

Fears, attitudes and opinions of suburban residents with regards to their urban foxes

A case study in the community of Grünwald—a suburb of Munich

Andreas König

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Abstract Throughout Central Europe, foxes have taken over urban areas as their habitat. In Southern Germany, these foxes are also carriers of the small fox tapeworm, which causes a serious zoonotic infection in humans. Therefore, a survey was carried out in a suburb of the city of Munich. A postal questionnaire was used to analyse the attitudes, opinions and fears of these participants towards their urban foxes and the background to these attitudes. Questionnaires were sent to all households with gardens and collected in again via the community council. Seven hundred and seventy-nine or 31% of questionnaires were returned. Only a few people are afraid of the fox itself; however, 55% are afraid of the fox tapeworm. Worming the animals is the preferred counter-measure, with 81% in favour. The majority of inhabitants are pleased to see a fox in the community and feel the animals have a right to live. People are afraid of the tapeworm either because they have children in the household or because of increased knowledge of the subject or because it has increasingly become an issue. On the basis of the results of this study, it is to be expected that radical solutions such as killing the foxes are unlikely to be accepted among the population. Worming of the foxes does, however, meet with general approval.

Keywords Urban wildlife · Human dimension · Zoonotic infection · Foxes · *Echinococcus multilocularis*

Introduction

Fox populations have been growing in Germany and throughout Central Europe since the end of the 1980s (König et al. 2005). This sudden, marked increase in population came about principally as a result of the immunisation of foxes against rabies (Vos 1990, 1993). At approximately the same time, foxes started entering towns and communities in greater numbers (Gloor et al. 2001, Hofer et al. 2000). As suburban areas offer foxes an ideal habitat (Adkins and Stott 1998, Contesse et al. 2004, Doncaster et al. 1990, Harris 1977, 1981a,b, Harris and Rayner 1986, Harris and Smith 1987, Heydon and Reynolds 2000, König 2005, König and Barla Szabo 2005, Macdonald 1993, Phillips 1970, Saunders et al. 1997, Wincentz 2005), high fox population densities coincide with high human population densities in these areas (Deplazes et al. 2004, König 2005, König and Barla Szabo 2005). Direct and indirect contact between foxes and people is frequent here. Living with these animals is not without its problems. Because they are nocturnal creatures, their activities are not necessarily noticed immediately. They do, however, leave debris behind in gardens and cause damage by pulling at or baiting things. The fact that the foxes in urban areas are highly infected with the fox tapeworm (*Echinococcus multilocularis*) is a problem (Hofer et al. 2000; König 2005; König et al. 2005). This tapeworm can cause a serious zoonotic infection in humans called *alveolar echinococcosis*, which is not only incurable, but also leads to death in many cases (Gerards 2005). Even if the absolute number of cases of the disease is relatively low, it has been possible to observe a massive rise in the number of cases in Southern Germany since 2000 (Robert Koch Institut 2007). Research into the causes of the disease—means of infection, conditions etc.—is made more difficult by the fact that between 10 and 15 years may pass between infection and the

A. König (✉)
Wildlife Biology and Management Unit,
Technische Universität München,
Am Hochanger 13,
85354 Freising, Germany
e-mail: koenig@wzw.tum.de

outbreak of the first symptoms (Gerards 2005). This knowledge gap leaves participants and politicians in a state of uncertainty. There have therefore been calls for management concepts to deal with the problem.

As well as biological and ecological principles, it is essential to consider the attitudes and opinions of stakeholders in the development of management concepts dealing with wildlife (Adams et al. 2005, Decker et al. 2001, Krausmann 2002). The consideration of the human dimension in the wildlife management process includes the following steps (Decker and Chase 1997):

1. Identifying what people think and do regarding wildlife
2. Understanding why
3. Incorporating that insight into policy and management decision-making processes and programs

Including the stakeholders and their opinions is essential to be able to carry out wildlife management projects successfully (Adams et al. 2005, Decker and Gavin 1987, Decker et al. 2001). In their summary of several studies, Loker and Decker 1998 contend that the attitude of participants is often ambivalent: On the one hand, they are happy to see wild animals in their own garden and perceive this as giving them higher quality of life; on the other hand, they fear problems in connection with the wild animals and feel disturbed or even threatened by them. Another small third group has no opinion or feeling regarding wild animals (Loker and Decker 1998; Knuth et al. 2001). In a study of attitudes towards white-tailed deer in New York, urban dwellers were pleased at the sight or closeness of the white-tailed deer, until they caused significant damage or there was a risk to health (Loker and Decker 1998).

