

Research and Development Series

Survival and Dispersal of coursed Irish Hares in Northern Ireland

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Survival and Dispersal of Coursed Irish Hares in Northern Ireland

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Survival & Dispersal of coursed Irish Hares in Northern Ireland



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Executive Summary

There is little available information on dispersal in the Irish Hare *Lepus timidus hibernicus* (Wolfe & Hayden, 1996). Dispersal is defined as a movement made by an individual or by groups of individuals out of one home range or territory for the purpose of establishing a new home range (Endler 1977; Stenseth 1983; Boonstra *et al.* 1987; Stenseth & Lidicker 1992). Knowledge about dispersal of a population is one of the essential requirements for its management and conservation.

During hare coursing, Irish Hares are removed from their home ranges for a period of time and returned to the location from which they were caught after being coursed. The aim of the current investigation was to evaluate the impact of hare coursing on individual survival and dispersal after release.

In early September 2002, the Environment and Heritage Service issued permits to two coursing clubs in Northern Ireland to net Irish Hares. These clubs are based at Dungannon and Ballymena. One of the conditions of the licence was that hare capture and release was undertaken in conjunction with the Queen's University of Belfast in order that a study of the animals could be made. In addition, the licence stipulated that each club should co-operate in the fitting of radio-tagged mammal collars to hares before they were released back to the wild.

The movements of the 9 hares captured in Northern Ireland were monitored during daylight hours using hand held radio receivers over a period of 11 weeks in order to ascertain survival and movement from the sites of release. A radio fix was obtained for each hare five days a week for the duration of the study period.

Radio tracking is a valuable method for obtaining ecological data without disturbing an animal. During the current survey there was no requirement to flush each hare, i.e. disturb the hares on a daily basis, since it was possible to get an accurate fix for the animal without disturbance. Hares were seen rarely during the radio-tracking survey although they were present in the fields. This reflects the difficulty in surveying a cryptic species such as the Irish Hare.

One of the hares released in County Tyrone removed its collar one day after release. A further two hares died during the radio-tracking study. One of these hares was from a release site in County Armagh and was found dead after ten days monitoring.

Since only fur, the radio-collar and blood were found, it is thought that this hare died due to predation. The second fatality was found after eleven days monitoring at the Ballinderry site and its cause of death is unknown. Six hares were alive and radio-tracked until 22nd January 2003. It would be unwise to attempt to apply percentage survival rates to the data in the absence of appropriate controls (using tagged, non-coursed hares) and given the small sample size. It is impossible to conclude that hare mortalities were a result of coursing. However, it is clear that hares can survive the experience of being netted and coursed before release and can resume activity to survive in the wild.

During the period of the study, all of the radio-collared hares remained within 200 metres of their release site and were commonly recorded in one field for weeks at a time. The furthest distance moved by a hare from the release site during the monitoring period was 1,200m in County Armagh. Given the size of home ranges found in other, albeit limited investigations of Irish Hares, this movement is comparatively small and suggests that any movements observed were within the home range and not dispersal.

Within the constraints of the study there is no evidence that hare coursing leads to significant mortality of hares. Further, hares returned to their place of capture after coursing and remained within that area. Hence, there is no evidence that coursing at the current level affects population size or distribution of the Irish Hare in Northern Ireland.

1. Introduction

The Irish Hare *Lepus timidus hibernicus*, is generally accepted to be nocturnal although individuals feeding in large groups may be observed at dusk or dawn (Morrison, 1994). During the day a hare will occupy a 'form' which is essentially a day-nest composed of an area of flattened grass usually on high ground with a good view of the surrounding countryside (Morrison, 1994). Here, the hare will remain in an inactive state for the majority of the daylight hours (Morrison, 1994). Feeding occurs during the night when hares may move large distances across their territories or home ranges. Rushes and hedgerows are among the most important diurnal resting sites for the Irish Hare (Dingerkus & Montgomery, 2002).

Scottish Mountain Hares have been found to occupy home ranges of between 20 - 28ha (Morrison, 1994). Average home range size of radio tracked Irish Hares in Wexford was found to be 12.6ha for females and 29.9ha for males (Fairley, 2001) while average ranges of hares on Bull Island in County Dublin were found to be 21.5ha for females and 46ha for males. These observations are based on small sample sizes. It is thought that home range size will vary with available food increasing as the food source becomes poorer.

There is little available information on dispersal in the Irish (Wolfe & Hayden, 1996). Dispersal is defined as a movement made by an individual or by groups of individuals out of one home range for the purpose of establishing a new home range (Endler 1977; Stenseth 1983; Boonstra *et al.* 1987; Stenseth & Lidicker 1992). As such, dispersal is a phenomenon of potentially great importance to the dynamics and structure of populations (Stenseth & Lidicker 1992). Knowledge about dispersal of a population is one of the essential requirements for its management and conservation. For example, it is important to know how dispersal is affected by land use, and how it affects disease and pest management (Hansson, 1971). Conservation of vulnerable populations requires knowledge of the minimum areas over which individuals spend all of their lives.

During hare coursing Irish Hares are removed from their home ranges for a period of time and returned to the location from which they were caught after being coursed. The aim of the current investigation was to evaluate the impact of hare coursing on individual survival and dispersal after release.

