Geographical concepts for a floodplain and catchment

Part 2 – defining the terms

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Photos by Jeanie Clark, unless otherwise acknowledged.

Geography applied to Jeparit's River Detectives site and its surrounds.

<u>This ppt (part 2) responded to these aims requested from a teacher:</u>

To explain these key geographical concepts:

- location,
- distance,
- scale,
- region,
- distribution,
- movement,
- spatial association
- spatial interaction,
- and spatial change over time

Sources of the satellite photo excerpts of the Wimmera River at Jeparit, used by J. Clark in the following pages:
Slides 10 – 18 ©Maxar 2020 on Bing at
https://www.bing.com/maps?q=Jeparit+&form=ANNTH1&refig=7021cb8ea6b2467aac0fcb86034c88c1&sp=-1&pq=&sc=0-0&qs=n&sk=&cvid=7021cb8ea6b2467aac0fcb86034c88c1 images captured 23 July 2020.
Slide 18 © 2010 Google-Imagery © Digital globe , image captured 8 November 2010.

Location = where is it?

Location of Jeparit P.S. RD site on its floodplain:

- The **name** of a place, e.g. Jeparit Showgrounds site; site code WI_WIM940_RD
- The **position** of it from somewhere else ,e.g. southwest of JPS; on the northern river bank .
- A position using a map or GPS reading, e.g. latitude 36.14S longitude 141.98 E

Distance = measurements (2D to 3D)

Distance for a site △ can be :

- The size by an **adjective** , e.g. small – students could measure length along bank, width back to road or swamp, and height or drop from the road down to the water.
- The **distance** of it from somewhere else ,e.g. It is about 350 m from the JPS back gate to the Showground site; students could measure the walking length.

Scale = how big an area does this cover?

Scale for a site △ can be :

- At **many levels** from the smallest local scales to the whole world global scales,
- The Showgrounds site matters on a local scale for the water of the river and the swamp behind it.
- Putting Showgrounds into its floodplain is still a local scale, but a larger area.

Region = the area it is part of

Scale and region are linked in how big an area it is. **A Region** for a site △ can be :

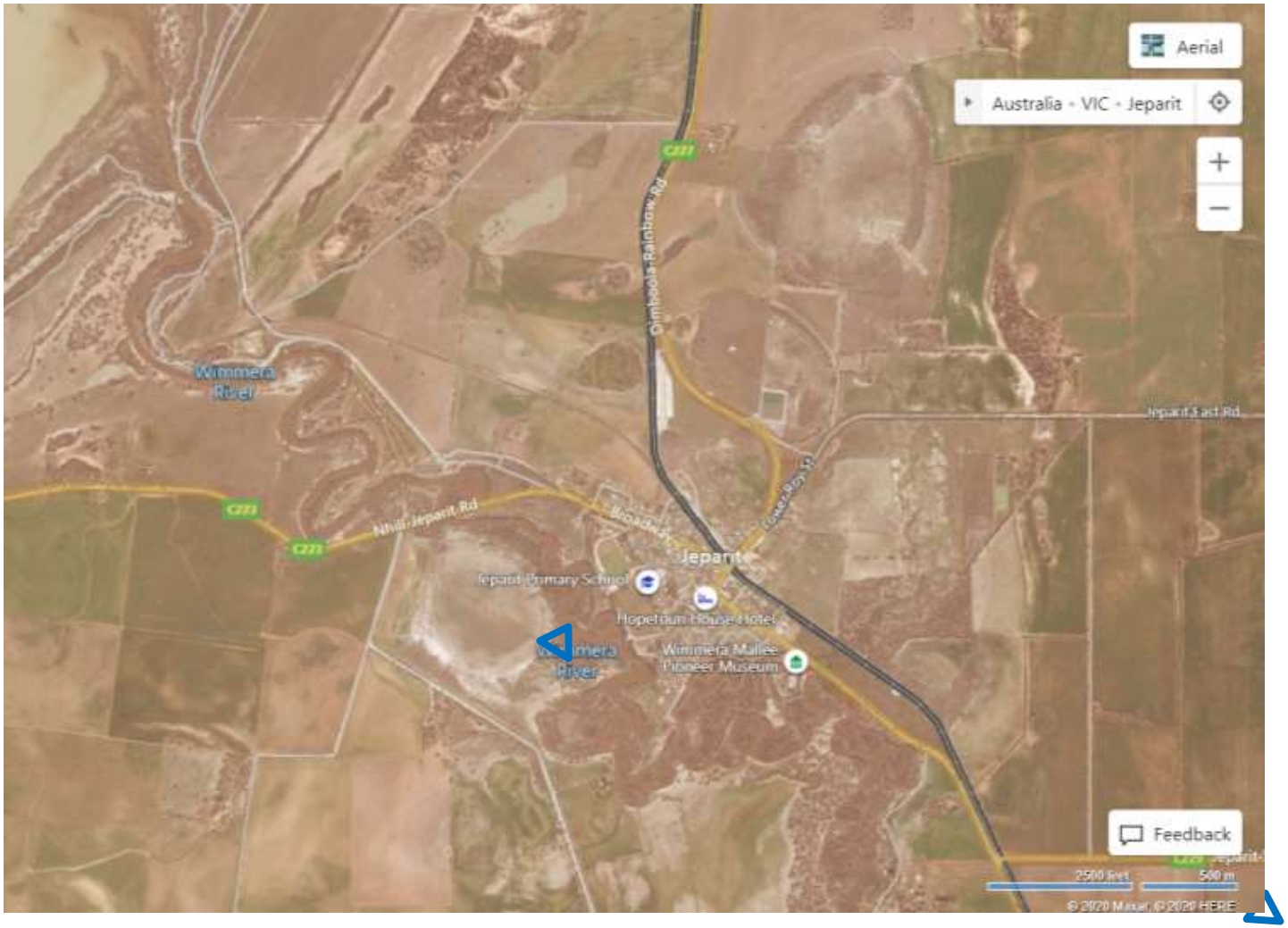
- At **different scales** too, but they all must have at least one thing that links them to each other and makes them different to parts not in the region.
- The Showgrounds site is part a river bank landform mini-region, but not a billabong.
- It is part of a larger 'floodplain' landform region, but not an urban/town region.