Using human–wild animal conflict situations involving Canada geese and white-tailed deer as examples, several studies into the acceptance of wildlife management plans were carried out. These showed “that suburban residents are more likely to accept non-lethal management actions...” (Loker et al. 1999, p. 152).

In Switzerland, surveys were carried out by Hunziker et al. (2001) and Bontadina et al. (2001), on wolves, bears, lynx and urban foxes. In general, they found that foxes are accepted, and only urban foxes are not accepted. An exception to this rule was, however, the city of Zurich, where the inhabitants were found largely to accept the urban foxes, despite the fact that the population densities of urban foxes can be high here (10 foxes/km²). According to Hunziker et al. (2001), their worries about the fox tapeworm had no influence on their acceptance of the fox. He found low acceptance of predators in general among families with children and especially the younger the children were. This fits in with the results of Bontadina et al. (2001) from Zurich, according to which especially women have a negative attitude towards urban foxes.

It is not possible to draw conclusions about the opinions of suburban dwellers on specific wild animals and the special problems associated with them from the relatively general statements about their attitudes and opinions (Loker and Decker 1998). Before suitable management plans are worked out and drawn up, preliminary studies of the specific problem are necessary to understand the attitudes and values of stakeholders with regards to the subject (Adams et al. 2005, Decker and Gavin 1987), and this knowledge must be considered when planning measures to be taken (Adams et al. 2005; Decker and Chase 1997).

Studies of the attitudes of urban and suburban dwellers must form the basis of management concepts for town foxes and foxes with fox tapeworm. Apart from public administrations and political parties, whose attitudes are known, home owners with gardens are the most important stakeholders. It does not matter which measure is chosen: All measures must be implemented in private gardens.

There are not just a lot of foxes living in the community of Grünwald—they are also relatively tame and can easily be observed during the day. This means an increase in the number of questions, complaints and expressions of fear the local community council receives from citizens with regards to the health risks posed by foxes. Grünwald Community Council was interested in a management plan for dealing with the foxes in the community area. The plan aimed to reduce the risk to citizens of infection with the small fox tapeworm and to inform citizens about how they should deal with wild animals in the community. In a first step, we thus wanted to find out what citizens knew about their foxes and what their attitudes towards them were.

For this reason, a postal questionnaire was sent out to the participants of Grünwald. The study aimed to find out which measures to counter the fox tapeworm and/or lower the fox population density could be expected to meet with the approval of the local inhabitants. Depending on the result of the questionnaire, it would have been necessary to react differently, which is why it was first necessary to know where the citizens got their information from and how it reached them. A detailed breakdown of fears in the questionnaire was designed to avoid confusion of the still latent fear of rabies with fear of the fox tapeworm in the questionnaire. It was also of interest to find out whether the citizens were driven more by irrational fear of the foxes or by the real risk from the fox tapeworm. Questions on personal behaviour and the way participants dealt with the foxes were to give information on to what extent the high fox population density is a problem people have brought upon themselves and to clarify their relationship to the animals. For the political decisions, the questions on the way people wanted the foxes dealing with were important. These showed which measures would be met with approval or whether intensive public information

campaigns are necessary to counter irrational demands such as calls for the culling of all foxes in the community area. Even if this for example were to be demanded, it would not be practicable for reasons to do with wildlife biology and safety.

However, according to literature we expected, that non-lethal methods would be preferred, even if some residents demand to shoot the foxes.

