Improving survival & performance of released pheasants

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The GWCT

- **Research and Education Charity**
- **The conservation ecology of game and wildlife**
- **Game research, 60+ scientists**
- **Our predecessors go back to 1930s**

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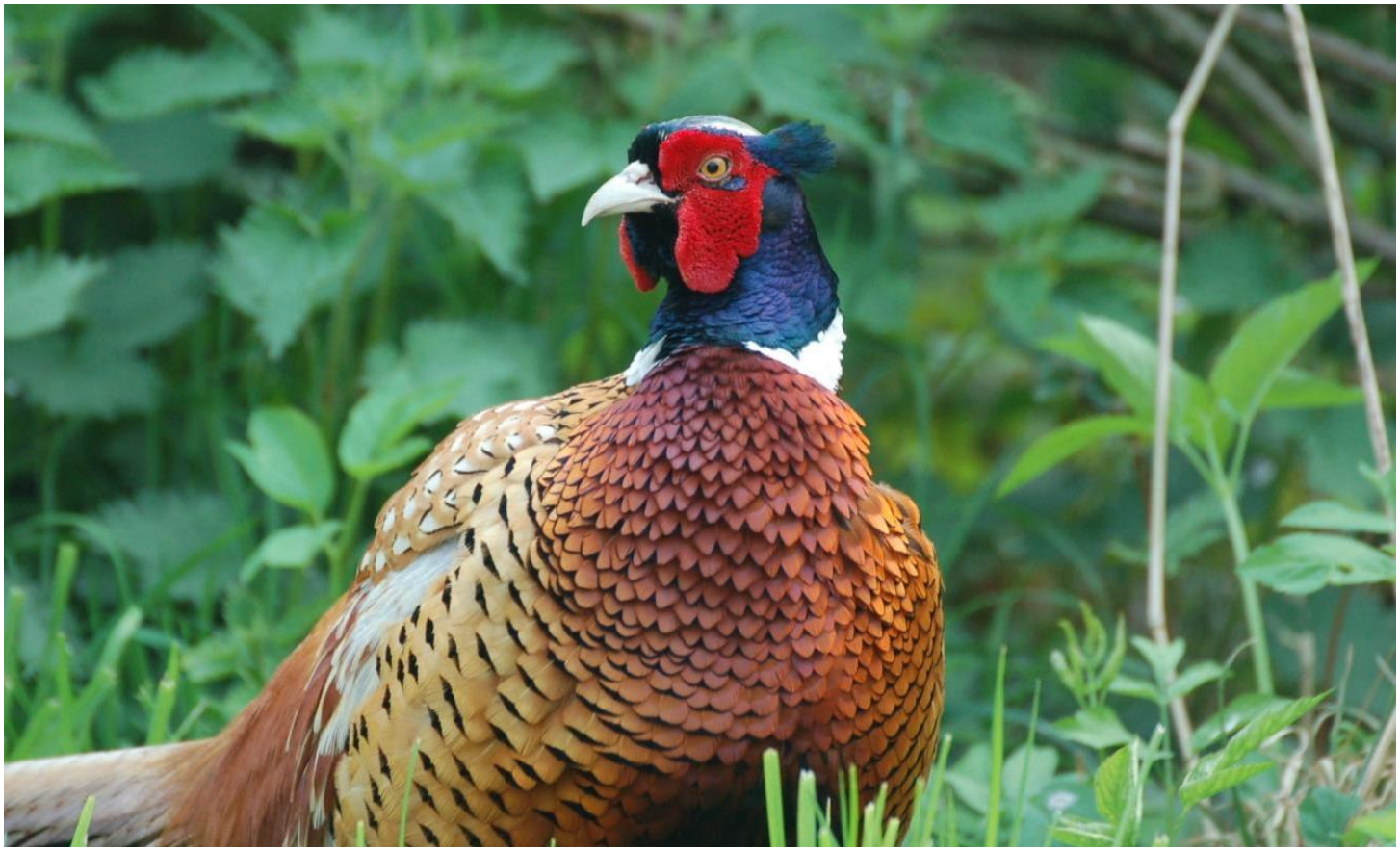
Pheasants are the most common and economically important gamebird in the UK



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Pheasant hunting in the UK

Birds released in the summer
for hunting in the Fall & Winter

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Pheasant hunting provides the motivation to manage woodlands

Pheasant hunting often the main reason for retaining and planting small woodlands on farmland

