TERN skill training Initiatives

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Australian Government

Department of Agriculture, Water and the Environment

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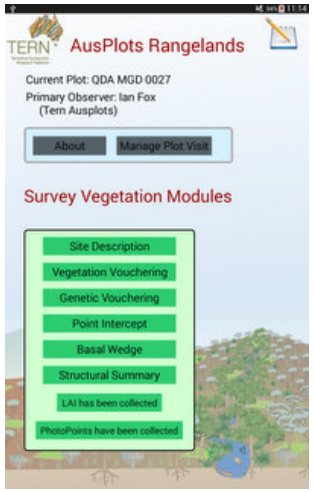
Ecosystem Research Infrastructure

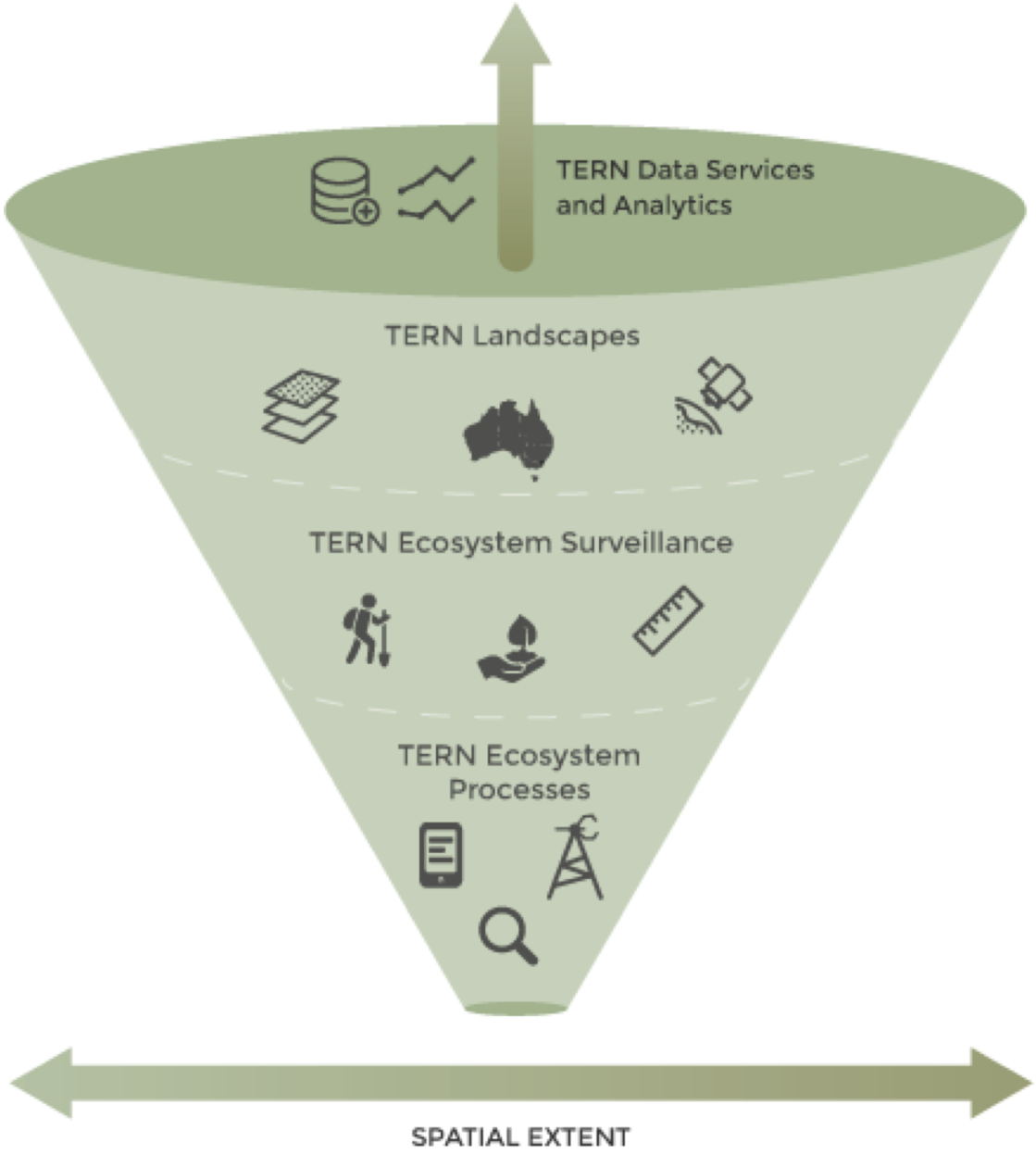
TERN Purpose[1]

- National collaborative research infrastructure for collecting, collating, storing and sharing Australia's terrestrial ecosystem data sets and knowledge.



[1] TERN is supported by the Australian Government through the National Collaborative Research Infrastructure Strategy from 2009.

