Alien Species Management: Public perceptions of animal rights and welfare
Project general aims & objectives
1. To investigate the effectiveness and efficiency of different methods of humane control of squirrels
2. To examine the effectiveness of an education program on public perception
3. To explore the role of local social beliefs and concerns to gain a better understanding of the motivation behind public concerns and objections

Outline of itinerary

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<td>Cap d’Antibes, France</td>
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<td>Visit San Mauro Torinese, Michelotti Park, Merisino Natural reserve – officers explain forest management practices and attitudes to control of alien species &amp; education Farmers/nut growers – compensation scheme &amp; Rocher family in Alba Meet local hunters</td>
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Key words
Alien species, squirrels, animal welfare, ethics, pest control, wildlife management, conservation, conflict resolution, human dimension

Abstract

Britain is a small and crowded island that has been changed and shaped by man for thousands of years. There is a constant conflict over land-use priorities, with many habitats and the flora and fauna that depend on them, marginalised.

However not all species are declining; some animals have flourished in the current environment, buzzards, wood pigeons, crows, foxes, rats, badgers and deer have done extraordinarily well, their population densities are higher now than they have ever bee (Easton et al. 2009).

In addition, invasive alien or non-native species of mammals, birds, reptiles, amphibians and even plants can cause substantial damage to natural resources, property, crops, livestock and also pose a disease threat to humans and native wildlife.

In this paper I focus on the grey squirrel (Sciurus carolinensis), although clearly if we are to address lethal control of grey squirrels from an ethical basis, this must be a robust ethic that can be applied equally in other aspects of wildlife management and human activity.

The perception of invasive species and the value placed on them is varied. In the past man’s response to damaging wildlife was simple; chase it away, fence it out or kill it, but in the modern world, control of invasive species often requires an understanding of human beliefs, values and behaviours.

As a wildlife manager and red squirrel ranger, I am explicitly concerned with the interface between humans and wildlife. Most people have little idea of which species are invasive, what their impacts are and what control methods might be appropriate for their management.

A wide variety of education, outreach and training programs are needed to help motivate people to take action and raise awareness of the causes of establishment, consequences of invasive species and the need for prevention, control and eradication programs. Key conservation messages should target diverse audiences through appropriate media outlets and methods. Surveys to better understand how different stakeholder groups view invasive species the threats they pose and the potential methods of control are also needed.

I review several programs in France and Italy attempting to fulfil this critical need for an informed and active public with regard to actual or potential of grey squirrel incursion. These programs are using new and innovative approaches which highlight the human dimension of wildlife conservation to create an informed public, generate public and financial support for grey squirrel management and to train the public to recognise and report sightings not only of grey squirrels but other invasives such as chipmunks (Tamias Sibiricus) and Pallas Squirrels (Callosciurus erythraeus)
Background to the Fellowship
The North American grey squirrel was deliberately introduced to Britain in 1876 and other parts of Europe during the 19th Century. Since then, despite being released merely as a curiosity to satisfy the Victorian penchant for novelty, the adaptable and resilient grey squirrel has thrived in Britain’s parks, gardens and woodlands. Indeed, it has now become so widespread, that it is accepted by many as a natural part of our wildlife, much enjoyed by many people and perhaps one of the most commonly seen British mammals.

However, despite the obvious charm and appeal of the grey squirrel, it is now clear that it’s continuing spread through the British Isles is having at least three major impacts on Britain’s native flora and fauna, which are poorly adapted to withstand its presence.

Most significantly, the grey squirrel has contributed to the catastrophic decline of Britain’s native red squirrel through indirect resource competition and the spread of pathological disease.

They are also responsible for causing significant damage to woodland of both economic and amenity value:
Recent scientific studies have reported that they are having an adverse effect on Britain’s already endangered woodland birds.

The grey squirrel is having such a profound impact on British wildlife that the IUCN have now listed it on their list of the 100 worst invasive species globally.

