Impacts of bushfires on NSW catchments

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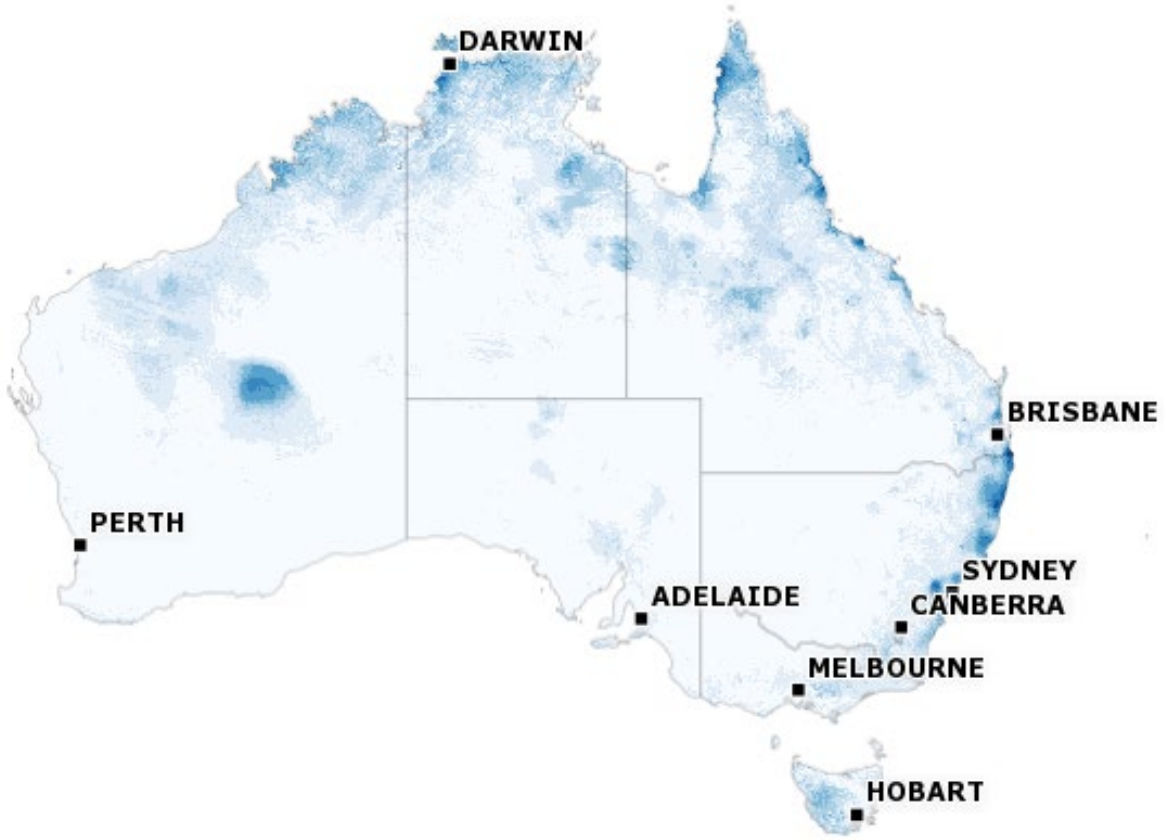
The concept

- Can we predict where water quality will be most affected following fire?
- Applications
  - Risk of fish death events
  - Identify drinking water catchments at risk

