



VALUING NATURE

The cultural importance of the Humber Estuary coastline

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Home organisation: Institute of Estuarine and Coastal Studies

Host organisation: Hull University Business School

Project outline

Aim...

To use a cultural and socio-economic setting to research the impacts of flooding on the Humber estuary, with emphasis placed on the 2013 storm surge.

Because...

The storm surge heavily affected the area, and the economic and environmental impacts have been covered in the press and in industry reports, but the effect on the social or cultural effects hasn't been researched.

Project outline



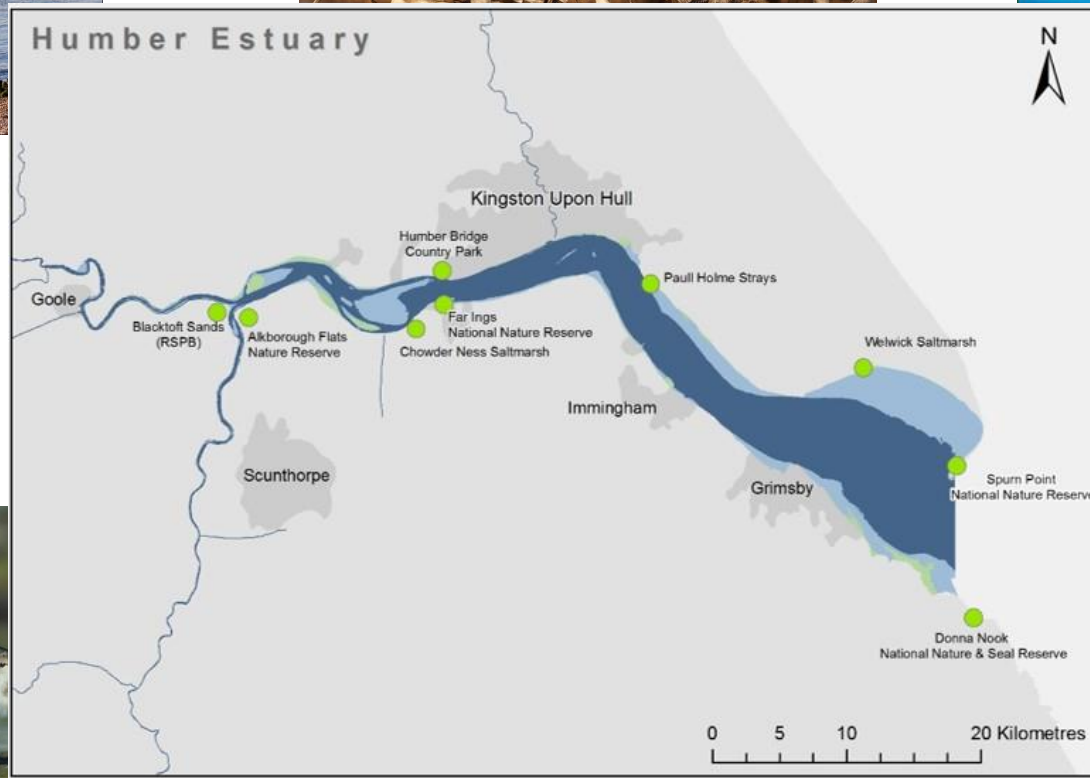
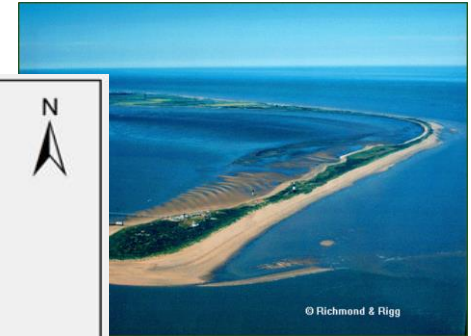
Objectives

- ↳ Creation of a robust evidence base
 - ↳ Valuation of cultural services
 - ↳ Use bow tie analysis to link impacts and threats
 - ↳ Use of stakeholder engagement
 - ↳ Creation of conceptual models based on level of flood threat
 - ↳ Summarise information to aid policy and management decisions

1. Development of a fit-for-purpose definition of 'cultural services'

| Cultural service | Definition |
|--------------------------------|--|
| Leisure and recreation | Engaging with the environment for reasons which are not work or education |
| Historic and cultural identity | Visiting heritage sites or environmental areas associated with conservation value |
| Education | Research and learning opportunities involving the environment |
| Spiritual | Visiting coastal areas for sacred or religious reasons |
| Existence | Valuing the environment without using it |
| Aesthetic | Appreciating the pleasant scenery whilst visiting coasts |
| Health and wellbeing | Reduced stress levels, creating motivation and opportunity for physical activity, and reduced air pollution exposure |