2. Background

During the summer months of 2002 a survey of the distribution of the Irish Hare population in Northern Ireland was undertaken by the Queen's University of Belfast. This survey involved estimating hare abundance by both walking diagonally across selected 1km squares distributed randomly throughout Northern Ireland and by counting numbers of hares 'spotted' during night driven surveys across transects of approximately 100km in length. The former method was a repeat of the survey carried out by Dr Karina Dingerkus in the mid 1990's.

In early September, 2002 the Environment and Heritage Service issued permits to two coursing clubs in Northern Ireland to net numbers of Irish Hares. These clubs are based at Dungannon and Ballymena. One of the conditions of the permit was that Hare netting and release was undertaken in conjunction with the Queen's University of Belfast in order that a study of the animals could be made. In addition, the permit stipulated that each club should co-operate with the University in the fitting of radio transmitters to Hares netted in Northern Ireland before they were released back to the wild.

3. Methods

3.1. Monitoring Released Irish Hares

Netted hares were monitored using radio-tagged mammal collars. Each hare was fitted with a collar prior to release into the wild. The radio collars weighed 15g and the batteries lasted for approximately 3 months. The radios were attached to hares using collars made from nylon cable-ties with a non-release ratchet lock mechanism (Plate 1). Collars were fitted by a veterinary surgeon in the field without anaesthesia. The radio collars consisted of a tag with a PIP transmitter and Ag376 cell (Biotrack UK Ltd, Wareham, Dorset). The transmitters emitted 50 pulses per minute, each pulse lasting 20ms. All the frequencies were in the range 173.200-173.350 MHz. The maximum range of the collars in optimum habitat was 1km.

Radio-collared hares were tracked using a three-pronged Yagi antenna and Marinar 57 Biotag Receiver (Marinar Radar Ltd., Lowestoft, Suffolk) in order to ascertain the direction and position of the Hare to an accuracy of approximately 50m.

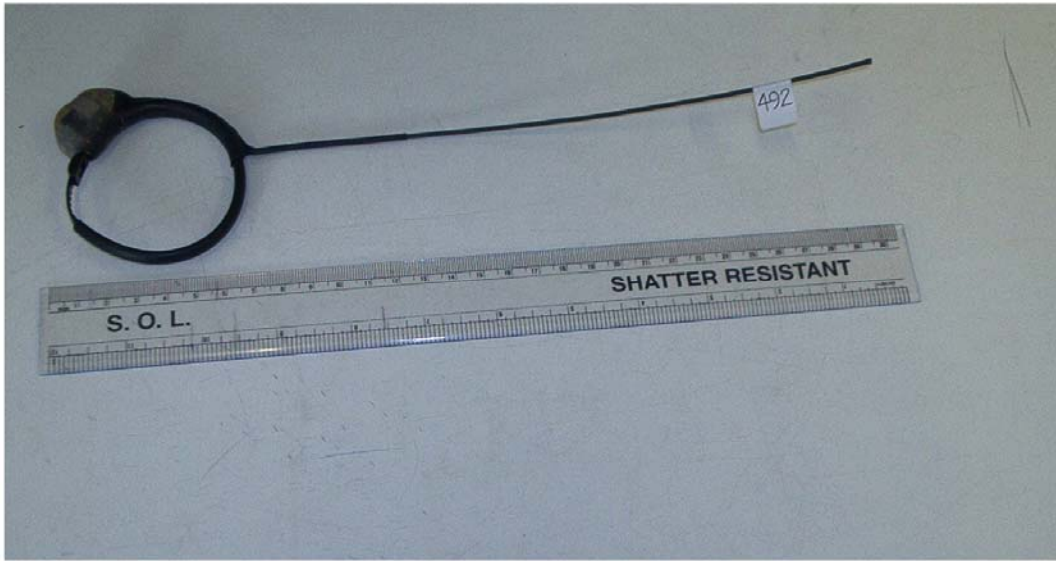


Plate 1. Radio-tagged mammal collar used to monitor the dispersal of Irish Hares.

4. Results

This information may be available on request.

5. Discussion

The current investigation monitored the dispersal and survival of Irish Hares subsequent to being coursed. A total of nine six hares were monitored for the full 11 weeks. There were two hare mortalities during this period. One of these hares is thought to have died due to predation whilst the cause of death of the other is unknown. Fatalities have been reported in other similar studies on Irish Hares that had not been coursed. For example, Wolfe & Hayden (1996) found that out of a total of twelve Irish Hares monitored over a period of 12 months, four were lost due to either mortality or transmitter failure. It would be unwise to attempt to apply percentage survival rates to the data in the absence of appropriate controls (using tagged, non-coursed Hares) and given the small sample size. It is impossible to conclude that Hare mortalities were a result of coursing. However, it is clear that hares can survive the experience of being netted and coursed before release and can resume activity to survive in the wild.

All monitored Hares remained close to the site of release and were commonly recorded in one field for weeks at a time. Given the size of home ranges found in other investigations of Irish Hares (Fairley, 2001; Wolfe & Hayden, 1996) this movement is comparatively small and suggests that any movements observed were within the home range and not dispersal.

6. Conclusions

Within the constraints of the study there is no evidence that Hare coursing leads to significant mortality of Hares. Further Hares returned to their place of capture after coursing remain within that area. Hence, there is no evidence that coursing at the current level affects population size or distribution of the Irish Hare in Northern Ireland.

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Our aim is to protect and conserve the natural and built environment and to promote its appreciation for the benefit of present and future generations.

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