

Integrating Evidence on (potential) Intervention for Policy

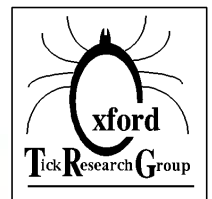
*Project: Assessing and Communicating animal disease risks
for countryside users*

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(on behalf of the Surrey University, Brunel University,
Forest Research and Oxford University team)

Risk assessment by Andrew Dobson, Jennifer Taylor & Sarah Randolph



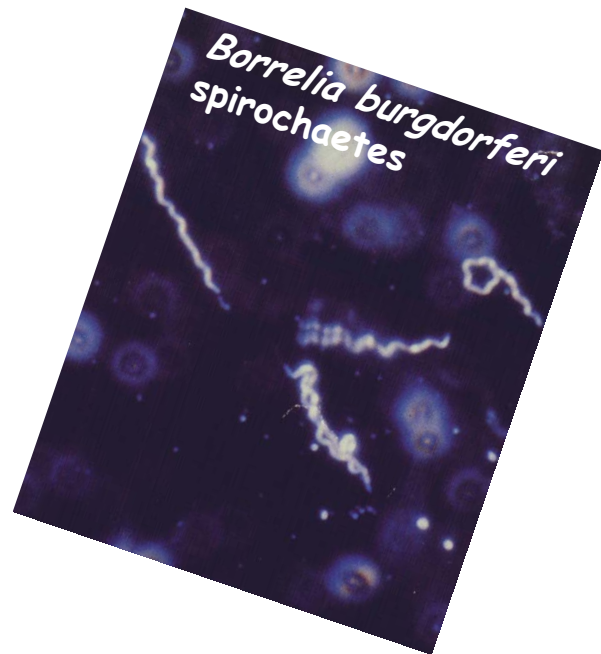
Lyme borreliosis (LB) in UK

E. coli 0157 - relatively rare but frequently severe disease

LB in UK - not uncommon but rarely severe disease

□ Typical zoonosis:

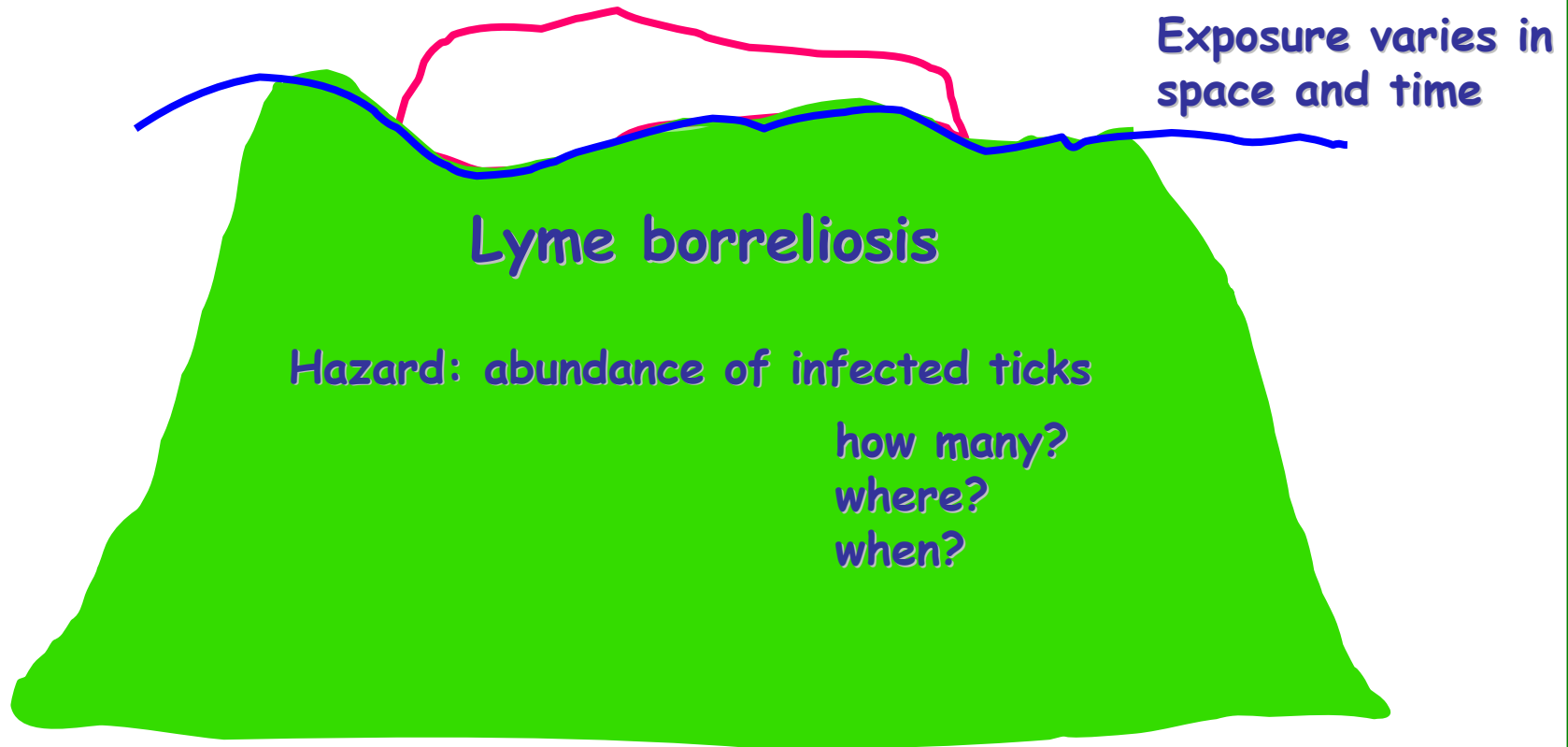
- bacteria (*Borrelia burgdorferi* s.l.) transmitted by ticks amongst wide variety of mammals and birds
- Humans infected if accidentally bitten by infected ticks