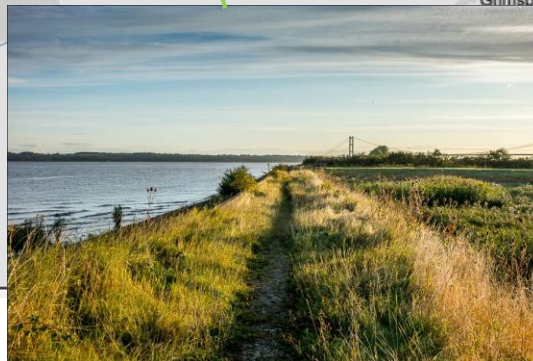
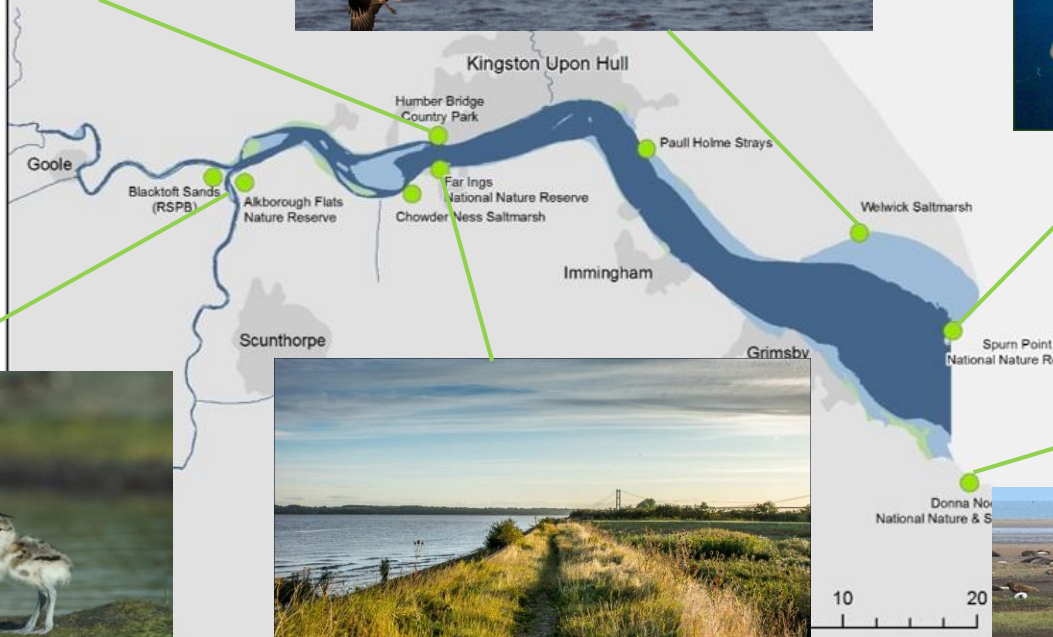
2. Valuation of cultural services



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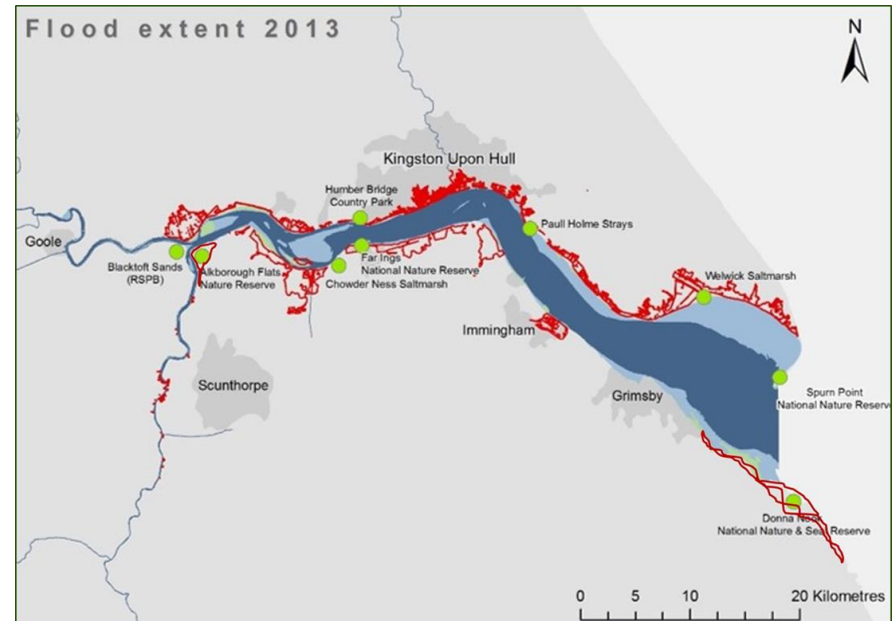
Humber Estuary



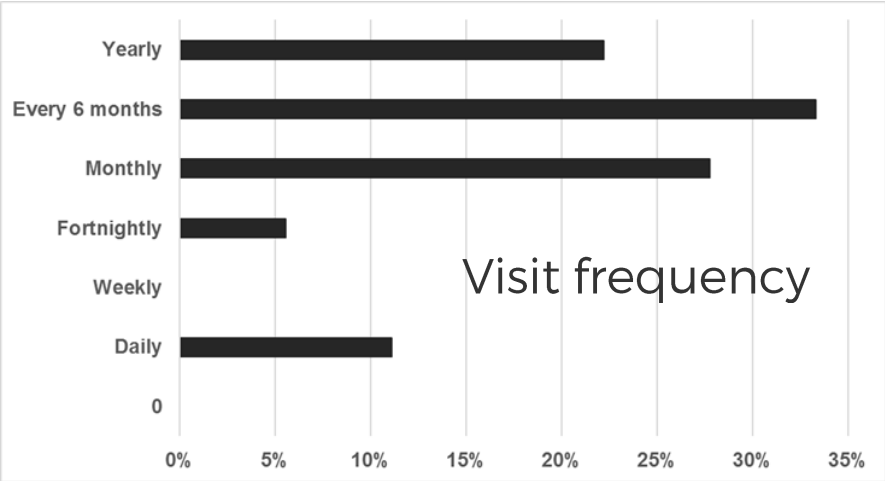
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2. Valuation of cultural services