Materials and methods

Study area

To carry out the study of attitudes towards town foxes and foxes with fox tapeworm, the community of Grünwald was selected, not only as it is a suburb of Munich, a city with a population of millions, but also because there is also a high fox population and high incidence of fox tapeworm there. The community is a suburb on the southern edge of the city of Munich and has the character of a garden city. Approximately 10,000 inhabitants live in the community in 5,400 households, of which 2,486 have their own garden. The plots range in size between 300 and 5,000 m²; the average size is 1,349 m². The community stretches over an area of 7.3 km². The housing areas are on the edge of the forest in the east and south. The 'Isar' valley runs along the western boundary of the community area. Apart from a narrow strip of vegetation, the built-up area merges directly with that of the city of Munich to the north. In winter, the fox population is approx. 10–16 animals per km². In the forest and fields, it is approx. one to two animals per km² (König 2005). The foxes mainly use garages and garden houses for their dens. Although there are only a few typical mice habitats in the community, 15% of the foxes are infected with the fox tapeworm. Despite this relatively low incidence, the probability of people being infected in Grünwald is 20 times higher than in rural areas with an infection rate of 80%, because of the significantly higher densities of the fox and human populations (König 2005; König and Romig 2005), and it thus represents a real health risk.

The population structure of the community of Grünwald was a critical framework for the study and for the selected method in particular. Many figures from public life live here, including politicians, industrialists and football heroes. The addresses of one third the citizens are not publicly accessible. It was extremely important to ensure anonymity.

Material

There are several methods of empirical social research available for the collection of data on attitudes. For this project, it was decided to conduct a survey by means of a

written questionnaire (Atteslander 2003). To develop the questionnaire, participants of the community of Grünwald were questioned at random in the street in the summer of 2000 on their opinions, fears and wishes concerning foxes in the community. On the basis of these interviews, a questionnaire was developed, which was later presented to students during the "Wildlife Management" lecture series at the Technical University of Munich. The students were to work through it looking at the comprehensibility of questions. The questionnaire was optimised using their comments.

The questionnaire includes the following groups of questions:

1. Personal data and living situation
2. What personal experience do they have of foxes?
3. What are their fears regarding foxes?
4. Which attitudes do participants have regarding foxes?
5. How do they themselves behave with the animals?
6. What action on the part of the council would they support?
7. What influences the participants' fear of the fox tapeworm?

Some questions (see Tables 1, 2, and 3) were thus formulated as yes/no items. With personal details, living conditions, personal experiences and sources of information, the relevant information was to be ticked. For more comprehensive items (Tables 4 and 5), bipolar rating scales without a middle category were used (Bühner 2004). The middle category was left out deliberately to force the participants to make a statement (Bühner 2004). In Tables 4 and 5, the items 'strong agree' and 'moderate agree' were joined to 'I agree.'

Random selection of participants could be ruled out, as the addresses of only little more than half of the inhabitants are available to the public. Because of the financial and public positions of many of the citizens, absolute anonymity was essential. After checking with the mayor, it seemed that this could best be ensured if all citizens were approached by the community council. This was to avoid giving the

Table 1 Where participants get their knowledge of foxes and fox tapeworm

Source of knowledge	Yes (%)
I read about foxes in the community in the newspaper	74
Public (information) event in the community	24
Scientific literature	22
Info-leaflet issued by community	62
Television	31
My friends/acquaintances tell me about foxes	53
I have no personal experience of foxes	27
Total <i>N</i>	779

Table 2 Participants' fears regarding foxes and the illnesses they transmit

Fears	Yes (%)
I am not afraid of the fox	55
I am afraid of rabies	35
I am afraid they could injure people	15
I am afraid of the fox tapeworm	55
I am afraid they could injure pets	8
Total <i>N</i>	779

impression that specific people were being selected. Furthermore, only the council has access to all the addresses and the register of postal boxes. Because of data protection laws, they could not make them available to us.

The community council posted the four-page questionnaire to all households with gardens, together with an introductory letter from the mayor. This last seemed important to us to make sure the impression given was not one of just another scientific study but that the questionnaire was in fact also important for the decisions facing the community and for the development of a management plan.

