

PRESENTING THE CASE FOR DESENSITISING CULTURAL ASSET DATA

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Overview

1. Why desensitise cultural data?
2. Why is cultural information collected as data
3. What techniques are currently used for data desensitisation of cultural assets?
4. Assessing suitability of desensitisation techniques
5. Data Desensitisation and Cultural Data
6. Benefits towards Data Sovereignty



Why is it Important?

Three of the five known Sunbury Earth Rings are located on private Wurundjeri Woi-wurrung Corporation land. It is also only one of five properties directly under the Corporation's freehold ownership.

Of the properties owned by the Corporation it is also the Property where cultural heritage is most at risk.

Not only risk from rapid local urban expansion, erosion, and pest species, the Sunbury Rings locations are publically available on Wikipedia. Which makes them a target for unauthorised visits by the general public.



Geographical location [\[edit \]](#)

- Riddells Road Ring [📍 37.553419°S 144.703165°E](#)
- Hopbush Ave [📍 37.56225°S 144.74129°E](#)
- Correa Way [📍 37.562801°S 144.739434°E](#)
- Wirilda Court [📍 37.564323°S 144.735566°E](#)
- Reservoir Road Ring [📍 37.569519°S 144.697926°E](#)

Why do We Desensitise Data?

The role of data desensitisation is twofold:

- To protect sensitive and identifying information and;
- Provide information that is usable for its intended purpose



Figure 1: Fishing Industry



Figure 3: Social Media

Figure 2: Medical Research

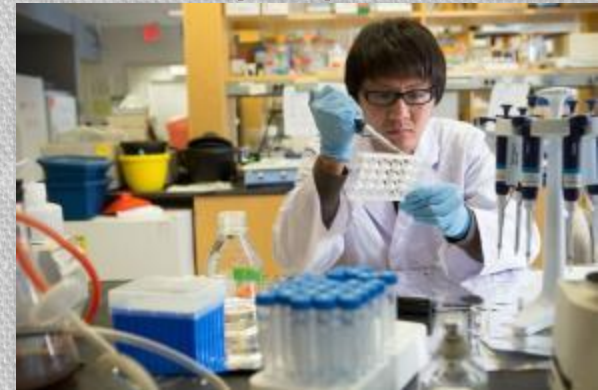


Figure 4: Financial Information



Figure 1: <http://theconversation.com/the-race-to-fish-how-fishing-subsidies-are-emptying-our-oceans-48227>

Figure 2: <http://www.mcleanhospital.org/research>

Figure 3: <http://www.launchandhustle.com/building-a-successful-social-media-marketing-future>

Figure 4: <http://blog.unibulmerchantservices.com/banks-may-limit-debit-card-transaction-size-to-fight-fee-limit/>

Sensitive Data

‘Sensitive data are data that can be used to identify an individual, species, object, process, or location that introduces a risk of discrimination, harm, or unwanted attention.’

