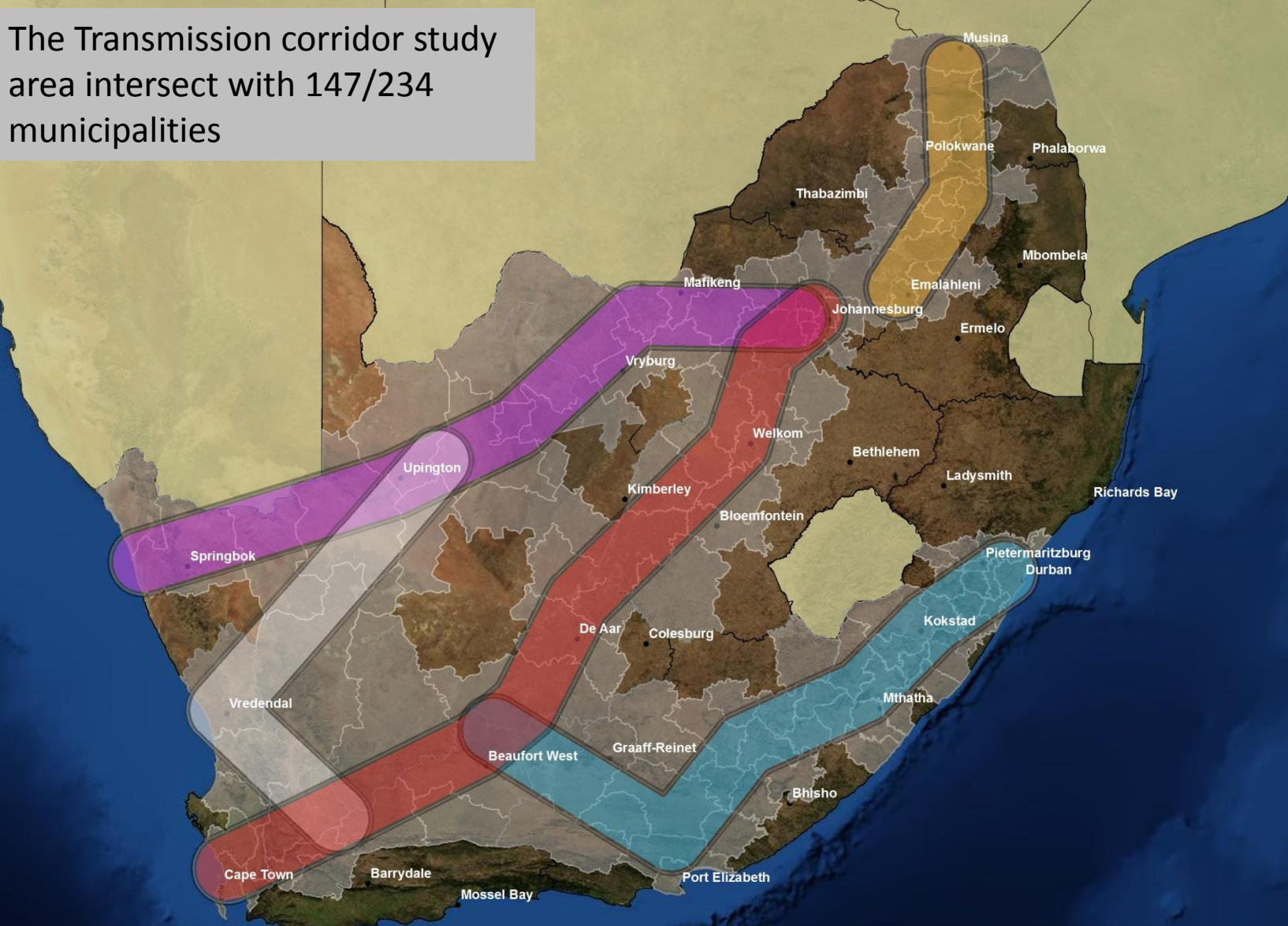
11 June 2014

Current footprint and study area



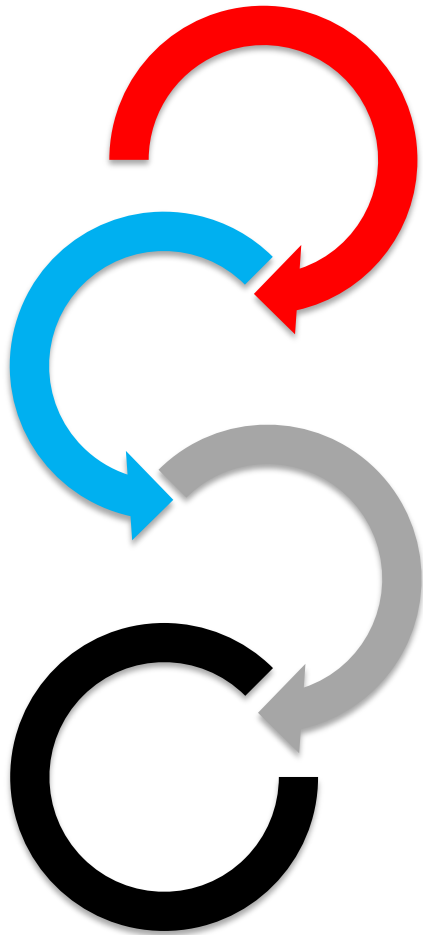
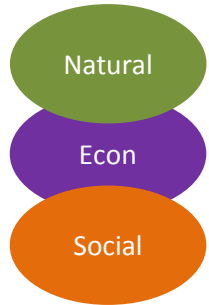
Municipal coverage

The Transmission corridor study area intersect with 147/234 municipalities



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, User Community

Process



Environmental Constraints mapping

Socio-economic opportunity mapping
(incl. opportunity cost to ESKOM)

Route optimisation analysis

Refining corridors for gazetting

Constraints mapping methodology

Impact on EGI on Environment: Constraints Categorisation

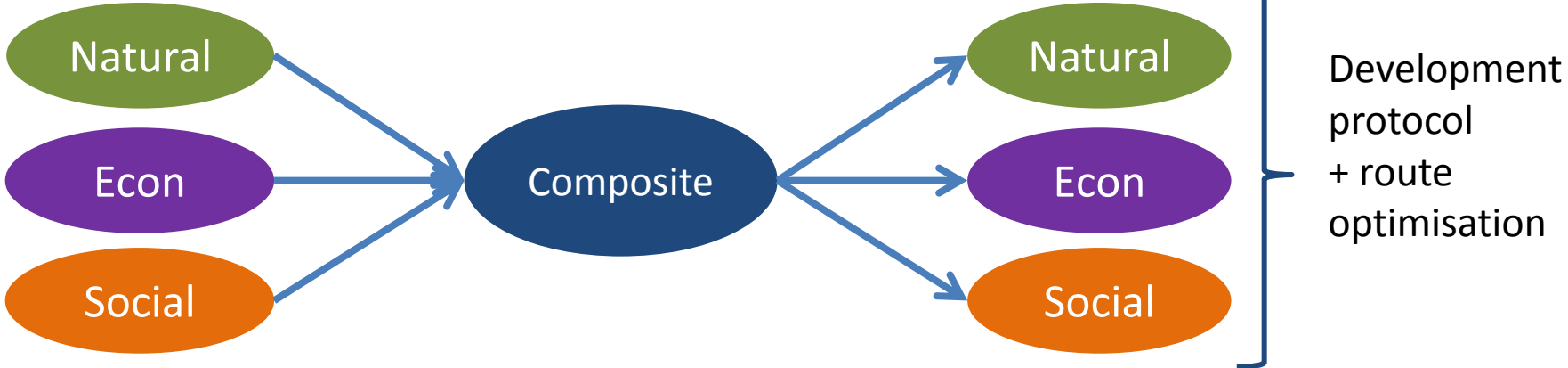
Level of Constraint	Description
'No- Go'	The area is rated as extremely sensitive to the negative impact of development. As a result the area will either have very high conservation value, very high existing/potential socio-economic value or hold legal protection status.
High	The area is rated as being of high sensitivity to the negative impact of development. As a result the area will either have high conservation value and or existing/potential socio-economic value.
Medium	The area is rated as being of medium sensitivity to the negative impact of development. As a result the area will either have mediums levels of conservation value and or medium levels of existing/potential socio-economic value.
Low	Area is considered to have low levels of sensitivity in the context of electricity grid infrastructure development.

Impact of Environment on EGI: Constraints Categorisation

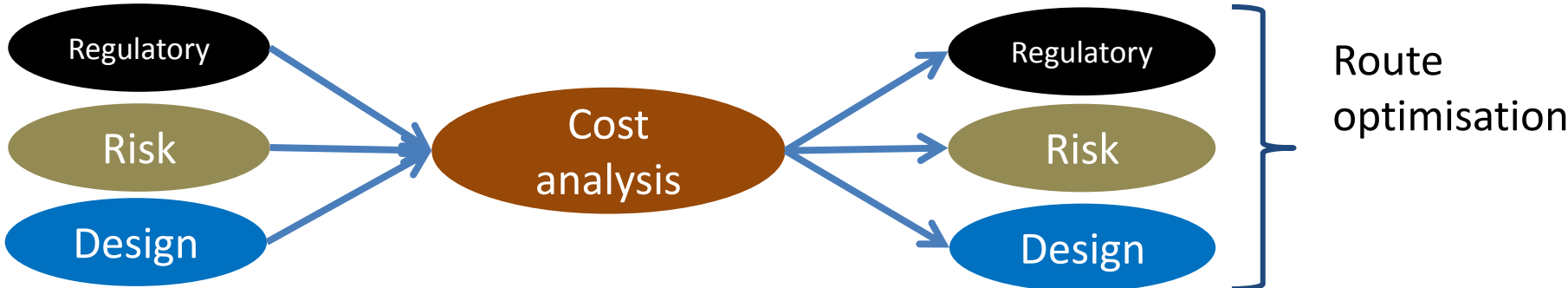
Level of Constraint	Description
'No- Go'	The lifetime cost associated with development in this area is greater than 3 times the baseline lifetime cost index. OR The land use in this area excludes EGI development completely.
High	The lifetime cost associated with development in this area is between 2.0 times and 3.0 times the baseline lifetime cost index.
Medium	The lifetime cost associated with development in this area is between 1.5 times and 2.0 times the lifetime baseline cost index.
Low	The lifetime costs associated with development in this area is less than 1.5 times the baseline lifetime cost index.