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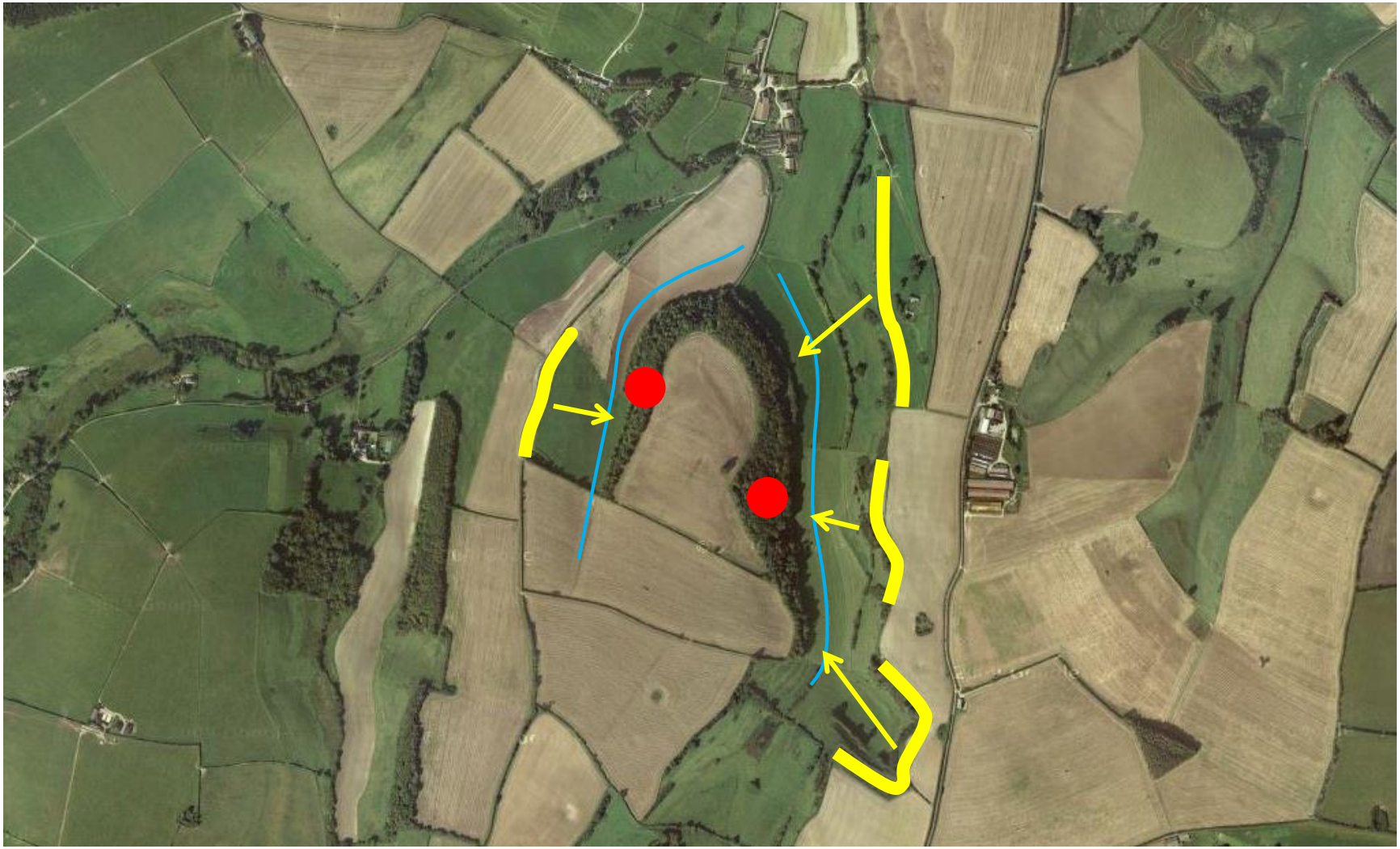