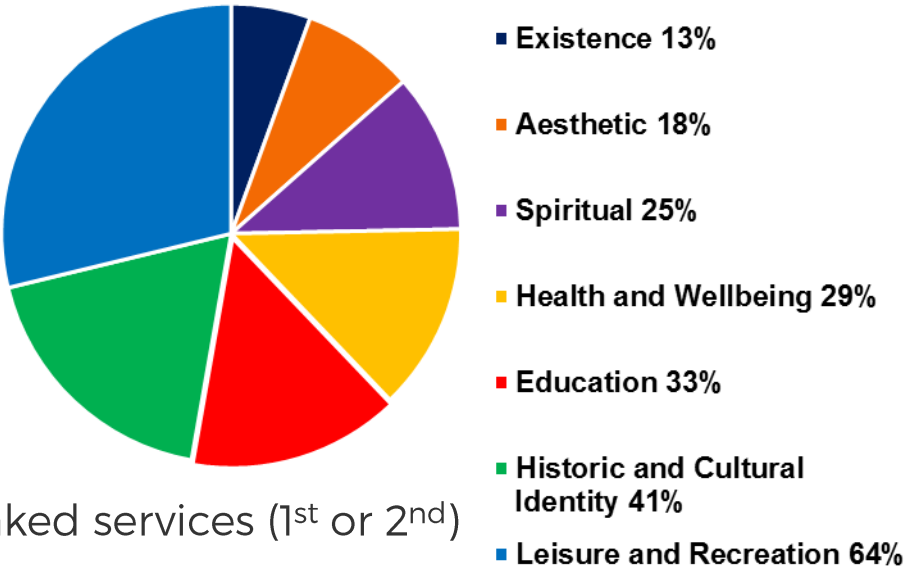
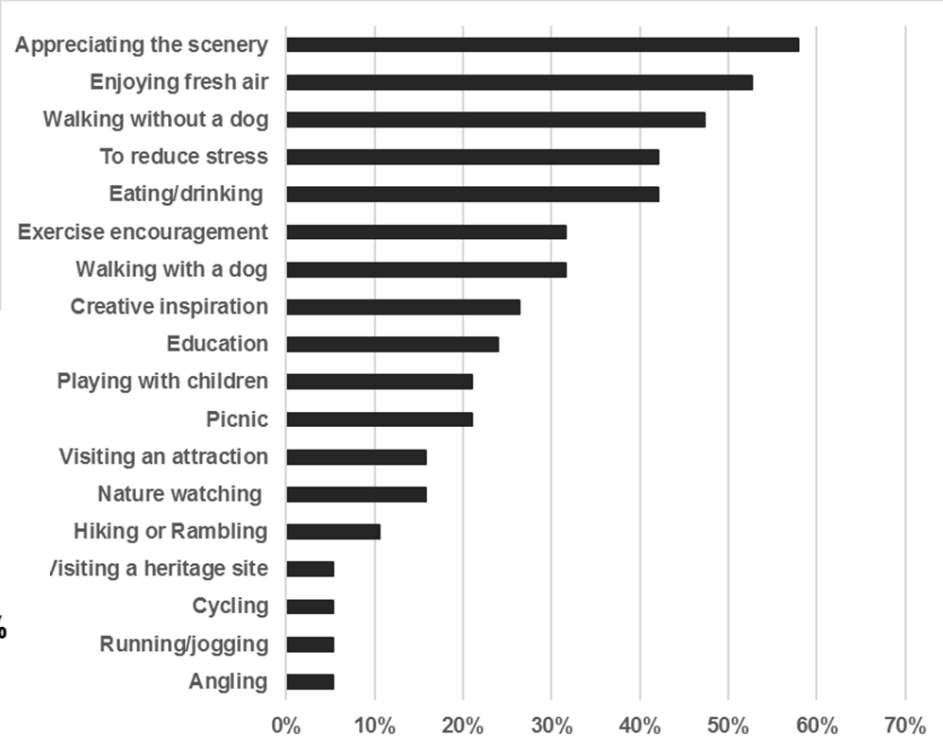
- How people use the sites
- Which cultural services are important to them
- Choice experiment: how they value the cultural services
- Whether they've noticed a change in the cultural services since the 2013 storm surge
- 87 respondents



