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http://www.see.leeds.ac.uk/virtual-landscapes/

Virtual Landscapes
Geoscience Education in Digital Environments

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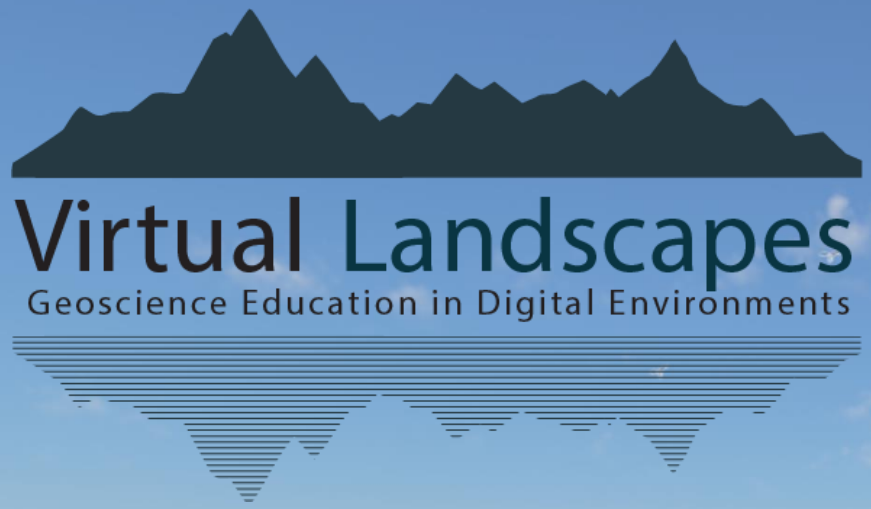

Where's the Dead Sheep? Making Virtual Landscapes Real

Jacqueline Houghton[1], Clare Gordon[1], Annabeth Robinson[2], Ben Craven[1], Dan Morgan[1] and Geoff Lloyd[1],
[1]School of Earth and Environment, University of Leeds; [2]Leeds Arts University

Virtual Landscapes Project

- Screen-based virtual reality environments, created using the Unity 3D game engine software.
- Aims:
  - Enhance the training students receive in geological field and map skills prior to going in the field.
  - Develop 3D visualisation skills.
  - Accessible alternative fieldtrips.
- Freely available on the internet http://www.see.leeds.ac.uk/virtual-landscapes/
- Winner: Times Higher Education Award for Outstanding Digital Innovation in Teaching or Research, 2016.

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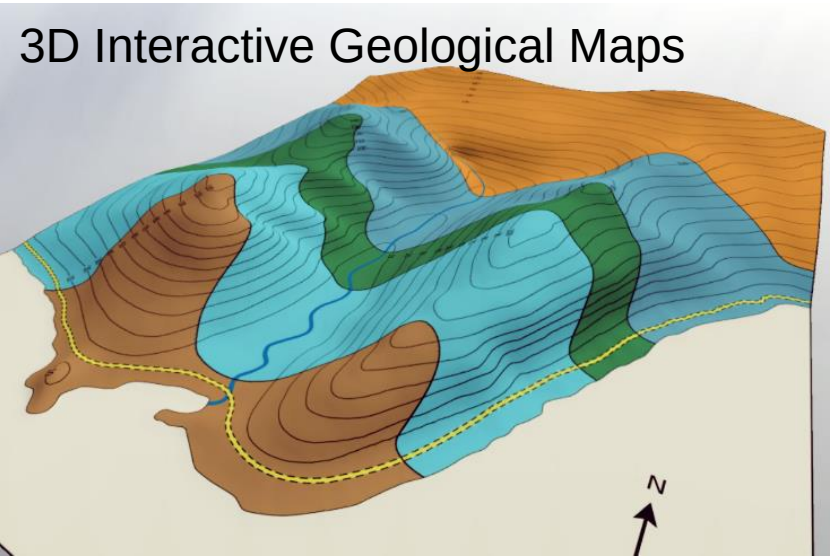