Distribution = how something covers a landscape

Distribution is about how something is spread over a landscape.

- The Showgrounds site is a compact, tiny site on the River bank.
- Its plants are thinly scattered and patchy over the Showgrounds space.
- The floodplain trees have a linear distribution of varying width along the River.

Movement = changing places (over time)



Movement is about how something changes **where** it is in the landscape.

- Water flows down hill at the Showgrounds site (in a southerly direction)
- Water winds along many River bends, but still going northwesterly to the Lake.
- What is the main direction that children travel to the site from the school?

Spatial association = where one thing is, there is something else

Any place can have features of four 'spheres' (parts of the environment): land , water, air and living things. Spatial association looks for which things are found together:

- Showgrounds mostly has a clay **soil** - bare of **plant cover.**
- Where there are remaining patches of sandy topsoil, there are ground cover plants.
- Samphire is mainly on the bank **slope** to the water's edge.
- Pigface is mainly on the flatter land (verge) higher up.
- These are spatial associations between plant type and soil and slope.

Spatial interaction = how are things linked that are found together?

Spatial interaction explains processes which link spatially associated things. Look for what things need to survive like, e.g. At Showgrounds:

- The exposed clay has no plants because the clay is too hard for the plants to grow in it.
- The Samphire and Pigface plants can grow in patches of looser sandy topsoil over clay.
- Samphire and Pigface plants grow here because they can survive salty soils, found here.
- Samphire can live in saltier ground than Pigface, so it is closer to the water.
- The spatial interactions between the soil and plants have a hidden salinity factor.

Spatial change over time – as effects from the past may carry forward

This was the Wimmera River and Showgrounds site in 2010.

Spatial change over time can involve all the previous concepts. In 2010, on the floodplain:

- The billabongs were empty of water; today they have water.
- The upper banks of the River meanders and billabongs are outlined as a white line: salt and bare clay banks. Today there is more water covering up these bare banks.
- The **spatial association**? White colour = salt and bare clay (land) with a lack of plants (life).
- The **spatial interaction**? Salty water evaporated at the water's edge, leaving salt on the surface; - too salty for many riparian plants, except Samphire on the non-eroded banks.
- Spatial **change over time**? Salt remains on the surface today; plant cover much reduced.

Spatial change over time – understand today's landscape with its past

Wimmera River and Showgrounds site in March 2019

Suggested followups:
Geographic Concepts Part 1
and
Jeparit Primary School's
Waterwatch Showgrounds Site
WIM940 –
A visual history of its changes
1996-2015

Spatial change over time can involve all the previous concepts. In 2018, Showgrounds:

- Had a higher water level at the river's edge and no obvious salt on the surface.
- Had water plants growing on the bank as it went under water.
- Reeds returning to the depression that were catching sand as it came downslope.
- The spatial association? Bright cream colour = sand (land) caught by reed stubbles (life).
- The spatial interaction? Plants catch and hold soil/sand particles stopping erosion.
- Spatial change over time? Where are they now in 2020?.

river DETECTIVES Event Evaluation

Wimmera CMA

Geographical concepts applied to the JPS Showgrounds RD site
T3 2020 date completed: .....

Thank you for taking the time to fill in this survey. The results will be used to plan and improve our events in the future and to attract funding for addition events. Your comments are confidential and will only be reported in summary form.
This topic was requested by Jeparit P.S. The ppt and site visit provides specific Jeparit information about the geography of a floodplain and catchment.

1. **Before this training, what was your level of knowledge of the topic?**

None Some Reasonable Good Excellent

2. **How much has this training improved your knowledge of this topic?**

Not at all Slightly Moderately Reasonably Considerably

3. **Please note any additional aspects to this topic that you would have liked included.**

4. **After this training, how likely are you to include parts of this topic in your classroom activities?**

Not at all Unlikely Uncertain Likely Definitely

5. **Please briefly outline what you might do:**

6. **Please describe what limiting factors may prevent you from including these activities in your classroom?**

7. **Please assess how suitable this this training was for you. If you did not use any part, please indicate this, by putting a line through it.**

VL = Very Low L = Low M = Medium H = High VH = Very High

Part of the training	Quality of information					length				
Site visit	VL	L	M	H	VH	VL	L	M	H	VH
PPT part 1 – floodplain and catchment concepts	VL	L	M	H	VH	VL	L	M	H	VH
PPT part2 – geographic concepts	VL	L	M	H	VH	VL	L	M	H	VH
Link to plants PPT	VL	L	M	H	VH	VL	L	M	H	VH

8. How could we improve training like this?

9. What information or events (up to three) would you be most interested in your local RD - CMA delivering for RD teachers and schools?

Jeanie Clark, North and West Wimmera CMA River Detectives Facilitator July 2020

River Detectives, T3 2020.

Geographical concepts applied to the JPS Showgrounds RD site

Professional Development Webex & ppt Training Evaluation

A **DOCX copy** of this form has been attached on this email for you. Please **complete** this and **email** it back to me.

Your **feedback** on this **PD** is essential.

A **PD certificate** will be sent to you on my receipt of this.

Thank you

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