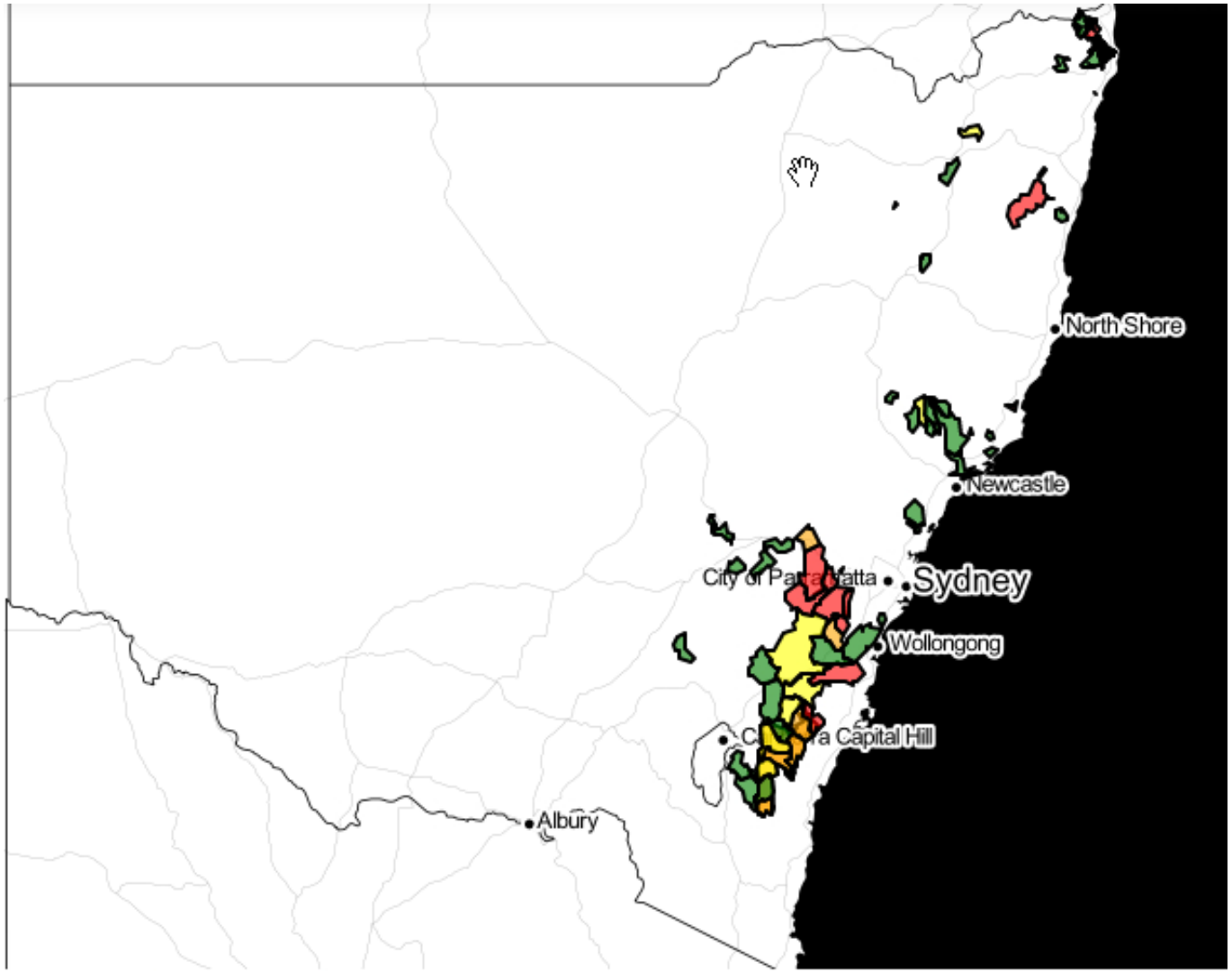
- Can we identify the recovery times of catchments?
- Applications
  - Allocation of conservation effort
  - Understand where fire prevention is most important

