NSW GOVERNMENT Department of Primary Industries

Rangeland monitoring and its application

Cathy Waters

(Pastures and Rangelands Unit)

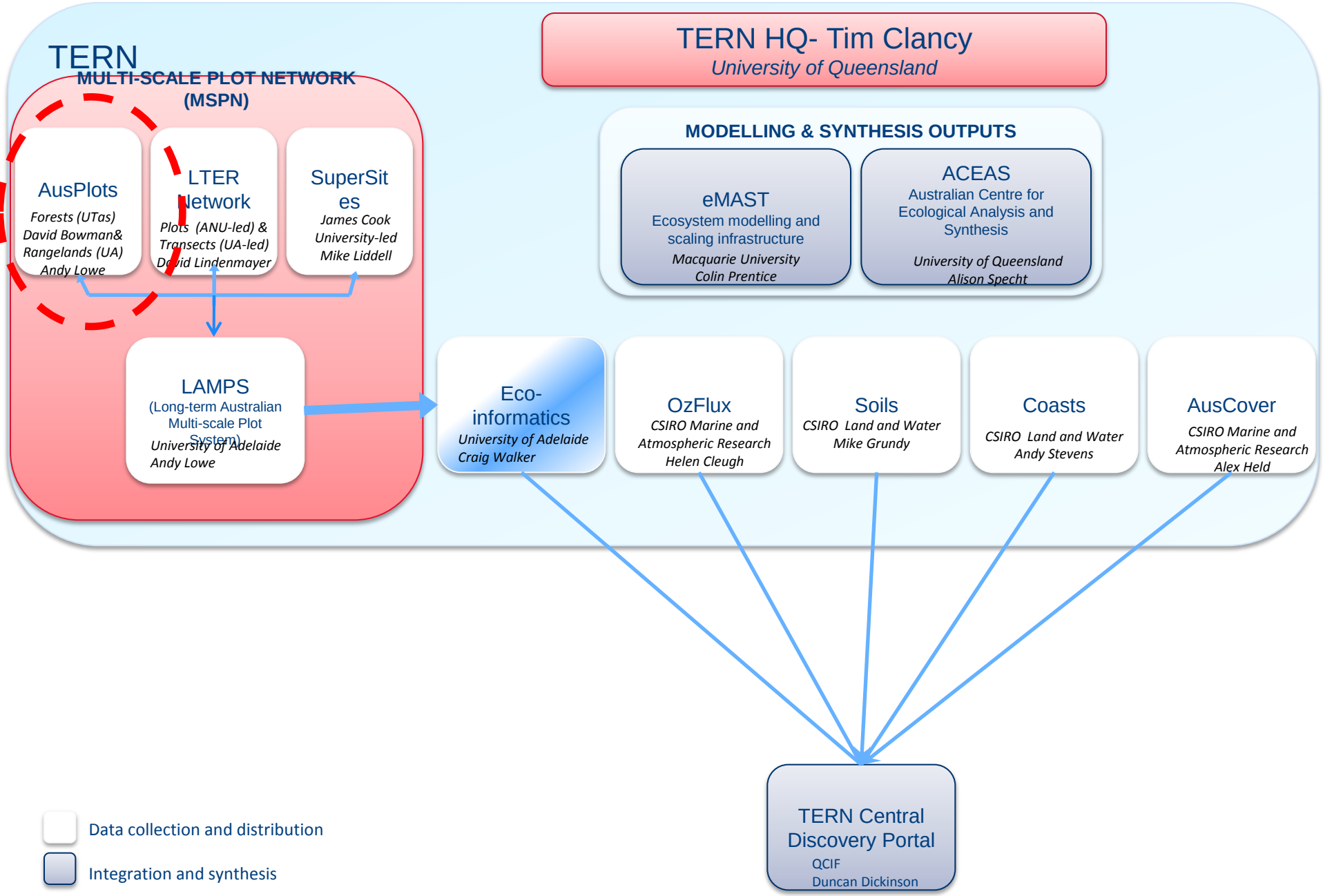
Trangie Agricultural Research Centre,
Trangie NSW 2923, Australia

