Evidence-based Development of an Arboreal Wildlife Bridge to Prevent Habitat Fragmentation and Isolation

Sophie Hughes BSc (Hons) MSc
Ecologist & Wildlife Bridge Advisor
Animex Wildlife Mitigation Solutions
Introduction

- Animex/PTES
- Review of historic wildlife bridges for arboreal habitat connectivity on highways & development projects in the UK
  - UK trial of Japanese design
  - Commercial product
  - Best practice
Hazel Dormouse *Muscardinus avellanarius*

- Nocturnal, largely arboreal, low densities and small home ranges
- Connected woodland with dense understory
- Population decline: habitat fragmentation & isolation
- Legally protected: material consideration in planning process
Historic Arboreal Bridges in the UK

- Lack of science-led design
- Lack of monitoring
- Cost
- Longevity
- Lack of consideration on a landscape scale

➢ A need for evidence-based, affordable and reliable alternative to prevent habitat fragmentation
Japanese Arboreal Bridge Trials

- Suspended on cable, aluminum roof, mesh floor, rope runway, shelters
- Used 800 times in three months (Japanese Dormouse, Japanese Squirrel, Japanese Dwarf Flying Squirrel, Japanese Wood Mouse, Japanese Marten)
- Preference for arboreal crossing
UK Trial - Animex/PTES

- Adapted Japanese design
- Isle of Wight: known Dormouse populations
- Aims:
  - Use by Hazel Dormouse?
  - Preference for crossing habitat gap on bridge or ground?
- 30 metre habitat gap (approx. UK dual carriageway width)
- Cameras on bridge and ground
- Installed 2015, monitored active season 2016
UK Trial - Results

• Dormouse use of bridge: nine hours post-installation
• 31 individual Dormouse events on bridge vs. three on ground
• 94 individual Red Squirrel *Sciurus vulgaris* events on bridge vs. 44 on the ground (night only)
• Clear preference for use of bridge
Progression into Usable Product

- Tried and tested design, cost effective, Highways compliant
- Multiple access points within vegetation
- Modular – adaptable, ease of shipping & installation
- Longevity: lifetime guarantee: mitigation in perpetuity
- Standalone fixed structure or retrospectively-fitted (bridges or culverts)
Standalone Bridge
Retro-fit Option
Best Practice Considerations

• Requires considered positioning on a project & landscape scale:
  – Population hotspots
  – Within a habitat network (or a newly created/enhanced network)
  – Lighting strategy
• Part of a wider landscape scheme: connectivity
• Post-completion monitoring to inform any updates to habitat management schemes
• Compliment green bridges?
The Future of Arboreal Wildlife Bridges

• Development of a tried and tested, affordable arboreal wildlife bridge suitable for highways projects
• Provision of effective, on-going habitat connectivity in compliance with planning policy and wildlife legislation