Input layers

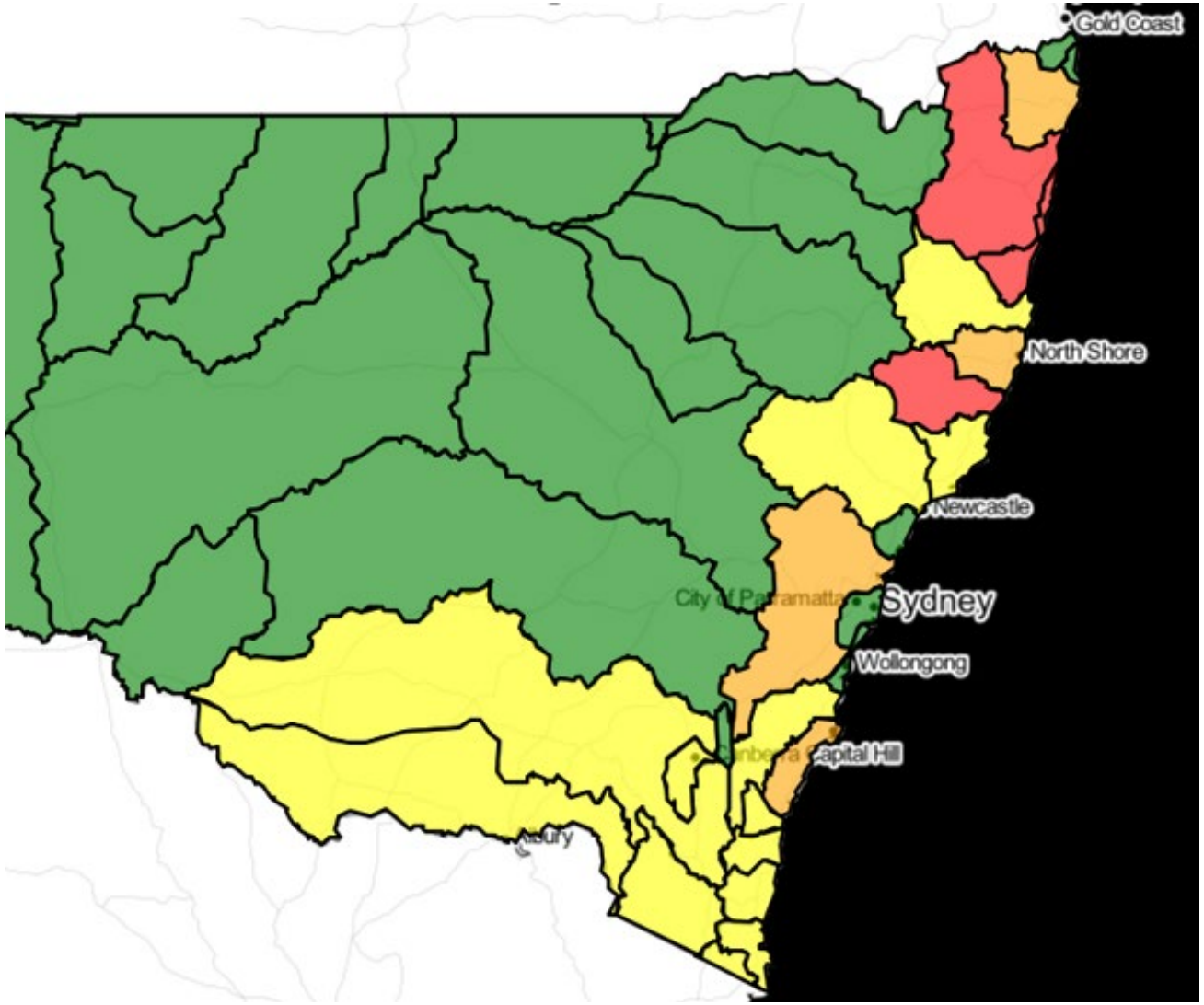
- Catchment boundaries
  - Drinking water catchments
  - River catchments
- AWRA runoff data for 2020
- GEEBAM NSW
  - Burn severity (0-4)
  - Vegetation type