Overview

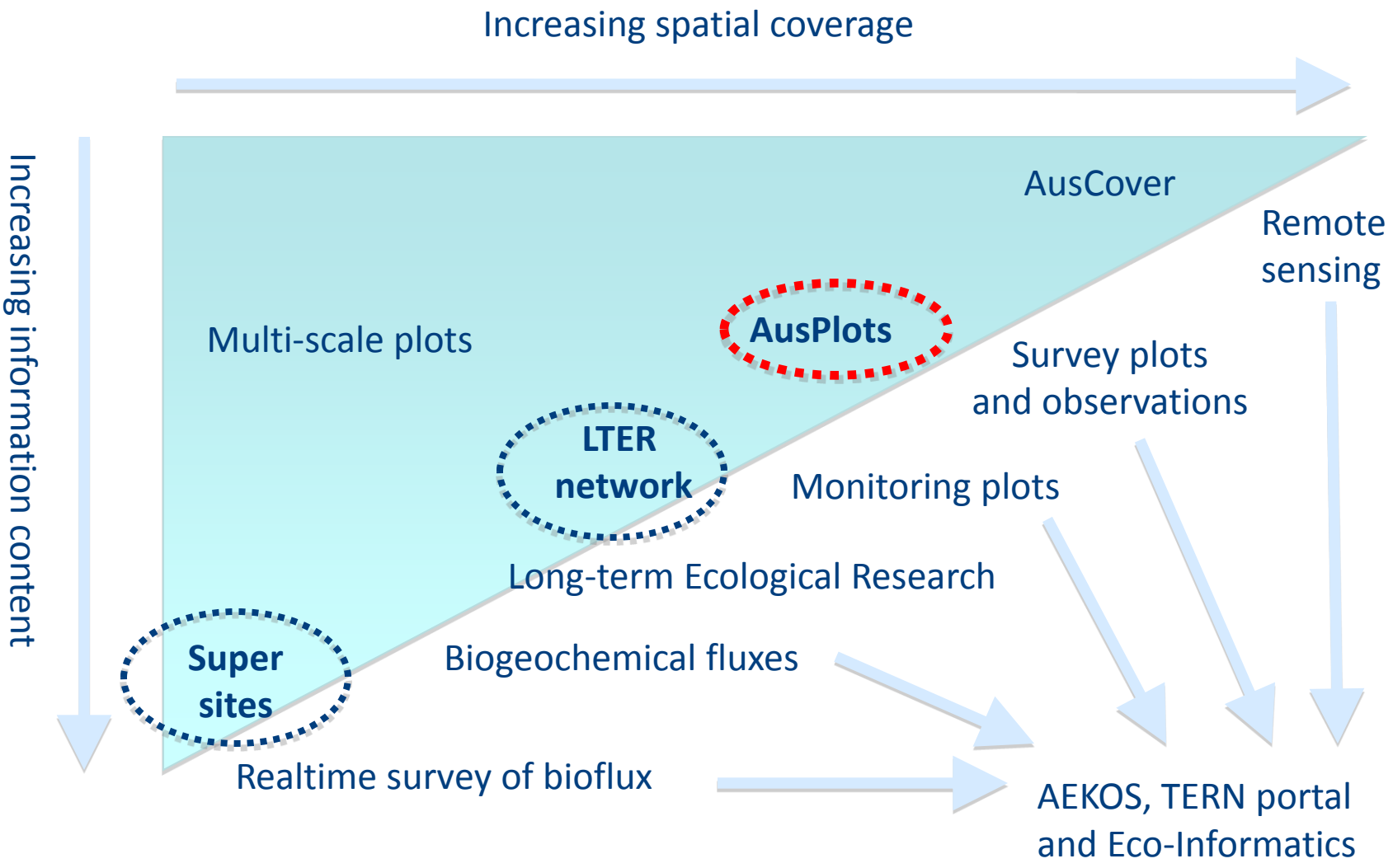
- AusPlots-rangelands NSW (TERN)
- Enterprise-based conservation (Ground cover incentive)

NSW GOVERNMENT Department of Primary Industries

HOW TERN FITS TOGETHER



Spatial, temporal and information scales



AusPlots Objectives

- Establish permanent plots (800-1000)
  - NSW (>100 sites)
- Undertake base-line surveys of vegetation and soil
  - Stratification process
  - Methodology
  - Dissemination via Eco-informatics facility