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Fran Foster
North Lakes Red Squirrel Ranger
American grey squirrels were first introduced to Italy in 1948. There are now three colonies in the country, a large population in Piedmont near Turin and two smaller populations, one along the Ticino River (Lombardy) and another at Genoa Nervi (Liguria). The introduction of the grey squirrel has caused the progressive disappearance of the native red squirrel and is causing damage to commercial tree and fruit plantations and cereal crops.

The spread of the grey squirrel in northern Italy will have serious implications for red squirrel conservation throughout Europe. Political concern about lack of action in Italy has been expressed by the Permanent Commission of the Bern Convention, who have produced a specific recommendation (December 2005) urging the authorities of the Ticino Valley to eradicate grey squirrels.
It is predicted that during the next 20 years grey squirrels will colonise the western Alps and the provinces of Turin and Cuneo and in approximately 30 years they will enter France. It is anticipated that it will only take 20 years for the grey squirrel to colonise the area along the Ticino and Lake Maggiore with first populations in Switzerland in around 25-30 years. In Italy there will be a fast expansion of grey squirrels. The eastern part of Liguria will be colonised within the next 35-40 years and in 50-60 years the colonisation of the Apennines between Emilia-Romagna and Tuscany will start.

The Piedmontese region will be completely colonised as well as Liguria, parts of the Aosta valley, the western part of Lombardy and the northern part of the Apennines. The total population size at the end of 100 years could reach 6 million animals.
Introductions have also occurred in Australia, South Africa, several states within the USA and in to parts of Canada. Consequently, the development of control best practice has international application.

It is widely argued by conservationists that controlling grey squirrel numbers is the best, if not the only, way of conserving red squirrels. However, animal rights groups have continually categorically opposed eradication campaigns, sometimes successfully; such groups believe there is little evidence to support culling as a means of conserving red squirrels.

In 1997, the League against Hunting and the League against Vivisection charged the coordinator of a trial eradication of greys in Racconigi Park, Italy and the director of the National Wildlife Institute with illegal hunting, damage to state property and cruelty to animals. The officers were acquitted in 2000, but the three year legal struggle caused the failure of the entire campaign: the species has significantly expanded its range and eradication is no longer considered feasible.

The case of the Italian Squirrels illustrated the role of social beliefs and concerns – whilst the input from scientific sources indicated a need for quick action, the failure to pay sufficient attention to public opinion and the failure to generate adequate public support proved counterproductive.

Having learnt the hard way, the existing team prioritize the human dimension and approaches to gaining public acceptance and support. The current 1. 93 million euro EC-SQUARE project co-funded by the European Commission and the three regions of Liguria, Lombardy and Piedmont in Italy offers a unique opportunity to learn from the science-led Italian approach where grey squirrel control is a highly sensitive issue due to court cases challenging grey control in the recent past.
Aim 1: Review of methods of humane dispatch of grey squirrels

Methods of controlling grey squirrels vary between organisations and operators due to a combination of policy, local conditions and personal preference. Grey squirrel control must be consistent, proportionate, transparent, targeted and accountable. Even where there is public consensus that lethal control is appropriate, this is dependent upon the public perception of the humaneness of the killing method.

As a wildlife manager in the UK, I am keen to ensure that my killing method is painless, achieves rapid unconsciousness and death, requires minimum restraint, minimises fear and psychological stress in the animal, is reliable, simple to administer and as far as is possible, is aesthetically and morally acceptable to myself and others.

Both here in the UK and in Italy/France cage (live capture) trapping is widely employed in invasive control. These seem to cause few injuries other than abrasions and hair loss on the snout. Covering the cage seems to reduce this kind of injury, as illustrated by this image of Dr Bertilino and his student, Nicola, in Gran Paradiso national park.