2. Valuation of cultural services: pilot study results



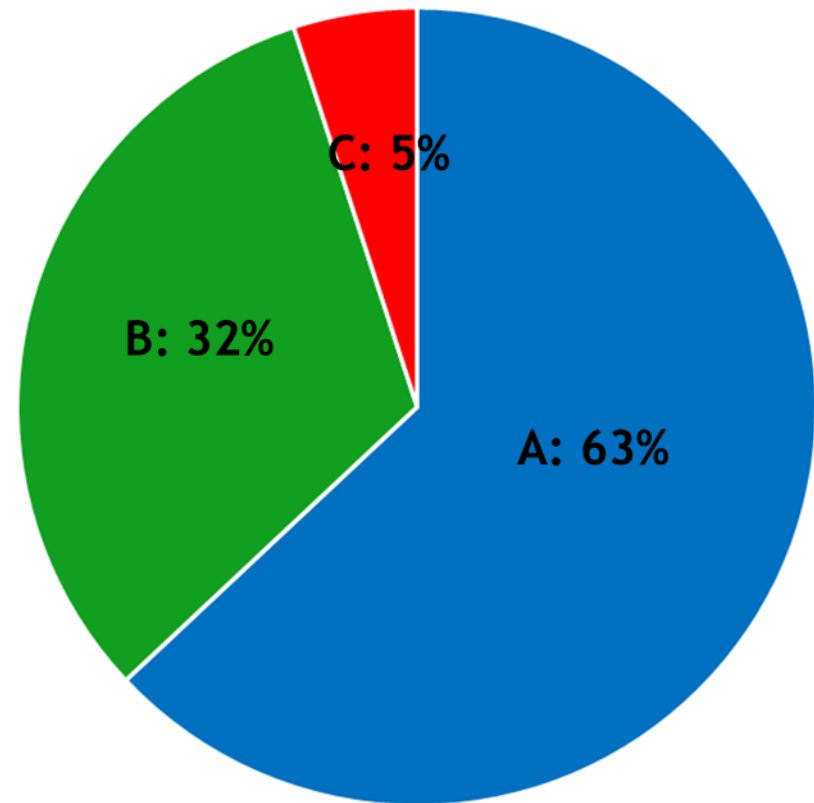
Activities whilst at a site



Ranked services (1st or 2nd)

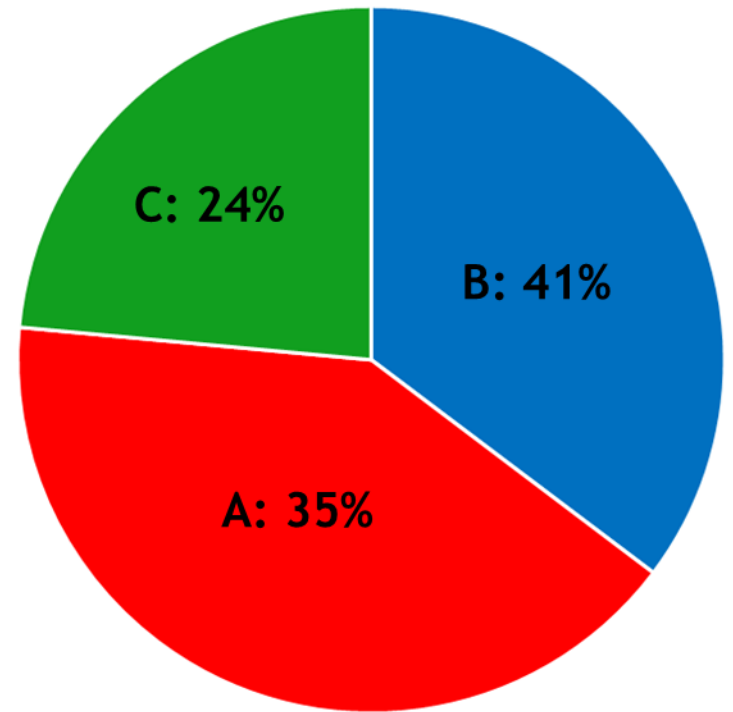
Have you noticed a physical difference in the areas now, in comparison to before the tidal surge? This difference may be caused by a change in the plants found there or less plant coverage, less bird species etc.

- A. No, there is no physical difference in the areas now, in comparison to before 2013 tidal surge
- B. Yes, I have noticed a physical change. It is worse since the 2013 tidal surge
- C. Yes, I have noticed a physical change. It is better since the 2013 tidal surge