Stratification & Site Selection

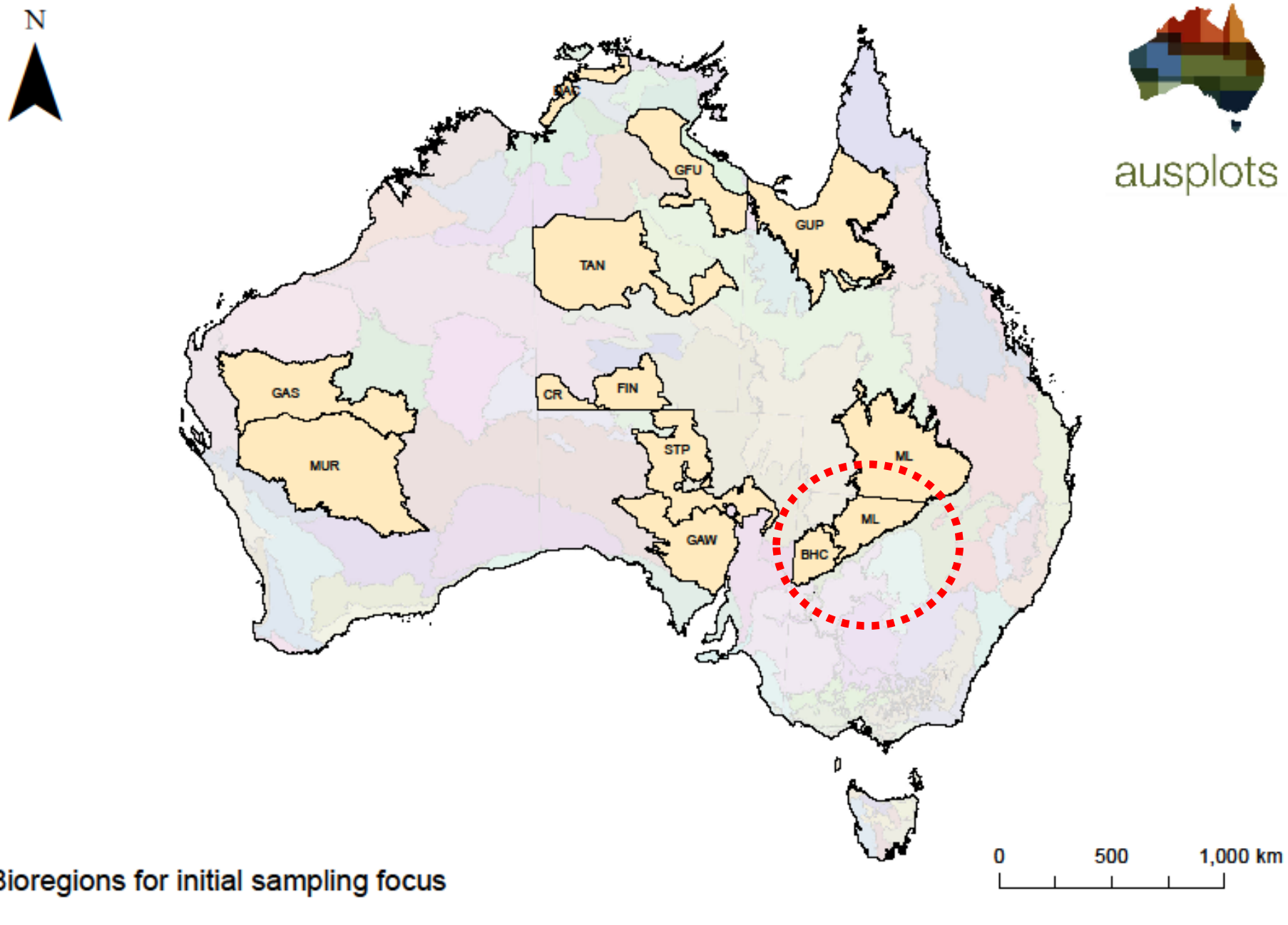
Consists of 4 steps

Stage 1: Bioregional Stratification

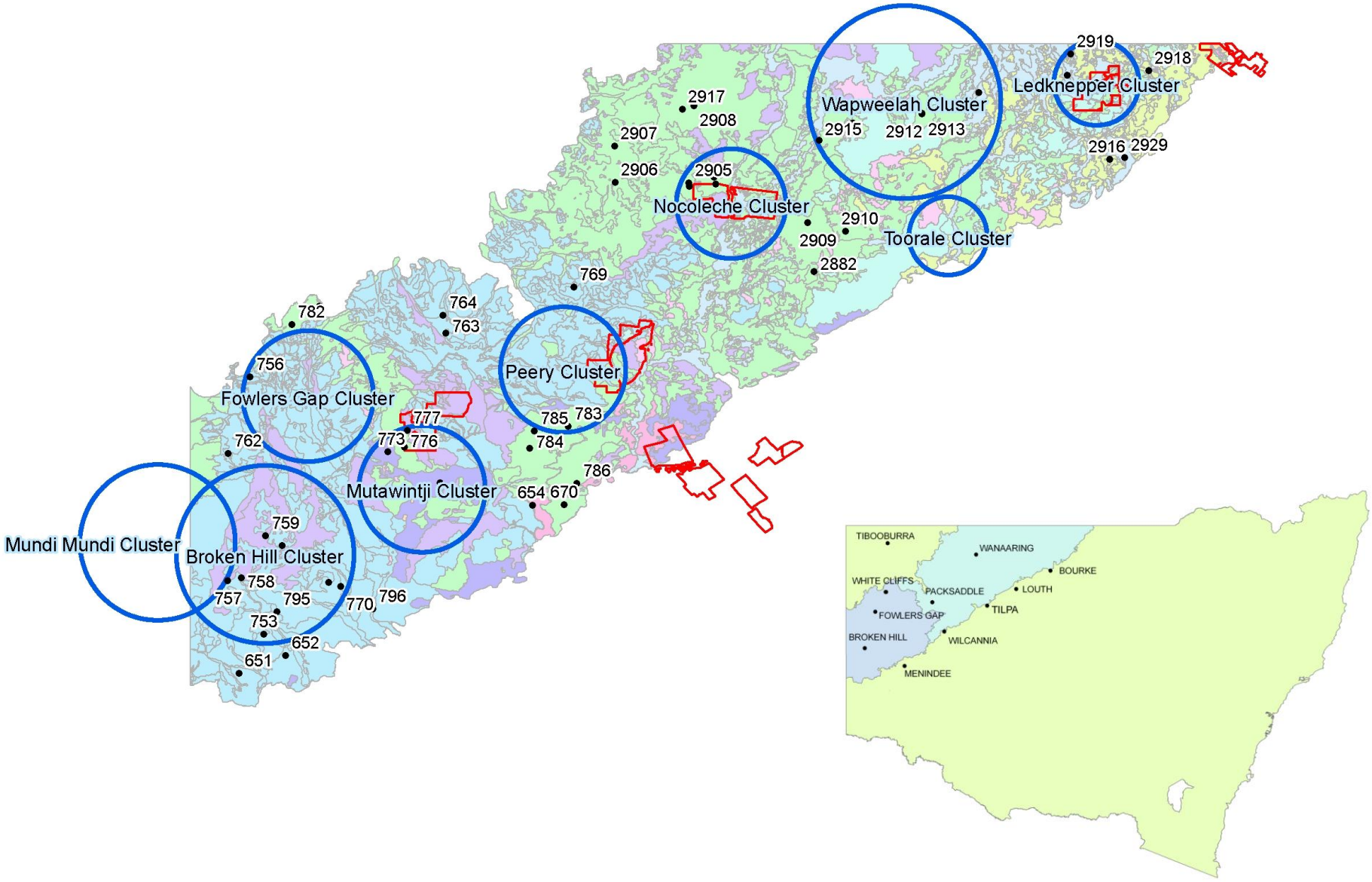
Stage 2: Selecting sampling bioregions

Stage 3: Best on offer

Stage 4: Field location of plots

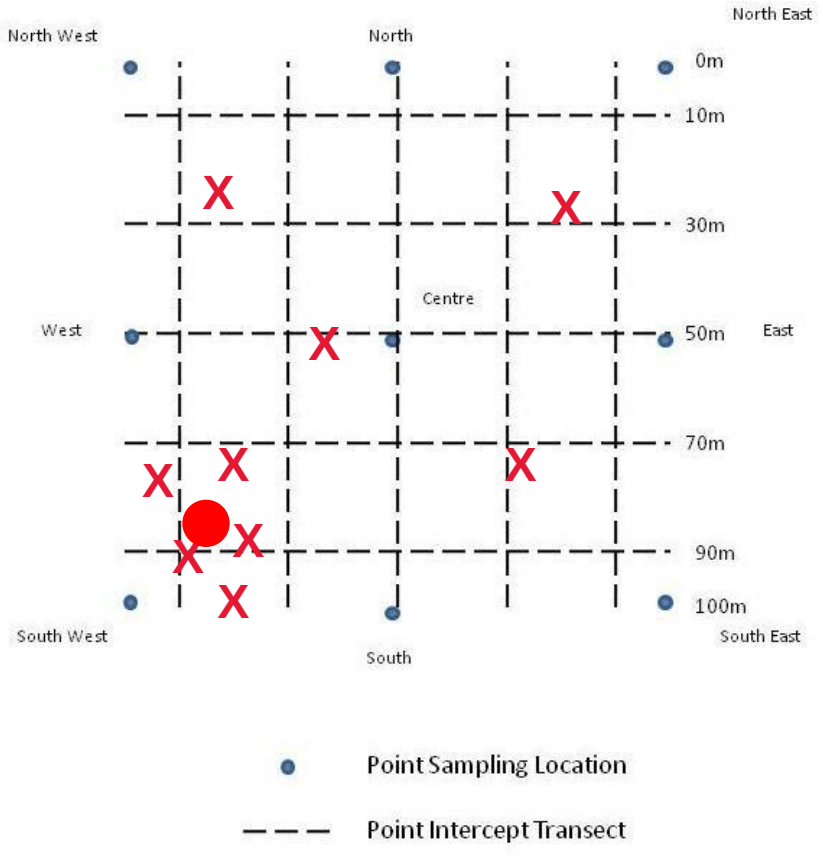


Bioregions for initial sampling focus

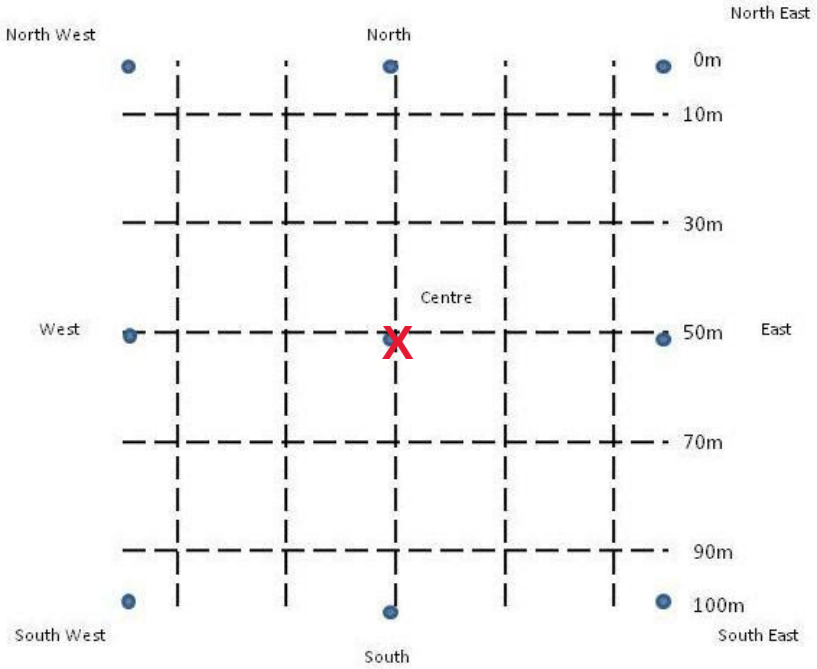

Wapweelah Cluster
Ledknepper Cluster
Nocoleche Cluster
Toorale Cluster
Peery Cluster
Fowlers Gap Cluster
Mutawintji Cluster
Broken Hill Cluster
Mundi Mundi Cluster
2919
2918
2917
2908
