



HABITAT MODIFICATION ANALYSIS

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INTRODUCTION

- New National Land Cover 2013/14
- Land cover created by Geo Terra Image (GTI) for Departmental of Environmental Affairs.
- It is based on **Landsat 8** and some part of the country on **Landsat 5**
- **Automated image modelling** was used to generate foundational classes from the multi-date imagery



Introduction (cont.)

- Automated image modelling create classes based on spectral signatures & seasonal cover
- Some class distinctions important for biodiversity planning are treated as one class and not adequately captured in the mapping
- For example **Waterbodies (Artificial vs. Natural)**

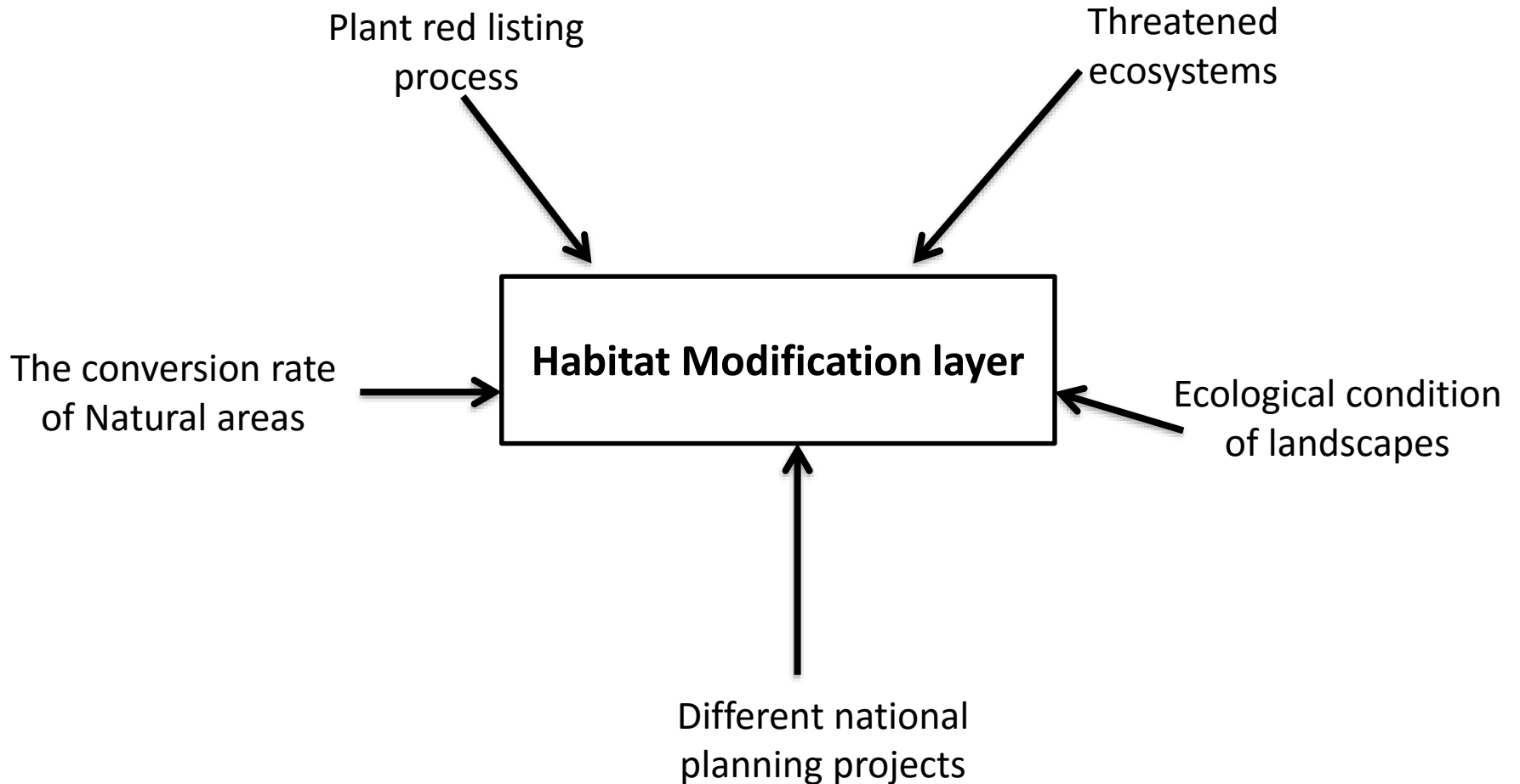


Rationale for analysis

- To create “*Habitat Modification layer*” which will be useable in biodiversity planning; by showing ecological condition of landscapes.
- The conversion of natural habitat is the primary driver of biodiversity loss worldwide; tracking the status of biodiversity is one of SANBI’s core functions.



How the layer will be used



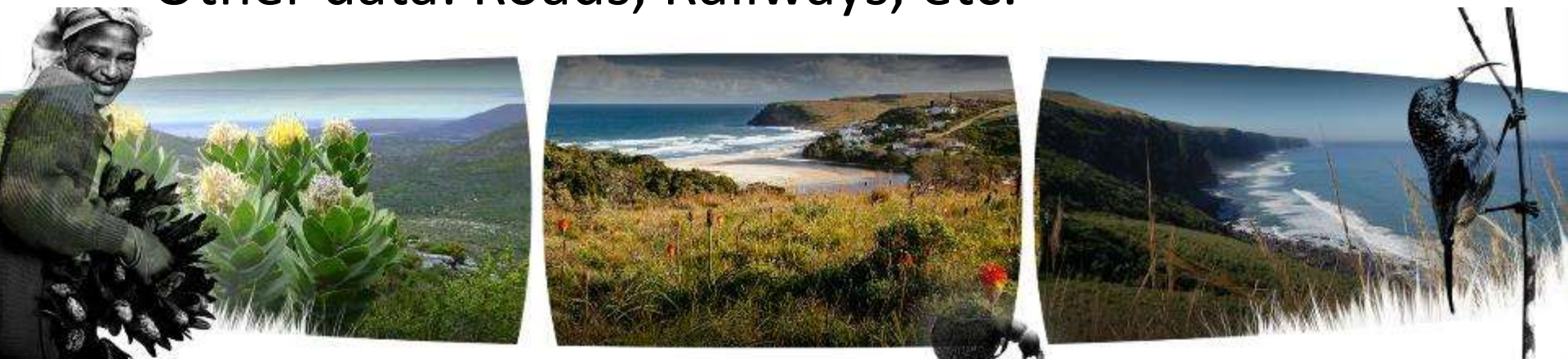
Methodology

- 72 NLC classes reclassified into 16 Habitat Modification classes which are more applicable to biodiversity conservation
- Using the best available data to improve the accuracy of some classes within the NLC:
 - Natural areas (primary vs secondary)
 - Waterbodies (artificial vs natural)



