WHAT IS A FERAL CAT?
Variation in definitions may be associated with different management strategies

Current estimates suggest the global population of *Felis sylvestris catus* (the domestic cat) to be about 272 million, of which 58% are essentially free-living and non-domesticated. Controversy surrounds the management of feral cats due to their association with the spread of zoonotic diseases, as well as issues of public nuisance and predation of wildlife. Additionally, they have been thought of as a reservoir for diseases affecting pet cats. There is no universally recognised definition of a feral cat. Worldwide, the term ‘feral’ is used differently between and within countries and may be used interchangeably with other terms including ‘free-roaming’, ‘street’ or ‘community’ cat. Various working definitions have been applied, incorporating features such as socialisation status, ownership, fear of humans, freedom to range, ability to confine, and interaction with, or dependence on, humans.

The aims of this study were to investigate the common features used by those working with feral cats in the UK to define them and differentiate them from pet cats. A secondary aim was to describe the interventions used in feral cat management, and how these differed between feral cat workers and veterinary surgeons.

**Materials and methods**

An interview-based questionnaire was developed by the Centre for Evidence-based Veterinary Medicine (CEVM) at the University of Nottingham, and is available at www.nottingham.ac.uk/cevm/sheltermedicine. The first part of the questionnaire consisted of open questions where participants were asked to give their definition of a feral cat, suitable for use in the field, education and research.

**Protocol:** A mixed methods approach, using questionnaires and focus groups, was used to collect data from feral cat workers and veterinary surgeons.

**Findings:** Conflicts in opinion on the implications of taming feral cats exist. The rescue workers typically felt that most cats could be tamed, whereas the veterinary surgeons felt this was generally inappropriate, except in the case of young kittens. A consistent definition of feral cats would enable better communication regarding the welfare and management of these animals, and would be useful for further research and education of the public.

**Proposed definition:** A feral cat is proposed by this study to be a cat that is unapproachable in its free-roaming environment and is capable of surviving with or without direct human intervention, and may additionally show fearful or defensive behaviour on human contact.
problems of ferals were. Participants were asked to base all of their answers on their opinions and subjective experience, rather than specific organisational policies or data.

A large online cat rescue database (www.catchat.org) containing the contact details of over 800 cat rescue organisations was used as the sampling frame. All of the 39 cat rescue organisations identified in Leicestershire and Nottinghamshire were contacted by telephone and asked to participate. If there was no response after five telephone calls across a range of days and times within a 3-week period, the organisation was removed.

All rescue organisations that agreed to participate were visited by one of the authors (LG), who administered the questionnaire. Following the questionnaire survey, all participants were invited to be involved in a focus group at the School of Veterinary Medicine and Science (SVM&S), and five rescue workers from three organisations attended.

The focus group further investigated issues raised in the questionnaire to clarify areas over which there was disagreement or ambiguity. The 1 h session was structured around four main questions to address the aims of this project and to further elucidate areas of disagreement identified in the questionnaire. These were:

- What features are common to feral cat behaviour?
- What are the most important factors in deciding whether a cat is truly feral?
- At which point can a cat be classified as truly feral?
- At what age(s) is it possible to tame a feral cat?

The questionnaire was also given to a group of veterinary surgeons who frequently worked with cat rescue charities, and were attending a shelter medicine meeting at the SVM&S. All were from practices involved in providing veterinary services for feral cats. They were requested to fill in the questionnaire and return it in a prepaid postal envelope supplied. At a subsequent meeting 6 months later, six veterinary surgeons from the same practices (five of whom were questionnaire respondents) participated in a focus group of identical format to the rescue workers’ session.

The survey results were manually entered into Microsoft Excel for descriptive statistics. Where numerical scales were used, the median and range for each set of data were calculated.

The focus group sessions were recorded using an Olympus VN-3500PC digital voice recorder and then transcribed. The transcript from the focus group was coded in NVivo qualitative data analysis software (QSR International, Version 9, 2010) and thematic and content analysis18 were undertaken.