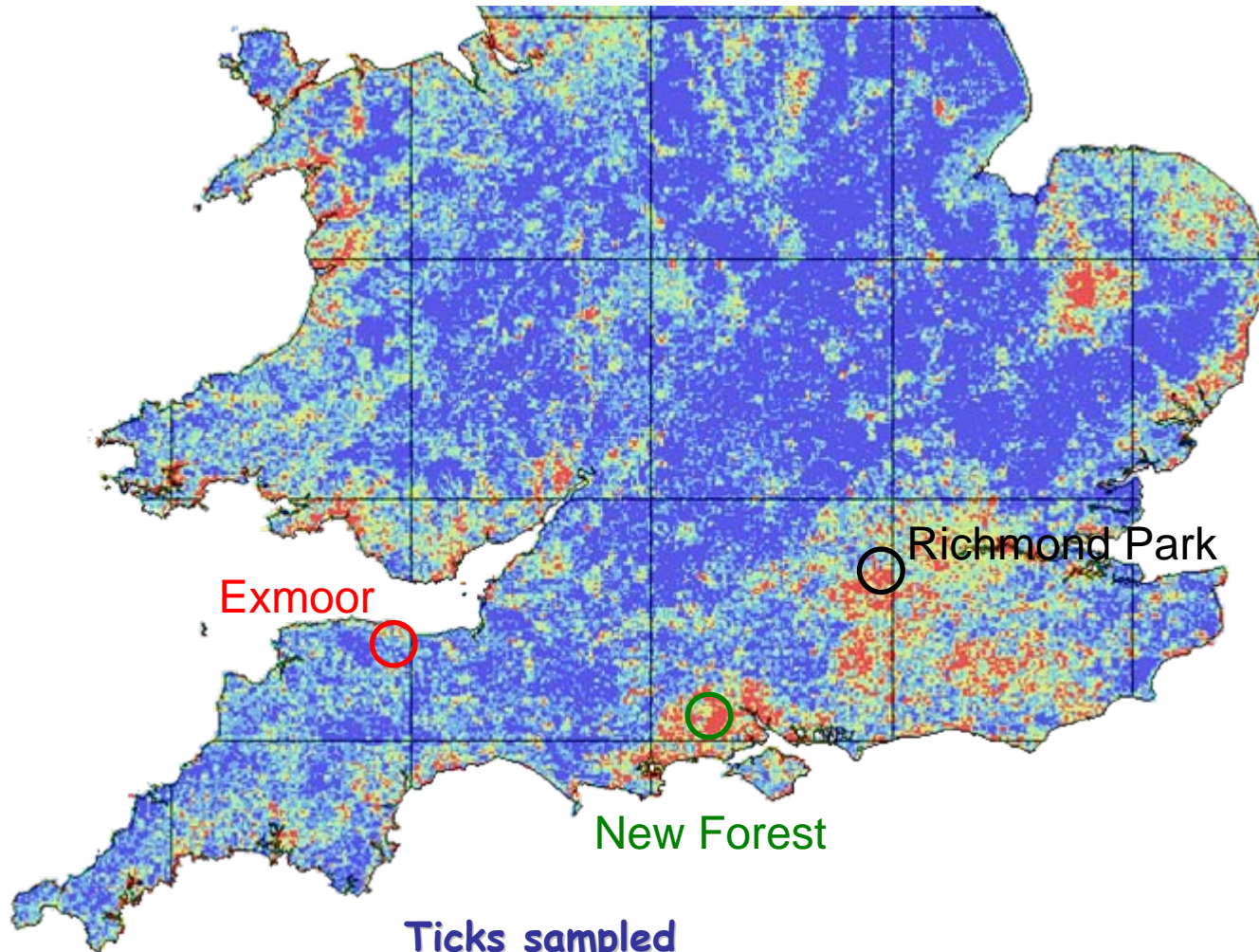


Zoonoses as ice-bergs

Wildlife cycles largely hidden beneath surface

Hazard depends on bulk of ice-berg (= enzootic transmission potential)





Ticks sampled

- every 3 weeks for 2 years
- in 6-7 habitats
- at 3 contrasting recreational woodland sites

