

What are TPC's and why we need to automate them

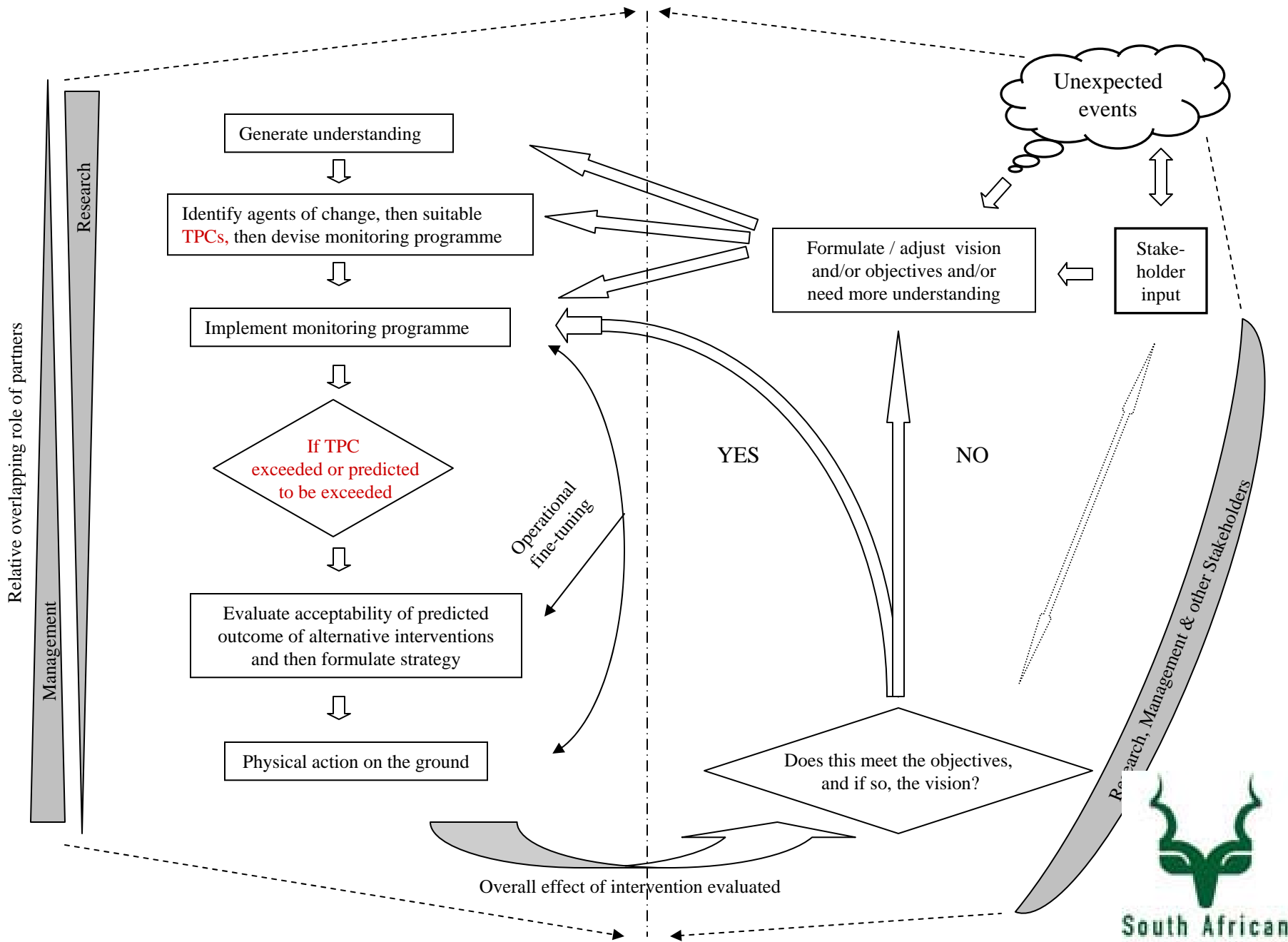
Judith Kruger
Program Integrator
Kruger National Park



Concepts

- TPC's are a set of operational goals that together define the spatiotemporal heterogeneity conditions of the KNP
- Joint suite of TPC's represent an envelope inside which flux is acceptable (Tent with poles)
- These are hypotheses of limits of acceptable change in ecosystem structure, function and composition (according to Noss)
- Vision, objectives and TPC's form an integral part of the Adaptive Management Process
- KNP has a specific TPC step which dictates when and how management action will take place