The introductory letter informed people about the questionnaire and its background. It also emphasized the absolute anonymity of the questionnaire and showed that no conclusions could be drawn from the questionnaire about respondents and their domiciles. This last addition was made on the basis of experiences the community council had had with previous surveys conducted among citizens on other subjects. With the agreement of the community council, participants were requested to hand in the filled in questionnaire direct to the council.

Because of the very high number of citizens who would have to remain anonymous anyway because of their fame or wealth, reminders were not sent out. We feared reminders might give the impression that the data was not absolutely anonymous and that conclusions about the participants could be drawn. This would have led to political complications that the council as a client wished to avoid.

Table 3 How participants behave towards their foxes

Behaviour	Yes (%)
I keep my distance from foxes	84
I look after foxes when they are ill	5
I feed foxes	2
I worm foxes	3
I am indifferent to foxes	16
I am pleased when I see a fox	60
Total <i>N</i>	779

Table 4 Attitudes of participants towards foxes in the community

Attitude	I agree (%)
Foxes are useful animals	62
Foxes are beautiful animals	88
Foxes have a right to live	91
Foxes have no place in the community	57
Foxes are a danger to people because they transmit diseases	74
I feel helpless in the face of the illnesses that can be transmitted by foxes	61
Because the fox has no natural enemy, people must re-establish the ecological equilibrium.	78
Total <i>N</i>	779

Data set

In Grünwald, 2,486 questionnaires were distributed to households with gardens. Of these, 779 were sent back. This corresponds to a response from 31% of households. The average age of the participants participating in the questionnaire was 57.5 years and that of the entire population in Grünwald is 54.3 years. Age distribution of all inhabitants of Grünwald and those taking part in the questionnaire correlate nicely ($r=0.9476$). The proportion of women taking part was 53%, and their percentage of the corresponding entire population is 54%.

Figure 1 shows the distribution of age groups for the whole population and for participants.

Statistics

The statistical evaluation was carried out using SPSS versions 12.0 and 13.0. Significances in the answers were calculated with χ^2 test and correlations. The influence of personal situations and the source of knowledge on fear of the fox tapeworm were estimated using a binary logistical regression.

Table 5 How the participants of Grünwald expect people to treat foxes

Treatment	I agree (%)
People must help sick animals	62
People should not attract foxes with food	95
The fox population in the community should be reduced dramatically	65
People should worm the foxes	89
People should adapt	28
The fox population can increase	26
Total <i>N</i>	779

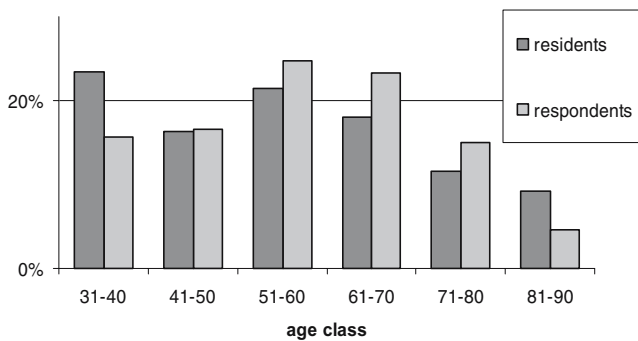


Fig. 1 Age distribution of residents and respondents

Results

Characteristics of residents and their living situation

Of those questioned, 68.2% had attended further education colleges or grammar schools (valid $N=669$, total $N=779$), 55.1% indicated they had a degree (valid $N=615$, total $N=779$) and 72.6% of participants work in management positions (valid $N=662$, total $N=779$).

Children play in 44% and pets in 37% of the households. Vegetable patches and orchards are in 32% of the gardens.

Knowledge of foxes and personal experiences of foxes

In this section of the questionnaire, it was first asked how often the participants see foxes in the community. One hundred and eighty-six questionnaires (24%) did not include an answer to this question. Of those who observe foxes, only 6% see foxes daily, and 44% see a fox just once per year.