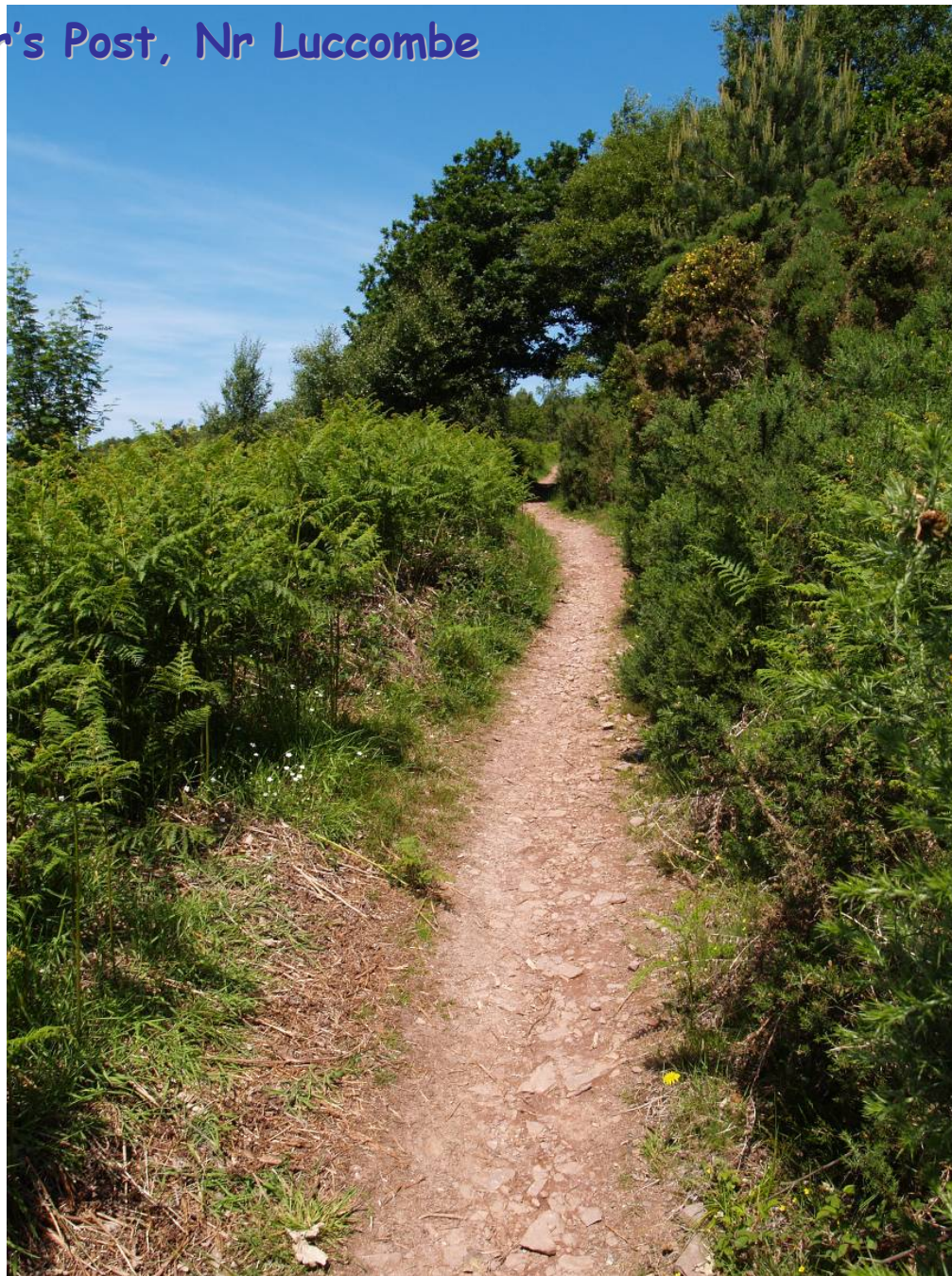
Exmoor: Webber's Post, Nr Luccombe

Grass next
to car park



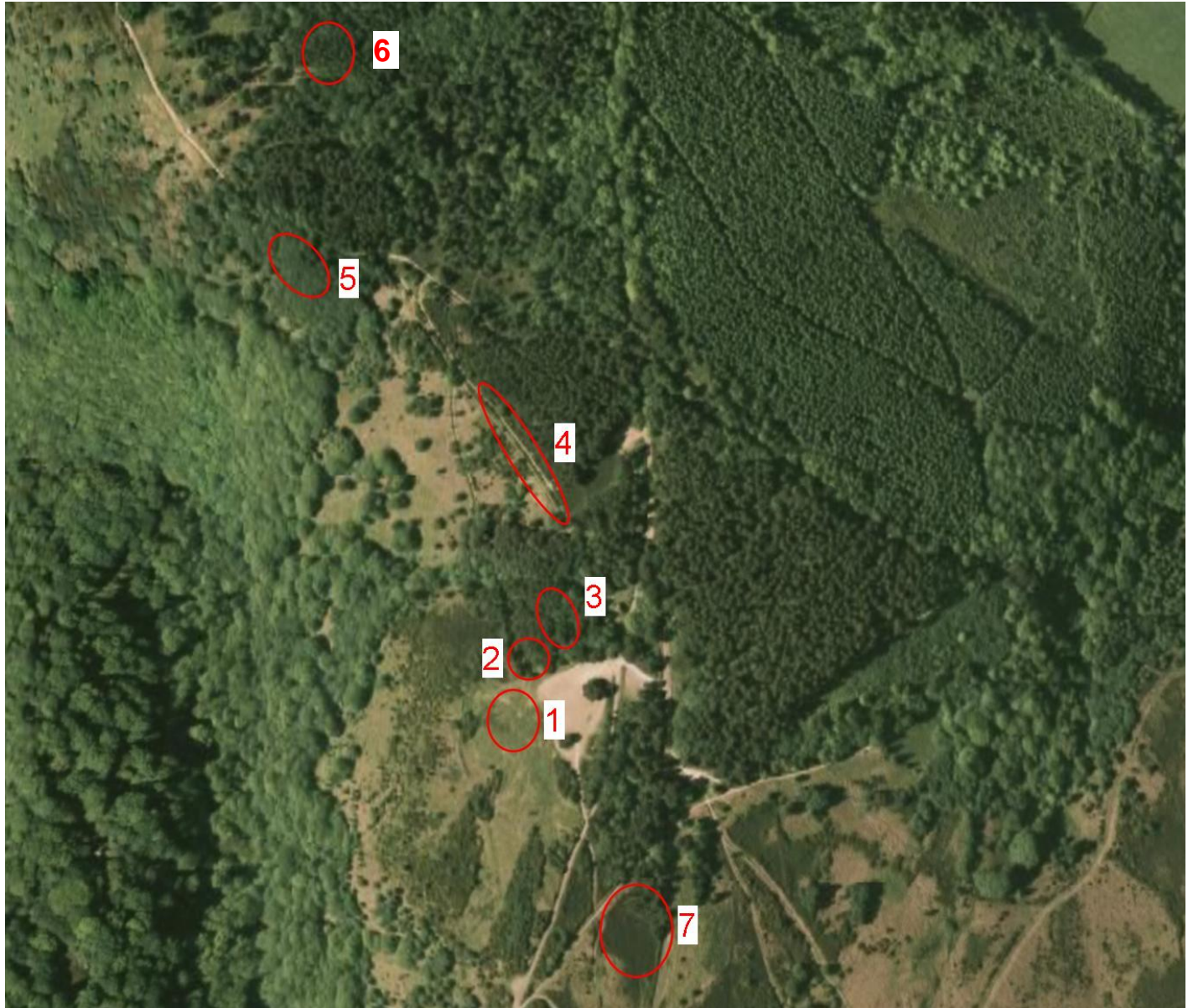
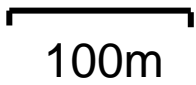
Exmoor: Webber's Post, Nr Luccombe