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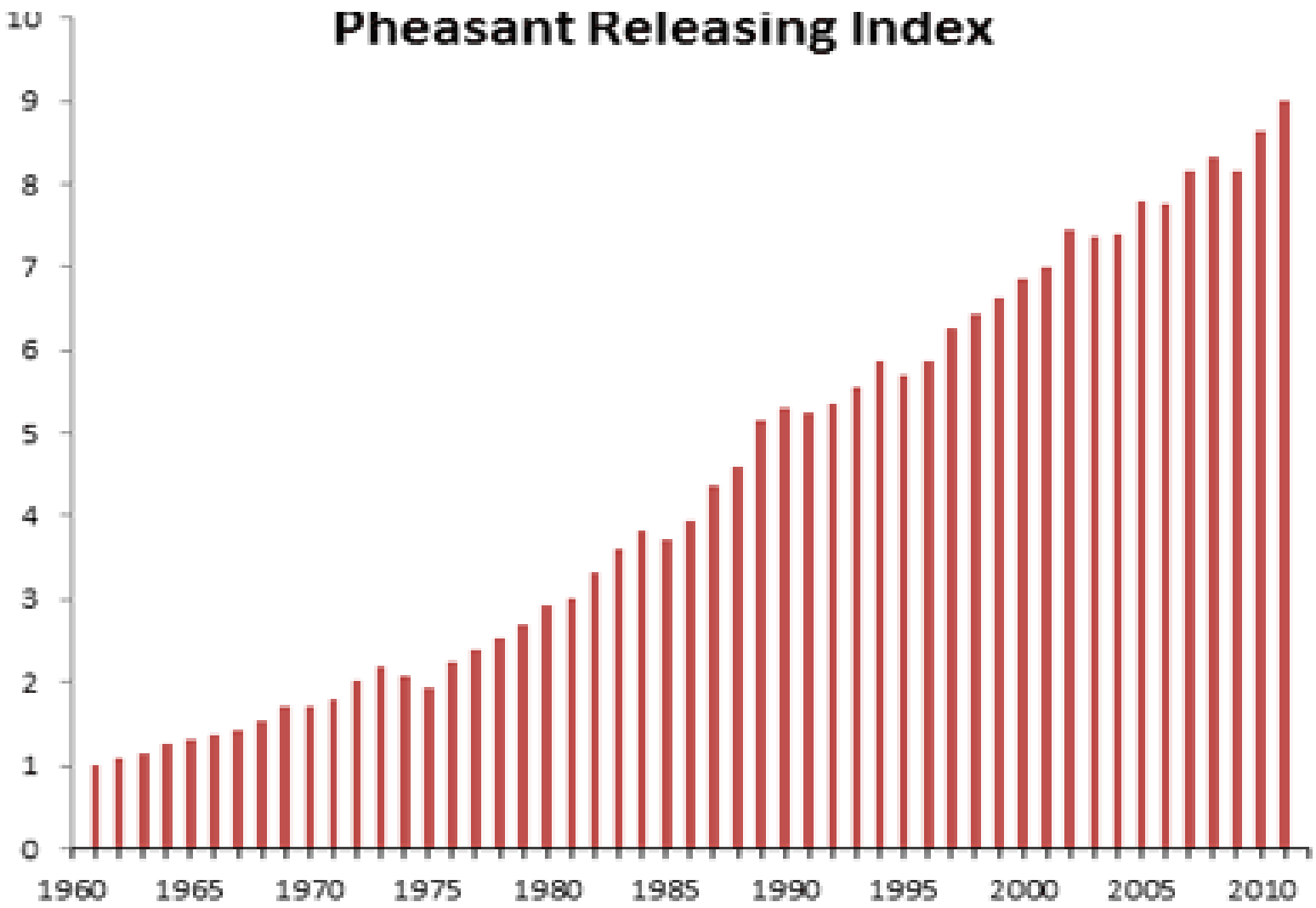

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Game Cover Crops

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Potential positive impacts of pheasant management on woodland and farmland ecology

Summary:

Management of woodland for pheasant shooting can benefit other woodland birds

Creation of rides and skylighting will increase light reaching understorey, good for butterflies and other wild pollinators

Accompanying game crops attractive to farmland and woodland birds

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Negative Impacts of released birds ?

Releases can effect flora and soils in and around release and feed points

Impacts on wild pheasants?

Increasing numbers of generalist predators?

Impacts on invertebrates?