### Results

#### Questionnaire

**Response rate – feral cat organisations**

In total, 37 organisations were approached to take part in the study, and 13 (33%) agreed to participate. Of the remaining 24 organisations initially approached, nine were not contactable after five attempts, so were discarded from the study and 17 organisations did not want to be involved. The main reason given for refusal (12/17, 71%) was that the organisation did not take in feral cats.

All questions were answered by all 13 participants, with the exception of two questions which were not answered by one participant, as these were not relevant to their work. For the purposes of this study, the term ‘participant’ represents one organisation interviewed; however, this may have been a group of up to three people from within the same organisation.

**Response rate – veterinary surgeons**

Seven of the nine attending veterinary surgeons completed a questionnaire.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Participants’ agreement with statements regarding key identifying features of a feral cat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statement</td>
<td><strong>Features of a feral cat, in its free-roaming environment</strong></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Unapproachable by humans (will run away)</td>
<td>10</td>
</tr>
<tr>
<td>Human contact not possible without trapping</td>
<td>10</td>
</tr>
<tr>
<td>Lives wild with no human intervention</td>
<td>10</td>
</tr>
<tr>
<td>Has never had any human contact</td>
<td>10</td>
</tr>
<tr>
<td>Hissing/spitting if approached</td>
<td>10</td>
</tr>
<tr>
<td>Lives wild but with some human intervention (eg, feeding)</td>
<td>9</td>
</tr>
<tr>
<td>Will attack if approached by humans</td>
<td>7</td>
</tr>
<tr>
<td>‘Messy’ appearance (thin, poor coat condition)</td>
<td>5</td>
</tr>
<tr>
<td>Will never be tamed</td>
<td>5</td>
</tr>
<tr>
<td>May possibly be tamed and can be rehomed to a pet situation</td>
<td>5</td>
</tr>
<tr>
<td>Can only be restrained and handled with drugs</td>
<td>5</td>
</tr>
<tr>
<td>Will tolerate human interaction</td>
<td>5</td>
</tr>
</tbody>
</table>

| Behaviour of a feral cat, once trapped | **Will bite and attack if you put your hand/ an inanimate object into the trap** | **Will hiss and spit if approached in the trap** | **Will make a mess inside the trap** | **Will cower away from you in the trap and try to hide** | **Climbing the sides of the trap** | **Quiet and subdued** | **Cannot be handled without the use of drugs (sedation/anaesthesia)** |
|--------------------------------------|-------------------------------------------------|-------------------------------------------------|-------------------------------------------------|-------------------------------------------------|-------------------------------------------------|-------------------------------------------------|
|  | 10 | 7–10 | 10 | 7–10 |
|  | 10 | 5–10 | 10 | 7–10 |
|  | 10 | 2–10 | 10 | 3–10 |
|  | 10 | 7–10 | 9 | 6–10 |
|  | 9 | 1–10 | 8 | 1–10 |
|  | 9 | 1–10 | 8 | 1–10 |
|  | 8 | 1–10 | 7 | 1–10 |
Characteristics of a feral

The participants were given a set of statements describing cat characteristics and asked to rate these statements from 1 (do not agree) to 10 (fully agree) (Table 1).

When asked if they had a set procedure for identifying a feral cat, all of the rescue workers did but the veterinary surgeons did not. The rescue workers based the identification of ferals on: whether the cat ran away or was unapproachable by humans (69%, 9/13); the opinion of the person referring (46%, 6/13); and the cat’s behaviour (23%, 3/13).

Interventions for ferals

The actions taken by rescue workers and veterinary surgeons when dealing with feral cats within specific age ranges are given in Table 2. For cats over 6 months old, trap–neuter–return/relocate was most commonly reported by both groups of participants, although there was disagreement between the groups for younger kittens.