Dr Bertolino suggested that in uncovered traps, trail camera data shows that escape behaviour is common in first hour after capture, with 85% of time spent performing behaviours directed at the cage door. This supports data from other species, such as foxes where there is an increase in glucocorticoid hormones. Italian trap operators that I spoke to, felt that once a squirrel enters a trap that is covered, they tend to remain quiet and even settle into eating remaining bait. However squirrels generally become agitated once a cover is lifted, so recommend that this is done carefully with the use of a handling bag/cone, as above.

Traps must be set to protect captured animals from flooding, hyper or hypothermia, adverse weather conditions and harassment by predators. Therefore the ASPER (Alpine Squirrel Population Ecology Research) project places the traps in trees, as above and closes traps overnight, opening them at first light, checking at midday and closing again in the late afternoon.
However, in the Parco Adda, the grey squirrel traps are placed on the ground, as illustrated above by Dr Wauters and his PhD student. Although one difference to the approach taken in the UK is that the killing of female grey squirrels with dependant offspring or those that are pregnant is not acceptable. The fate of pre-weaned young being an additional welfare cost which raises significant ethical concerns.

Similar trapping methods are used for live capture of chipmunks in Senart Forest using longworth traps baited with peanut butter. These traps are only open during the daytime when they are checked every three hours.

As far as dispatch of trapped squirrels, in the UK/France two methods are employed; cranial concussion, often referred to as ‘sack method’ and shooting. Whilst in Italy the only accepted method is a lethal dose of a gaseous agent – CO2.

In the first case, the sack method involves transferring a squirrel from a cage trap to a medium weight Hessian sack, manipulated to the corner and killed by a blow to the back of the head with a blunt instrument. A single sharp blow with a heavy blunted object is delivered to the cranium. Dr Chapuis, from the National Museum of Natural History in Paris felt that this is the most appropriate and humane method, as supported by the European Scientific Panel on Animal Health and Welfare (2005). Cranial concussion is considered a quick and humane method of stunning Pallas Squirrels (Callosciurus erythraeus) in Cap d’Antibes, although French students interviewed were on the whole uneasy about this method, which is certainly less aesthetically acceptable than some methods. In the UK, some grey squirrel controllers suggested that a single blow to the head did not always render the animal insensitive, with various degrees of consciousness and ensuing pain occurring.
although operators felt that peer pressure meant that they had to claim to feel confident and happy in being able to using this method.

Squirrels usually perform a number of long-drawn-out gasps before death by cranial concussion; the neck stretches and the intake of breath have a rasping sound. Although these breathes do not led to long-term survival it can delay death, and although the squirrels are almost certainly unconscious and not suffering, this ‘agonal gasping’ can be very distressing to both operator and lay-onlookers. This distress to human onlookers is further heightened should the squirrel then exhibit any involuntary kicking of hind legs post-mortem within the hessian sack.

This is a method that British press focus on when wanting to whip up a reaction – see Daily Mail article below.

Shooting an animal in the head at close range is often considered one of the most humane killing methods. In France, an air rifle of .22 calibre seems to be the weapon of choice, the muzzle of the gun is pushed through the mesh and the operator waits for the animal to move into the ‘right’ position before firing the shot. A slight adaptation that I use myself and described to the French team is to assist with accurate placing of the shot by inserting a (crush) comb through the mesh of the trap to restrict the movement of the squirrel, then use an air pistol with a pointed pellet designed to penetrate deeply.
Shots must be aimed so that the projectile enters the brain, causing instant loss of consciousness. Immediate irreversible disruption of the respiratory centre should be the aim.

Correct placement of the shot is essential – by firing vertically down good penetration is achieved through the relatively thin parietal bones or alternatively aim at the back of the head with barrels pointing forward so the shot penetrates the occipital bones and destroys the brain stem.

Twitching or spasm like movements may occur shortly after death, this is a sign that is effectively stunned, however to observers such as passing walkers or garden owners, this can be interpreted as severe distress. The natural process of stunning, involving initial rigidity, followed by a gradual relaxation of muscles, sometimes accompanied by paddling of hind legs, downward movement of eyes and urination/defecation, painless to the squirrel, is made more aesthetically acceptable to lay on-lookers by keeping the squirrel’s movements restricted by the trapping combs until all signs of reflex activity has ceased.

