Factors that can be used to predict release rates for wildlife casualties

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AIM

This research aimed to establish which factors could be used to predict the likely outcome of rehabilitation of a casualty.

CONCLUSION

More severely injured animals are less likely to survive to be released – statistics describing the likelihood of survival can be used to decide between treatment and euthanasia.

'MATERIALS AND METHODS'

Records of eight casualties species (badger, blackbird, hedgehog, red fox, tawny owl, starling, house sparrow and Pipistrelle bats*) from four RSPCA wildlife hospitals between 2000 and 2004 were analysed in this study.

** may include three species as centres did not always identify/record which species of Pipistrelle bats were rescued*.

The following factors that might affect the success of release were investigated:

- Species
- Age (adult older than one year/juvenile less than one year and/or still dependent on parents)
- Sex
- Time of admission (3 categories): 8am – 2pm, 2pm – 8pm, 8pm – 8am

- Season of admission (4 categories): spring, summer, autumn, winter
- Rehabilitation centre
- Weight on admission
- Reason for admission (7 categories): road traffic accident, cat/dog attack, orphan, injured, sick, grounded (bats) and other
- Total time in captivity (after the first 48 hours to remove animals immediately euthanased)
- Clinical diagnosis or symptoms (6 categories):
  1) no apparent damage
  2) weak and/or thin
  3) superficial tissue wounds only
  4) deep tissue wound(s) and/or emaciated and/or blind and/or fractured pelvis/ all other bone fractures
  5) moribund (nearly dead) and/or blind and/or fractured pelvis
  6) eye damage was included as an additional category for tawny owls

  Category 1 was considered the least severe, and category 5 (or 6 for tawny owls) the most severe.

Statistical analysis was also adapted to account for the necessarily longer captivity of orphans and lower body weight of young animals.

RESULTS

- **For all species, the more severe the injury or illness, the less likely the individual was to be released. (Reason for admission was not analysed as it is too closely related to clinical diagnosis or symptoms.)**
- **Patients that died were in captivity for varying lengths of time – in other words more severely injured animals did not necessarily die more quickly.**
- **One of the centres was more likely to release house sparrows. There were no other statistically significant differences in release rates of different species between centres.**
- **Other factors – sex, age, time, season or year, body weight on admission and length of captivity were not significantly related to the likelihood of release.**

DISCUSSION

As release and survival rates for the four centres studied were found to be similar to those of the 35 centres that contributed to the British Wildlife Rehabilitation Council's (BWRC) Casualty Recording Scheme in the 1990's, the authors considered the data studied to be representative of rehabilitation centres across the UK.

"The results of this study…highlight the importance of obtaining a clinical diagnosis early on in the admission procedure, and using this diagnosis to make the decision about the future treatment of this casualty".

Previously published advice has suggested that a range of factors such as body weight, or speculation about the chances of post-release survival, should be used to make decisions concerning treatment, and while logical suggestions, these have not generally been supported by evidence from scientific study. Centres often seem to have a policy of attempting treatment in order to give all casualties 'a chance'.

The authors found that severely injured animals were (on average) spending around two or three weeks in care before dying/being euthanased. This could be considered to be both detrimental to animal welfare due to the stress of captivity and pain associated with their condition, and an unproductive draw on rehabilitators' resources which could be better employed for other casualties.

The authors proposed that "a triage principle will enable rehabilitators to decide whether or not to treat a wildlife casualty". If rehabilitators were to choose not to treat individuals with less than 10% chance of survival, then these results suggest that the following categories of casualty should be euthanased following diagnosis:

Species	**Diagnosis with less than 10% survival**
Bats and passerines	fractures, wing membrane tears and/or deep tissue wounds
All mammals	Fractured pelvis and/or severe eye damage
Raptors	Eye damage with fractures/deep tissue wounds

The authors suggested that further study would be useful in the following areas:

- Whether the body weight of small birds could be used to predict outcomes for these species (although it was not found to be useful for the raptor and mammal species studied);

- The impact of captivity on stress levels and recovery time for wildlife casualties; and

- Injuries that, despite apparently successful treatment, still reduce rates of survival after release.