Bracken-edged
path

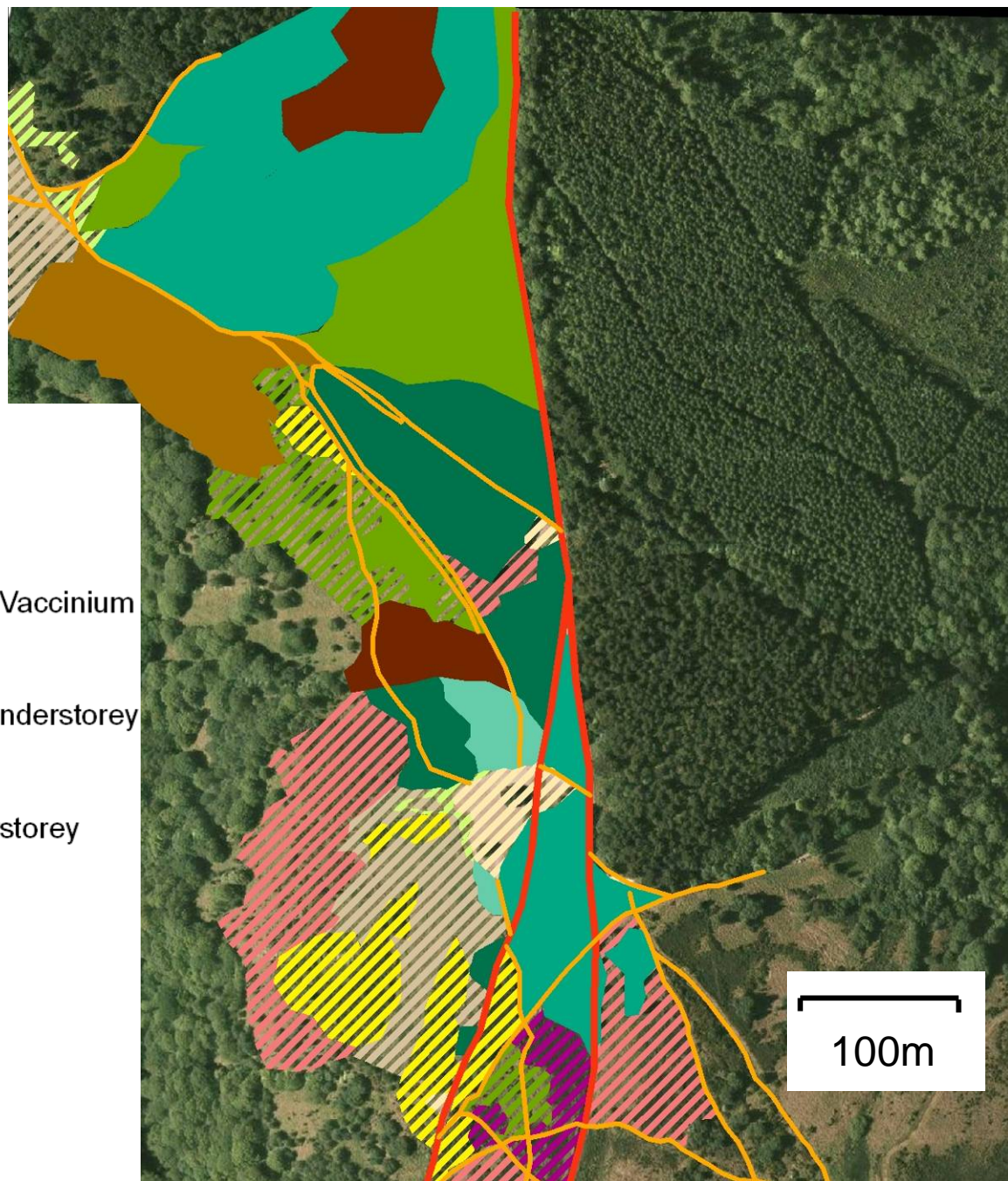




Exmoor: Webber's Post, Nr Luccombe

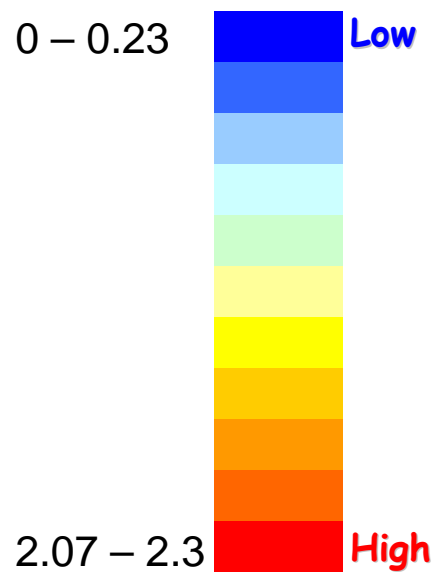


Webber's Post vegetation

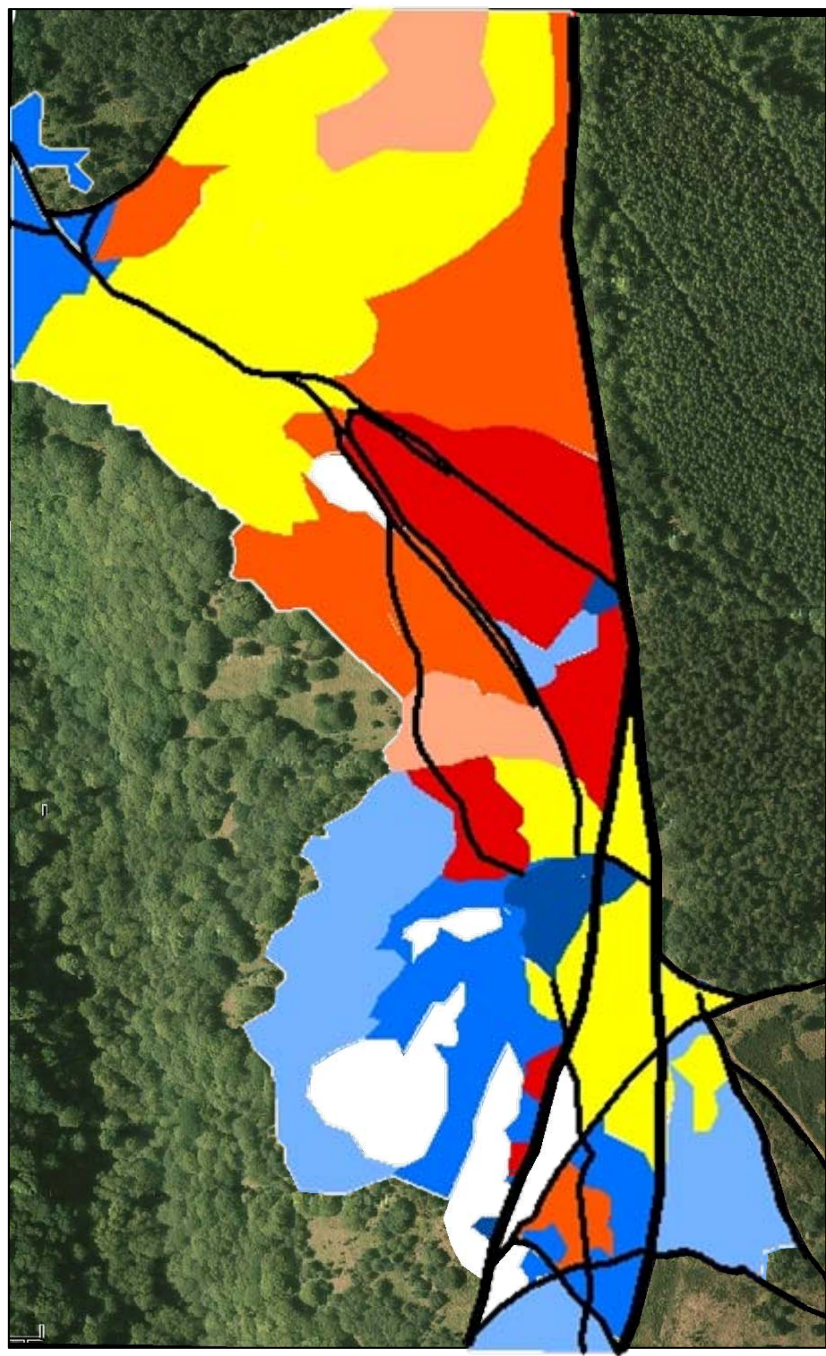


- Road
- ▨ Bare ground
- ▨ Bracken
- Coniferous wood with heather and *Vaccinium*
- Coniferous wood with *Vaccinium*
- Coniferous woodland with limited understorey
- Deciduous wood with *Vaccinium*
- Deciduous wood with limited understorey
- Deciduous wood with bracken
- ▨ Heather-gorse-bracken scrub
- ▨ Heather
- ▨ Grass-scrub
- ▨ Close-cropped grass
- ▨ Gorse