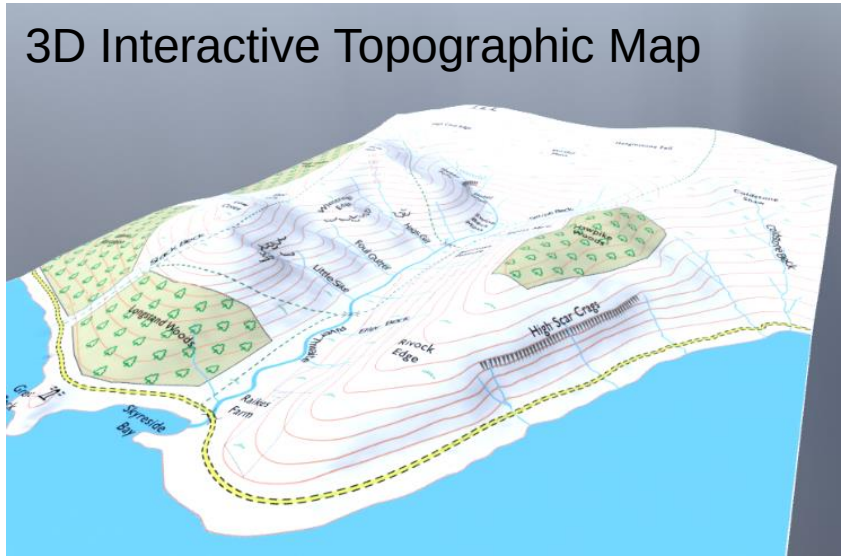

Current Landscapes

Future Landscapes

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Virtual Landscapes
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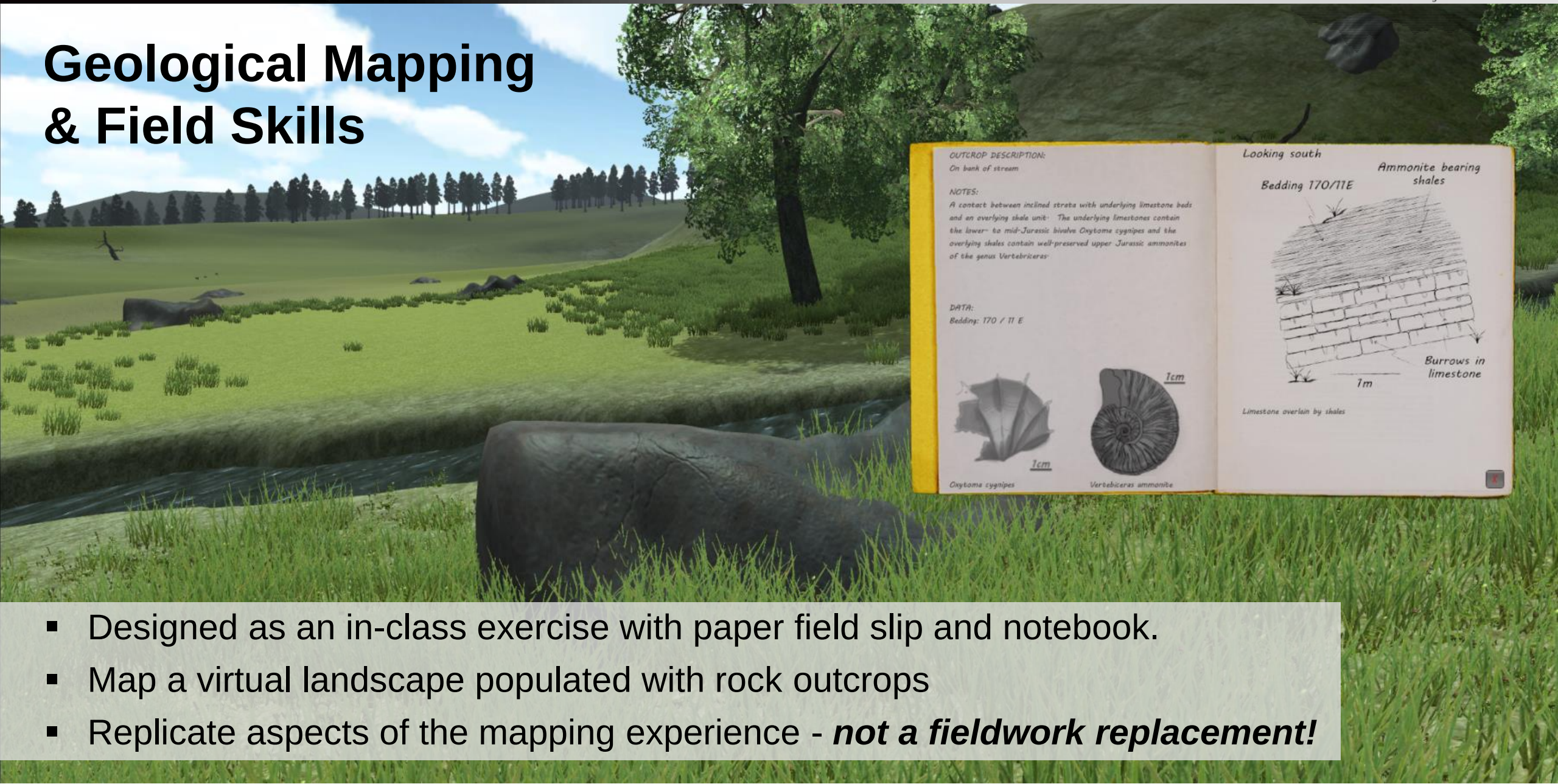
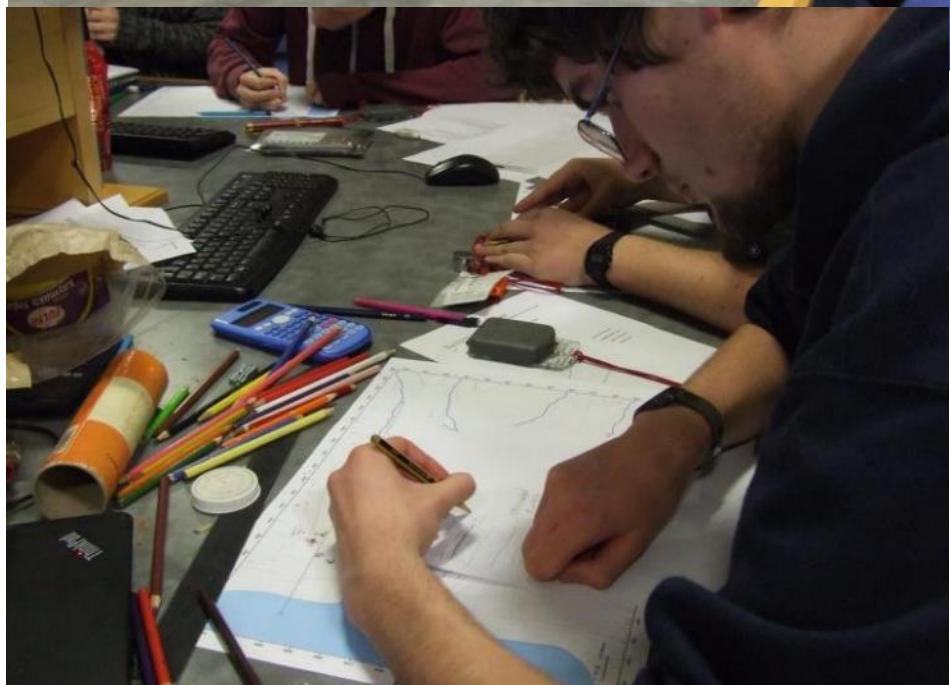
Geological Mapping & Field Skills



