



# An assessment of two methods used to release red kites *Milvus milvus* to Hampshire, England.

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## 1. The red kite *Milvus milvus*

was exterminated during the late 18th and 19th centuries in England and Scotland, primarily due to human persecution<sup>1,2</sup>.

A reintroduction programme began in the United Kingdom in 1989. This programme re-established successfully populations of red kites to a number of locations in the UK<sup>3,4</sup>. Despite the success of the reintroduction programme, red kites remained scarce in Hampshire in southern England.



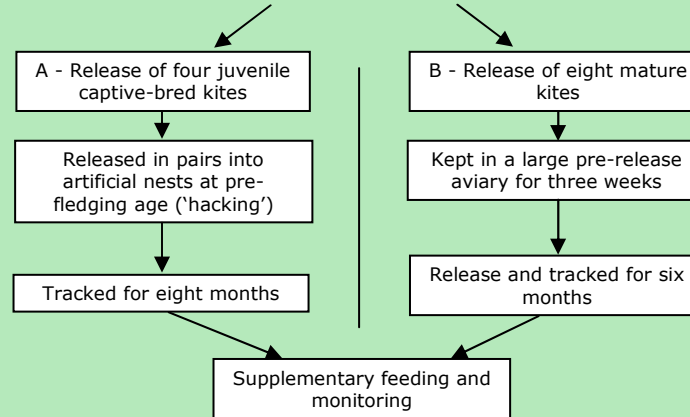
Between 2003 and 2005 we released 12 red kites into the wild in Hampshire, in two stages.

Here we:

- Outline the two release methods we used
- Describe post-release findings
- Assess the consequences of the release methods
- Discuss these in the context of reintroduction planning



## 2. Release methods



## 3. Post-release findings

- Captive-bred kites left the nest at eight days
- Mature kites dispersed between two and 56 days
- Flight skill development varied between groups:
  - Captive-bred kites developed skills slowly
  - Mature kites became accomplished fliers quickly
- Combined mortality for both groups during monitoring: 33%
- Captive-bred kites (75% mortality):
  - Two killed by electrocution
  - One died from head injuries (inter-specific aggression)
  - One remains local to release site in 2008
- Mature kites (12.5% mortality):
  - One died from unknown causes
  - One kite remained local for six months of observation
  - Remaining kites dispersed

## 4. Methods assessment

- Other releases of scavenging raptors have successfully employed hacking or a combination of hacking and the release of adults from aviaries
- However, behavioural variation between individuals has traditionally been given little attention in reintroduction programmes
- The different fates of the four young kites highlights how individuals within a species can respond differently to the same situations, despite having had identical rearing or life experiences
- It is possible that during the important time of post-fledging flight skill development, the release method of hacking exposed behavioural variations between the four young kites that increased their risk of mortality
- Holding young kites in captivity until they are fully flight-fit may therefore be a superior release technique
- We conclude that the proximity of a dangerous powerline and aggressive inter-specific encounters during the fledging period was the reason for the high mortality of the juvenile kites



## 5. Conclusions and implications

- Understanding the biology of a species is central to reintroduction success
- Such an understanding should incorporate the behavioural variation between individuals (particularly in small groups)
- Adapting release methods to incorporate the behavioural ecology of juveniles can mitigate exposure to hazards and improve survival

### References:

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