Output 1: Drinking water catchments

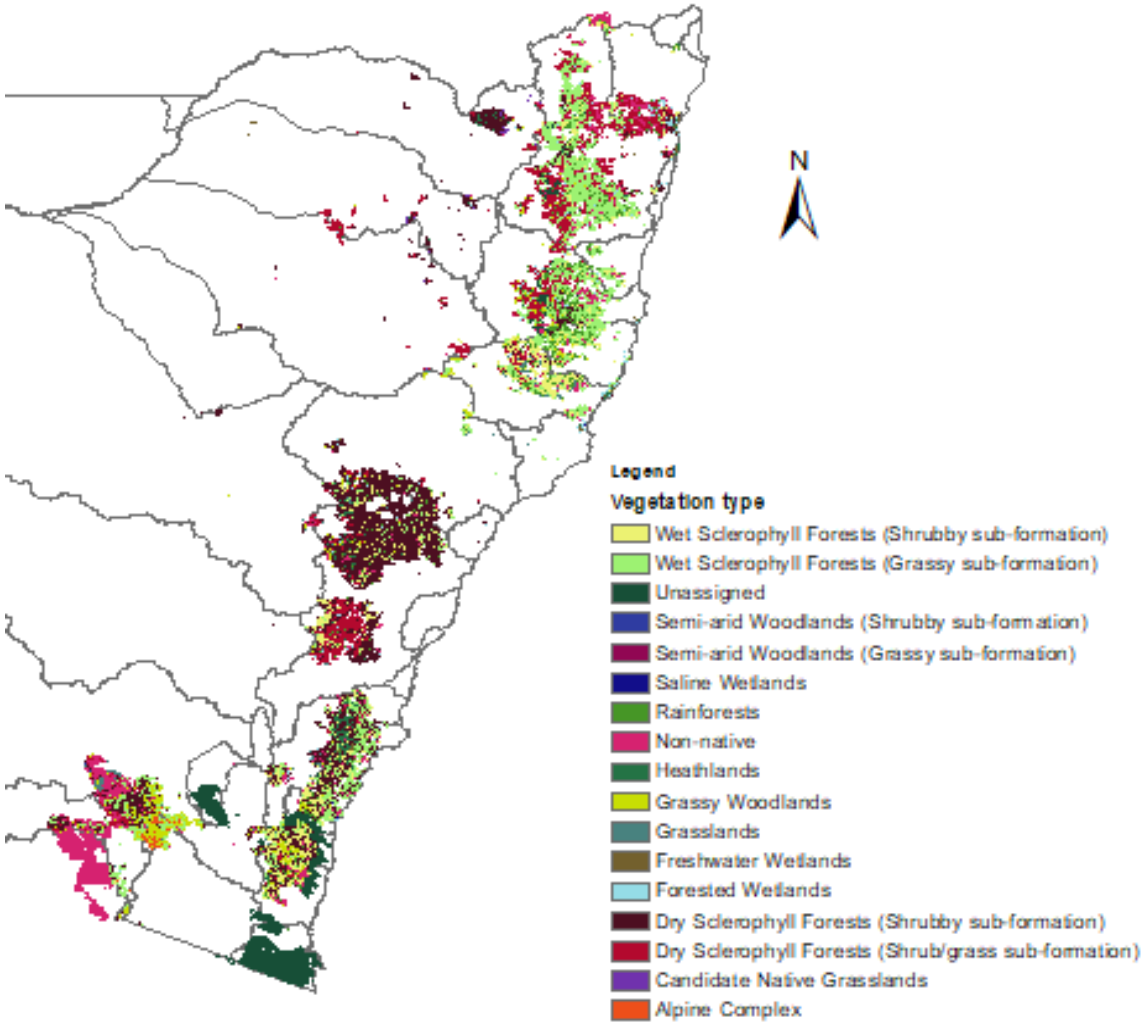


Output 2: River catchments



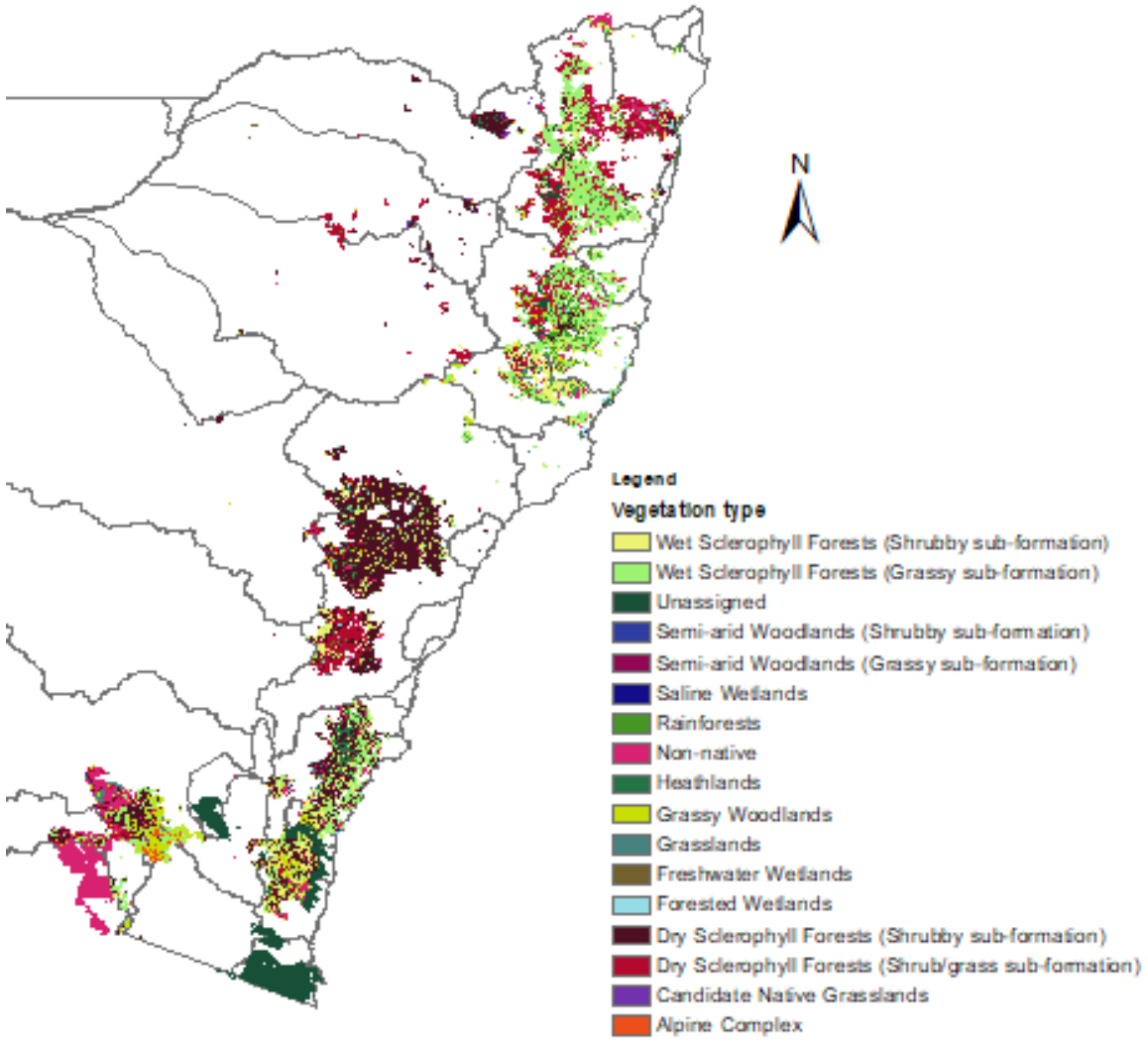
Making it interactive…

Output 3: Vegetation map



Macleay	# pixels	m²	km²	% of total area
Wet Sclerophyll Forests (Grassy sub-formation)	8723930	1.96E+09	1962.9	38.82
Dry Sclerophyll Forests (Shrub/grass sub-formation)	4999971	1.12E+09	1125.0	22.25
Rainforests	3230602	7.27E+08	726.9	14.37
Non-native	1602250	3.61E+08	360.5	7.13
Unassigned	1212273	2.73E+08	272.8	5.39
Wet Sclerophyll Forests (Shrubby sub-formation)	966259	2.17E+08	217.4	4.30
Grassy Woodlands	783033	1.76E+08	176.2	3.48
Dry Sclerophyll Forests (Shrubby sub-formation)	494927	1.11E+08	111.4	2.20
Forested Wetlands	308946	69512850	69.5	1.37
Freshwater Wetlands	89046	20035350	20.0	0.40
Heathlands	59876	13472100	13.5	0.27
Grasslands	4126	928350	0.9	0.02
Total				
	22475239	5.06E+09	5057	

Output 3: Applications…



Post-fire recovery of woody plants in the New England Tableland Bioregion

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Rainforest, Alpine & Wet schlerophyll forests take longest to recover (30-40, 20, 10 years min respectively)

- Maclaey had 15% rainforest and 38% wet sclerophyll in burnt areas and other northern catchments had similar percentages
- Snowy had 16% alpine in burnt area,

Direct seeding in burnt rainforests can reduce regeneration times to 10 years…

Implications for run-off