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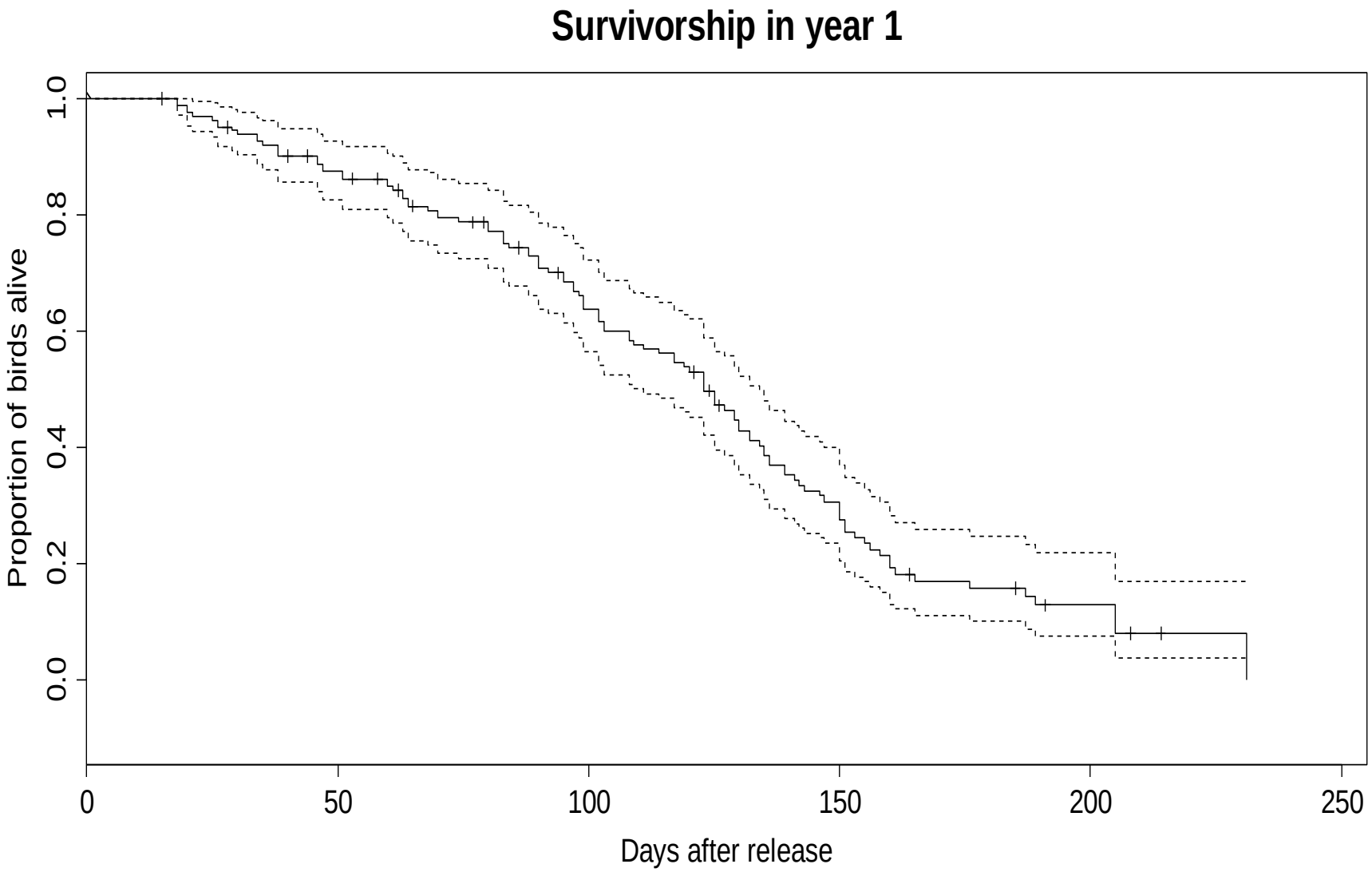
Fate of released pheasants July – March on large professionally managed shoots

Results from 385 radio-tagged birds on 6 estates over 3 years

Fate	Number			Estimated Percentage*
Shot on estate	148			**31**
Shot off estate	25			**5**
Predated	80			**19**
Survived	49			**16**
Early pen death	12			**3**
Scavenged	44			**15**
Unknown/other	27			**11**
Total	486			**100**

* Taking account of lost or failed radio-tags

Survival - Six sites, three years (average)



