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# MELBOURNE RESEARCH

Presenting the Bushfire Data Commons Dashboard

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# Bushfire Data Commons Dashboard

- Objective
  - to develop and support a front-end use-oriented interface and associated data access and integration platform for the BDC portfolio of projects\*
- Partners and Stakeholders
  - University of Melbourne
  - All ARDC funded BDC projects\*
  - Data providers
    - DELWP, EPA, ABS, ...
- Challenges
  - Data Heterogeneity
    - Vector, *Raster*, ...

\* where appropriate!

# BDC Projects

- **Projects**

- **CC-DC-01 Stream 1: BDC-B:** Aggregated and harmonised burnt extent fire history data on a national scale
- **CC-DC-02 Stream 2: BDC-F:** Aggregating and harmonising fuel data on a national scale –exemplar data received
- **CC-DC-03 Stream 2: BDC- F:** Aggregated and harmonised fuel data on a national scale –exemplar data received
- **CC-DC-04 Stream 3: BDC-P:** A fire behaviour modelling platform – independent system
- **CC-DC-05** Framework for sharing bushfire data and tools between jurisdictional agencies
- **BDC006** Australian Fire FAC – data sharing agreement focus
- **BDC007** Natural Hazards Research Agency – cataloguing focus
- **BDC008** National Air ATAG - licensing issues (other data sourced)
- **BDC009** Australian Institute of Health and Welfare – hospitalisation data
- **BDC010** Atlas of Living Australia – potential end user (other data sourced)
- **BDC011** ALA – potential end user (other data sourced)
- **BDC012** Invertebrates Australia – potential end user

# Planned Software Development



<https://sudo.eresearch.unimelb.edu.au>

(All changes saved) Logged in as Richard Sinnott Project BDC-29June2022 Project ▾

VIC DELWP - History Records of Fires on Public Land (Polygons)

Download as CSV Download as JSON Download as SHP Title Name

CFA ID	Accuracy	Area (ha)	Creation Date	Fire Cover Type	Firekey	Fire Number	Fire Severity	Fire Type	Method
UNKNOWN	UNKNOWN	123.610	0-9	W196911999	999	BURNT_UNK...	BUSHFIRE	Unknown	Unknown
UNKNOWN	UNKNOWN	45.865	UNKNOWN	W197311999	999	BURNT_UNK...	BUSHFIRE	Unknown	Unknown
UNKNOWN	UNKNOWN	5485.083	UNKNOWN	W198111026	026	BURNT_UNK...	BUSHFIRE	Unknown	Unknown
UNKNOWN	UNKNOWN	49.881	30-49		999	BURNT_3	BURN	Unknown	Unknown
UNKNOWN	UNKNOWN	16.085	UNKNOWN	W198211012	012	BURNT_UNK...	BUSHFIRE	Unknown	Unknown
UNKNOWN	UNKNOWN	299.592	UNKNOWN	W198311999	999	BURNT_UNK...	BUSHFIRE	Unknown	Unknown
UNKNOWN	UNKNOWN	35.884	50-69		999	BURNT_UNK...	BURN	Unknown	Unknown
UNKNOWN	UNKNOWN	20.655	0-9		999	BURNT_UNK...	BURN	Unknown	Unknown
UNKNOWN	UNKNOWN	5.209	0-9		999	BURNT_UNK...	BURN	Unknown	Unknown

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# Raster?

Total Usual Resident Population 2016 - 2

- (class 1) 19-151 (2)
- (class 2) 151-211 (3)
- (class 3) 211-255 (3)
- (class 4) 255-306 (5)
- (class 5) 306-368 (4)
- (class 6) 368-457 (5)

VIC DELWP - Vicmap Vegetation - Tree Density - Medium 1:25,000 (Polygons) - GeoJSON

VIC DELWP - History Records of Fires on Public Land (Polygons) - GeoJSON

Area

Area Selection  
20502108516 (sa1\_2016/20502108516)

Bounding-box Selection  
[]

Data

Browse Import Draw

SAI Aggregated Population & Dwelling C...  
Orbost (sa2\_2016/205021085)

VIC DELWP - Vicmap Transport - Local Ro...  
[149.3409, -37.7780, 149.9763, -37.2969]

VIC DELWP - History Records of Fires on P...  
[147.8914, -37.8577, 149.9763, -36.8193]

VIC DELWP - History Records of Fires on P...  
[148.3210, -37.7640, 148.5940, -37.5470]

VIC DELWP - Vicmap Vegetation - Tree De...  
[148.3210, -37.7640, 148.5940, -37.5470]

Visualise

Base Map Take Screenshot Maps & Charts

Total Usual Resident Population 2016 - 2

VIC DELWP - History Records of Fires on Publi...

VIC DELWP - Vicmap Vegetation - Tree Density...

FIRETYPE	BUSHFIRE
SEASON	2020
NAME	SNOWY 16 - SNOWY COMPLEX -
FIRE_COVER	90-100
UPDATE_DATE	2020-03-12T00:00:00.026+0000
FIREKEY	W202045016
ACCURACY	UNKNOWN
START_DATE_INT	20200106
START_DATE	2020-01-06T22:00:00.026+0000
AREA_HA	226577
FIRE_NO	16
METHOD	Satellite Image Interpretation
CREATE_DATE	2020-03-09T00:00:00.026+0000
CFA_ID	null
TREATMENT_TYPE	FIRE
FIRE_SEVERITY	BURNT_UNKNOWN

# Actual Software Development

- Adoption of GeoNode

- <https://geonode.org/>

- Web-based platform for developing GIS systems



- National Cloud

- BDC Data

- Raster

- Sentinel satellite (multiple bands)

- Vector

- Key data sets



- Analytics

- Visualisation/maps through GeoNode

- Deeper analytics through Jupyter notebooks



# Dashboard Demonstration



# Jupyter Notebook Analytics (using WFS endpoint)



# Other Capabilities

- Diverse ways to i

- <https://geonode.org/>

- Web-based platform for developing GIS systems



- National Cloud

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