Current TPC's

- Alien Biota

- Fish

- *Water Quantity*

- *Water Quality*

- Geomorphic

- Below ground water

- Landscape function

- Aggregation

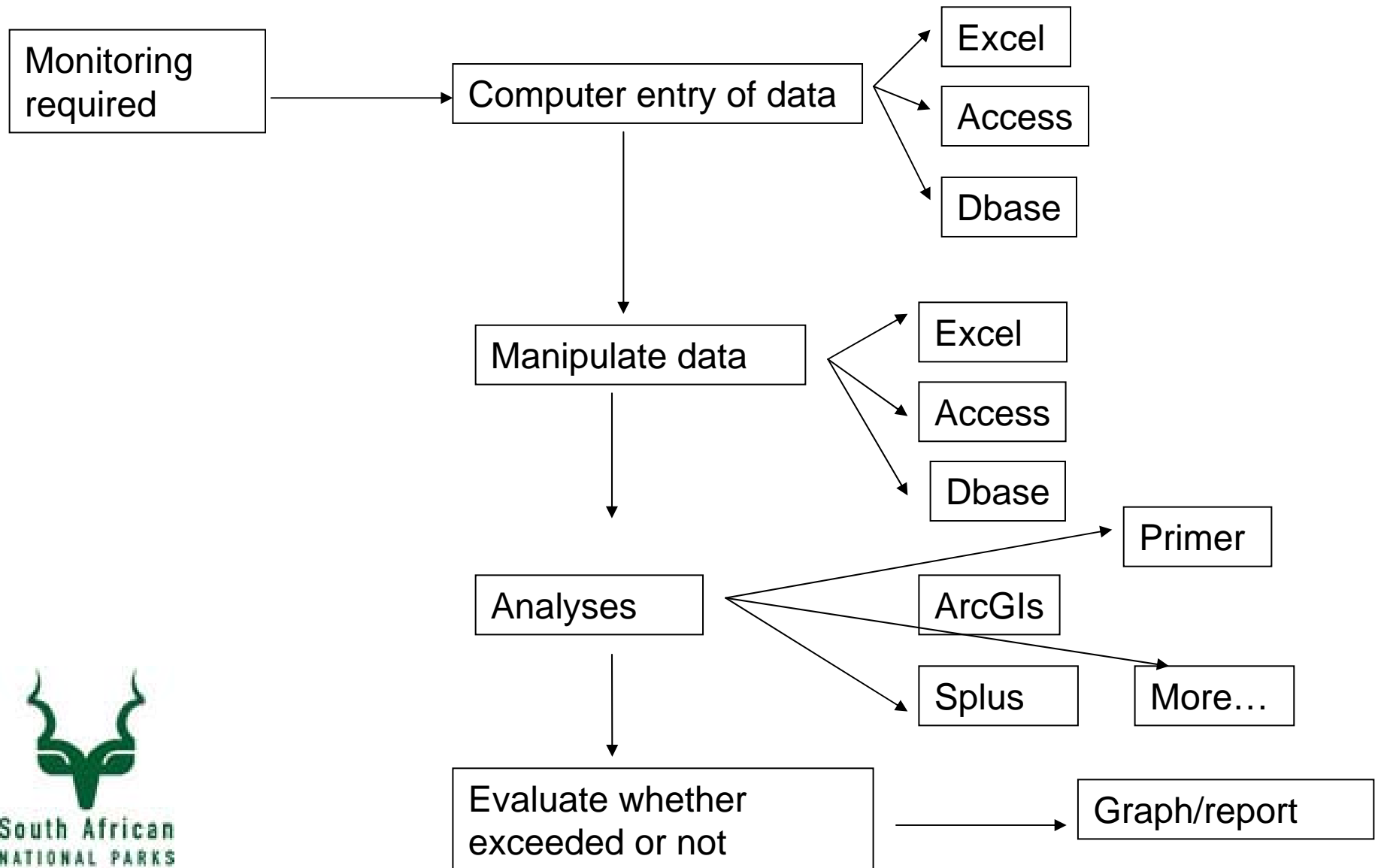
- Fire

- Vegetation

- Herbivory

- Threatened Biota

HOW THEY CURRENTLY WORK



Problems Associate with this way

- No proper data management
 - No metadata - hard to reuse next time
 - Files not archived/Computer breaks/retire data lost
 - With manipulating data create many interim datasets unsure what the final version was that was used
 - Analyses not documented – hard to rerun
 - No standardized analyses/procedures

Solution



- Morpho

- » Allows entry of metadata and data
- » Allows versioning
- » Allows collaboration and sharing



- Metacat

- » Archives data from Morpho or other sources
- » Serves data over the web



- Kepler

- » Uses data from morpho via metacat
- » Ability to integrate other data sources
- » Archives code used in analyses
- » Archives results
- » Repeatable- rerun workflow
- » Easily change parameters to test simulations etc



Way Forward

- Design procedures to automate and report on all of the TPC's
- Demonstration of one of these

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South African
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