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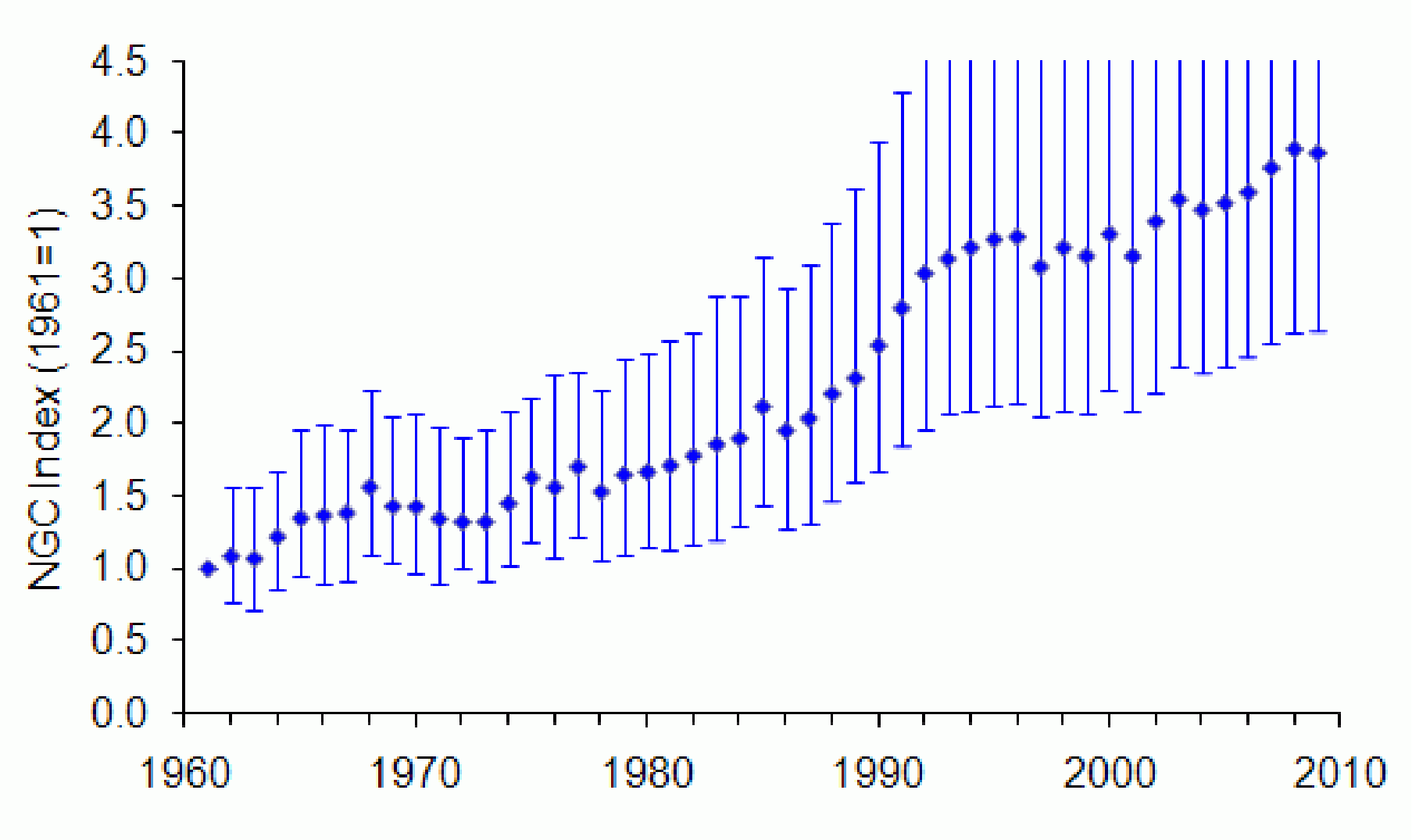
Fox bag records – National Gamebag Census



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Release Pen Habitat

- 1/3 Open sun
- 1/3 Low escape cover
- 1/3 Low roosting

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Husbandry

Feeding regime – enough feeders?

What to feed?

Drinkers - are there sufficient?

Hygiene

Medication?

Date of release

Age of release

Wing clip or not?

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Good release pen habitat

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Poor release pen habitat

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Improve the habitat – Improve the survival

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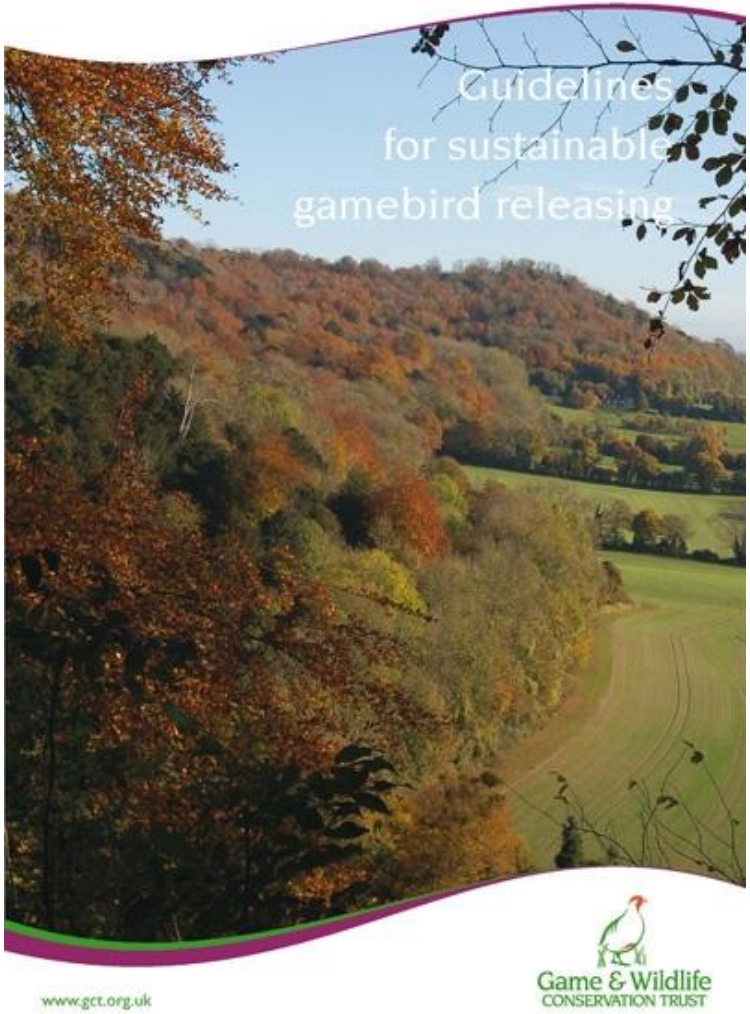
Science-based Advisory guidelines