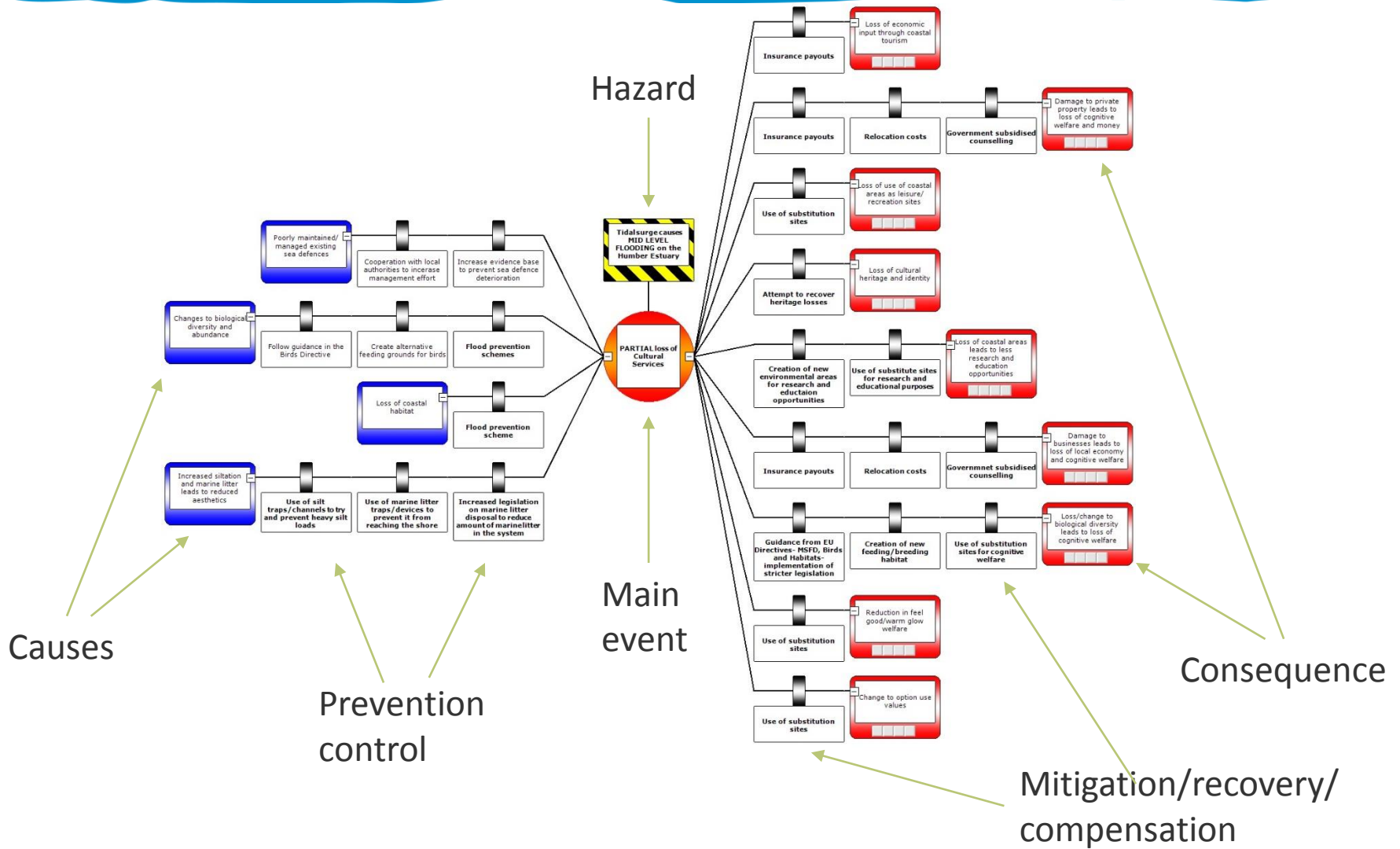


If charging for access to the coastal areas around the Humber Estuary (which provide cultural benefits) was implemented, would you rather:

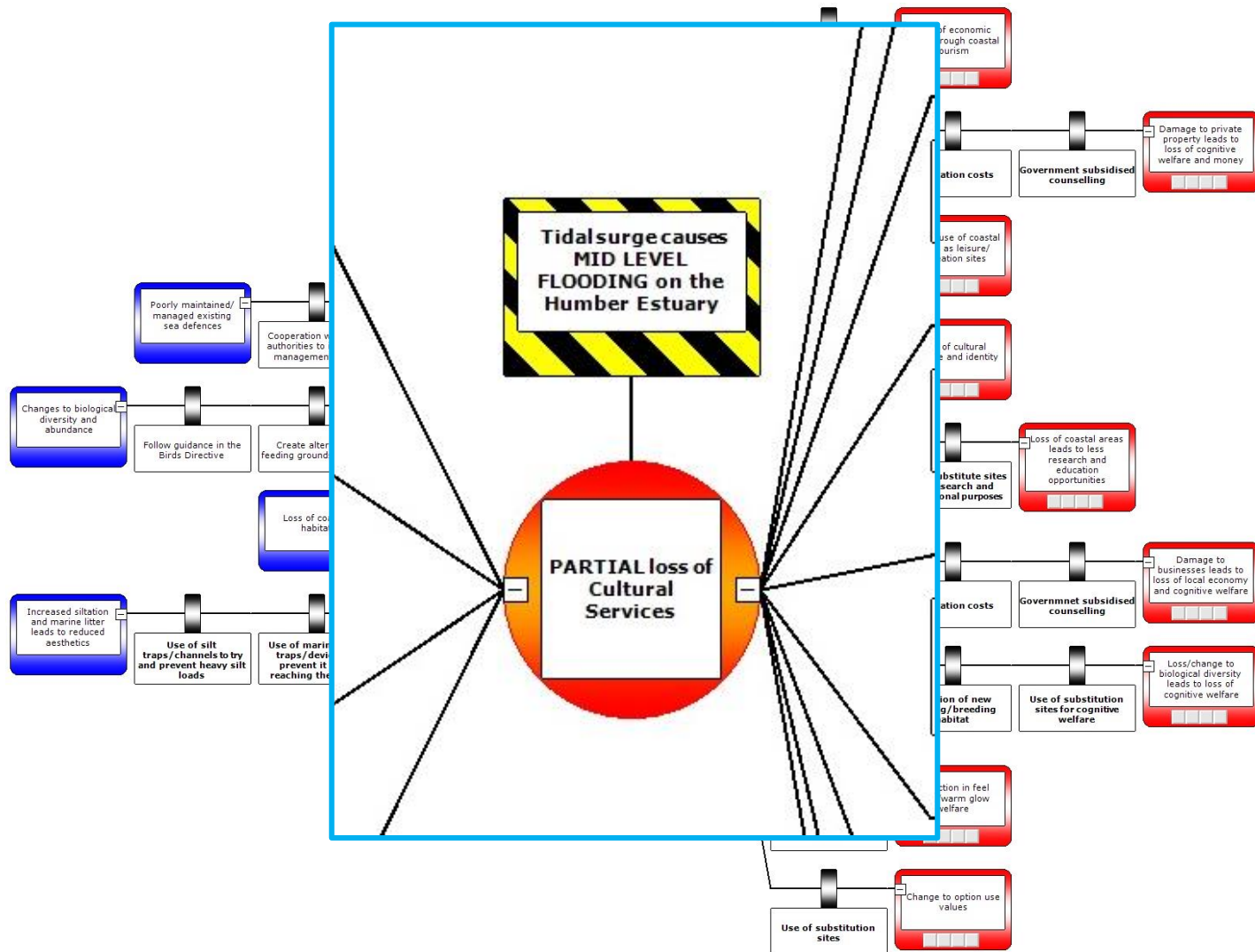
- A. Pay £2 per visit for access to the coastal area. The coastal areas would have a high level of repair and restoration, all the cultural benefits will be provided to a higher level than they were before the tidal surge.
- B. Pay £1 per visit for access to the coastal area. The coastal areas would be restored to the standard it was before the tidal surge, all the cultural benefits will be provided to the same level as they were before the tidal surge.
- C. Pay nothing per visit for access to the coastal area. The coastal areas would have no additional restoration or maintenance. It is unknown how the coastal areas would develop naturally, but it is likely that the cultural benefits would be provided at a lower level than before the tidal surge.