In Table 1, the participants were asked explicitly what they knew and about their personal experiences. Twenty-seven percent have no personal experiences. The local press in the form of the newspaper is the most important medium for the formation of opinions, along with conversations with friends and acquaintances. The information brochure developed specially on this subject by the council was also well received by participants. Scientific literature and public information events have reached only around one fifth of the participants. Although there have been few reports about the fox tapeworm and town foxes, television has reached 31% of the participants with its information.

What fears they have concerning foxes

The participants are not so much afraid of the fox itself (55%, compare Table 2). More than half of the participants (55%) are scared of the health risks presented by the fox tapeworm, and 35% of them are afraid of rabies. Fear that the fox could injure people (15%) or pets (8%) is of lesser importance in public opinion.

How they behave towards the animals

The participants' own behaviour towards foxes is very ambivalent. On the one hand, they keep their distance from the animals (84%, compare Table 3), and on the other hand, 60% of participants are pleased if they see foxes in the community. Only 16% of the participants are indifferent to the animals. In absolute terms, only a few do, but for the fox population, actually an important number of people feed (2%), look after (5%) or worm (3%) their foxes.

Attitude of the participants towards foxes

All in all, the fox is seen positively by participants in Grünwald: 62% believe they are useful, 88% find them beautiful, and 91% agree that they have the right to live (Table 4). At the same time, 52% of respondents are of the opinion that foxes have no place in the community and that the human population should re-establish the ecological equilibrium, as the fox has no enemies. Seventy-four percent see in the fox a danger for people because of the transmission of diseases, and 61% feel helpless in the face of these health risks.

What measures on the part of the community they would support

If we add together the answers expressing agreement, 62% of respondents in Grünwald want sick animals to be helped, and 89% want foxes to be wormed against the fox tapeworm (Table 5). Although 65% of participants demand a marked reduction in the number of foxes in the community, agreement that the fox has a right to live is significantly higher ($\chi^2=117.185$, $df=9$, $p<0.001$). The support for worming is also significantly higher ($\chi^2=30.236$, $df=11$, $p<0.01$) than the support for reducing the number of foxes. Nevertheless, 26% of participants see no problem should the fox population continue to grow, and 28% are even of the opinion that people should actively adapt to this situation.

Correlation between personal situation, knowledge and fear of the fox tapeworm

A binary logistic regression (Wald backward) was used to analyse the correlation between personal situation, knowledge and fear of the fox tapeworm. All items on knowledge sources were included as well as the personal situation, beginning with age, sex, including school education and career as well as living situations like children and pets or having vegetable patches and orchards. Table 6 shows the results of the regression calculation. Fear of the tapeworm starts when children play in the garden. The second largest

Table 6 Connection between personal situation, knowledge and fear of the fox tapeworm as dependent variable (results of the binary logistic regression, Wald backward)

Variables in the equation	Regression coefficient	Standard error	Forest	df	Significance
Children in garden	0.892	0.195	20.929	1	$p < 0.001$
Conversations with friends	0.884	0.194	20.754	1	$p < 0.001$
Public information events	0.870	0.232	14.089	1	$p < 0.001$
Newspaper	0.847	0.243	12.167	1	$p < 0.001$
Scientific literature	0.470	0.229	4.216	1	$p < 0.05$
Constants	-1.759	0.287	37.629	1	$p < 0.001$

effect comes from conversations with friends and acquaintances. Public information events play a significant role in helping form opinions, as does the newspaper. The television was insignificant in the forming of opinions.

Discussion

Limitation of the method

A postal questionnaire was the method used to collect data in the community of Grünwald. One reason why this community was chosen was that studies of urban fox ecology and on the fox tapeworm were already being carried out here. The results of the questionnaire survey were to help with decisions on further action to be taken.

Thirty-one percent of the questionnaires were returned. According to German scientific standard literature (Bortz 1984; Diekmann 1997; Roth 1987), return rates of between 10 and 90% are to be reckoned with for postal questionnaires. Diekmann 1997 gives a return quota of 26% for the procedure used. Swiss market research companies assume a rate of return of approx. 20% and consider 31% to be a good quota (Hunziker et al. 2001).