Constraints framework

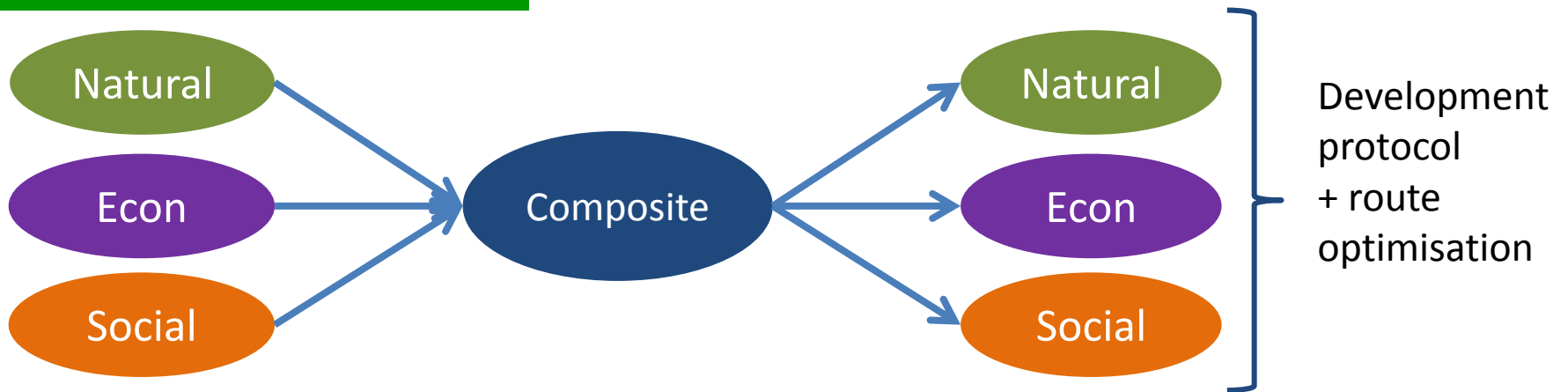
Impact of EGI on Environment



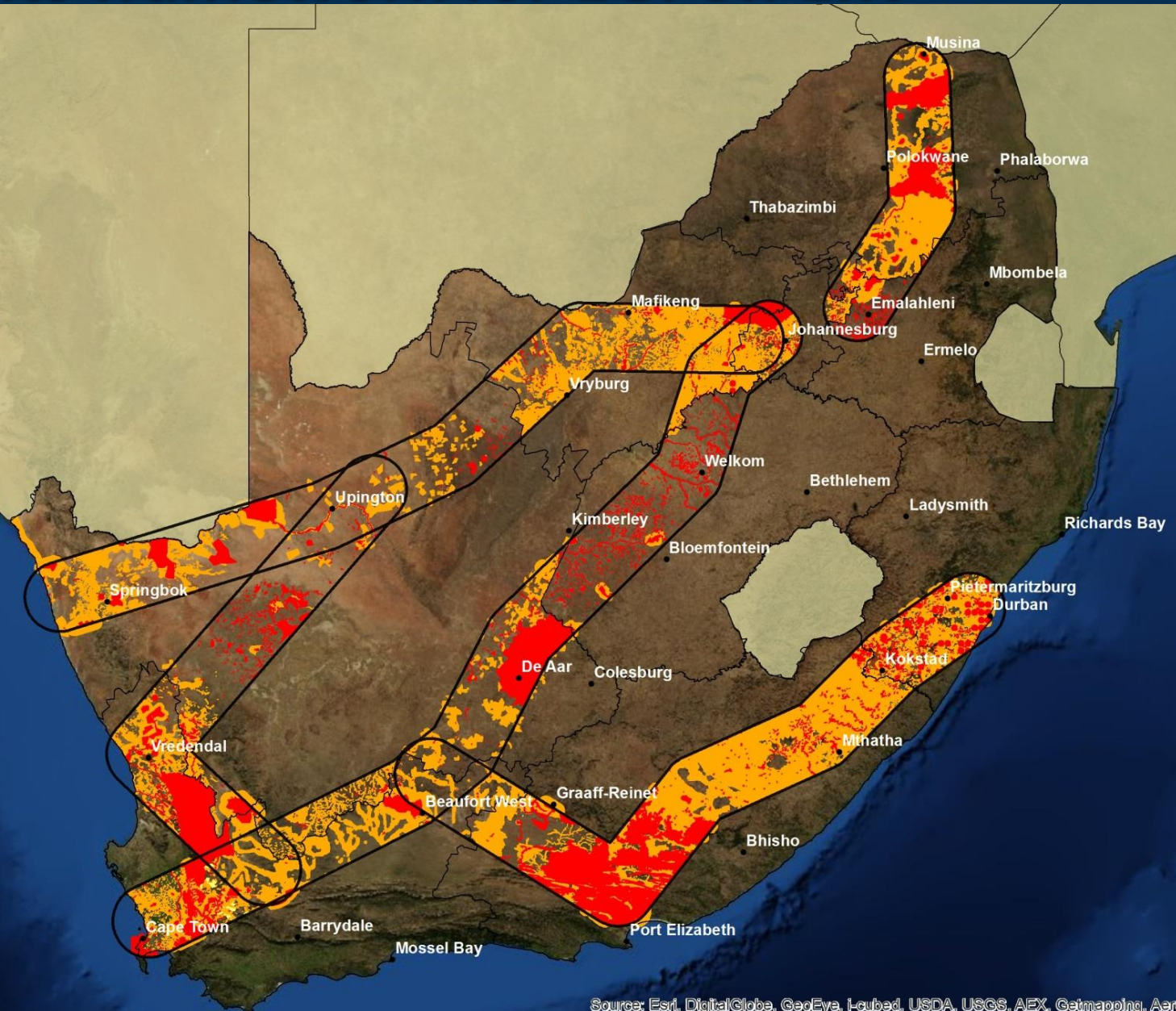
Impact of Environment on EGI



Impact of EGI on Environment



Constraints framework for EGI on Env



Natural

EGI impacts on Env constraints inputs

Protected Areas

National Parks

Prov NRs

Contract NRs

Forest Act PAs

Special NRs

MCAs

PEs

PA expansion*

PA buffers*

Terrestrial

Natural Forest

Thicket

Thr spp localities

CBAs

Special habitats

Freshwater

All wetlands

Rivers*

Dams

Estuaries

Degradation

Eroded areas

Soil erodibility

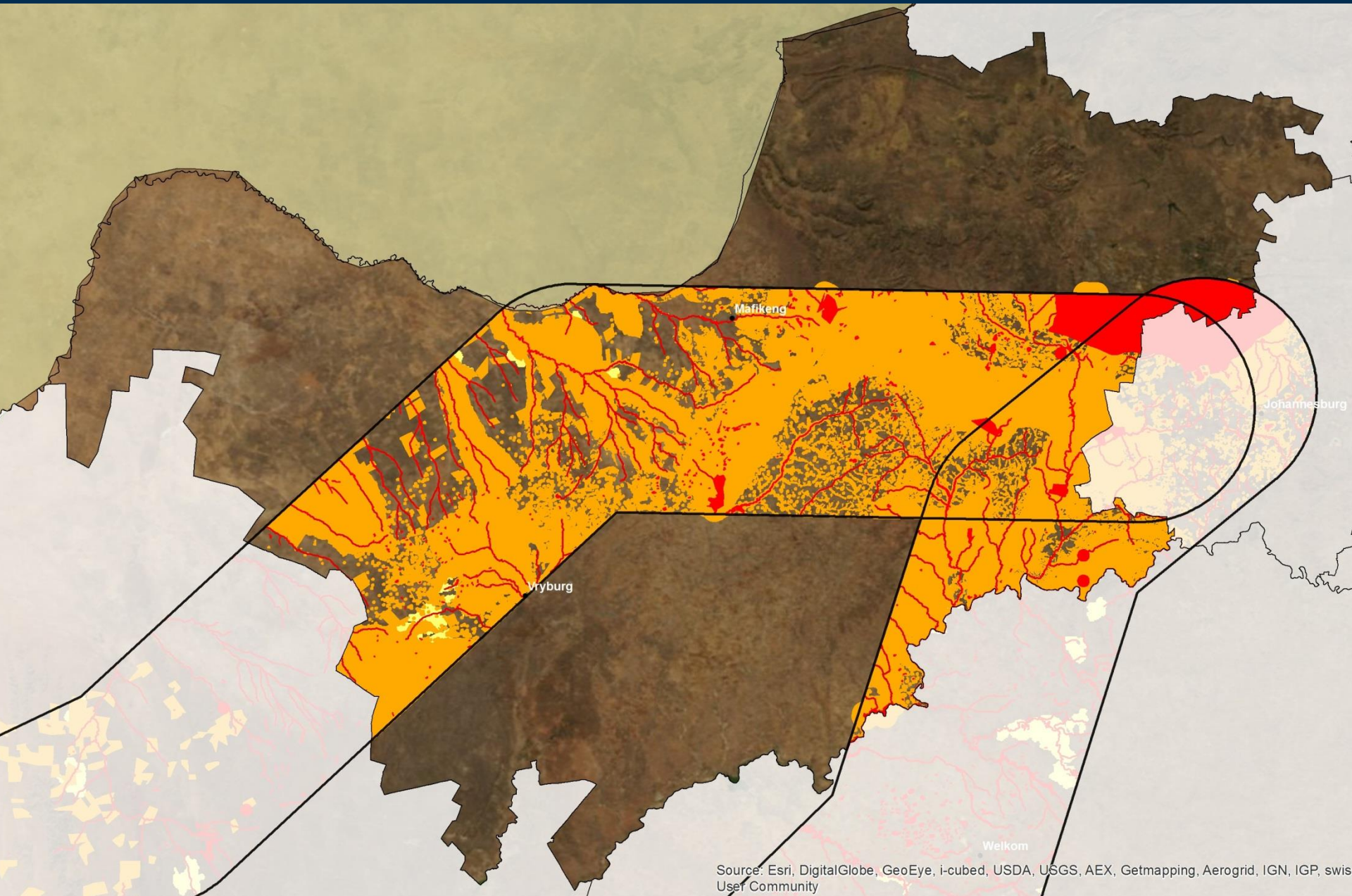
Avifauna

IBAs*

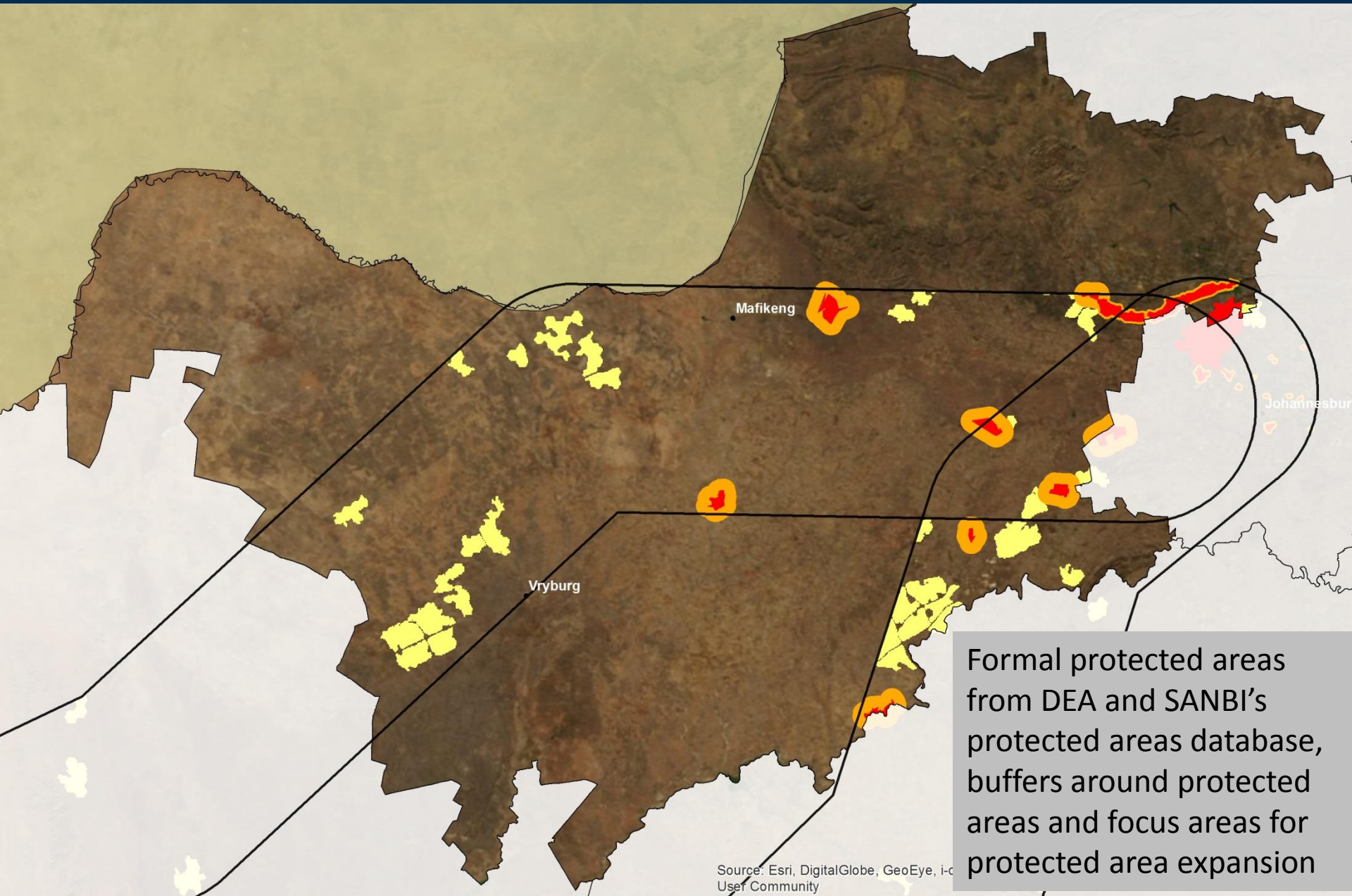
nb areas – large birds

Bat roots (2km)