All of the participating rescue workers and veterinary surgeons neutered ferals, and most provided worming and flea treatment. Twelve (92%) rescue organisations and six (86%) of the veterinary surgeons used a method of re-identification, and ear tipping was the most common method (7/13 [54%] of the rescue workers, 100% of the veterinary surgeons). Other methods of identification used by the rescue workers included microchipping (4/13, 31%), shaving fur (2/13, 15%), markings (1/13, 8%) and body condition score (1/13, 8%). One of the reasons given for not ear tipping, and shaving patches of fur instead, was that the participant ‘did not like the idea’ of ear tipping.

Twelve rescue organisations and two veterinary surgeons regularly blood tested ferals for feline immunodeficiency virus (FIV) and feline leukaemia virus (FeLV). The cats most commonly selected for testing were entire males (5/12, 42%) and sick females (4/12, 25%); 58% (7/12) tested all cats. Participants reported that they thought the most common health problems of feral cats were ‘cat flu’ and injuries from fighting or road traffic accidents (Figure 1). Several participants commented that ferals were ‘surprisingly healthy’, although one stated that ‘35% of rehomed cats are then involved in RTAs and dead within 2 years’.

Focus groups

Themes identified included those concerned with defining a feral (previous contact with humans, behaviour during human interaction), and those alluding to the cats’ welfare and management (physical condition, taming and interaction with the public).

There was general consensus between the veterinary surgeons and the rescue workers that lack of prior human contact, particularly during the first 8 weeks of life, formed a defining feature of a feral cat. There was also agreement that most ferals would avoid humans where possible, and would try to escape in preference to attacking. Lack of tolerance of human touch or handling was also an important feature. Several people additionally commented that the only time a feral would tolerate handling was when it was ill.

Both the veterinary surgeons and the rescue workers agreed that ferals were often in good physical condition; however, one veterinary participant commented that ‘you don’t get many older ones’. Several veterinary surgeons and the rescue workers commented that finding a positive FeLV or FIV test result was rare. When the rescue workers were asked how they would manage an FeLV or FIV positive cat, 9/13 (69.2%) said they would euthanase it, 3/13 (23.1%) said they would keep it and 1/13 (7.7%) said they would keep for 3 months and retest it.

Table 2. Actions taken by rescue workers and veterinary surgeons when dealing with feral cats, grouped by age of cat

<table>
<thead>
<tr>
<th>Action</th>
<th>&lt;2 months</th>
<th>2–6 months</th>
<th>6 months+</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rescue (%)</td>
<td>Vet (%)</td>
<td>Rescue (%)</td>
</tr>
<tr>
<td>Trap, neuter, return</td>
<td>0</td>
<td>1 (14)</td>
<td>5 (38)</td>
</tr>
<tr>
<td>Trap, neuter, relocate</td>
<td>0</td>
<td>0</td>
<td>6 (46)</td>
</tr>
<tr>
<td>Trap, neuter, tame, rehome</td>
<td>13 (100)</td>
<td>6 (86)</td>
<td>8 (62)</td>
</tr>
<tr>
<td>Trap, neuter, keep</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Euthanasia</td>
<td>0</td>
<td>0</td>
<td>1 (8)</td>
</tr>
</tbody>
</table>

Figure 1. Opinions regarding the prevalence of health problems found in cats presented to the rescue workers (n=13) and veterinary surgeons (n=7) surveyed. RTA = road traffic accident, FeLV = feline leukaemia virus, FIV = feline immunodeficiency virus.
The main source of disagreement was in relation to taming. All of the rescue workers would attempt to tame cats (defined by one of them as ‘be homed in a domestic situation’). This included both kittens and adult cats. While acknowledging the challenge posed by taming an adult feral, they felt it was achievable in the long term, commenting ‘we don’t fail with many’, and ‘it seems defeatist … saying never’. In contrast, the veterinary surgeons felt that, while kittens under 8 weeks would be amenable to taming, trying to do the same with an older feral was ‘a welfare issue’. Describing bringing a feral cat into a house, one participant commented: ‘That isn’t that cat’s environment. That’s not where it’s going to be happy.’