In comparison with relevant Anglo-American literature in particular, the response rate received here was low. The use of general and then specific reminders, in which the participants are addressed by name, leads to considerably higher response rates Diekmann 1997. For the reasons given above to do with the nature of the population of Grünwald, we did not give reminders. This study shows, however, that no one should be encouraged to carry out questionnaire surveys without reminders. In further studies of attitudes to wild animals in urban areas (Treptow 2006), we did use reminders or contacted participants personally to increase response rates.

There is of course a certain bias with a rate of return of 31%. Fifty-three percent of respondents got their information about foxes and the fox tapeworm by talking to friends. This permits us to conclude that participation in the survey was in fact increased by this means of information. This could thus have led to a certain bias in the data. On the other hand, there is a slight shift towards older citizens

among the participants (Fig. 1). These in particular respond much more coolly to health risks than young parents, which would possibly compensate for this particular bias.

According to the experiences of Bortz 1984 and Suda (personal statement), the first to respond are those interested in the subject or who have already thought about the issue. The rate of return can be doubled by a reminder and even trebled by contacting people personally (Roth 1987). However, it is mainly undecided people or those who are not well informed on the subject who are reached through the questionnaires (Bortz 1984; Suda, personal statement). A reminder can also make these people aware of a problem that had not previously existed for them (Suda, personal statement). Roth (1987) even questioned the need for high rates of return, and Bortz 1984 stressed that for the results of a postal survey to be usable, the composition of the sample is more important than the level of the rate of return.

Comparisons of the average age, ratio of the sexes, age structures, and professional groups of the participants and of the parent population (Bortz 1984), in this case the population as a whole, indicate that the samples are usable. As shown by this comparison (see “Data set”), the average age of the participants and the population as a whole is just 3 years apart, and there is strong correlation between the age distributions of both groups (see also Fig. 1). The proportions of women to men among the participants and within the population as a whole are also almost identical. Thus, it can be concluded that the data is usable (Atteslander 2003; Bortz 1984; Diekmann 1997; Roth 1987). Despite all this, we must realize that extreme views are more likely to be reflected in the survey.

With regards to the project as a whole and possible consequences, a few percent here or there do not matter.

Discussion of the results

In comparison with the national average, both participants and home owners in Grünwald are relatively old, being in their mid-50s. The educational level of the participants from Grünwald is relatively high. The majority of participants (68.2%) attended sixth form, more than half have completed a degree and 72.6% also occupy managerial

positions. The participants in the study conducted by Schulz 1985 about attitudes to nature were under 40 years of age on average. Just 19% of them had ‘Abitur’ (higher secondary school-leaving certificate), 19% had completed a degree and just 20% occupied managerial positions. The vast majority of participants from Grünwald can be counted among the upper middle or upper classes and high society.

As in Schulz’s study (1985), the participants of Grünwald showed by and large a moralistic attitude. Kellert 1984, 1996) also found a largely moralistic attitude towards wild animals among urban Americans in his studies among the inhabitants of suburbs. Higher education also coincided with this attitude in America. The participants from Grünwald also fit into this scheme, being both urban dwellers and having a relatively high level of education. Ninety-one percent of participants thus agreed that the foxes had a right to live.

What influence does this have on policy?

Radical solutions such as intensive hunting of the foxes to reduce the risk of infection with the fox tapeworm can thus be ruled out, as this is unlikely to meet with the approval of the population.

Every second, respondents of Grünwald is afraid of the fox tapeworm. Fear of the fox tapeworm is completely justifiable even within communities with a relatively low infection rate (15%), given that there are not only lots of people in a relatively small space here but also a significantly higher fox population density (Deplazes et al. 2004). Even at low infection rates of just 10 to 20% of foxes in urban or suburban areas, the probability that people come in contact with an infectious egg is much higher than in rural areas even where the infection rate among foxes is extremely high at 80% (König 2005).