Nymph density (ticks m^{-2})

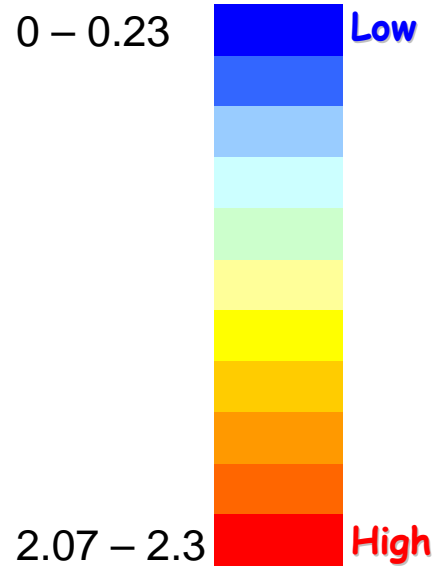


April

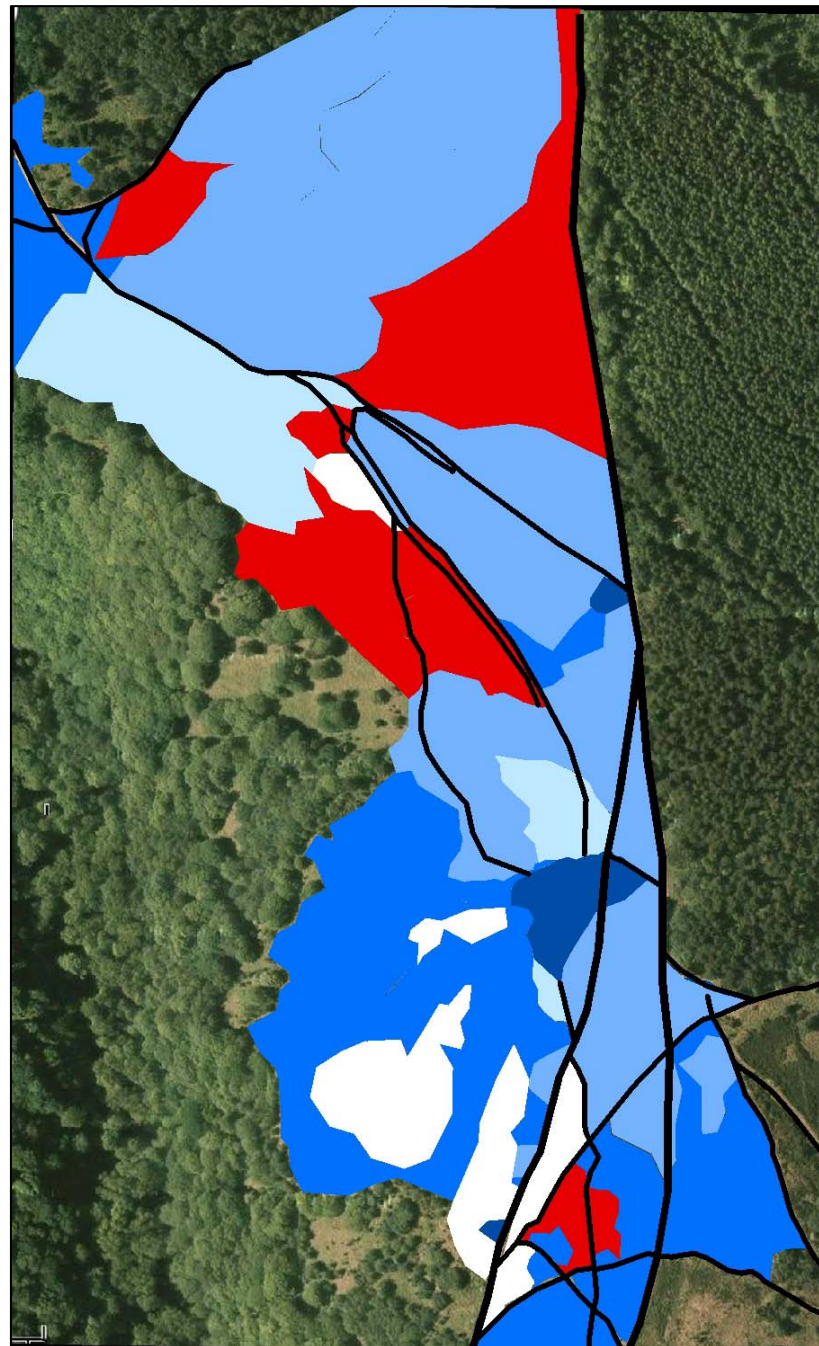


100m

Nymph density (ticks m^{-2})