- Designed as an in-class exercise with paper field slip and notebook.
- Map a virtual landscape populated with rock outcrops
- Replicate aspects of the mapping experience - ***not a fieldwork replacement!***

Geological Mapping & Field Skills

- Easier to focus on learning and teaching the skills in a classroom than in the field.
- Students make the same mistakes they make when learning in the field.
- 77% agreed or strongly agreed – “I feel better prepared for the field”
- 84% agreed or strongly agreed – “Overall, I found the virtual world training a useful experience.”
- “I’m enjoying this way more than is natural!”
- “Good alternative to normal teaching.”



Why a dead sheep?

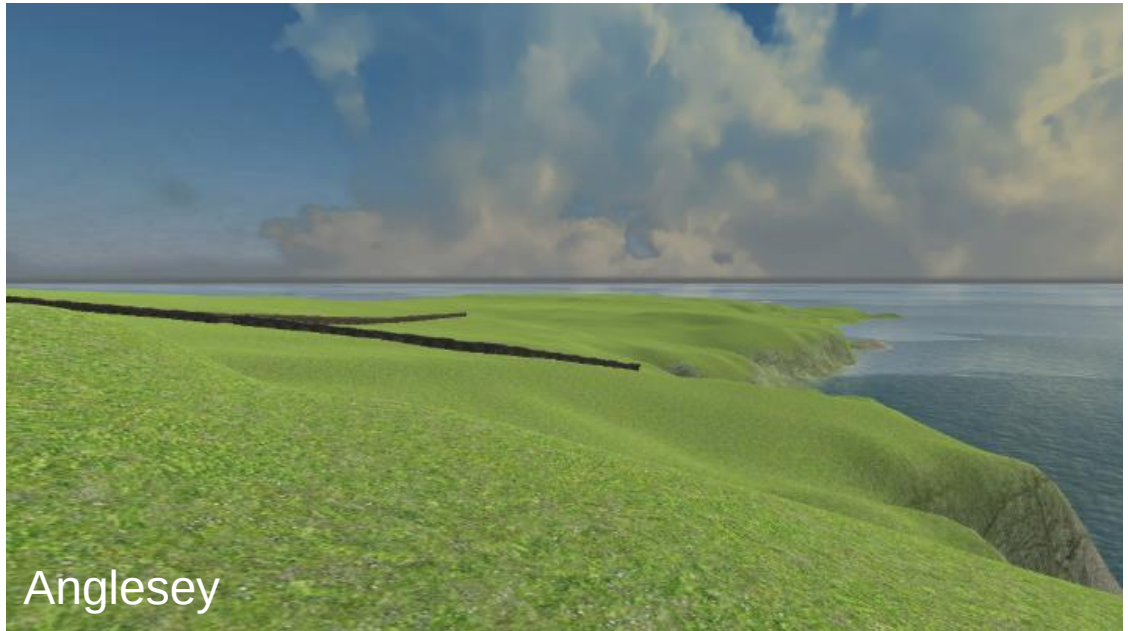
Memorable and engaging experiences aid learning