Eighty-nine percent support worming as a measure and 65% a reduction of the foxes in the community area, although 91% of participants feel the foxes have a right to live. This correlates well with a series of study results from the USA. These showed that with problems with white-tailed deer in suburban areas, participants’ tolerance is lowest where there is a public health risk (Loker et al. 1999; Zinn et al. 1998). At the same time, participants much prefer non-lethal methods to lethal methods of dealing with the problem (Loker et al. 1999; Messmer et al. 1997; Stout et al. 1997). In the study undertaken by Stout et al. 1997, the focus was, however, on the capture and subsequent transport of the white-tailed deer to other areas. This is also what participants of Grünwald intend when they plead for a reduction in the number of foxes. They do not consider that this measure will very probably lead to the death of the animals.

For policy in the community, this means that the abstract danger to the health of participants posed by the small fox tapeworm is perceived by them as a threat to their health,

and they therefore support or even call for counter-measures. The risk of infection of the participants by the fox tapeworm can only be minimized by reducing the number of infectious tapeworm eggs in the environment, that is, in the community. The inhabitants agree with the putting down of worming bait. This is the only measure that can reduce the risk of infection for people quickly. It also works against the existing fears people have of the fox and the risk of infection with the tapeworm.

The participants acquire information about foxes and the fox tapeworm mainly in conversation with friends and acquaintances. Only every fourth person reads scientific literature; television reaches every third with its information. Every fourth person has no personal experience of foxes, and only every fifth person has contact really often with foxes. This is where the strong sense of helplessness of the participants comes from with regards to the fox and fox tapeworm problem and the judgement that the fox represents a danger to participants’ health. This is exactly the knowledge deficit that leads to the current situation, in which participants make life more than easy for the fox in the community (König and Barla-Szabo 2005), despite on the other hand being very afraid of the health risks posed by the fox.

In terms of policy, this means that the gaps in people’s knowledge must be filled, through education and information. Regular information brochures and contributions in the local community information publication are therefore necessary. It would be ideal if the local daily papers would also propagate information on this subject at intervals.

As well as being personally affected by concerns for the health of their children and grandchildren, having some knowledge about the fox tapeworm was crucial in making people afraid of it. Age, sex and education were removed from the model in the regression. This correlates with investigations conducted by Gilbert 1982 in the city of Guelph (Ontario), which showed that with increasing knowledge, participants worry more about wild animals. In this study, however, television was the most important information medium. Hunziker et al. (2001) found little acceptance of predators among families with children and especially the younger the children were.

At the same time, people in Grünwald are just as pleased as suburban residents in the USA (Decker and Gavin 1987) when they see animals in their own garden and think of foxes as beautiful and useful animals.

Should policy makers consider reducing the fox population by shooting them, they can, apart from legal and hunting problems, reckon with the resistance of almost the entire population. The fox population can also be reduced by non-lethal methods, such as by reducing the quality of the fox’s habitat in the community. This requires the participation of a large section of the participants, which would seem possible in the light of the survey. At the same

time, intensive public relations work and an information campaign must be conducted with the goal of teaching participants which food sources the fox can use and that wild animals in general do not need to be fed to survive. It is even more important to give participants information on how garages and garden houses can be made fox proof. As dominant vixens use several dens for rearing their cubs, it is to be expected that they enlarge their territory if they have too few of these dens. If the size of the territories of individual groups increases while the number in the group stays the same, the fox population density is effectively and quickly reduced.

The fastest, greatest and most sustainable success is to be expected where a combination of all three possible measures are taken. The most difficult aspect of this will be persuading the participants to change their behaviour with regards to foxes.

Conclusion

Radical solutions such as intensive hunting and culling of foxes are not possible, as the participants have a positive attitude towards foxes, despite the health risks. To find support among participants, the problem can only be dealt with using methods that protect the lives of the foxes. Going on from the study, it was therefore decided to lower the risk to participants of infection with the fox tapeworm by worming the foxes, as catching and moving the foxes would be technically and financially impossible. The measure has been very widely accepted among the participants.

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