2907
2906
2905
2915
2912
2913
2916
2929
2910
2909
2882
769
764
763
782
756
777
785
783
784
762
773
776
786
654
670
759
758
757
795
770
796
753
652
651
TIBOOBURRA
WANAARING
BOURKE
WHITE CLIFFS
PACKSADDLE
LOUTH
TILPA
FOWLERS GAP
BROKEN HILL
WILCANNIA
MENINDEE

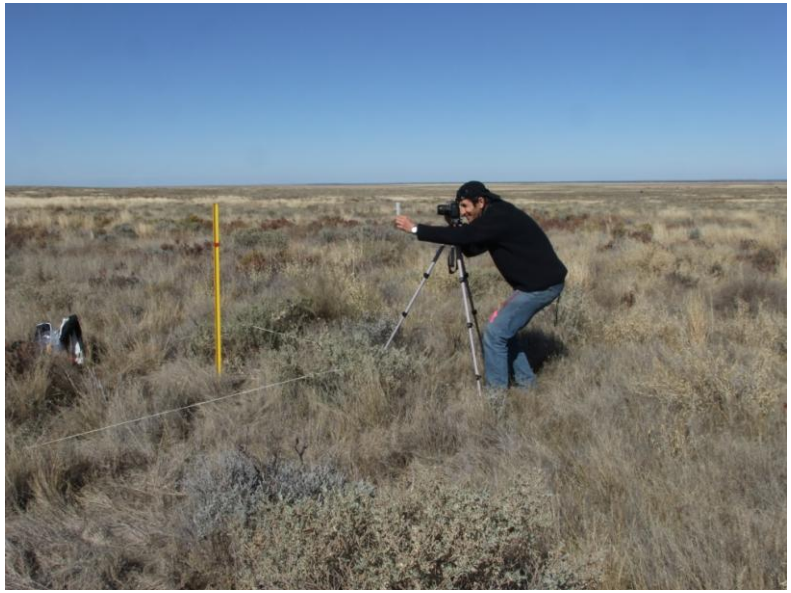
Method Development

- Point Intercept transects for vegetation
- Soil sampling down profile and across site
- Plant vouchers for herbaria
- Samples for DNA barcoding, isotope analysis & metagenomics
- Photopoint panoramas


North West
North
North East
0m
10m
30m
Centre
West
50m