The rescue workers (but not the veterinary surgeons) also expressed concern about the public treatment of feral cats. They felt that people were reluctant to allow ferals to be neutered, either because they enjoyed seeing kittens play, or (for farmers) because it was perceived they would hunt less.

Discussion

Definition

There is no recognised definition of a feral cat in the UK. This study has demonstrated that there is huge variation in what people believe a truly feral cat to be. Participants agreed that a feral cat is unapproachable in its free-roaming environment and cannot be handled without trapping. This concurs with previous studies that use socialisation status, fear of humans and lack of tolerance of handling as defining feral characteristics.7,8,10,13 However, other features, including whether a cat receiving (active or passive) human intervention is truly feral, were more divisive. Participants in the survey were more likely to think a feral could exist in the wild with some human intervention than without; however, most participants felt either was possible. It is possible, therefore, that a true feral will be able to survive without human intervention, but will exploit it if offered.

The response of a cat to different situations was also seen as important in defining feral behaviour, with a feral being more likely to behave in an agitated way, such as panicking when trapped and trying to escape. However, domestic cats may demonstrate these characteristics when trapped or fearful; in these situations, the differentiating factor is likely to be change in behaviour over time as the cat acclimatises to the new situation.18

There was disagreement among participants regarding how apparently healthy a feral will typically appear. Feral cat health has been shown to be good,19 especially in well-managed colonies.20 There is likely to be an element of ‘survival of the fittest’ in feral cat colonies, as kitten mortality is so high (up to 90% in some studies),17 so only the healthiest survive. It was also suggested that ferals may have a reduced lifespan compared with pet cats.

It is interesting to note that rescue workers and veterinary surgeons agreed on some of the statements that define ferals but not on others. For example, in terms of feral cat behaviour they agreed on some areas (tolerance of human contact) but not on others (hissing/spitting/attack, ability to tame). The vets more strongly agreed that the cats may have compromised health. These differences of opinions may be due to many factors, possibly including different routes of education about this population of cats and also the different jobs that rescue workers and veterinary surgeons have. For example, it is possible that veterinary surgeons are more likely to see sick ferals and are less likely to encounter healthy individuals.

Health interventions

All participants surveyed insisted on neutering before release. The earliest age at which participants were prepared to neuter was 4 months, meaning young cats may have to spend a period of time in care before release or rehoming. Paediatric neutering (ie, from 8 weeks of age)21 was not practised by any of the rescue organisations, possibly due to a reluctance of either their vet or the organisation. However, this may change with an awareness of the advantages of and improved techniques in paediatric neutering.22 This high incidence of neutering is extremely promising as it has been suggested that this is a key step in controlling the feral cat population.19,20 although it needs to be done in conjunction with education of the public with regards to cat care and population control.2,12,23

Only 31% (4/13) of organisations vaccinated their feral cats against common feline diseases. This is surprising as, although most participants claimed true ferals to be generally very healthy, one of the main health problems identified by organisations in ferals was ‘cat flu’ (infection with feline calicivirus and/or feline herpesvirus), which was commonly seen by 61% of rescues. It is interesting that vaccination for ‘cat flu’, a common disease, was carried out comparatively infrequently. In contrast, testing for FeLV and FIV, which carries a similar cost to vaccination, was performed relatively frequently, despite these infections being identified by participants as rare among feral cats. This may be due to the fact that management of a cat found to be FIV/FeLV positive would alter, as it is recommended that cats testing positive for FIV or FeLV are either
euthanased, or are kept confined.24 Confine-
ment was practised by several organisations,
which is concerning as confinement of a feral
can have profound welfare implications.25

Ear tipping was common, but not universal-
ly used, and no standard procedure was
followed (see box).