What makes the virtual landscape an immersive experience …

The Landscape

Three River Hills

Three River Hills


Anglesey

Anglesey

The Real Place

Virtual
Anglesey

The Rocks

Scale and Speed

- Less important in imaginary landscapes. Very important for real ones.
- Affects sense of place and perception of speed.
- Speed set to “brisk walk” to replicate time management and decision making skills.
- Students want to go faster/fly/teleport/respawn.
- Answer: smaller landscapes, outcrops closer together and/or a “run” mode.

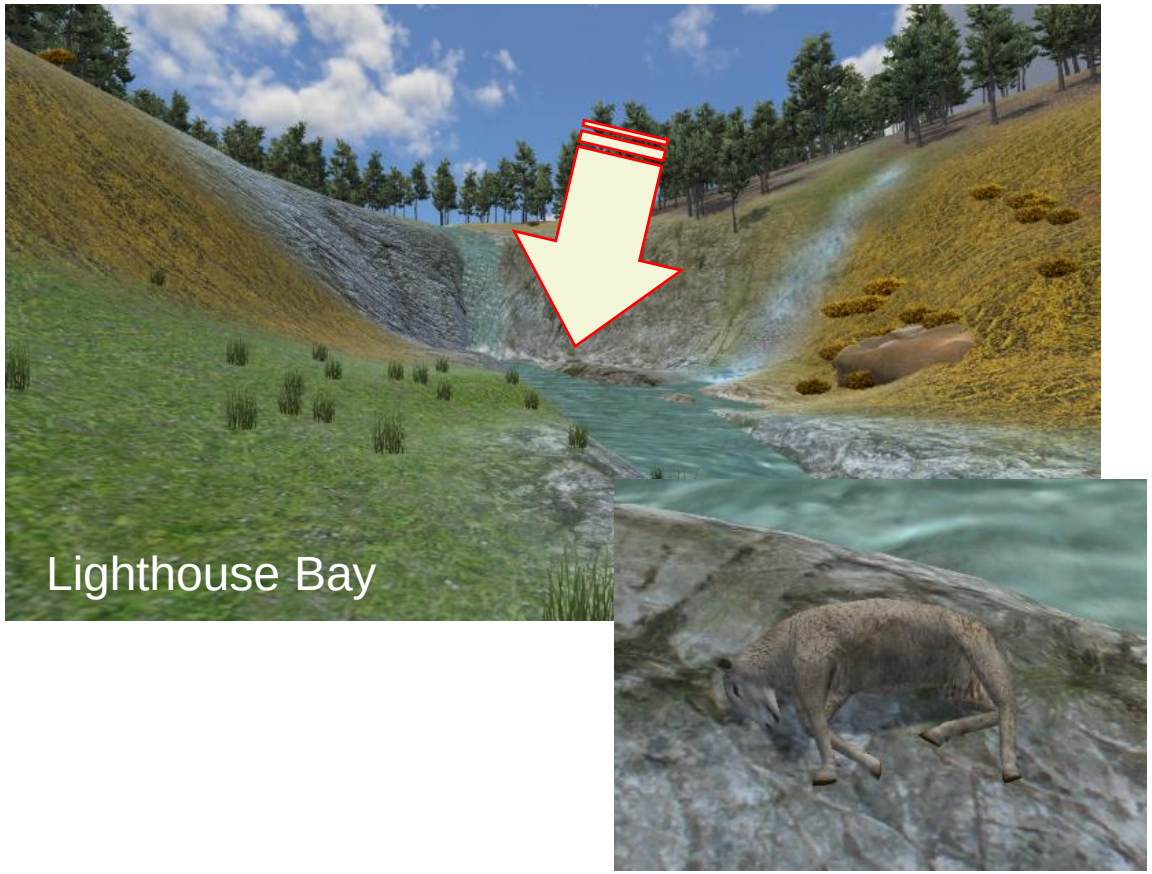
The Sound Track

- Sheep
- Birds
- Running water
- Footsteps
- RAF flying over
- Flies buzzing round dead sheep
- Waves
- Wind
- Seagulls
- Notebook opening
- Wind turbines

Assets

- Give a sense of scale.
- Give a sense of place.
- Provide reference points in the landscape.
- Perform a function (“travel” in minibus).
- Add history to a landscape.
- Form story seeds.
- Vital to the immersive experience.

Where is the dead sheep…?



Thank you

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