East
70m
90m
100m
South West
South
South East
Point Sampling Location
Point Intercept Transect


GLAD
SNAP LOCK
Bare
(0-10cm)


North West
North
North East
0m
10m
30m
Centre
West
50m
East
70m
90m
100m
South West
South East
South
Point Sampling Location
Point Intercept Transect



TERN
Terrestrial Ecosystem Research Network

ausplots

Rangelands Field App

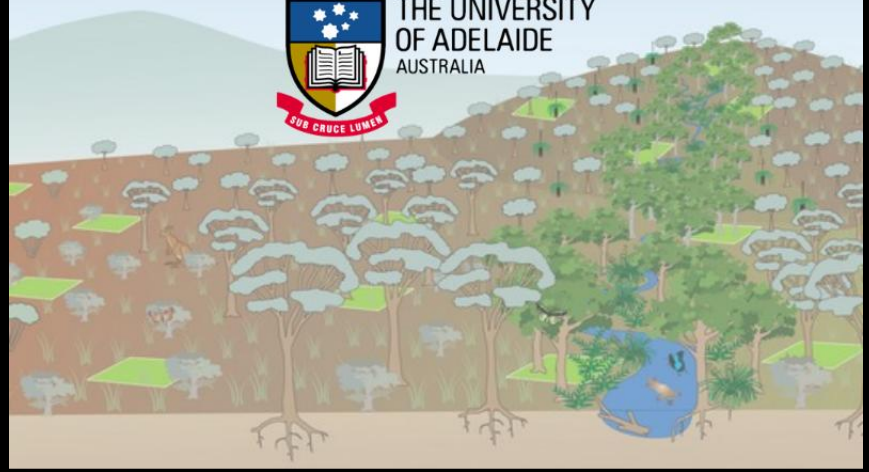
This software has been developed by the University of Adelaide for TERN AusPlots. It allows users to enter and archive field data collected according to the AusPlots methodology.