Australian National Data Standard

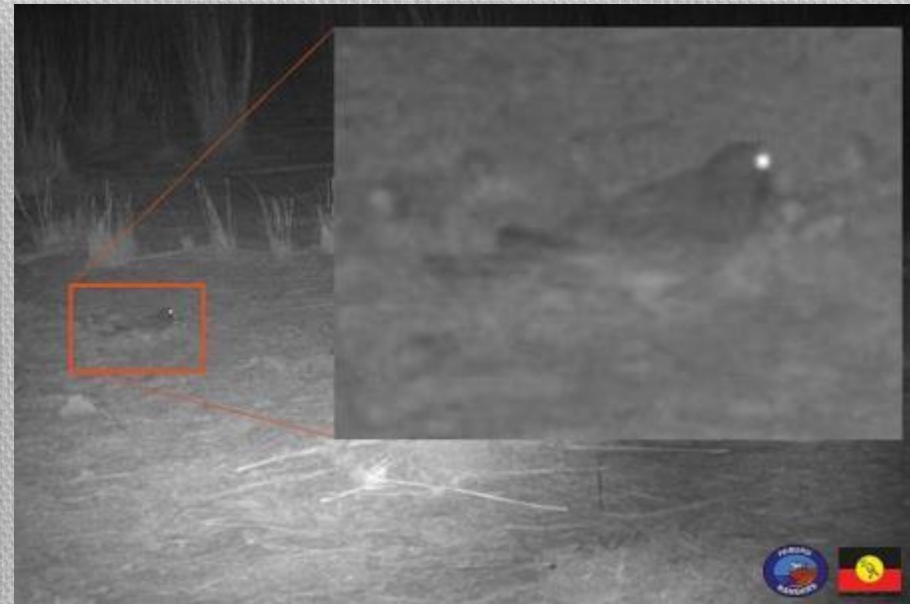


Figure 1: <https://www.abc.net.au/news/2017-01-03/elusive-night-parrots-drinking-habits-revealed/8159588>

Figure 2: <https://www.abc.net.au/news/2018-11-24/night-parrot-photographed-in-kimberley-for-only-second-time/10550784>

Why Desensitise Cultural Data?

Cultural places are at risk from:

- Land Use Change and Urban Development
- Climate Change
- Vandalism
- Loss of Knowledge Holders

Cultural Assets are also at risk though:

- Being Unknown, Unrecorded or Under Recorded
- The Community Disconnection from Country and Place



Figure 1: Graffiti on Rock Art



Figure 2: Graffiti on Rock Art

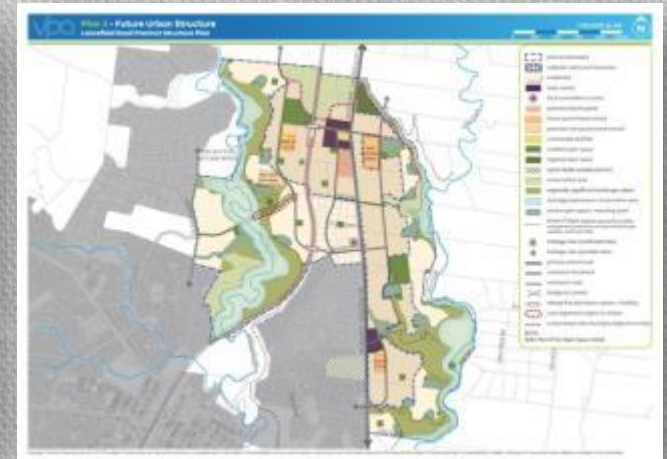


Figure 3: Precinct Plan Map for North Sunbury Victoria

Figure 1: <http://cms.ausgeo.bauer-media.net.au/news/2011/03/aboriginal-rock-art-site-vandalised>

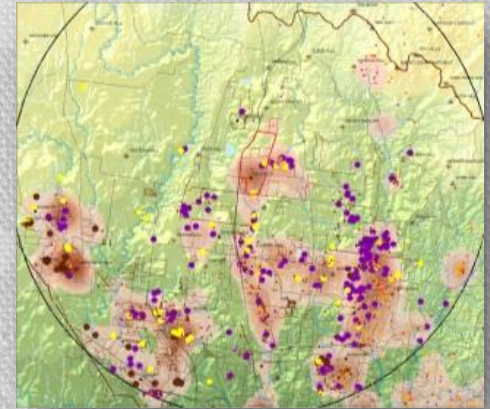
Figure 2: <http://www.abc.net.au/news/2012-05-24/push-on-to-protect-australia27s-rare-rock-art/4031154> (photo by Paul Tacon)

Figure 3: <https://www.linkedin.com/pulse/big-plans-released-sunbury-peter-seamer>

Why is Cultural Data Collected Digitally?