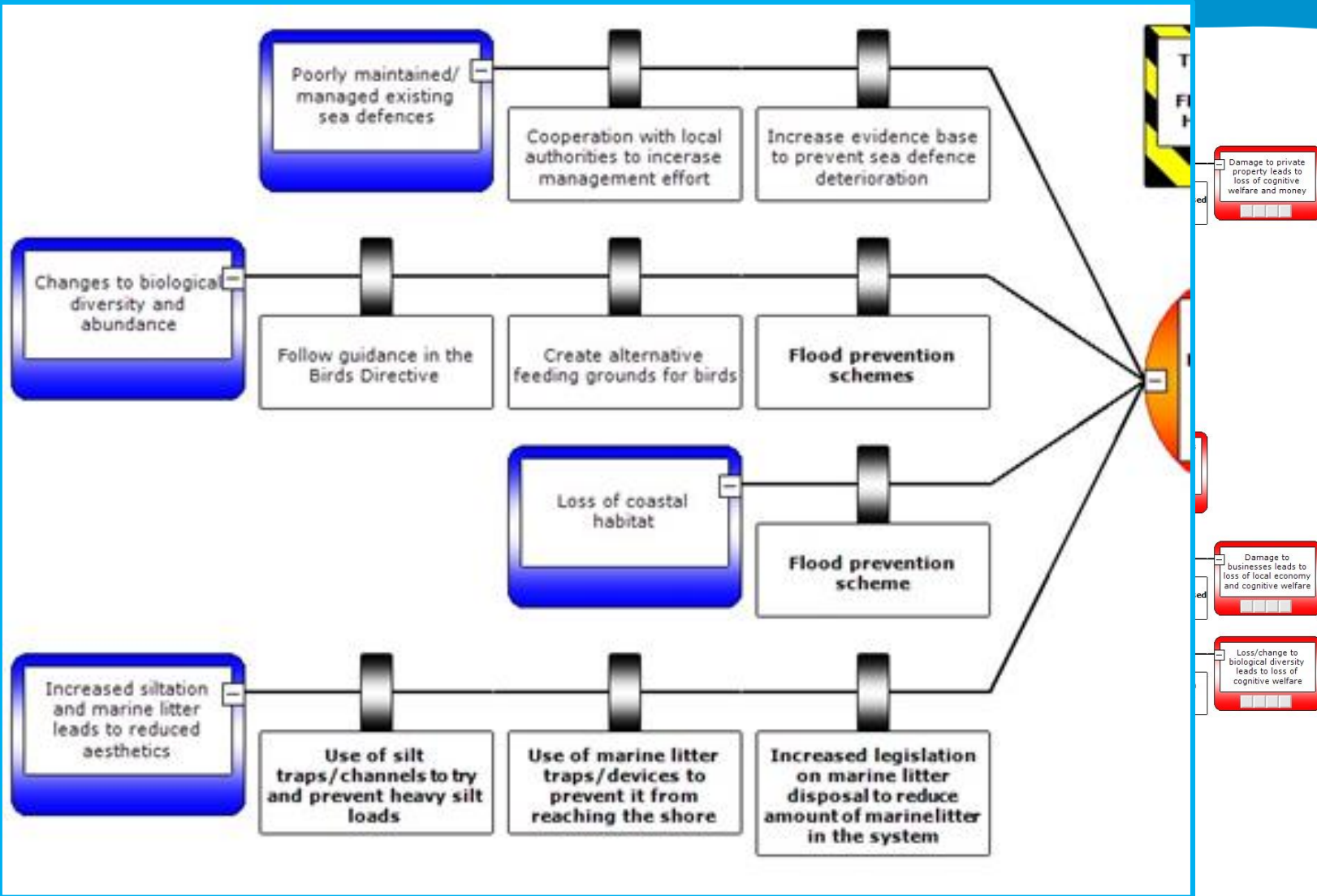
3. Bow-Tie analysis



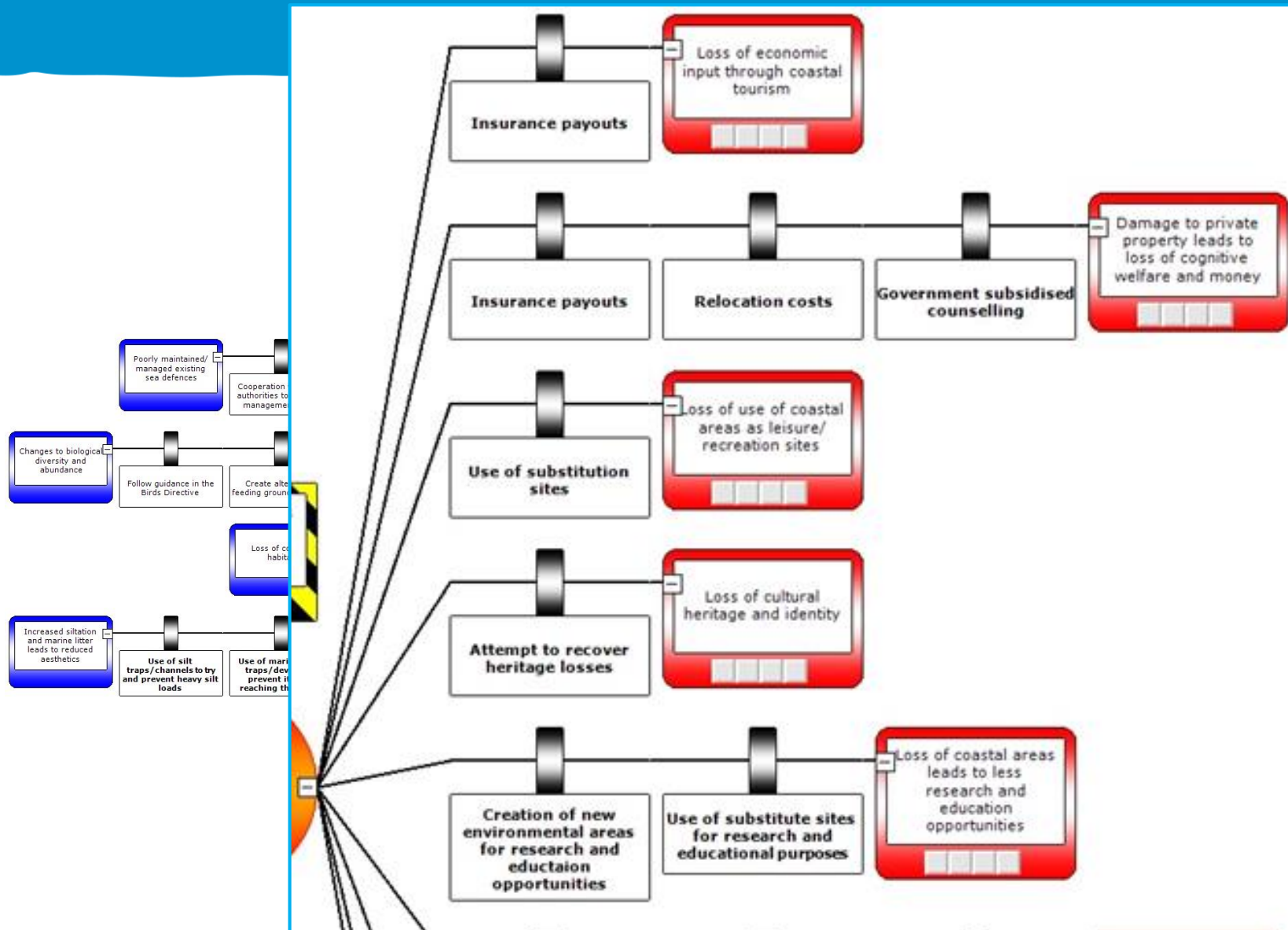
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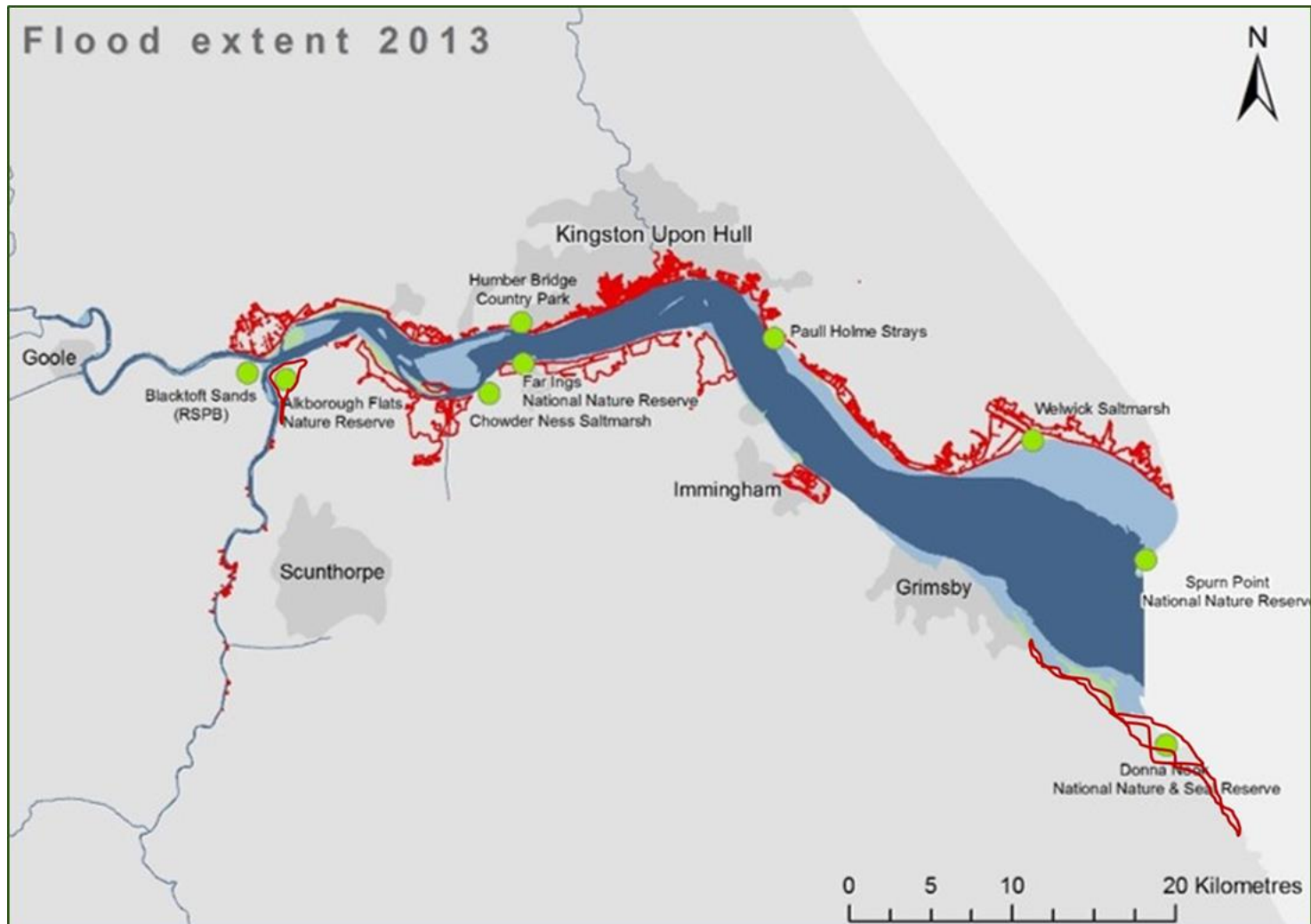
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