TERN is supported by the Australian Government through the National Collaborative Research Infrastructure Strategy and the Super Science Initiative.

Version: Alpha 1.002

THE UNIVERSITY OF ADELAIDE AUSTRALIA

SUB CRUCE LUMEN



AusPlots Rangelands

Current Plot: test007

User:

Manage Plot

Login

Settings

About

Land Cover Assessment

Star Point Intercept

Ausplots Vegetation Modules

Vegetation Vouchering

Genetic Vouchering

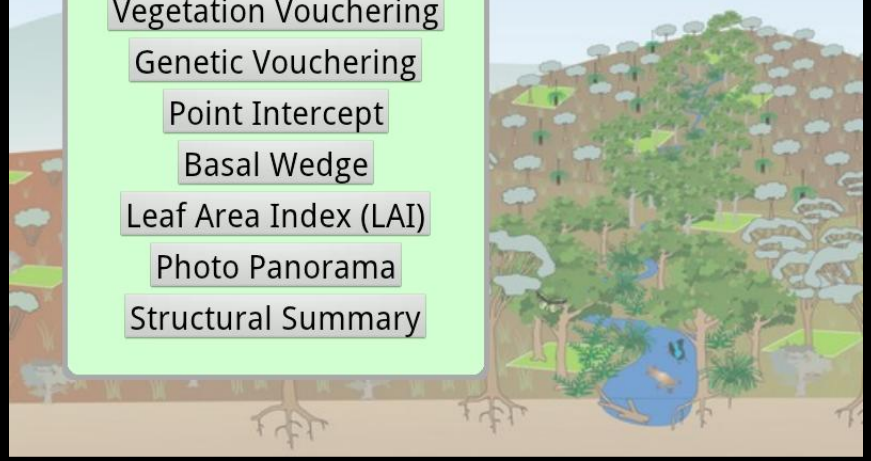
Point Intercept

Basal Wedge

Leaf Area Index (LAI)

Photo Panorama

Structural Summary



12:15

Transect Point: 0/100

Species

Abacopteris presliana | Abacopteris triphylla

ICS | Senescent **Abacopteris presliana**

(Height:1.00m, Growth Form:Shrub mallee)

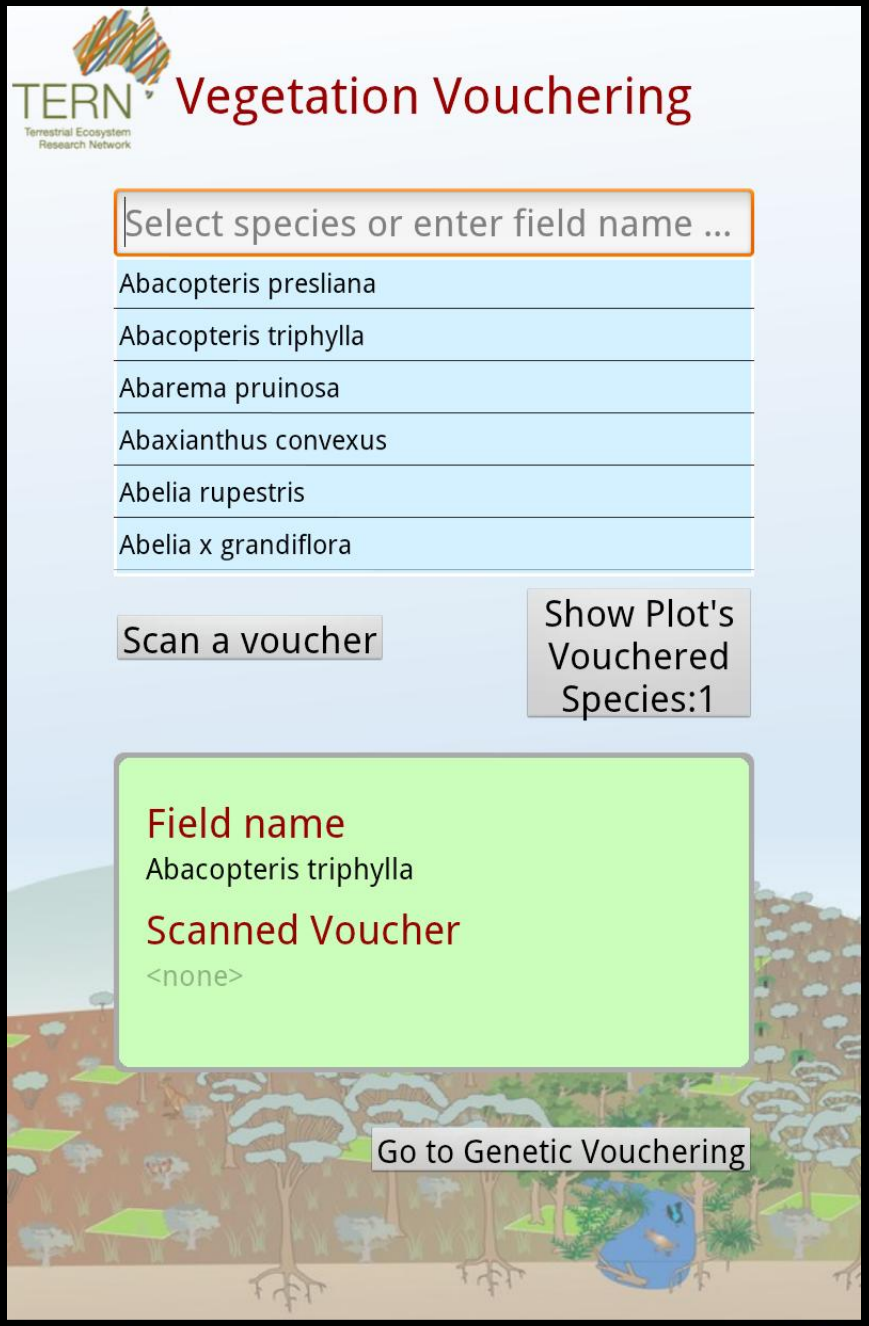
C.W.D.