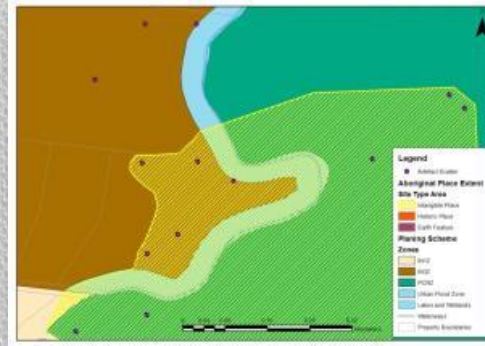
Cultural Data is collected in digital formats many reasons:

- Cultural Continuation
- Land Use Mapping
- Planning
- Compliance
- Education
- Research
- Legal land claims
- Environmental Planning
- Information repository



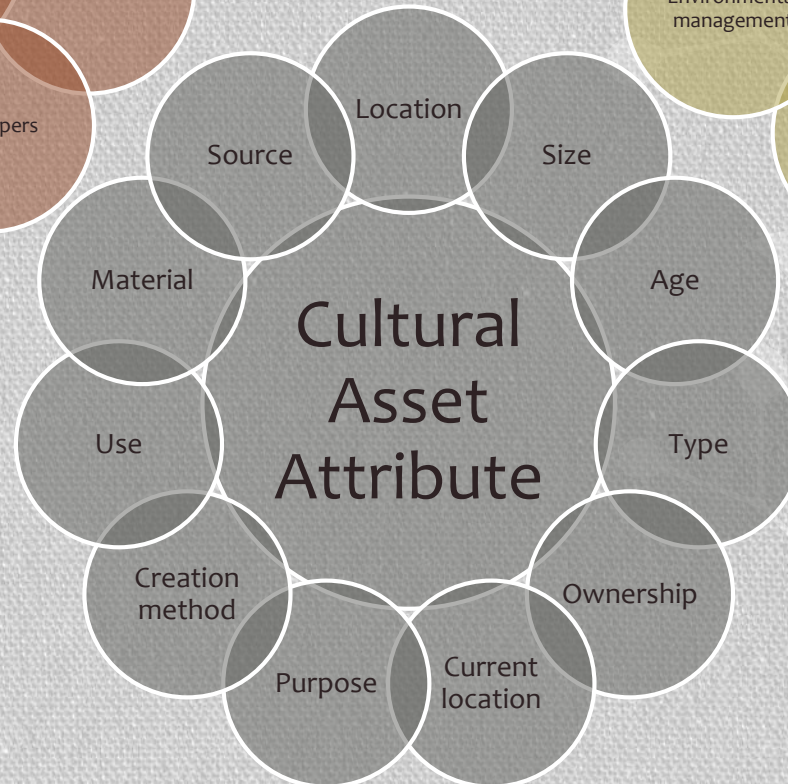
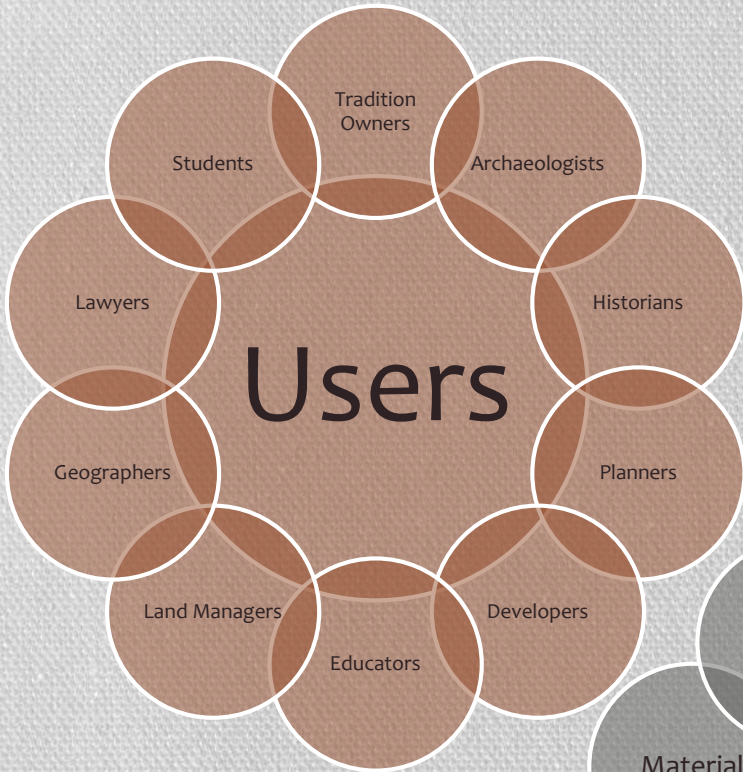
Defining Data User Groups