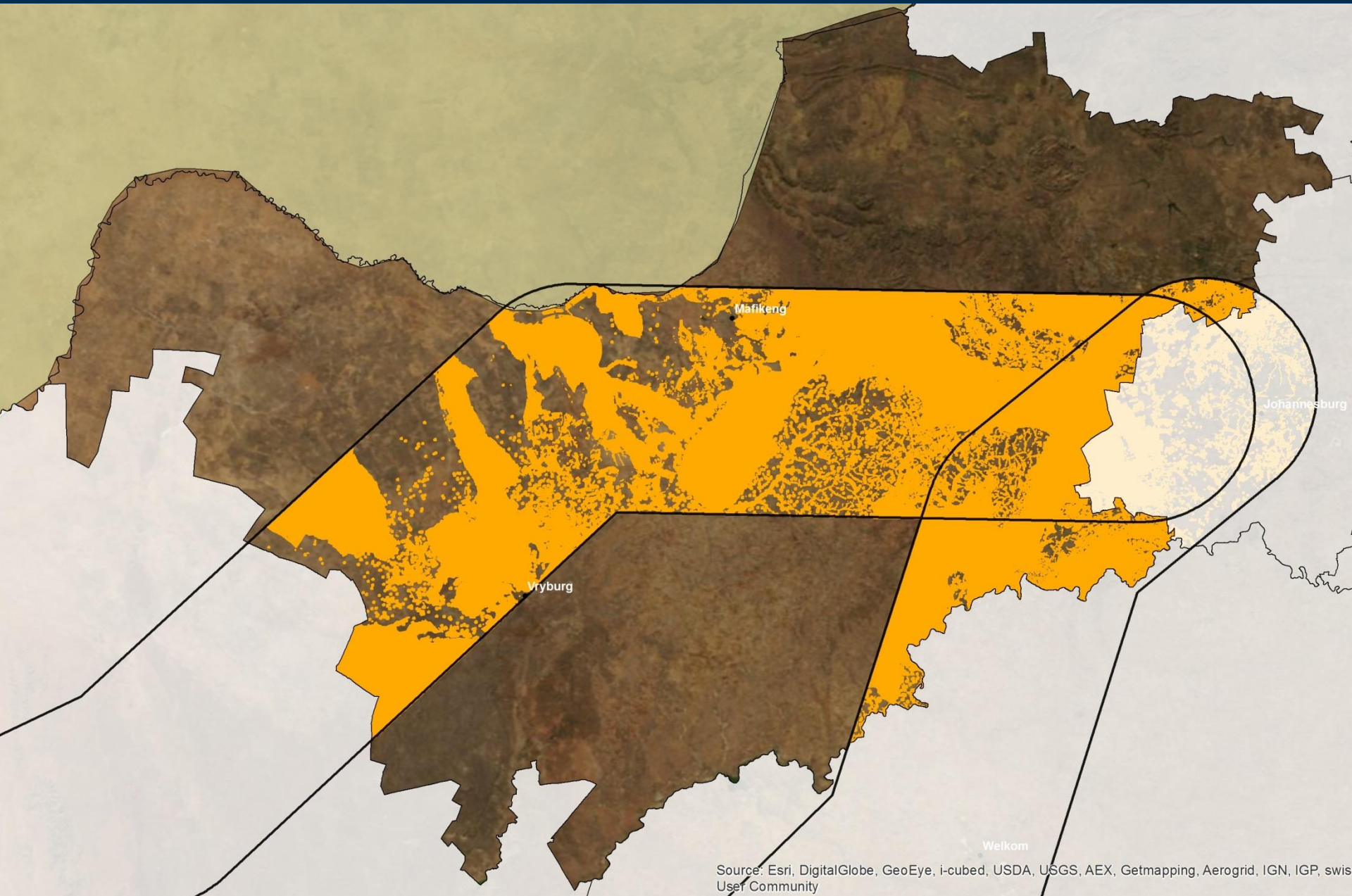
EGI on Environment



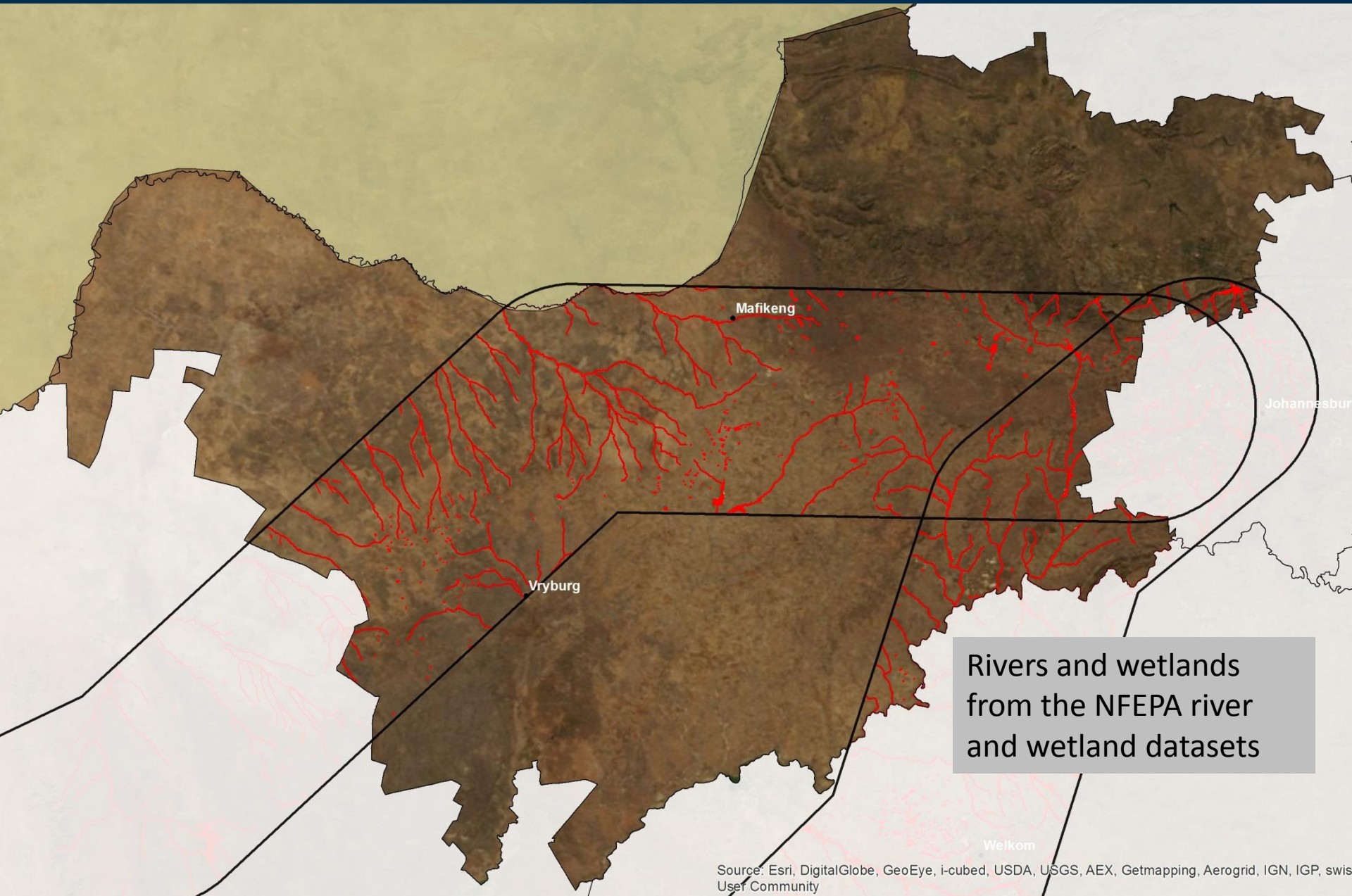
Protected Areas



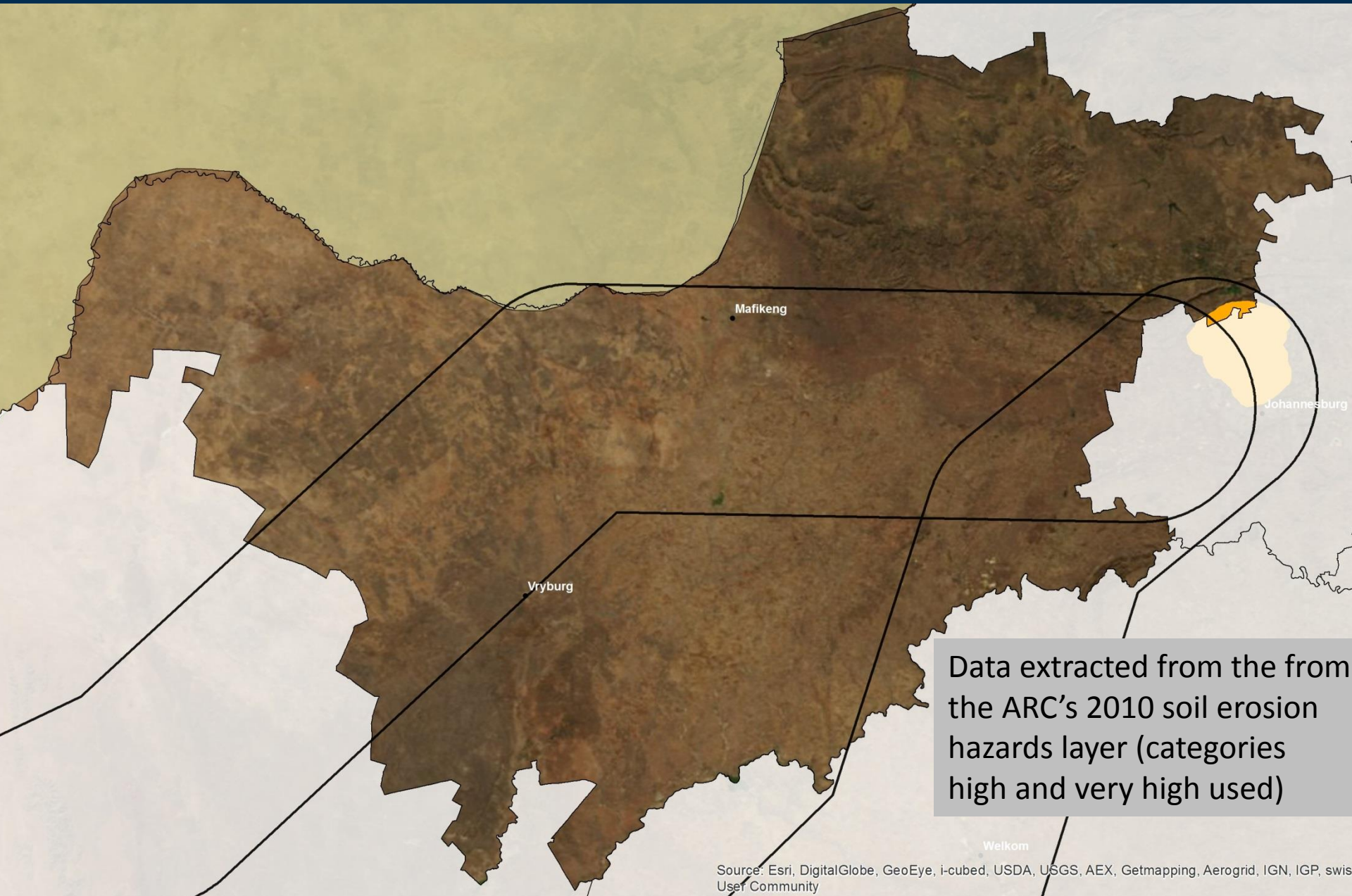
Terrestrial



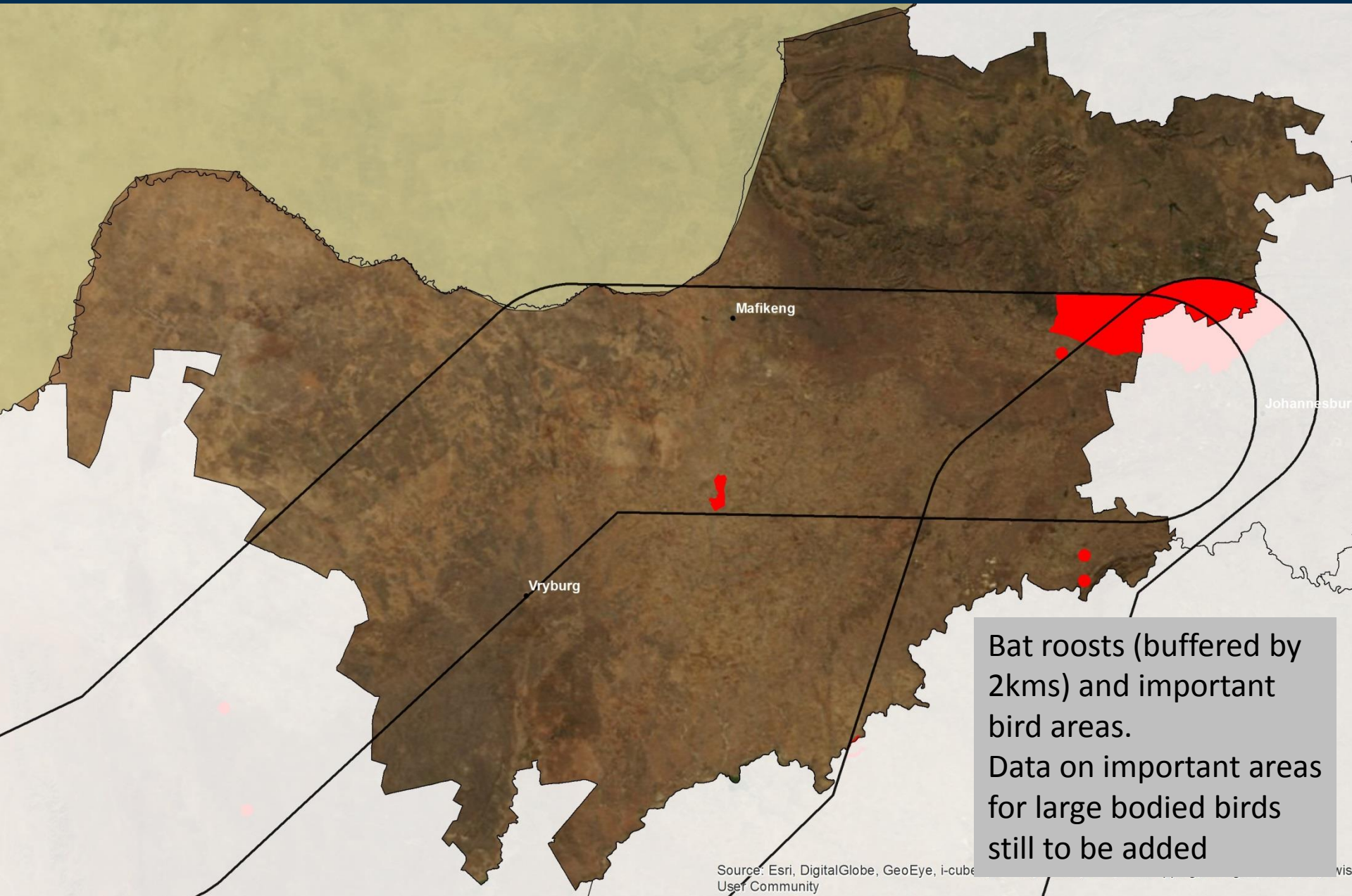
Freshwater



Degradation



Avifauna



EGI impacts on Env constraints inputs

Production Landscape

Commercial Forestry

Forestry expansion

Sugar cane fields*

Irrigation pivots > 500m

Other agri fields*

Cultural Landscape