Substrate

Bare | Litter | Rock | Outcrop | Gravel | C.W.D. | Other | Crypto.

Voucher Species | Back | Next

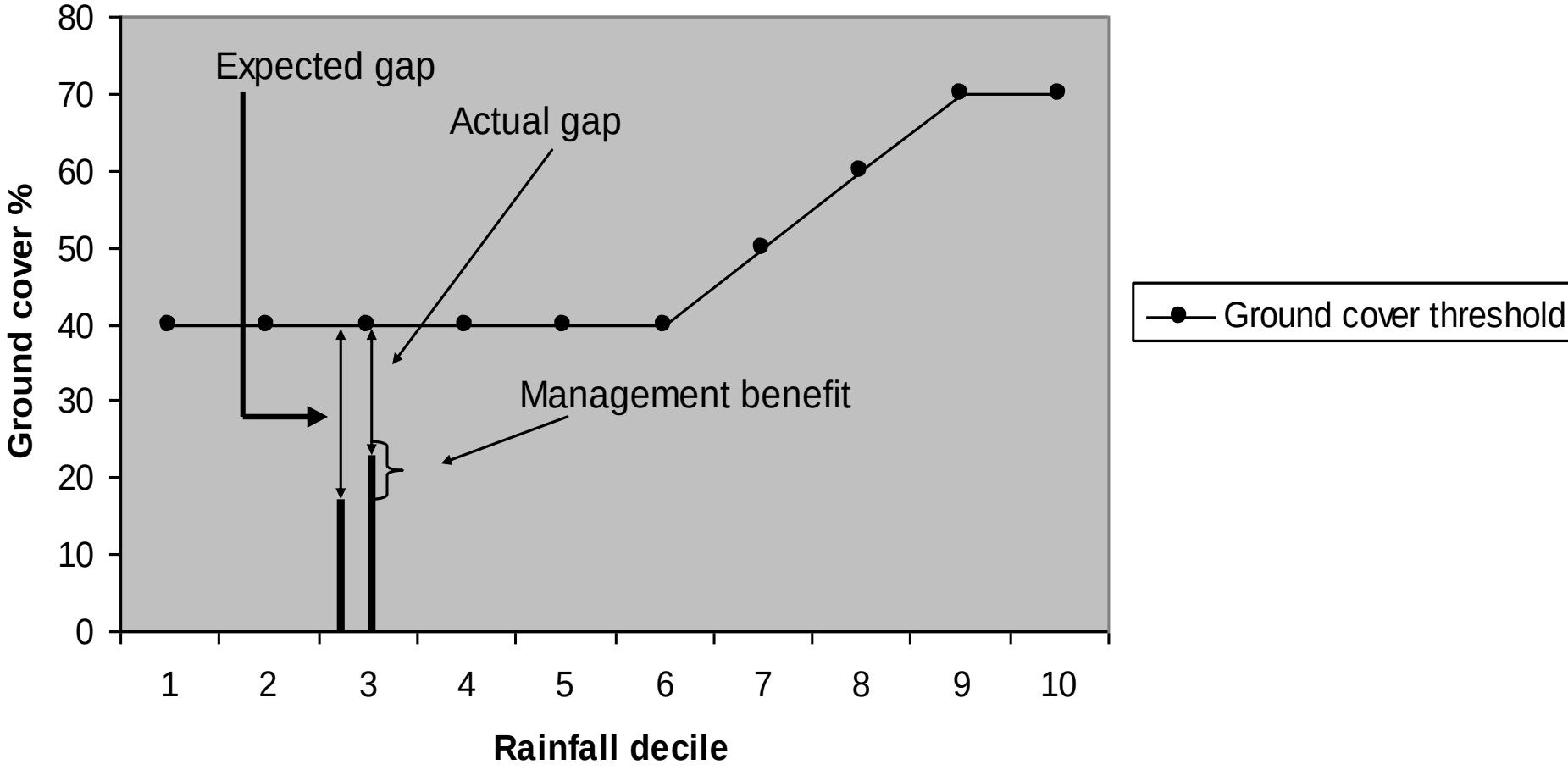
12:05


TERN
Terrestrial Ecosystem Research Network
Vegetation Vouchering
Select species or enter field name ...
Abacopteris presliana
Abacopteris triphylla
Abarema pruinosa
Abaxianthus convexus
Abelia rupestris
Abelia x grandiflora
Scan a voucher
Show Plot's Vouchered Species:1
Field name
Abacopteris triphylla
Scanned Voucher
<none>
Go to Genetic Vouchering
11:57


TERN Method
Rangelands
SAG000408
TERN Method
11:59

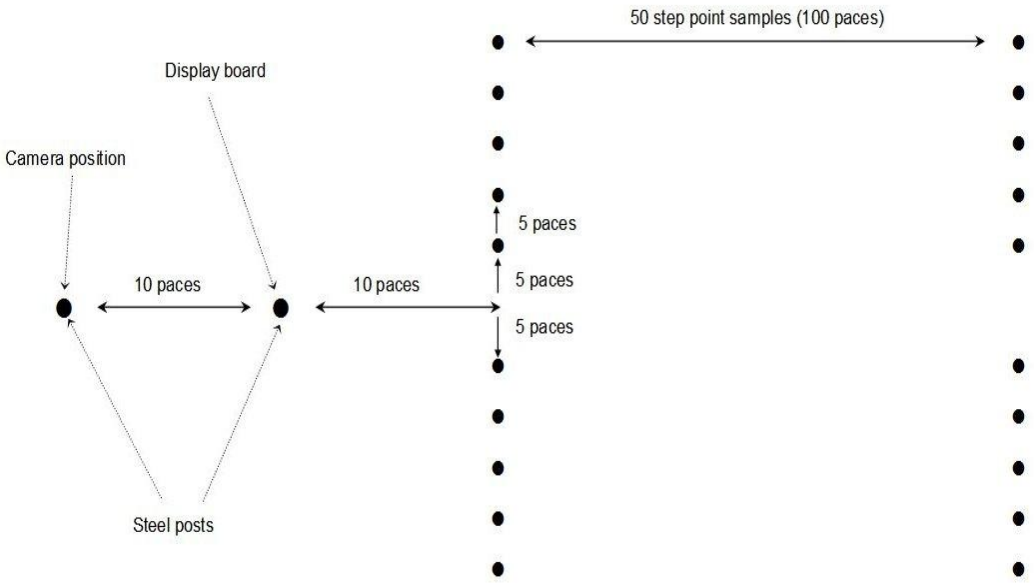
Ground cover incentive (NSW)

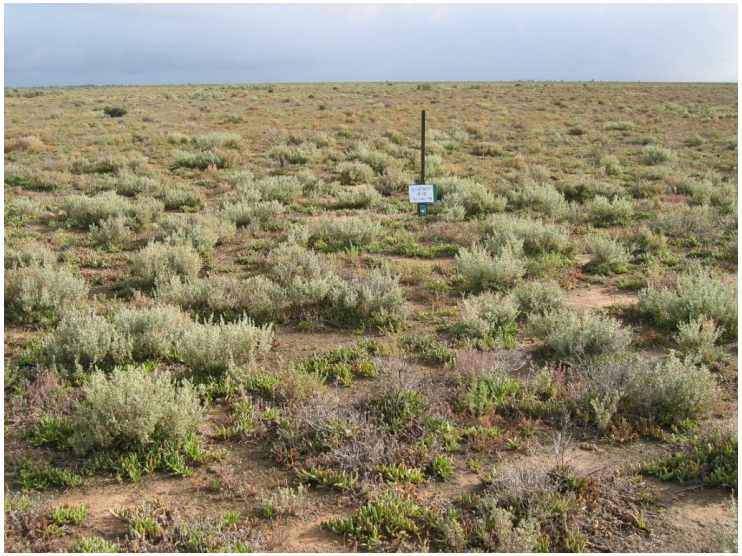
- Pilot program (2008 – present)
- Basic principles
  - $ for 40% ground cover
  - drought management (early response)
  - recovery management (resource conditioning)



$ Incentive = management benefit/expected gap

$ Incentive = 8/24 of potential payment = 33.3%


50 step point samples (100 paces)
Display board
Camera position
5 paces
10 paces
10 paces
5 paces
5 paces
Steel posts



Features

-Linked to preceding 12 months rainfall

-Pro-rata, annual payments

-Costs ($1.9/ha payments; $2.25/ha admin)

-Collateral benefits

Summary

- AusPlots
  - Continental scale (standard methods)
  - Publically available
- Enterprise based conservation (ground cover)
  - Practical application of monitoring
  - Inform policy (recovery management)