- Traditional Owners
- Archaeologist
- Planners
- Ecologists
- Developers
- Researchers
- Students
- Anthropologists
- Park Rangers
- Mining Companies
- Teachers/Educators



- Knowledge/Data Owners (Traditional Owners)
- Data Managers
- Data Collectors
- Data Custodians
- End Users
- Data/Knowledge Analysts

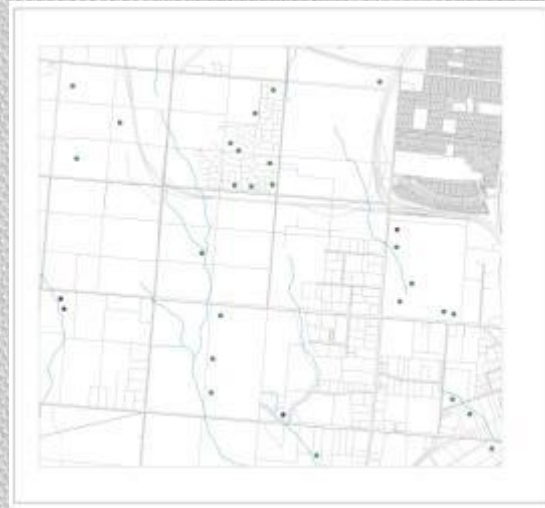
Cultural Asset Data Properties



Different Ways of Desensitising Data



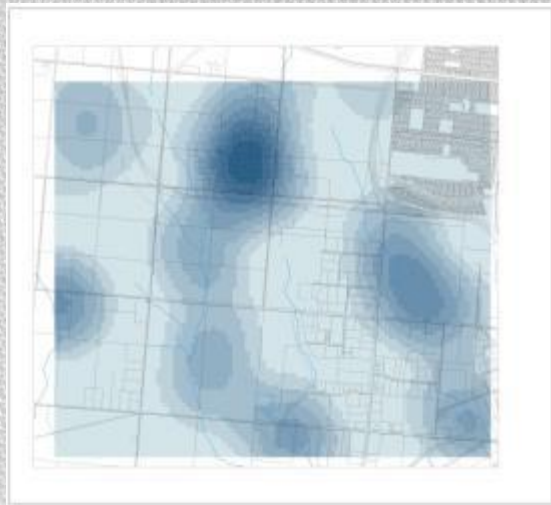
Masking - Buffer



Suppression – removing sensitive information



Perturbation – movement of locations



Probability



Data Aggregation – spatial grid

Site Description	Number of Sites	Cultural Sensitivity
Artefact	25	1
Historic Place	2	4
Stone Feature	1	5
Scar Tree	2	2
Stone Feature - Grinding Grooves	2	3

Non Spatial Display - Table

Protecting Sensitive Cultural Data in Mapping

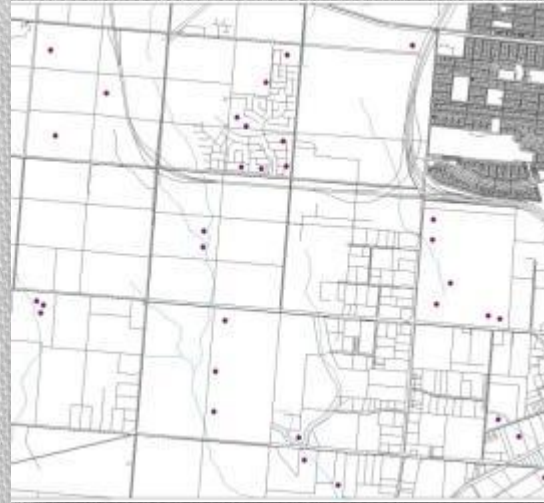
To date in this research we have:

- Examined the different types of data desensitisation currently in use
- Identified where cultural data is used
- Identified who uses cultural asset data
- Identify the way cultural data is collected and the characteristics which need to be protected