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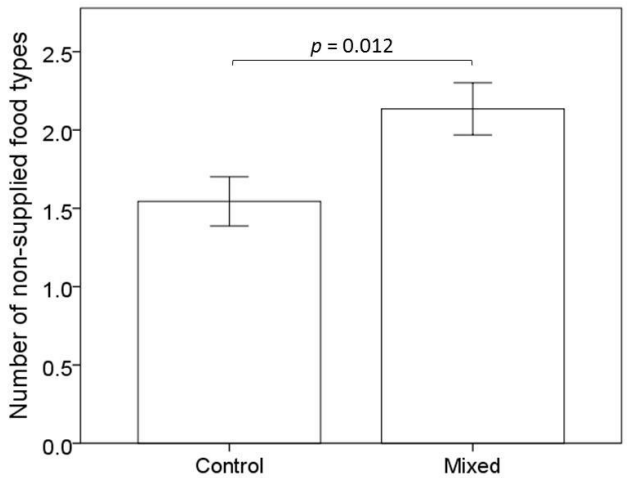
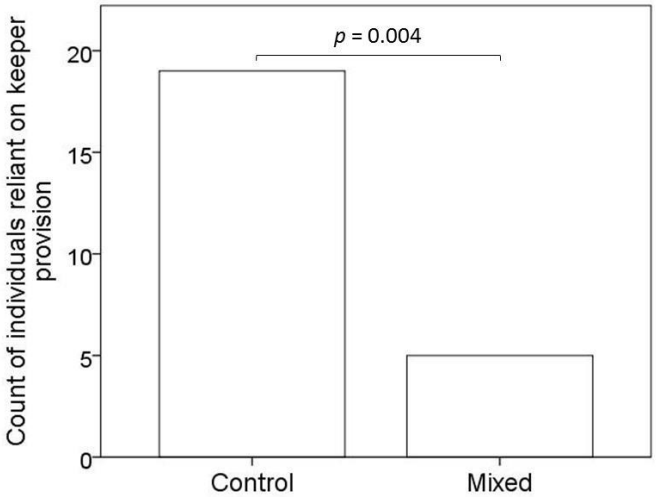
Rearing pheasants better adapted to life in the wild

- Experiments:
- Can manipulating diets of chicks influence foraging efficiency in poults and adults?
- Can access to perches in rearing pens improve behaviour and survival post-release?

Does natural diet during rearing affect diet after release?



Birds reared with mixed diet had a more diverse crop sample



Birds reared with the controlled diet were more reliant on supplementary feeding

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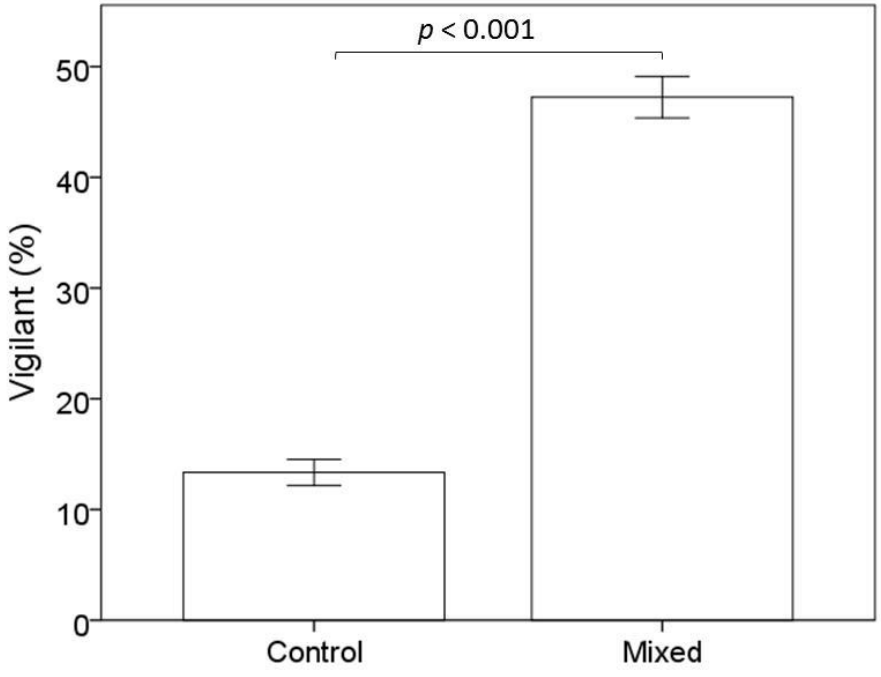
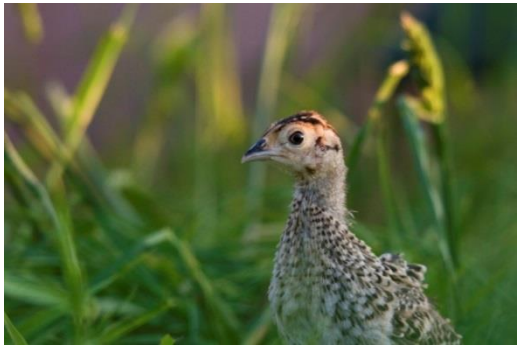
When a bird is not foraging what is it doing?