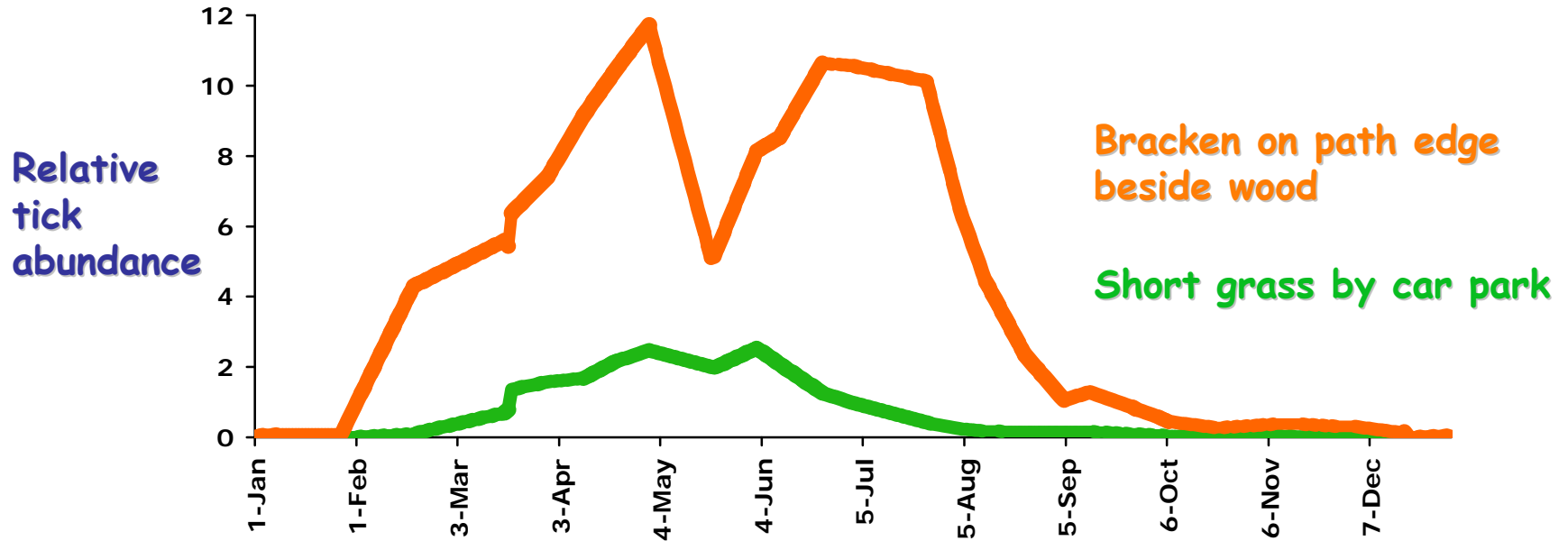


July



100m

Seasonal and habitat variation in tick hazard



Ticks much less abundant in short grass outside woods

But.....