In Italy, trapped squirrels are dispatched using a lethal concentration of carbon dioxide.

Carbon dioxide is an asphyxiate and the most powerful cerebral vasodilator known. The squirrel’s respiration is initially stimulated then depressed, resulting in death. Although this is the most commonly used method for euthanasia of laboratory animals, I was initially concerned about its humanness. I was aware that carbon dioxide can cause pain or discomfort, because it converts to carbonic acid in the nose, eyes and mouth and that animals
may experience air hunger or dyspnoea, which is reported in humans to be highly distressing (Banzett & Moosavi, 2001). However, at the present time, many in the wildlife control industry consider euthanasia by carbon-dioxide (bottled gas only) induced narcosis to be the most user-friendly of the AVMA suggested methods. In reality, I observed that squirrels euthanized using carbon dioxide seemed to experience a few seconds of hyperactivity followed by loss of consciousness – death being confirmed by lack of eye reflex in response to touch.

Although this method is not pleasant aesthetically, the operator does not have to view the animal during the process.
Aim 2: To examine the effectiveness of the EC-SQAURE education programme

During 2012 students of primary and secondary schools of Lombardy, Piedmont and Liguria, enjoyed the interactive game “Who Framed Mr. Red?” using the EC-SQUARE project DVD. Although this series of classroom visits has finished Dr Wauters arranged for me to observe an example of a teaching session led by student Francesca at the Istituto Comprensivo Ponti in Gallarate. The class was the 5th grade of elementary, accompanied by their teacher Silia Pavan.

The DVD leads the class through an investigation to discover “Che fine ha fatta Mr Red?” - what happened to Mr Red. Francesca used her own experience in working with this age group as a Cub Scout leader, in order to add a little extra to the presentation and thus held the children’s attention wonderfully. Francesca added excitement by arranging for a mysterious package to be delivered, containing the DVD of course and a few other props including a large magnifying glass and a letter asking the children to help her investigate a mystery. The magnifying glass served as a great way to allow discussion and turn taking, as only the child holding the magnifying glass could speak!

To my surprise, but not the Rosso Scoiattolo team, most children answered that they had never seen a squirrel, undaunted Francesca showed them various cartoon characters, like the one above to prove that they did know what a squirrel looks like!

The DVD includes various interviews with ‘experts’ giving their opinion on why populations are suffering, including game wardens, scientists, farmers, teachers and so on. The children choose who to ‘interview’. Very enjoyable, but highly confusing!

After the session I saw some materials that children have then created to invent an information campaign aimed at saving the red squirrel, producing posters, drawings, rhymes, games, videos and interviews, demonstrating excellent knowledge of the conservation problems of the red squirrel ... and great creativity!
After the teaching session Luc, Fran and I went to the nearby Parco Bassetti – a complex with a home for retired priests, a centre for young people with learning difficulties (both of whom take part in activities organised by EC_SQUARE Rosso Scoiattolo) and a public park with feeding platforms for red squirrels and information panels, where a small band of locals monitor the red squirrels.
Here we discussed the educational program and Luc and Francesca both expressed their frustrations. In particular they felt that too much information was pushed into one hour, and that a fault in the program means that the crucial interview with the scientist who explains the grey squirrel issue may never even crop up - leaving the children to think that the main problem for squirrels is poachers or goshawks.

Fran felt that the real teaching about the issues was therefore left to the teacher and thus affected too strongly by their level of knowledge, understanding and enthusiasm for the subject.

There is currently no formal evaluation of the education program.

Outside of the EC-SQUARE project I noticed the following advertisement near Varese;
Paola is a natural storyteller and very experienced environmental educator who studied earth education under Steve Van Matre in the States. This book includes a story, games and puzzles suitable to support a visit to woodland with Paola, but also serves as a stand-alone resource highlighting the difficulties faced by red squirrels in Italy, including, of course the invasive grey squirrel.