Taming
The age at which a feral cat can be socialised
to humans is still a contentious issue, particu-
larly in cats aged over 2 months. There was
some suggestion among the rescue workers
that, with time and patience, any feral cat of
any age could usually be ‘tamed down’ or
‘brought round’ to human contact and domes-
ticated. It was said by a feral cat worker that
taming an adult takes a long time (years)
although cats may ‘still remain wary of
humans.’ This contrasted sharply with both
the opinions of the veterinary surgeons, and
with previous literature.2,9,13,18 It has been
suggested in previous work that keeping cats
which are non-socialised towards humans
(i.e., feral) in rescue centres causes high levels
of stress.25 This would suggest that prolonged
stays in shelters should be avoided for non-
socialised cats because of the high stress levels
this entails. If this is the case, taming of ferals
should be avoided, yet according to this study
is widely practised.

The focus group introduced the concept of
the importance of circumstance in whether a
cat becomes feral or not; if a kitten is born into
a situation where there is no human contact,
such as living wild in a colony with no human
intervention, it will be feral. Similarly, a
domestic cat placed in this situation may take
on feral characteristics, although possibly
never to the same degree as a cat born into the
wild.

Study limitations
It is uncertain how far the results of this study
can be generalised, due to the small numbers
involved. However, it is possible that these
attitudes and opinions are prevalent in others
working with feral cats. It is possible that
these results may have been affected by selec-
tion bias, whereby those with stronger opin-
ions on the management of feral cats may
have been more likely to participate in the
study. This study is limited by the small pop-
ulat ion investigated, due to time constraints
and the selected study area. Additionally,
without a clear definition of a feral cat, it can-
not be known if the study participants are
working with the same population of cats.
Discrepancies between definitions could be
due to different subgroups being described,
the population being naturally diverse or to
different interpretations, recall and descrip-
tions of the same details. To move forward in
this field, either the inclusion criteria for a
feral cat or our definition of a feral need to be
improved to allow continuity between all
areas of the field.

Conclusions and priorities
This study proposes the below definition of a
feral cat.
Currently, domestication of feral cats of all
ages is commonly practised by all the rescue
organisations participating in this study,
although the success rate and impact on the
welfare of the cats is not known. There is no
standardised procedure for dealing with a
feral cat across welfare organisations and
veterinary practices, and this is an area that
needs to be addressed. Without this, there can
be no coordinated and effective response to
the feral cat population. Neutering and public

FERAL CAT – A PRACTICAL DEFINITION

- A feral cat is unapproachable in its free-roaming environment and is capable of surviving with or without
direct human intervention.
- When trapped, a feral cat will either display defensive tactics, or cower and try to hide.
- When released into a confined space, it will not be possible to handle the cat.
education are the two key areas highlighted by this study in feral cat population control. Nearly half of organisations surveyed based their decision as to whether a cat was feral or not on information from the public, so it is important to consider the public as a stakeholder when discussing feral cats. National coordination between veterinary practices and rescue centres is necessary to reach a solution to the feral cat problem that we know still exists in the UK; both in dealing with the cats and in educating the public.

Clearly variation exists, both in how feral cats are classified and in the strategies used to care for and control their populations. Common ground must be established in order to allow discussion and collaboration between stakeholders in feral cat welfare and management. Only then can the problems associated with feral cats be fully understood and addressed.

Acknowledgements

Many thanks to all of the feral cat workers and veterinary surgeons who participated in this study. Thanks also to Lisa Morrow for her invaluable assistance.

Funding

This work was supported by both the School of Veterinary Medicine and Science and the Centre for Evidence-based Veterinary Medicine (CEVM) at the University of Nottingham. The CEVM is supported by an unrestricted grant from Novartis Animal Health and The University of Nottingham.

Conflict of interest

The authors do not have any potential conflicts of interest to declare.

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