What we need to do:

- Identify user preferences
- Understand user interpretations
- Identify suitable and usable desensitisation techniques
- Ensure that the proposed GIS framework is Fit – for - Purpose

Choosing Desensitisation Techniques

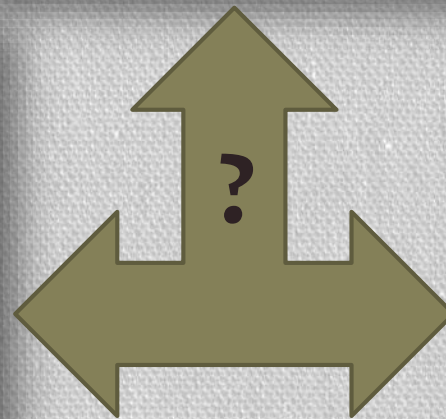
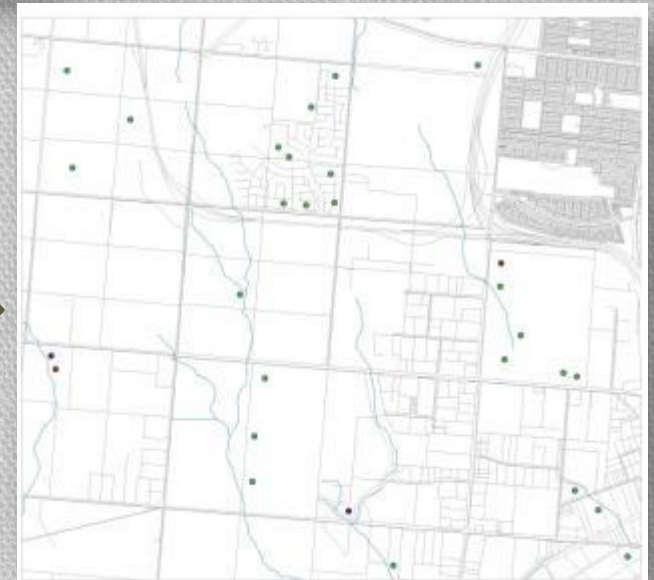


Original Data Representation
(Point Based)

Spatial Aggregation
(Property Based)



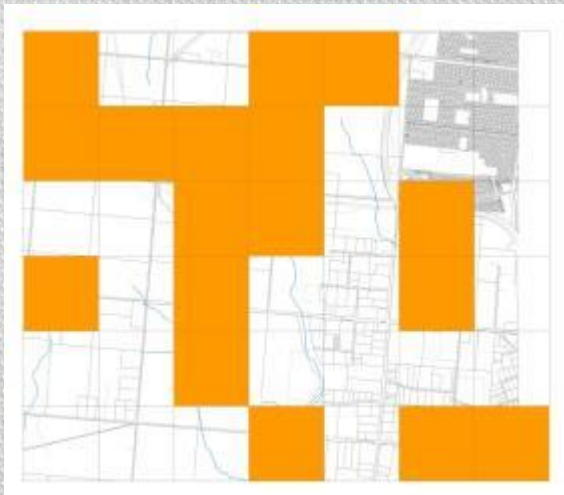
Record Suppression
(Some Information Removed)



Effectiveness
Vs
User Preference

An Example Qualitative Question

Q1: Which of the maps below do you prefer for its representation of recorded assets?



Map A



Map B



Map C

Questions measure the effectiveness of choices of data desensitisation:

Q2: Can you identify how many different assets are on this map?

Q3: Can you identify where the two scar trees are recorded?

Q4: Can you identify how many different asset types are on the map?

Supporting Data Sovereignty

- Presenting options to control how different types of spatial data is represented
- Designing a Data Desensitisation Framework that is easy to use by non-experts
- A framework which allows for different types of spatial data attributes to be desensitised
- Based upon cultural and data use principles
- Systems which can be used with off the shelf GIS products including ArcGIS and QGIS
- Method that can be presented to external data users such as consultants and government

ANY QUESTIONS?