Informal education of the general public includes the erection of feeding stations and platforms to encourage close encounters with red squirrels. Such as this children’s playground in Genova wood- not too far from the contentious Nervi Park.

Feeders and artificial dreys are also set in popular walking/mountain cycling paths elsewhere in Genoa Woods, such as this one near Forte Begata in the urban park. The team don’t really expect squirrels to use the dreys but feel they are good PR and discussion starters.

The cylindrical green feeder in the middle below contains a timer to allow squirrel feed out at midday each day. This may in future help to attract squirrels to a feeder when the public are there to see them.

These experimental feeders on the right in Parco delle groane, Solaro near Milan are particularly innovative.
The EC-SQUARE Rosso Scoiatto team try to maintain a public presence, with displays in museums and attendance at events and agriculture/forestry shows, particularly in the Milan province, often involving partners such as these ecological guards from Magnago.

The team also maintain a website and various social media such as Facebook, as well as a regular newsletter.

The Facebook page in particular is a good platform to share positive media coverage and new developments within the project.

The project managers also maintain a strong international and academic presence with attendance at international conferences and the publication of many scientific papers.
Aim 3: Exploring the role of local social beliefs and concerns to gain a better understanding of the motivation behind public concerns and objections

In addition to meeting colleagues in several museums, universities, environmental projects and national parks, I chose to extend my visit to allow me to undertake a long-distance walk with my working cocker spaniel, Gypsy. As well as allowing me to undertake a pilgrimage along ancient routes to Santiago/Rome, Gypsy acted as a crucial social icebreaker. It’s difficult to strike up a conversation with a (lone female, foreign, English speaking) complete stranger – all sorts of ulterior motives may be suspected. However my little spaniel gave a safe, non-threatening, neutral topic to start a conversation.

Hence I was able to converse with people, including local residents, people working in hospitality, holiday makers, of various nationalities, school children and walkers in France and Italy. After initial chat about dogs, conversation generally led on to why I was there – especially in non-tourist areas, so I was able to talk about squirrels, wildlife management and related topics, leading to an impression of peoples beliefs and concerns – albeit rather unscientific.

My limited experiences in France in regard to control of alien squirrels and potential threat of grey squirrel incursion is that the public are largely supportive; Dr Chapuis that some city dwellers were shooting, trapping and poisoning the species (whilst others were feeding it), and in the past he had felt that an action plan was urgently needed to limit the species before the last geographical barrier was crossed (the A8 motorway).

He also noted that non-intervention in the early years was followed by marked expansion in the population. This ‘Plan national lute ecureuil ventre rouge’ now been implemented, with little opposition on the rugged coastline dotted with millionaires’ homes including that of the...
renowned animal activist Bridget Bardot. It is possible that strong anti-immigration, nationalist political views have a bearing on how non-native, invasive species are viewed in France. These mental modes are often manipulated by the press on both sides of an alien species control argument – condemning ‘ethnic cleansing’ or worrying the public with ‘threats of foreign invasions’.

One such attempt concerned the chipmunks in the Forest of Senart “BRITAIN was last night under threat of invasion... from killer CHIPMUNKS. The alert came amid fears the buck-toothed critters — which have wreaked terror in France — could make it through the Channel Tunnel” a quote from The Sun newspaper.

On the day I visited the Natural History Museum in Paris there was a special free entry day to the wonderful evolution exhibition and therefore lots of families, some of whom I was able to chat to, who appeared to be very knowledgeable about alien species and the need for control measures.