Datasets

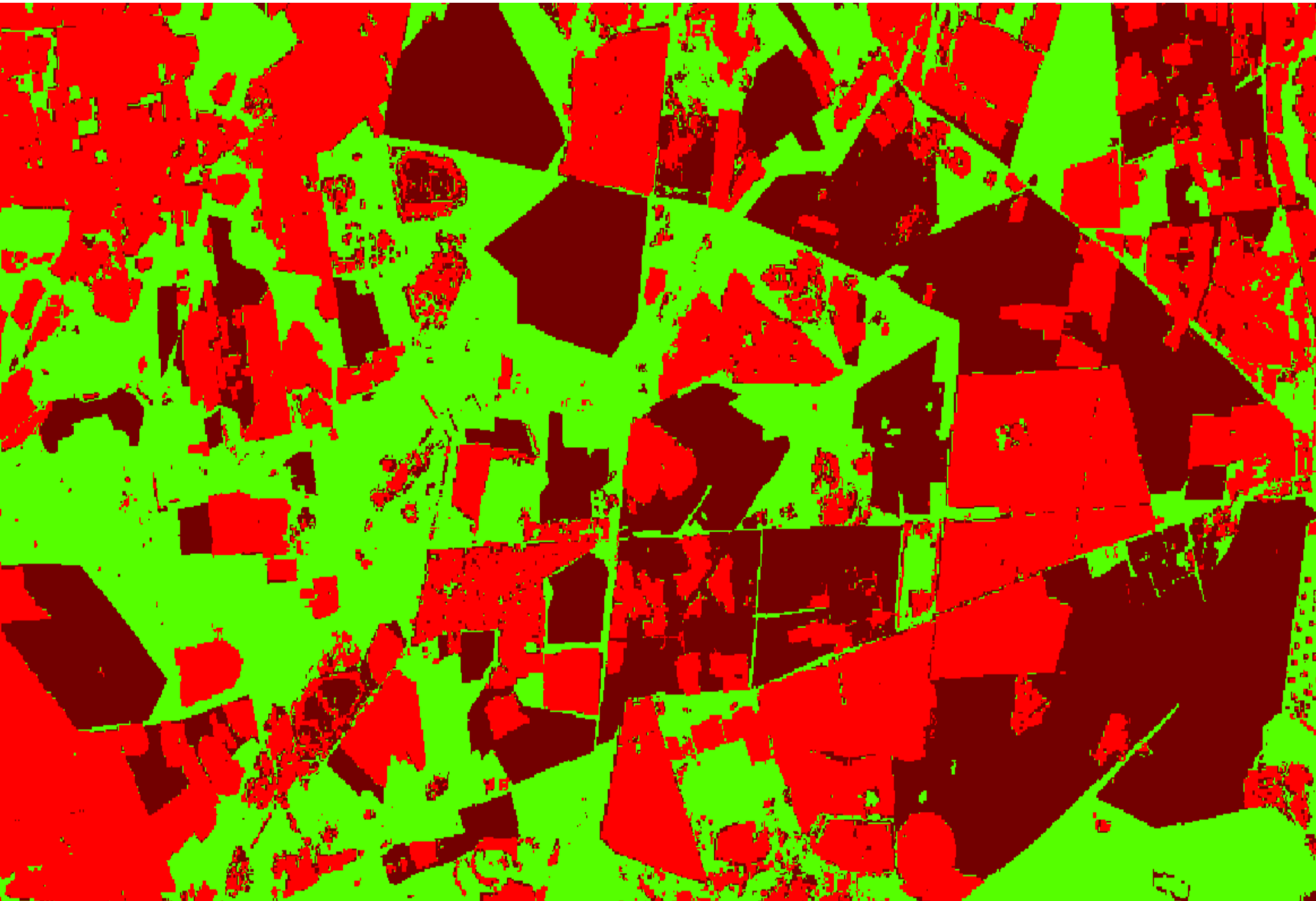
- National Land Cover
- Wetlands (CSIR & SANBI)
- Topographical Maps
- ESKOM Spot Building Count
- Provincial Land Cover
- Agriculture Research Council Field Crop Boundary
- Agriculture Research Council Gully Map
- Other data: Roads, Railways, etc.