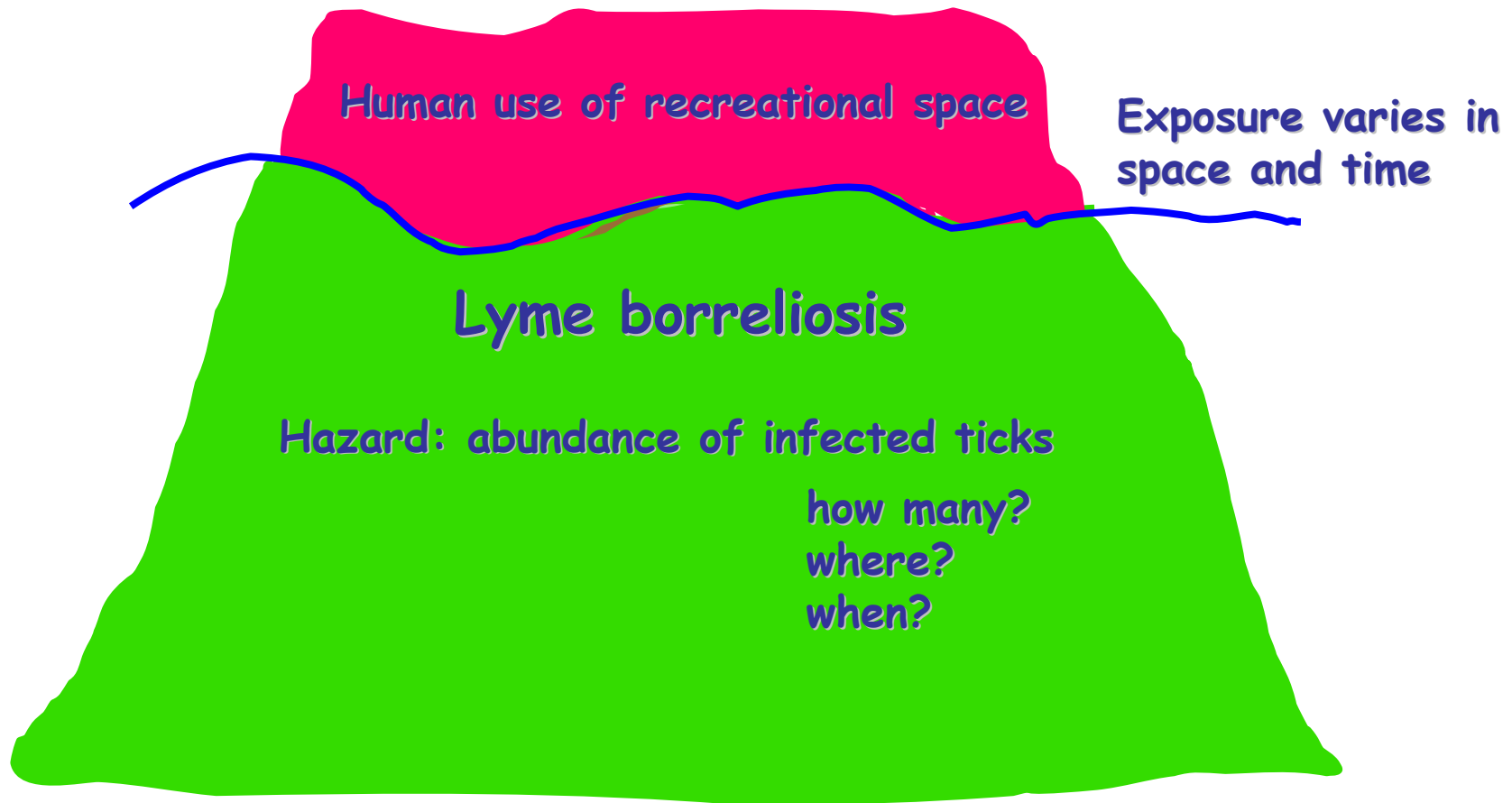
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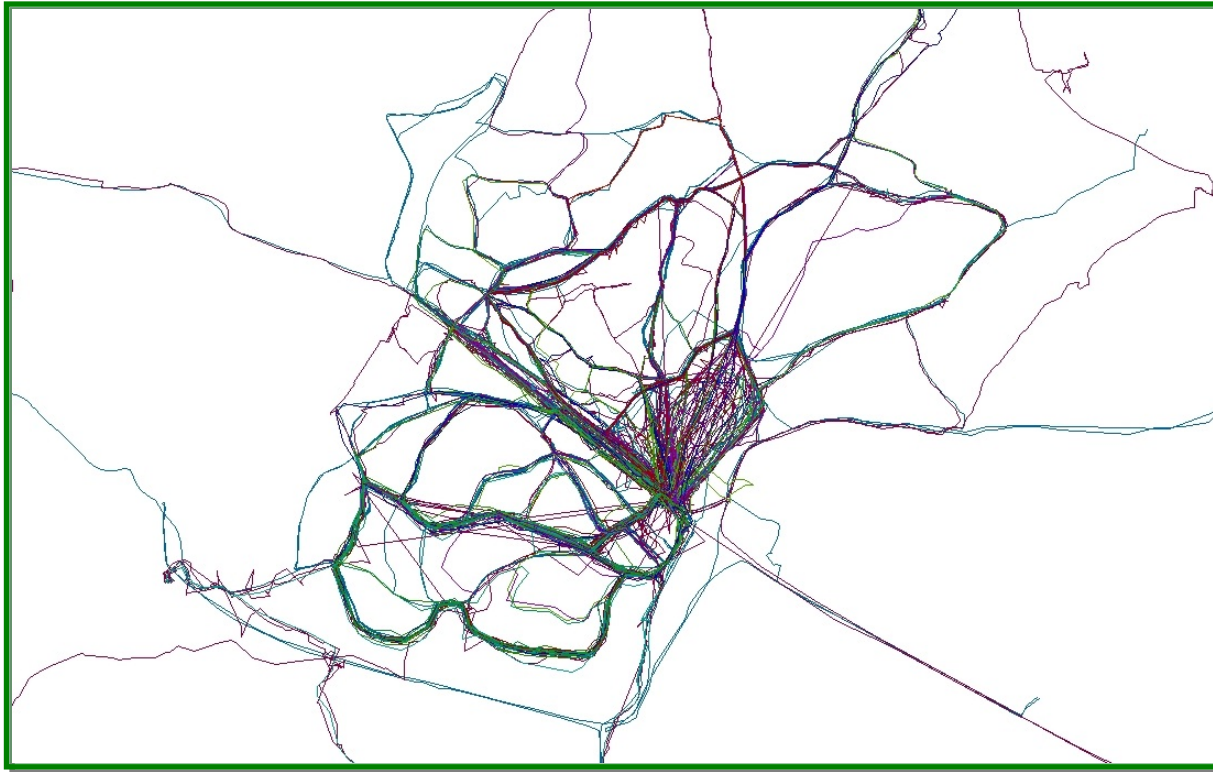
Risk depends on relative exposure (= human contact rates)

Incidence in humans \propto hazard \times risk



Human use of recreational space

GPS tracking of human walkers in New Forest



80% of walking confined to paths

Awareness of ticks and LB

- 88% of regular walkers
- 61% of casual visitors

Potential for effective intervention

☐ Tick population reduction?

- Vegetation management
- Acaricide applications

Extensive environmental impacts
Costly in time, manpower and sterling

☐ People management?

- Signage
- Exclusion
- Re-routing of outdoor activities
- Seasonal partitioning

Impact on purpose of countryside visits
People already on paths

☐ Influencing human behaviour

- Risk perception
- Awareness
- Responses

Talk by Julie Barnett on Thursday

Sampling for ticks



Leggings

Blanket

Flags