Heritage Sites*

Landscape integrity*

Infrastructure and Industrial

Square Km Array

Industrial areas*

Industrial expansion*

Roads

Railways

Pipelines

Wildlife economy

Buffers around PAs

Game Farms, Pvt NRs

Buffers around game farms, Pvt NRs

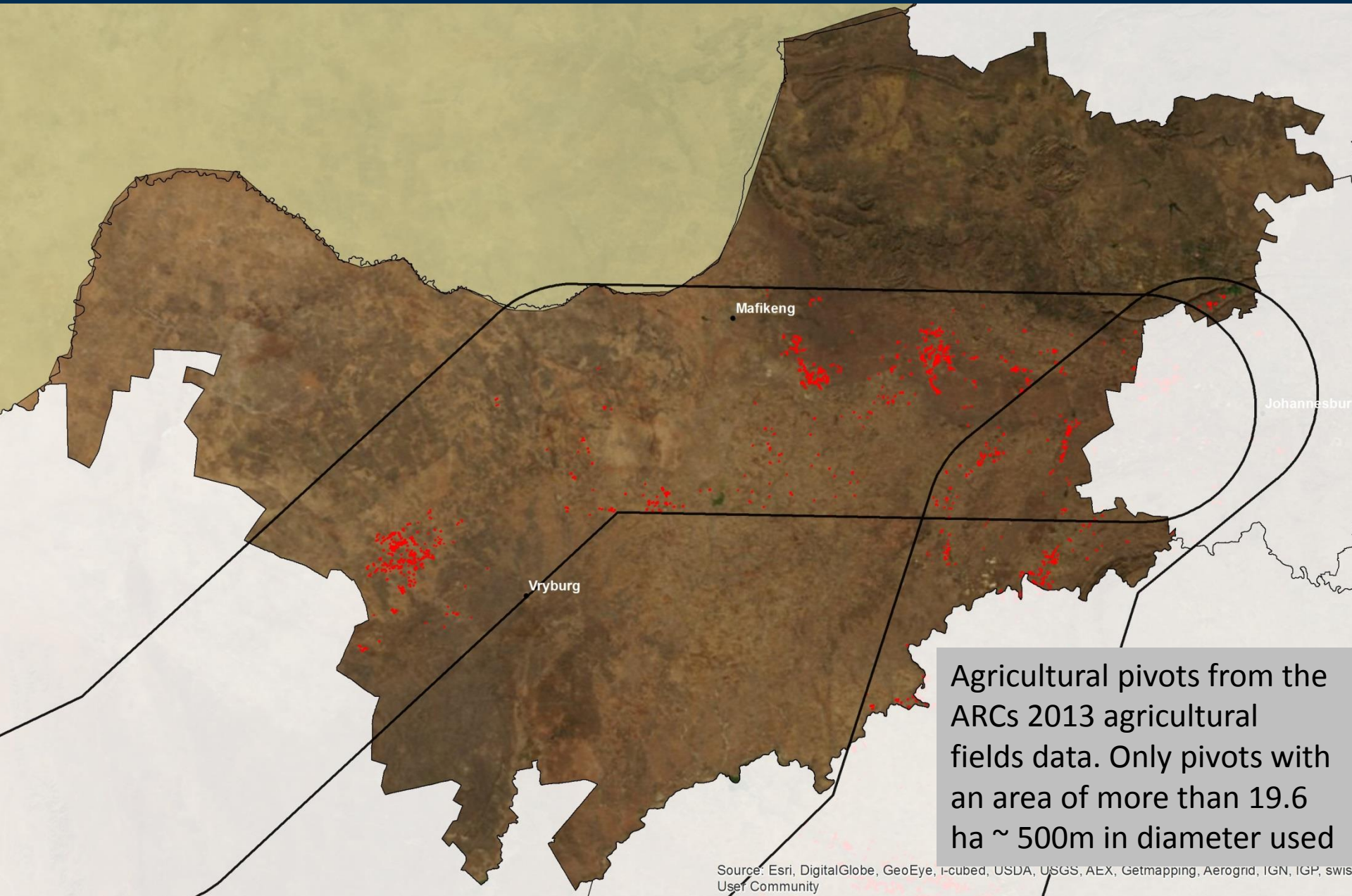
Urban and settlements

Rural Settlement*

Urban areas

Urban Expansion*

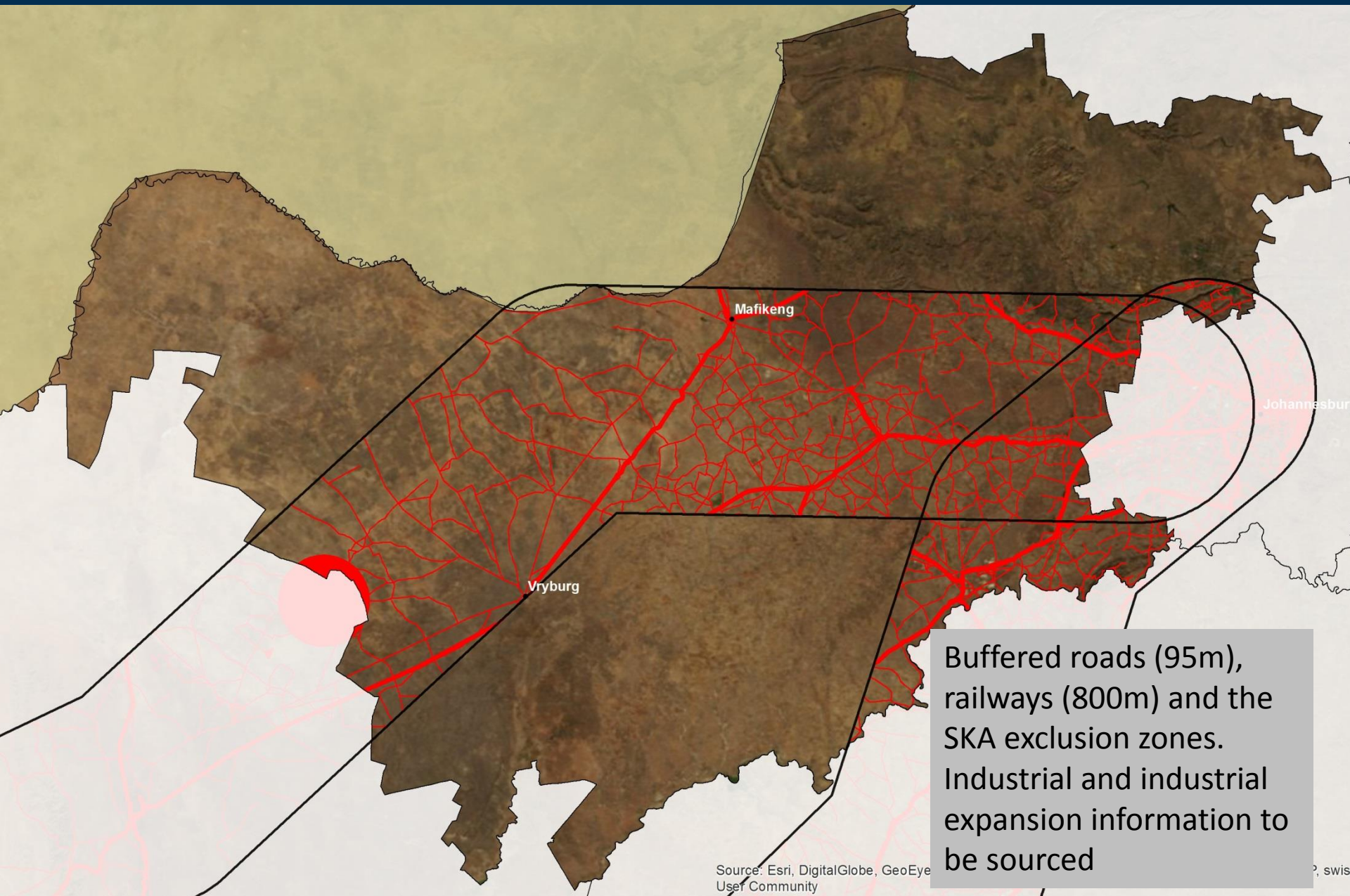
Production Landscape



