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AIRPORT ENVIRONMENTAL MANAGEMENT

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Module 8: Habitat , Ecology and Sensitive Sites

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Module objectives

- Describe the drivers for action to protect habitats and sensitive species in the vicinity of airports.
- Demonstrate how careful design, translocation and compensatory action can minimise destruction / disturbance.
- Discuss the conflict between habitat protection and aviation safety.
- Review other sites away from the airport that are sensitive to noise disturbance and need to be taken into account when planning the location and alignment of new airport infrastructure

Introduction

- Meeting increasing demand requires the construction of new airport infrastructure.
- The location, alignment and design of that infrastructure can have significant environmental, cultural and economic impacts both locally and along approach and departure routes.
- If not properly avoided, managed or mitigated, these impacts can put future long term airport growth at risk.

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Sustainability Challenge

- Increasing demand requires additional infrastructure.
- Environmental considerations (e.g. LAQ) can require increased land take (e.g. for rail access).
- Many airports situated in 'green belt' areas.
- Sensitive habitats in surrounding areas can prevent growth
- Protected species in surrounding areas can delay developments.

Manchester Airport runway 2 development

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Background

- Manchester Airport identified the need for a second runway
- Significant social and economic benefits would result
- Airport located in ‘Green Belt’ – area of environmental protection
- Local residents and regulatory bodies opposed to development on habitat and ecological grounds
- NW England - history of environmental destruction - Industrial Revolution
- Countryside protection a political issue
- Local Government Ownership so have particular social responsibility

Drivers for action

- Regulatory requirements
- Ownership – corporate responsibility
- Secure planning approval for new infrastructure
- Sustainable development – compensating for growth

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Philosophy and approach

- Assess habitat and ecological impacts of options
- Approach to development of preferred option
  - Avoid.
  - Minimise
  - Trans-locate.
  - Compensate

The challenges

- River crossing.
- 300 year old woodland.
- Freshwater ponds.
- Wildflower meadows.
- Hedgerows
- Protected species.

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The river crossing

- River Valleys ecological corridors.
- Extend river valley around end of runway?
- Length of tunnel shortened (runway/taxiway).
- Lighting/planting in tunnel
- Cave habitat created (bats)
- River bed (riffles and pools)
- Remove existing river weir

Ancient woodland

- 300 year old.
- Movement of saplings and stumps.
- Translocation of ground vegetation
- Movement of top soil.
- 4 hectares translocated
- 25 hectares new planted
- 22 hectares existing improved

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Ponds

- Medieval ponds
- Diversity of ponds.
- Survey contents.
- Survey structure.
- Construct new ponds.
- Move contents.
- Capture and relocation.
- 'Renovate' others
- Total 160 ponds affected.

Protected species great crested newt

- Protected species.
- Prevented or delayed many developments.
- 17,000 moved.

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Wildflower meadows

- Systematically translocated
- Original structure recreated.
- 44 hectares translocated or improved

Hedgerows

- Species diversity/age.
- Important for birds.
- Cover for wildlife.
- Compensation:
  - Plant (32 Kms.)
  - Repair (5 kms.)

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Protected species - Bats

- Move bats before construction begins.
- £10,000 / bat house!

Protected species - badgers

- Survey population.
- Identify home ranges.
- Construct new halt.
- Lure badges off site.
- Fence site.

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Strategic management

- **Site selection for new airports.**
- **Secure adequate land holding for compensation/ mitigation.**
- **Infrastructure design.**
- Species relocation.
- Habitat relocation
- Habitat mitigation.
- 10% project costs ?

Long term conservation and maintenance

- Once established, such ecological and habitat developments have to be maintained and managed to ensure they develop appropriately in the future. The financial implications of this can be significant.

- The Manchester Airport development included a commitment to a 10 year maintenance and management programme overseen by local and regional countryside, wildlife and conservation bodies.

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Discussion point

- Why spend all this money on plants, frogs and worms when there are people starving in this World?

Habitat migration and bird strike hazard

- Bird strikes a serious threat to aviation safety.
- Habitats mitigation can attract birds.
- Without mitigation future growth limited.
- With mitigation future growth 'unsafe'.

- Several airports that have successfully delivered 'bird proof' landscaping E.g. in UK Manchester, Heathrow and Stansted airports

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2009 New York

Bird proof landscaping

- Long grass across airfield.
- Avoidance of standing water.
- Linear planting of woodland.
- Avoidance of food sources.

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Sensitive sites away from the airport

- The alignment of runways will determine aircraft departure and arrival routes and therefore potentially, impacts on a variety of sites further away from the airport.

- Some of these 'sensitive sites' could impact upon the future growth potential of the airport.

Culturally sensitive sites

- Historical sites
- Religious sites
- Political sites

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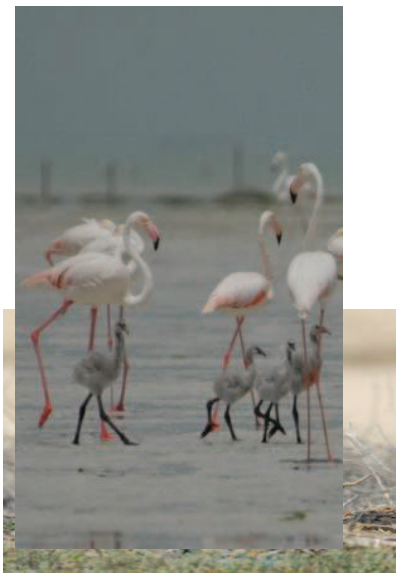
Environmentally sensitive

- Disturbance to Wildlife
- Wilderness Area



Economically sensitive sites

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Conclusion

- If an airport is to ensure long term traffic growth then needs to plan for future infrastructure development.
- The location, alignment and detailed design of the development proposal can determine the magnitude of ecological damage resulting and whether this can be compensated for. This in turn can determine whether planning approval given for growth.
- Further away from the airport there can be a number of 'sensitive' sites that could constrain future growth and need to be taken into account when planning new infrastructure.

Developers – be respectful to the environment

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Any questions?