Reactions to my dog were varied in France. We started our walk here and soon learnt that whilst dogs are welcome in cafes, hotels, and churches, they are not welcome in parks and the French don’t like to see a dog tied up outside a building. At first in Paris I found it difficult that no taxis would take her and I had my only refusals in a hotel. However, people soon started to talk to me because of her presence and one interesting encounter was on an extremely crowded rush hour metro that was stationary between stops due to an incident – I had been doing field work so Gypsy was muddy and the cartridge hot and lacking air. People were all in silence and I was very aware that my rucksack and smelly dog must be making the situation worse, when suddenly a Parisian lady loudly asked if Gypsy was a working gundog, on my affirmation she begun explaining to other travellers that she was ‘chien de chasse’ and people began to crane to see her and asking how cockers were worked in England!
I have been able to spend more time talking to people in Italy. I did come across people who were deeply concerned about the environment, in finding sustainable lifestyles and keen to preserve wildlife, but for the most part these people remain in the minority.

After many years of neglect of the environment (the Ministry for the Environment was only established in 1986) and overzealous hunting, (la caccia form a powerful lobby group in Italy) the tables have turned. New environmental groups and re-wilding projects are common in Italy.

However, when I spoke to ordinary hunters, foresters, farmers, rural and urban residents there appears to be a lack of effective communication between special interest groups and the general public about conservation.

In my experience, in speaking to as many people as I could, most Italians associated ‘environmental issues’ with pollution in towns and cities - Italians appeared less likely than English or French counterparts to worry about the loss of biodiversity. Those who did consider this to be a concern felt that the most effective way of dealing with the issue is through the provision of greater information.

Respondents in the age group 25 – 50 were most likely to feel well informed, especially those who had received a university education – in any subject area.

Environmental protection groups such as World Wide Fund for Nature, Greenpeace, Legambiente and Lega Anti vivisezione are the most trusted sources of information regarding conservation with ‘television’ cited as the second most trusted source.

Interestingly National Government is trusted above political parties standing for the environment (Greens etc.) with radio/newspapers, friends/colleagues and scientists all cited as the least trusted source of information.

Around 80% of respondents were aware that grey squirrels were an introduced species from America. However 95% of Italians that I spoke to, felt that they should not be controlled, destroyed or even monitored. The vast majority of respondents enjoyed seeing American grey squirrels in local parks, with a very strong feeling that the grey squirrels belong to the people and form an important part of Italian culture – even members of the EC SQUARE grey control team had fond memories of family trips to feed the grey squirrels and felt that most of their friends and families didn’t understand any need to control the non-native squirrel, as they cannot see any harm to the environment.
It seems to be a common Italian characteristic to feel a ‘knee jerk’ passionate reaction to wildlife that is rather anthropomorphic at times, and sees no real separation between domestic and wild animals.

A common juxtaposition is a strong negative reaction to any suggestion of control of non-native squirrels; a great many families enjoy buying nuts and going to parks that contain grey squirrels to hand feed them. However, minutes later these same families will happily laugh as they allow their dog to chase the squirrels. Almost placing entertainment over the real welfare of the animal’ or at least a lack of realisation of the stress placed on these squirrels.
In Nervi Park, Liguria where local feelings ran high after a proposed grey squirrel eradication plan, endless patient negotiations are nearing a compromise through listening all the different opinions and co-operating with diverse interest groups, including the Friends of Nervi Park with sometimes contradictory values. The EC_SQUARE team have been willing to try all approaches suggested as compromises, such as the use of an ultra sound barrier to prevent grey squirrels from venturing into wider area (proved totally ineffective), removing the grey squirrels to local zoos (an idea deemed abhorrent by the Friends), removing greys to an Island were the squirrels would have a suitable habitat without effecting any population of red squirrels (Friends unhappy that they could not visit ‘their’ squirrels) and currently the idea of sterilising the grey squirrels and moving them to a mainland urban park without a nearby red population. Whilst I was in the area this idea had to be put on hold due to a lack of vets willing to tender the this operation.

The team have also been researching the possibilities of replacing the grey squirrels with a population of captive bred red squirrels. Although initially keen, again the Friends are not convinced that as natural tree dwellers, who live in lower densities than their American counterpart (estimated to be over 100 grey squirrels in this small urban park), these native reds could serve the same social role in allowing feeding and interaction.