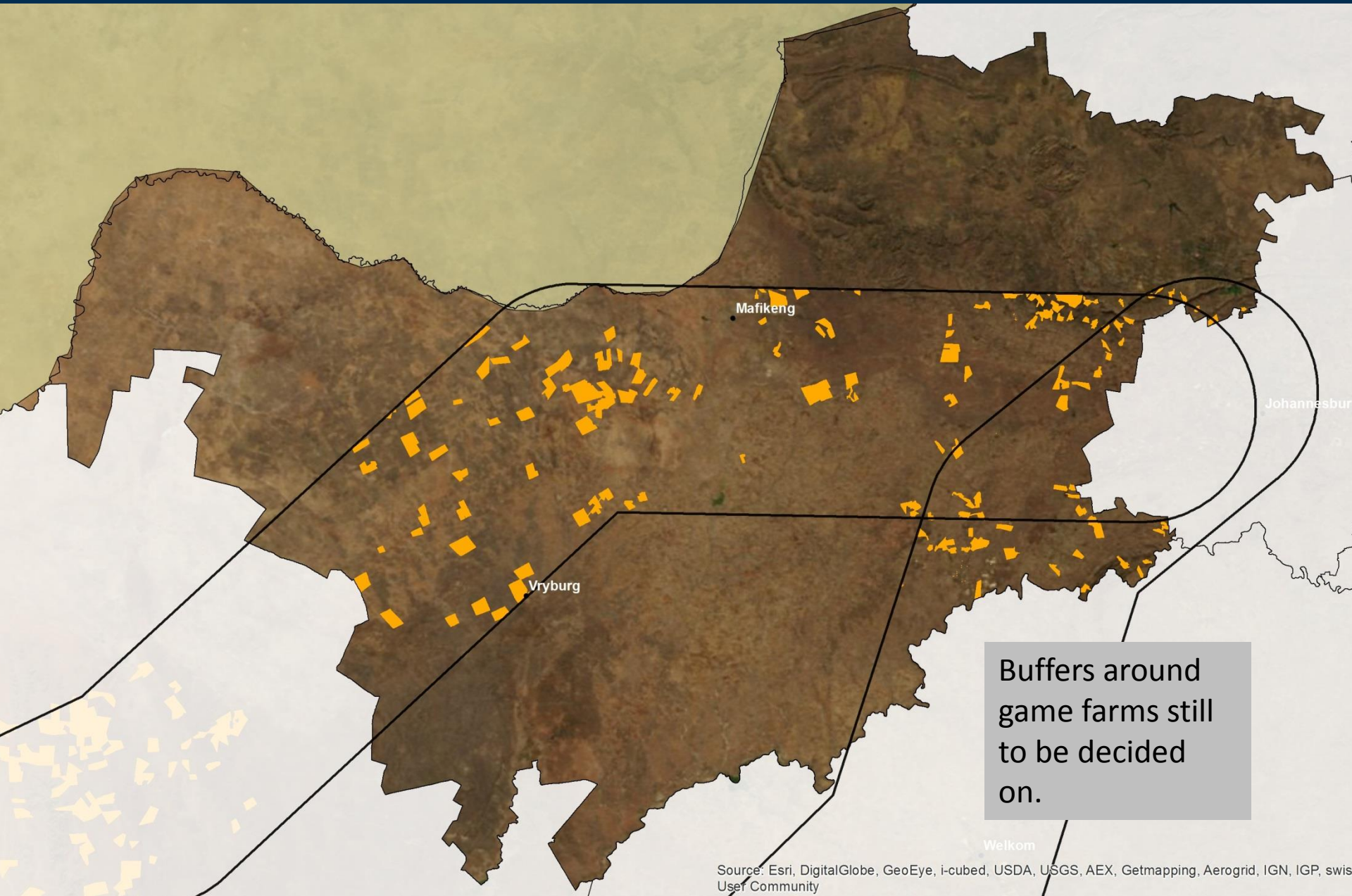
Cultural Landscape



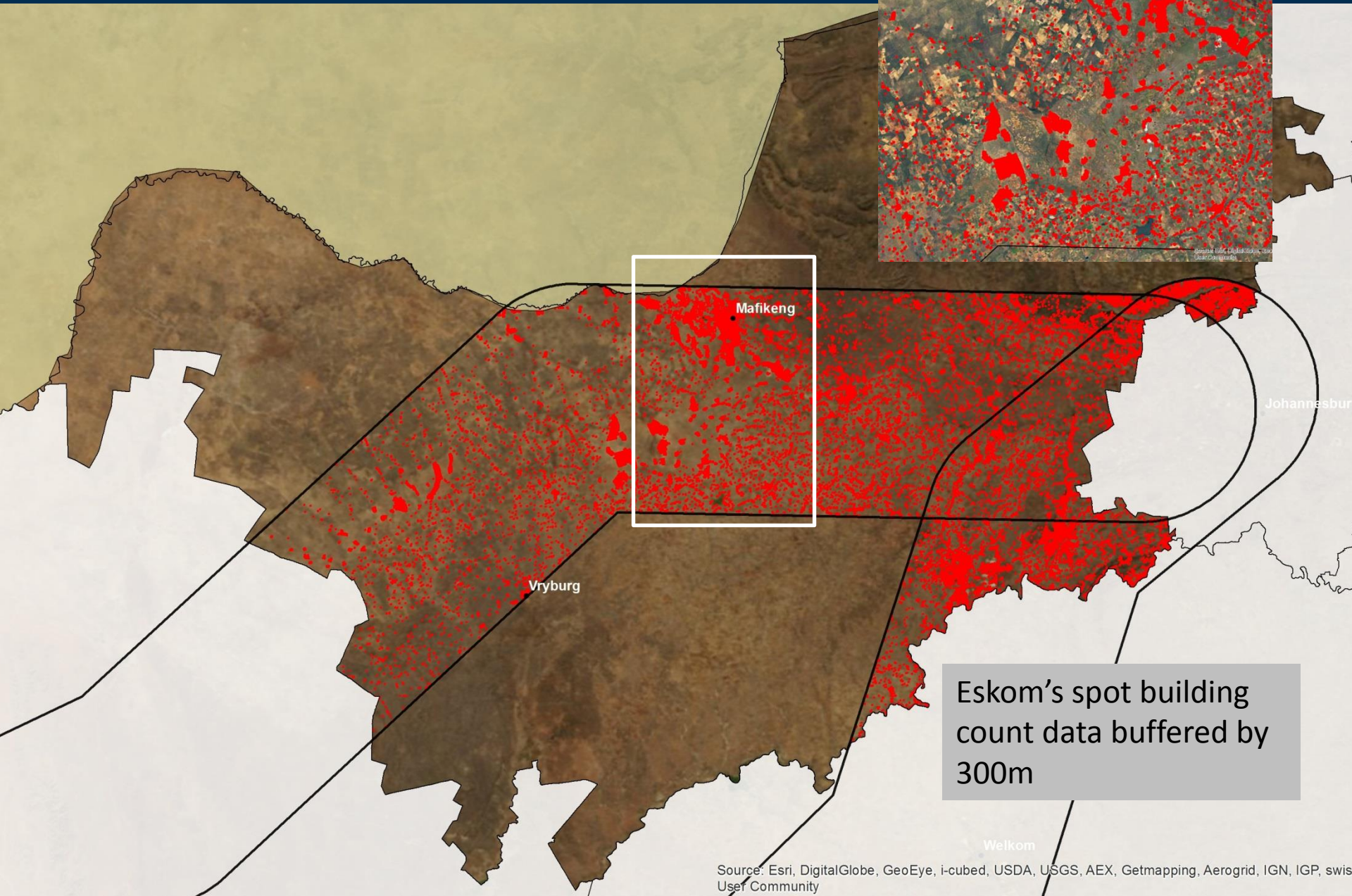
Infrastructure and Industrial



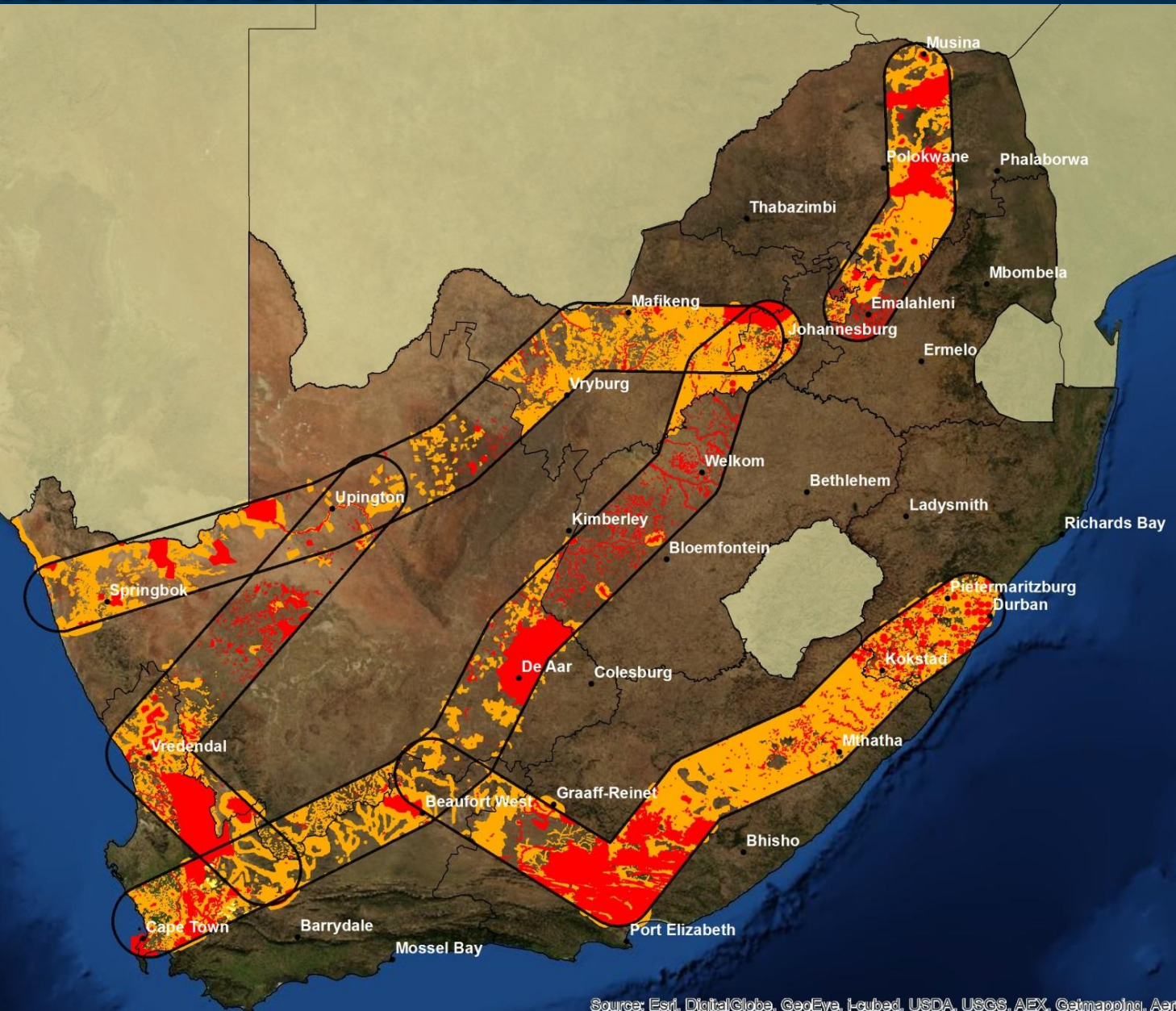
Wildlife Economy



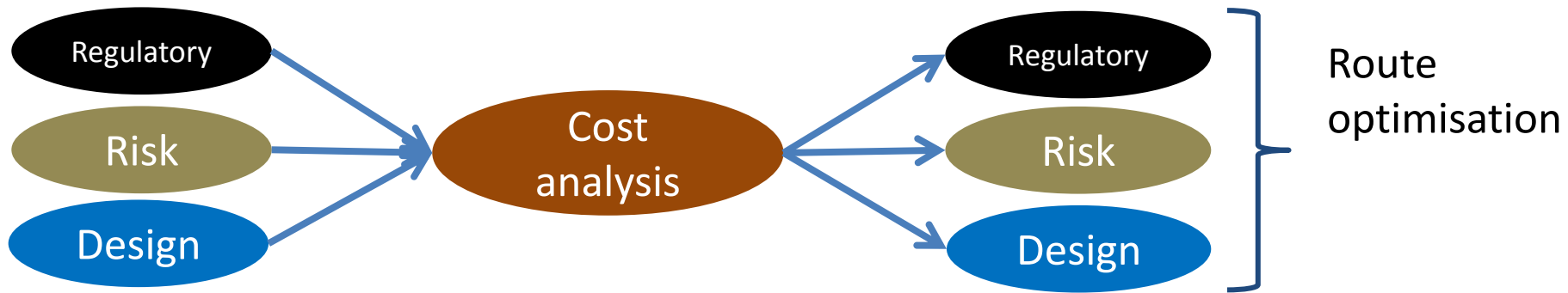
Urban and settlements



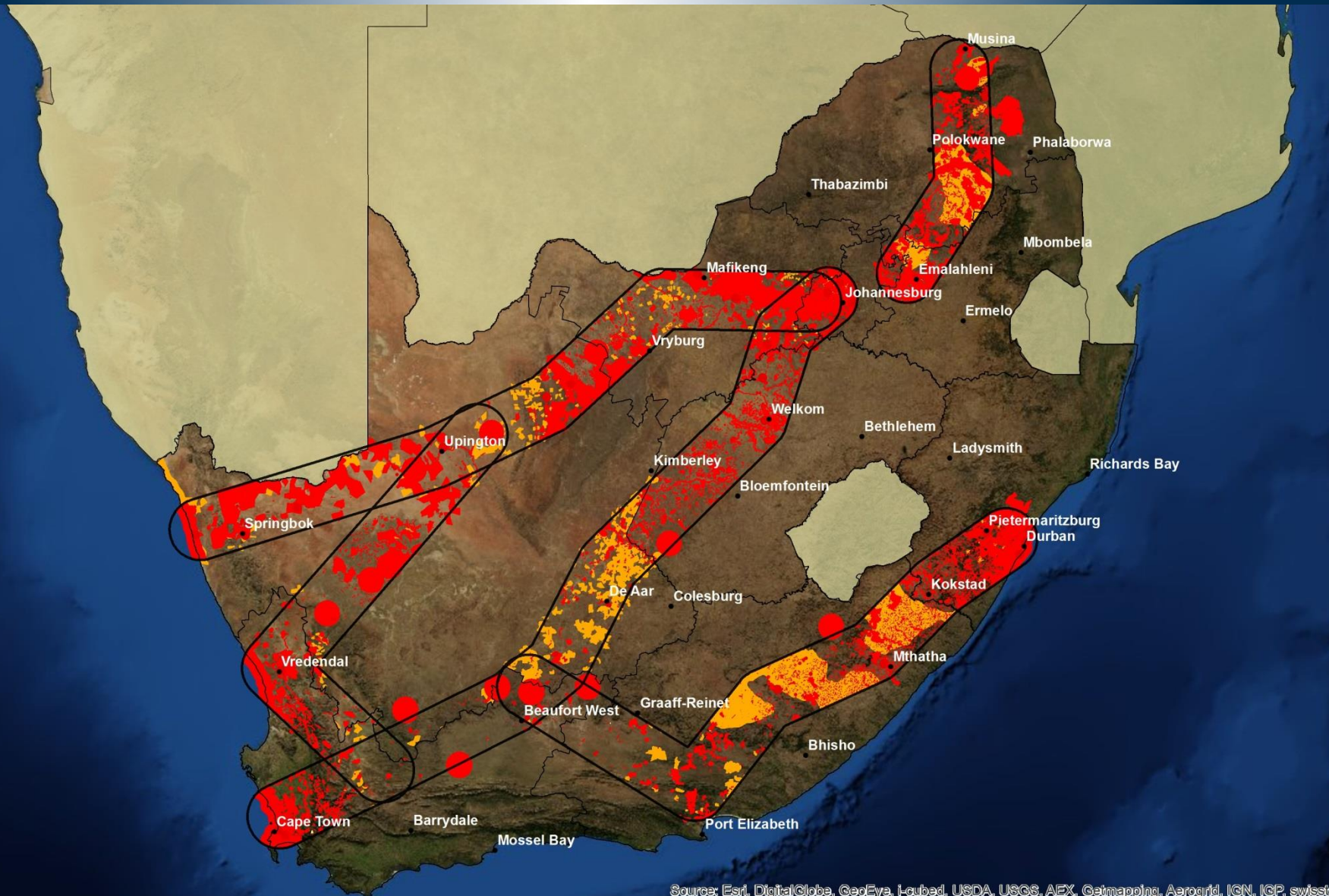
Constraints framework for EGI on Env



Impact of Environment on EGI



Constraints of Environment on EGI



Constraints for Env on EGI