Habitat Modification classes

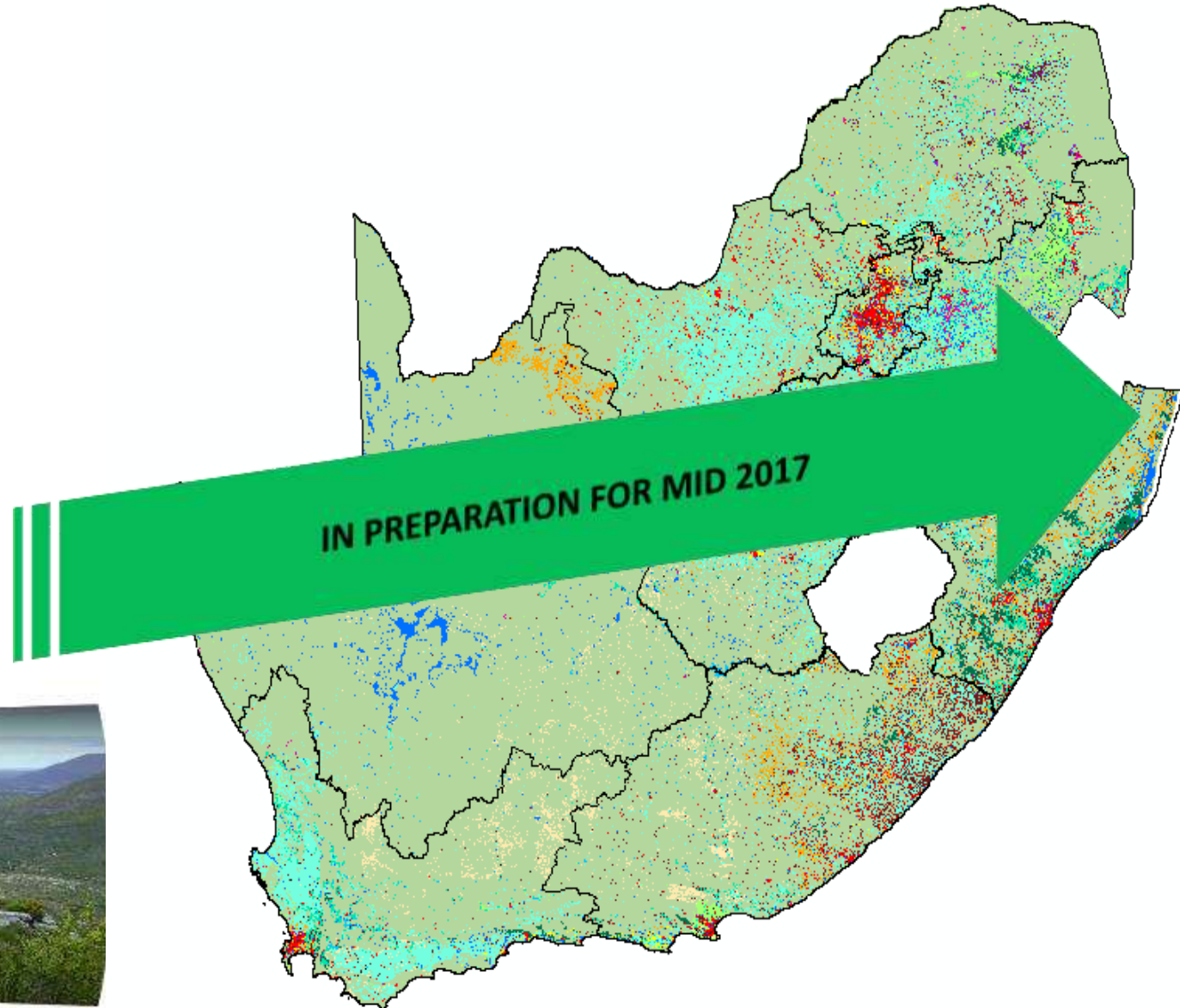
Unique ID	Habitat Modification Classes	Biodiversity Planning Classes
1	Primary Natural Areas	Natural
2	Secondary Natural Areas	Natural / Degraded
3	Degraded Natural Areas	Degraded
4	Dryland Cultivation	Not Natural
5	Irrigated Cultivation	Not Natural
6	Degraded / Erosion	Degraded
7	Urban Built-up	Not Natural
8	Low Density Settlements	Not Natural
9	Non Natural Urban Space	Not Natural
10	Natural Waterbodies	Natural
11	Artificial Waterbodies	Not Natural
12	Plantations	Not Natural
13	Mines	Not Natural
14	Roads	Not Natural
15	Medium Density Settlements	Not Natural
16	High Density Settlements	Not Natural

Primary vs Secondary Natural Areas



Habitat Modification Layers

- Artificial Waterbodies
- Built up Areas
- Degraded / Erosion
- Degraded Natural Areas
- Dryland Cultivation
- High Density Settlements
- Irrigated Cultivation
- Low Density Settlements
- Medium Density Settlements
- Mines
- Natural Waterbodies
- No Data
- None Natural Urban Space
- Plantations
- Primary Natural Areas
- Roads
- Secondary Natural Areas



Conclusion

- The Habitat Modification layer is not a substitute to land cover but it rather indicates the level of modification of natural areas nationally
- Habitat Modification layer will show ecological condition of landscapes
- This layer will be used in the next NBA 2018



Thank you

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