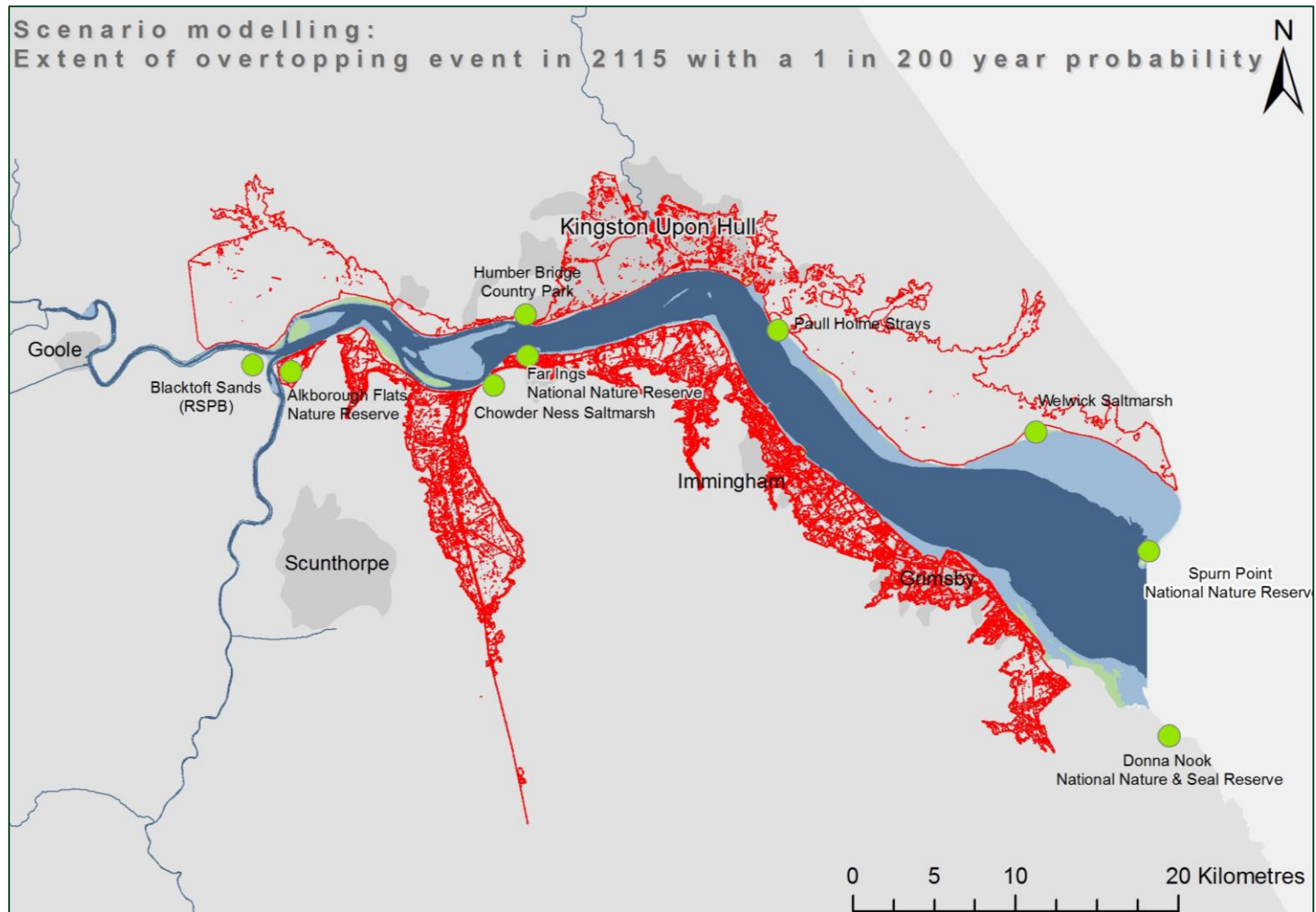
3. Bow-Tie analysis



4. Flood scenarios- 2013 flood extent



4. Flood scenarios- 2115 flood extent



Further work...

- Completion of the non-market valuation survey
- Attempting to quantify the Bow-Tie analysis pathways through ISO Risk Analysis and Risk Management techniques
- Link this to the flood models
- Applying these methods to other systems

What I learned...

- The importance of communication
- Stakeholder engagement takes time
- Research is fun!