Regulatory

Variable

- Forest Clearing permits*
- WULAs

Established norm

- Airports
- Astronomic Exclusion

Risk management

Self-imposed

- Coastal
- Soil erodibility
- Unstable geology
- Mining areas

Externally imposed

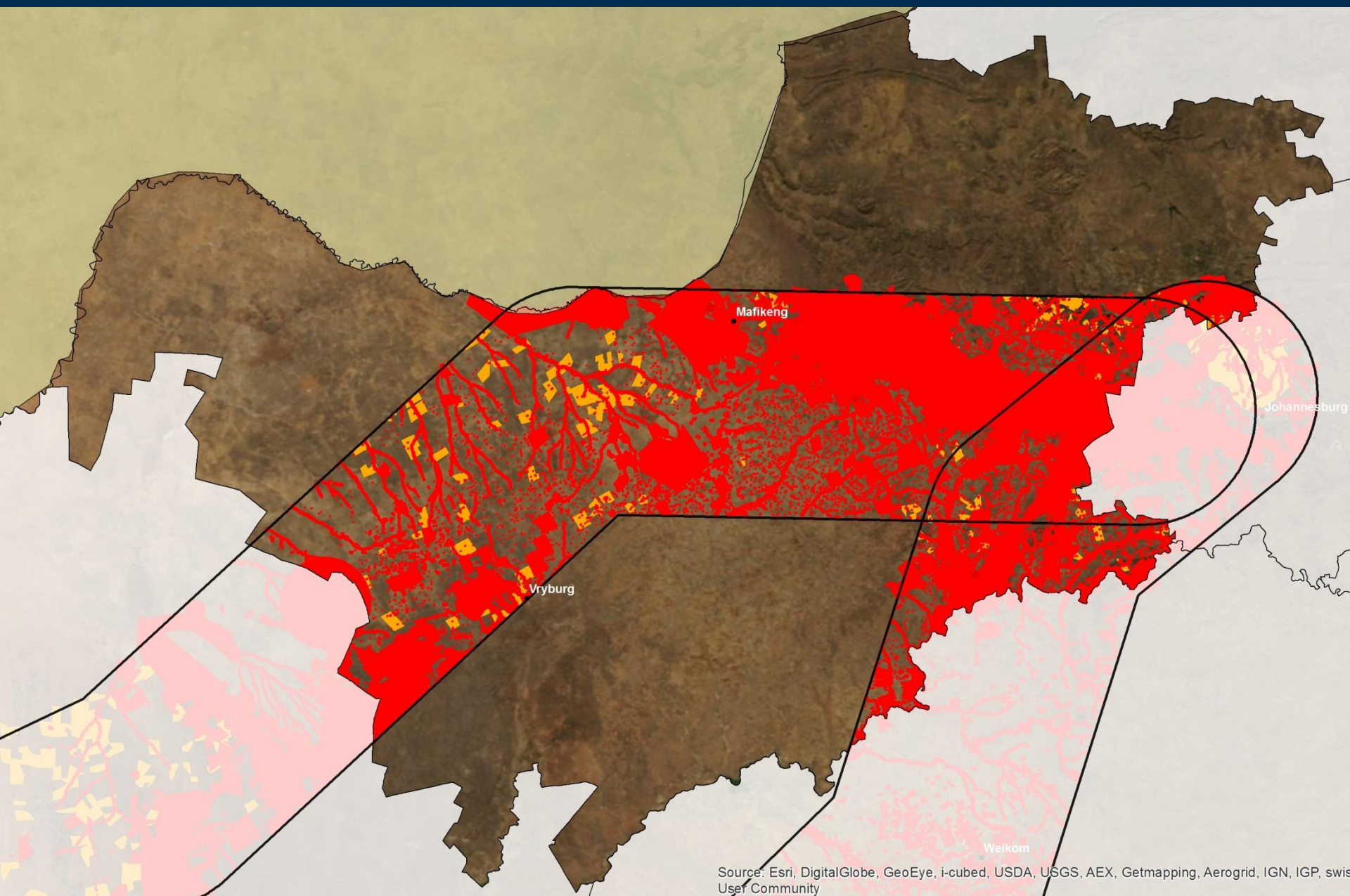
- Rural settlements
- Game Farming
- Road Access

Design

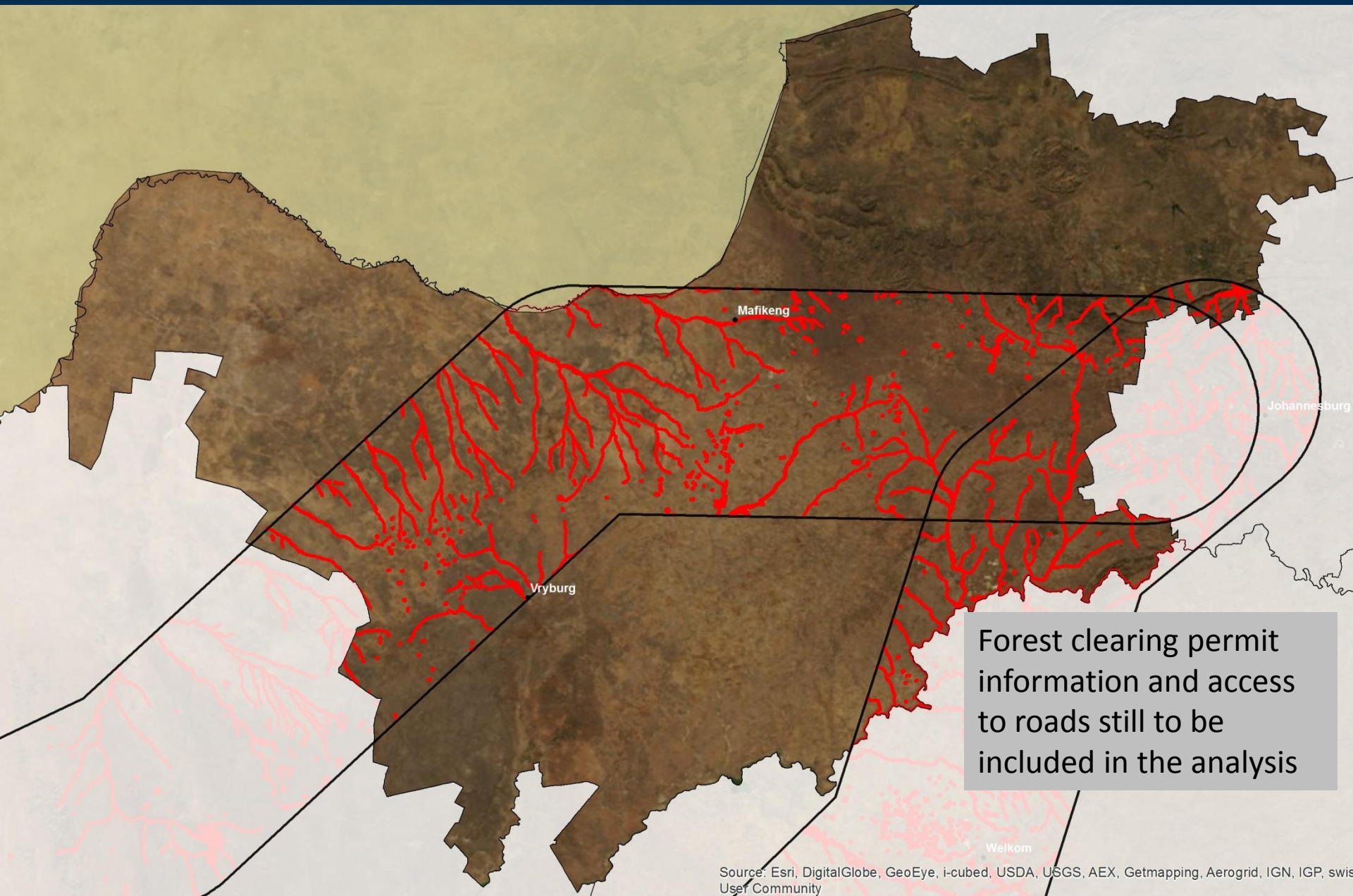
- Lightning strikes
- Veld & field fires
- Extreme temp
- Prolonged ice