- Vigilance levels increase in birds reared with a mixed diet
- Greater vigilance = better ability at detecting and avoiding predators.

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Roosting behaviour

- Roosting behaviour is an anti-predation behaviour
  - Fox is biggest predator for pheasants
- Mother prompt chick perching in the wild at around 3 weeks.
- Current modern rearing regimes preclude perches

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Methods and Predictions: Quickly

- Reared pheasants for 6 weeks differing in access to:
  - Access to Perches
  - No access to perches: current rearing regime

Having early access to perches:

- Increase propensity to perch
- Increase the physiology to reach perches and stay on them for extended periods
- Differ in brain development
- Increase spatial awareness

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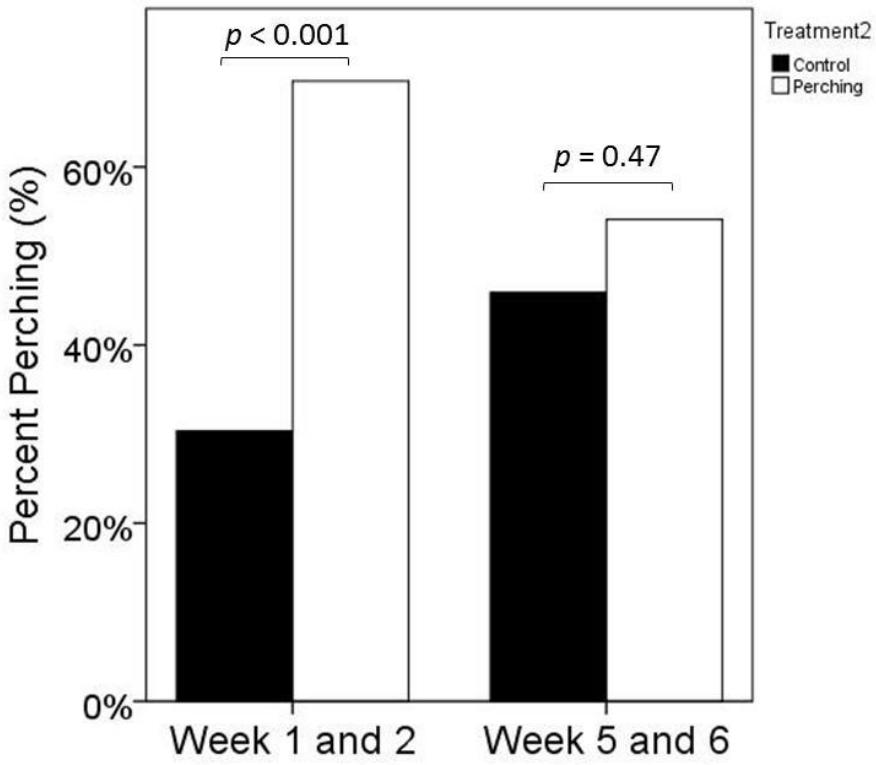
Does early access to perches affect the propensity to roost at night after release in the wild?



Higher proportion of birds in the perching groups roosted at night in the first 2 weeks of release.

- Roosting is an important anti-predator behaviour.

By 6 weeks there is no difference in the proportions roosting.

- In the wild the mother will promote roosting through calling.