TERN in Operation



- Satellite remote sensing products
- Land cover dynamics and phenology
- Vegetation composition and structure
- Fire dynamics and impacts
- Continental Soil & Landscape data

- Plot-based surveillance monitoring
- Soil sample, leaf tissue samples, LAI, Basal area

- Carbon, energy, water fluxes
- Phenocams
- Acoustic sensors
- Flora population

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TERN provides

Open Data

Open access ecosystem data via the TERN Data portal

- Continental-scale gridded remote sensing, soil and landscape products
- Plot-based soil and vegetation surveillance monitoring data
- Aggregated state government survey data
- Calibration and validation data for remote sensing
- Time series flux tower, phenocam and acoustic monitoring sensor data

Data Infrastructure

Tools that support the discovery, analysis and re-use of data

- Cloud-based virtual desktop to run and share experiments (CoESRA)
- Data submission, harmonisation and retrieval of ecological data (SHaRED)
- Discovery, mapping and analysis of landscape-scale ecosystem datasets (Data Visualiser)
- Cloud-based analysis, synthesis and training platform

Standard, Protocols & Collections

Services that facilitate research, education and management

- Catalogued plant and soil sample collection
- Nationally consistent field methods
- Guidelines for calibration and validation of remotely-sensed data
- Field data collection apps

Site-Based Instruments & Monitoring

A network of ecosystem monitoring sites and sensor data streams available to long term researchers

- Eddy covariance flux towers; Heat flux plates; Radiometers; Anemometers; Infrared Gas Analysers; Spectrometers; CosmOz soil moisture meters; Groundwater bores; Ecoacoustic sensors; Phenocams; Terrestrial laser scanners; UAV/drones; Camera traps; Photopoints; & more…

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Training

Data collection

- Hands-on data collection training using AusPlots Protocol
- Opportunity to use site infrastructure to learn survey protocols

Data processing

- Annual Flux data processing workshops
- Tutorial and training on deriving data from human observation data

Data access and analytics

- Tutorials and user manuals to access and use data and tools
- Workshop tutorials and sample programs
- Training in domain conferences
- user manual for tools and services developed by TERN

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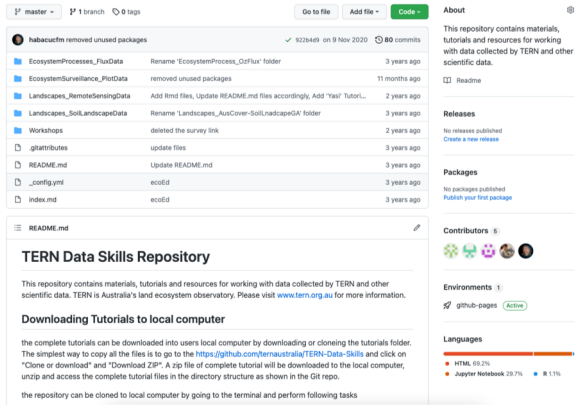
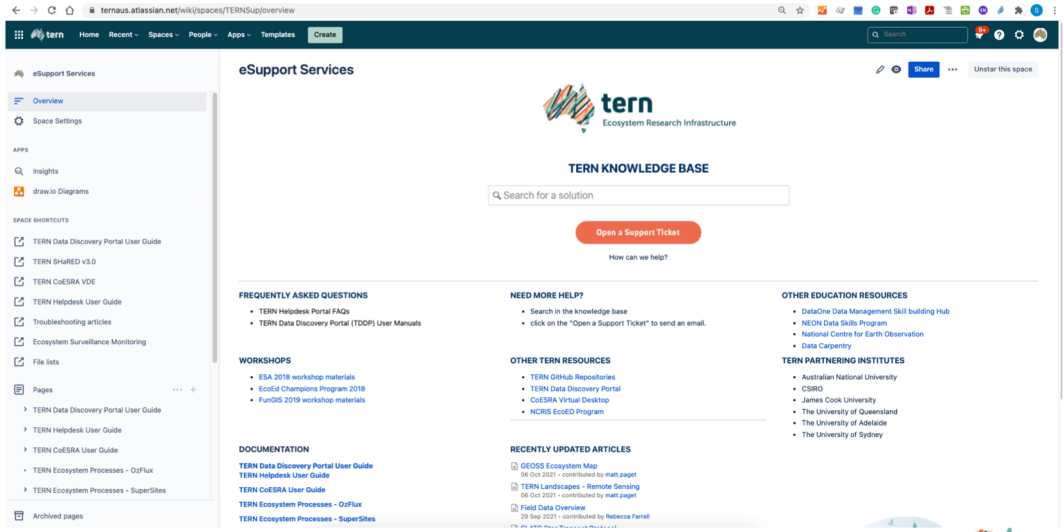
Resources

- TERN Data Skills: https://github.com/ternaustralia/TERN-Data-Skills
- User Support: https://ternaus.atlassian.net/wiki/spaces/TERNSup/overview
- Field Sample Library: https://www.tern.org.au/field-sample-library/
- AusplotsR: https://cran.r-project.org/web/packages/ausplotsR/ausplotsR.pdf
- Controlled vocabularies: https://linkeddata.tern.org.au/viewer/tern/
- Field Survey Protocol and App: https://www.tern.org.au/field-survey-protocols-apps/



Tools

- Data Discovery : https://portal.tern.org.au
- Data Submission Tool: https://shared.tern.org.au
- Data Visualiser: https://maps.tern.org.au
- CoESRA VDI: https://coesra.tern.org.au



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Ecosystem Research Infrastructure

NCRIS
National Research Infrastructure for Australia
An Australian Government Initiative

We at TERN acknowledge the traditional owners and their custodianship of the lands on which TERN operates. We pay our respects to their ancestors and their descendants, who continue cultural and spiritual connections to country.

TERN is enabled by NCRIS.

Our work is a result of collaborative partnerships with many universities and institutions.

To find out more please go to **tern.org.au.**

Acknowledgement

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