- Slope

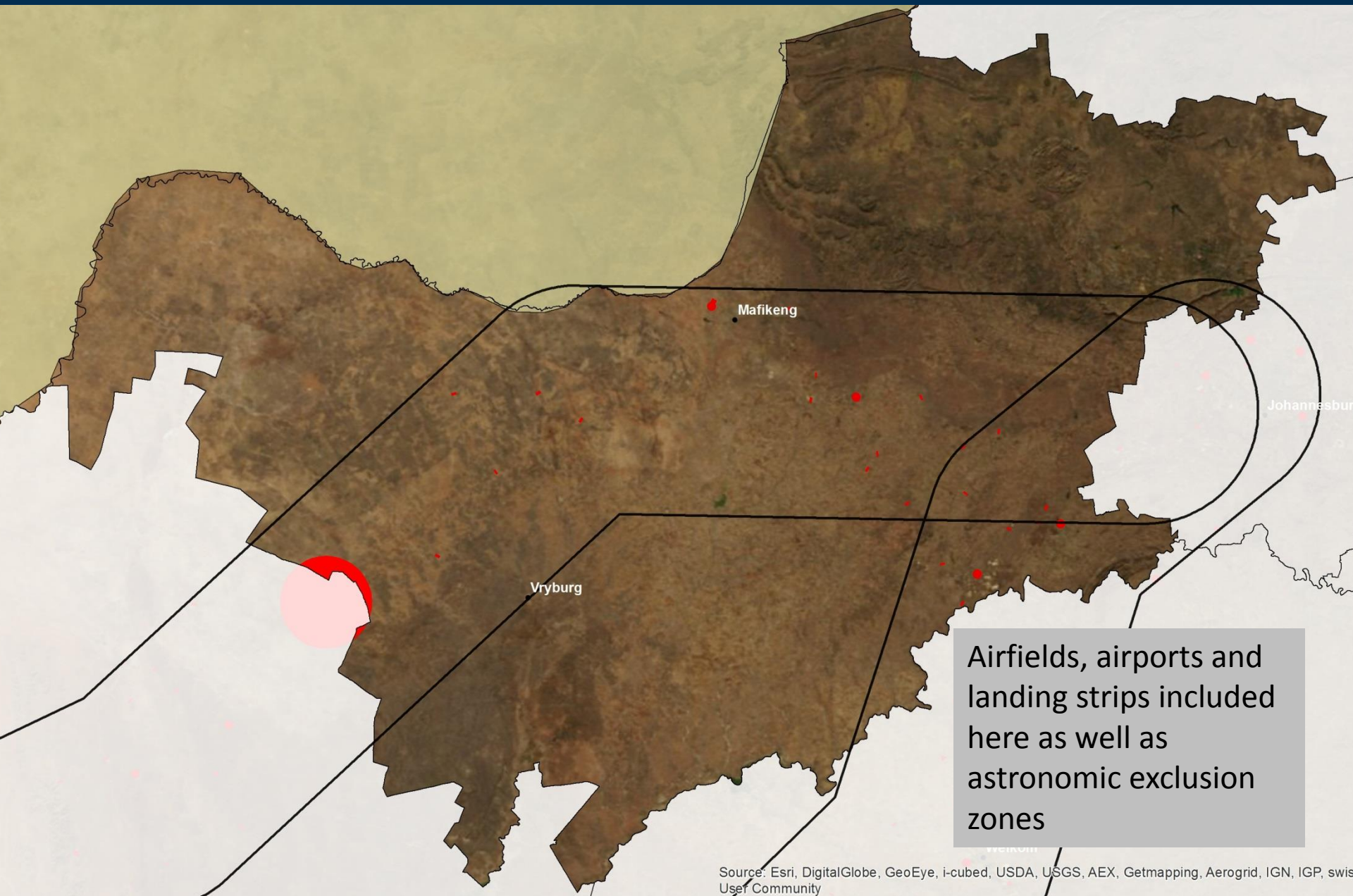
Environment on EGI



Regulatory- Variable



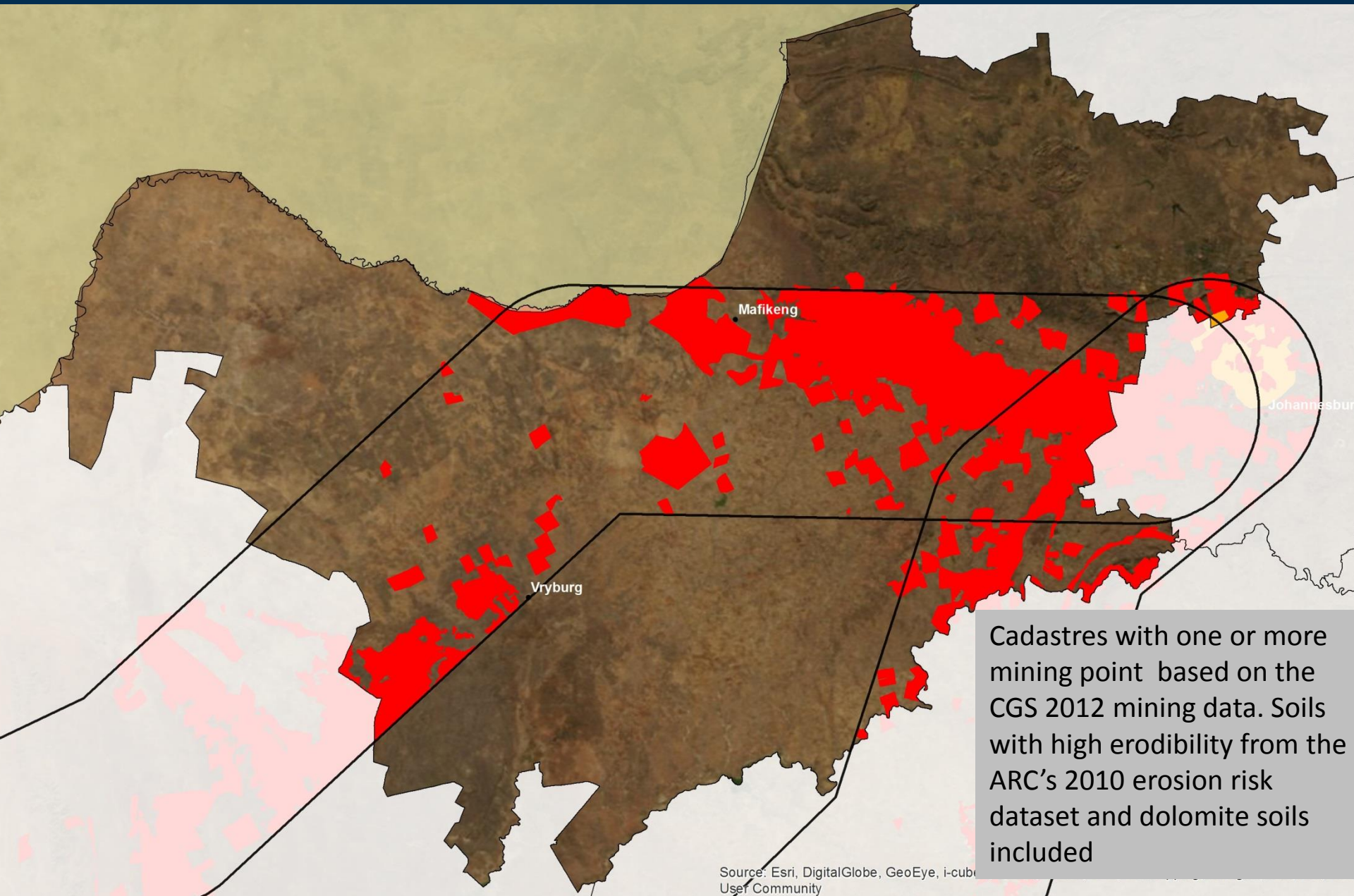
Regulatory- Established norm



Airfields, airports and landing strips included here as well as astronomic exclusion zones

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swis, Usef Community

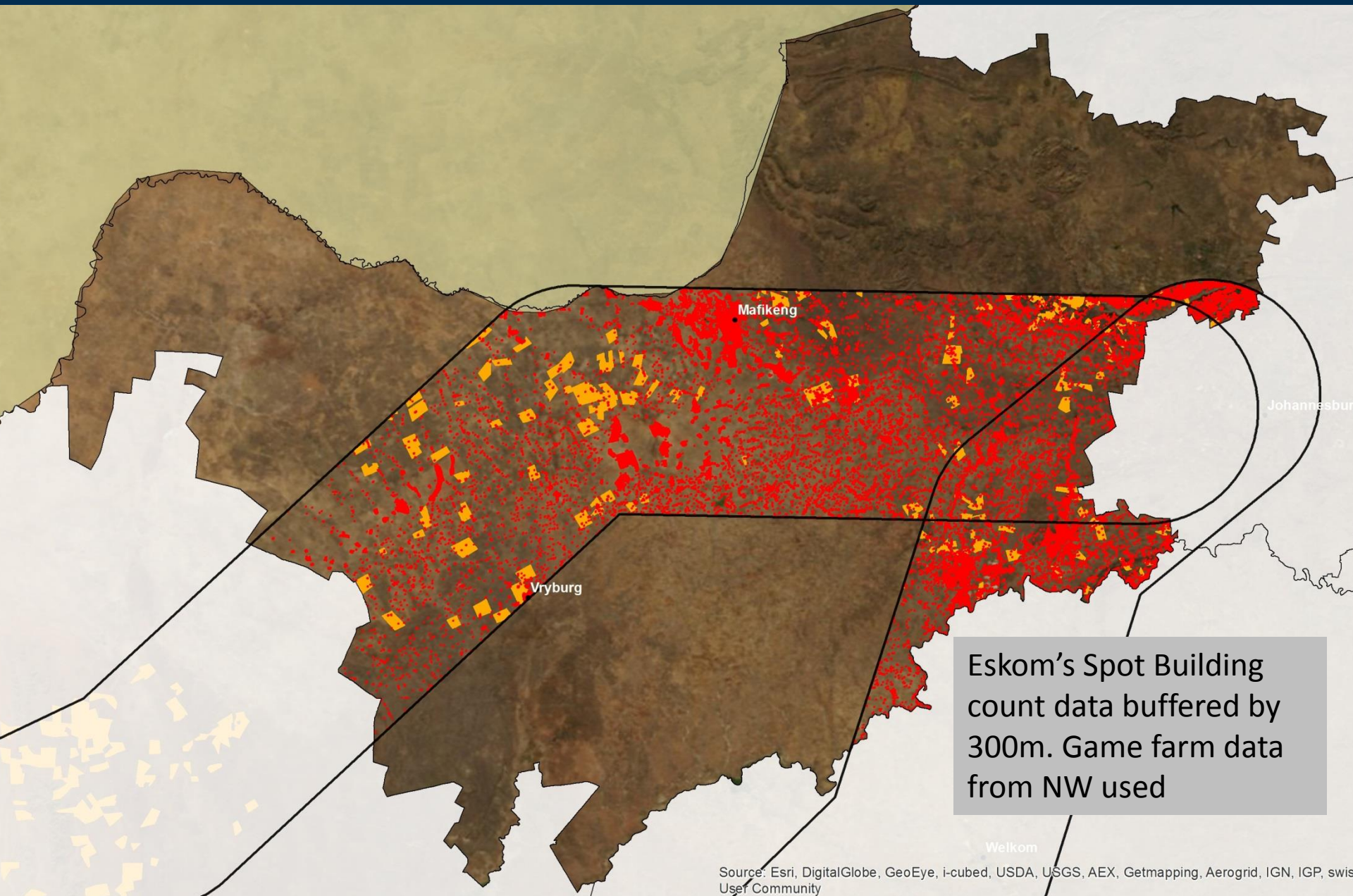
Risk management: Self imposed



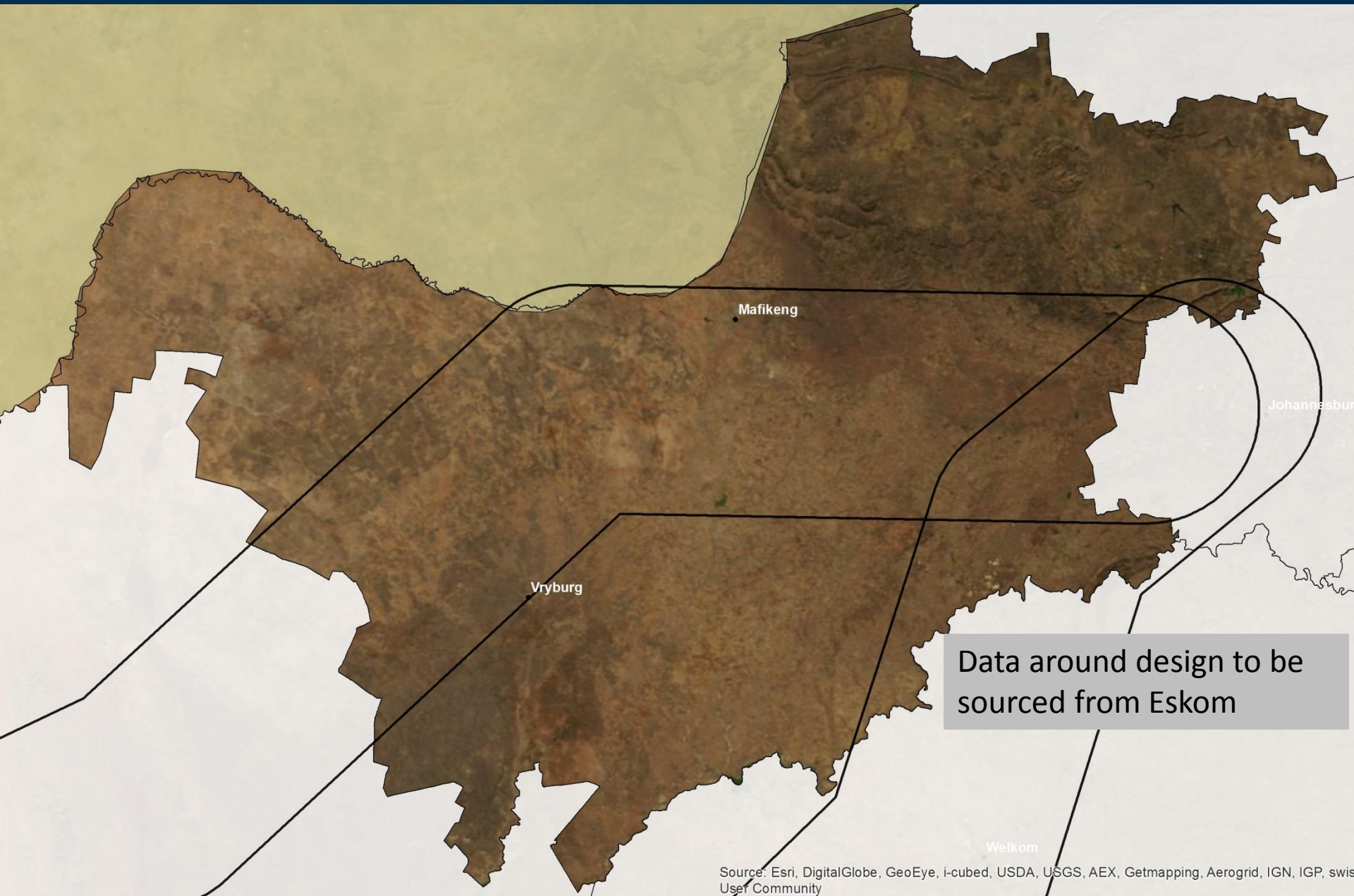
Cadastrals with one or more mining point based on the CGS 2012 mining data. Soils with high erodibility from the ARC's 2010 erosion risk dataset and dolomite soils included

Source: Esri, DigitalGlobe, GeoEye, i-cube, User Community

Risk management: Externally imposed



Design



In the next two months....

- Update constraints framework based on inputs from provincial consultation
- Source and Update data throughout consultation process
- Engage ESKOM and refine matrix
- Present output at next ERG and consult stakeholders
- Identify key datasets and build layers for opportunity matrix during provincial consultation

Questions and Discussion