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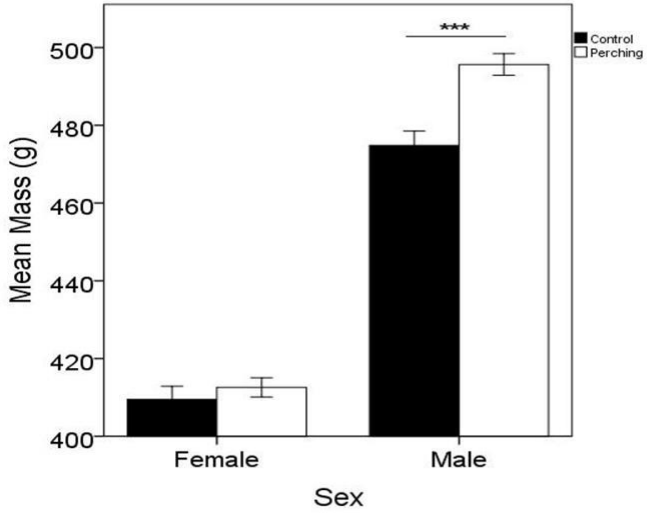
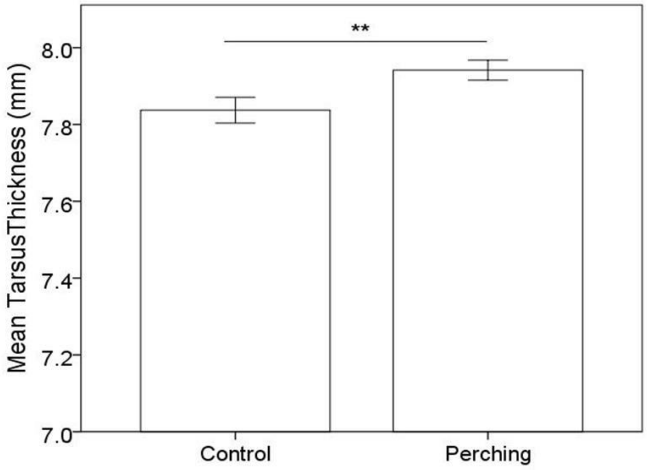
Does early access to perches affect the physiology that better enable a bird to perch after release?





Birds reared with access to perches were heavier

- Perching promotes flight
- Wing flapping for balance
- Influences muscle development

Birds reared with access to perches had larger tarsus thickness

- Bone size, strength and volume increases with exercise and loading
- Found in captive chickens reared with perches

Therefore upon release birds have the propensity to perch and the physiological development to get to higher perches and stay there for an extended period.

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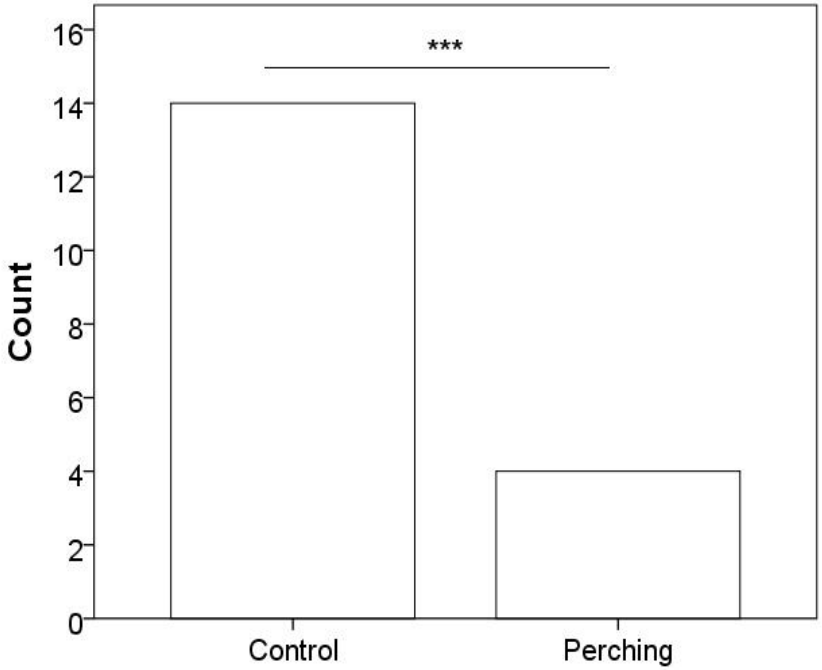
Did this affect survival?



More birds from the control groups were predated in the first 8 months after release.

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Manipulations during early development influences

- Behaviour
- Physiology

Diet Complexity

- Preference
- Discrimination
- Foraging time in the wild
- Diet
- Gut morphology

Habitat Complexity

- Propensity to roost
- Physiology to allow for prolonged roosting at night

Crucially influences survival

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Summary

- Husbandry, Habitat and predation control are key factors in influencing post-release survival rates and return rates

- Can we produce birds that are better adapted to life in the wild through minor modifications in the commercial rearing sector?

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