It would seem that even in this environment where the EC-SQUARE team value the human dimension so highly in working with local people to achieve effective conservation of the Italian biodiversity including red squirrels, that a better understanding of the nature of this conflict between interest groups is needed.

In the case of the grey squirrel in northern Italy, the differences between animal rights activists and conservation biologists of the EC-SQUARE project views make lasting cooperation seem impossible, but a middle ground has to be found. Despite the apparently opposing goals, both claim to value nature over at least some economic considerations, and both view the role of humanity as preserver and supporter rather than exploiter of natural resources so perhaps a focus on the common ground is healthier than focusing on the negative.
Alistair Bath, the world renowned expert in human dimensions in the field of wildlife management identifies four types of conflict:

Cognitive– where there is a difference in beliefs between various interest groups, these beliefs may be true or not

Values – when there is a difference in the importance of an issue

Costs/Benefits - particularly where there is a difference perceived between those who bear the cost of implementing and issue versus those who reaps the benefits. A group may feel unfairly that it must suffer all the costs while another gets the benefit.

Behavioural – this can be a personal conflict between individuals of different agencies over issues not directly related to the issue at hand. A behavioural conflict could also exist due to a mistrust of an agency by another based on past history

In the case of the grey squirrels in northern Italy, several types of conflict are happening at once, and it is necessary to peel back the layers of the conflict to enable a clear understanding. This could be interpreted as

Cognitive conflict:-  
According to scientific community
- Grey squirrels, an American, would threaten the red squirrels, as more robust and therefore victorious in competition for food, as well as living in higher density.
- The grey squirrels are also carriers the squirrel pox virus deadly to red squirrels
- Grey squirrels damage forests and crops
- Extermination would be required to comply with the directions of the Berne Convention and therefore avoid heavy sanctions by the European Union.

According to animal rights activists
- The red squirrel is not in danger of extinction but simply declining, both in Europe and in Asia, where, however, the American squirrel is absent: the main cause of the decline of red squirrels is in fact the destruction of their habitat by man!
- Recent research carried out by Dr Julian Chantrey/Institute of Integrative Biology/University of Liverpool has shown that red squirrels are beginning to show signs of immunity to the virus exactly as in grey squirrels
- Any violation of the Berne Convention does not entail any sanction procedure by the European Union
- In Britain, nineteenth and twentieth centuries, it was the red squirrel accused of damaging forests and crops and was subjected to mass killings. Today its numbers are very low and the victim of the moment is the grey squirrel!
Values conflict:
According to Scientific Community
- Conservation biology is concerned with species, populations and ecosystems. It is not concerned with the individual.
- Humans are sole objects of moral value

According to Animal Rights Activists
- The preservation of a species does not outweigh the life of even a single animal.
- Any sentient being should have the same protection moral and legal systems provide humans

Cost/Benefits:
The main reason that sterilization and relocation was originally considered infeasible was financial. The actual costs of removal during the 1997 trail eradication in Racconigi Park, when the total grey squirrel population was estimated at about 7000 was 50 euro/squirrel, Dr Bertilino estimated the additional cost of neutering to be about 80 euro/squirrel.

According to the original plan, all animals were to be captured, so the additional cost of neutering would have brought initial costs to nearly one million euros.

Since the three-year legal battled caused the failure of the entire campaign, the species has significantly expanded its range and eradication is no longer considered feasible, populations are unknown, but some estimate ½ million animals.

Behavioural:
According to Scientific Community
Animal rights activist are a direct threat to wildlife conservation, not worthy of serious consideration
Groups such as ‘The Friends of Nervi Park’ are dishonest about their motives; their sole objection to the removal of grey squirrels is a financial and political one

According to Animal Rights Activists
Scientists are a direct threat to wildlife conservation, not worthy of serious consideration
The staff of EC-SQUARE are dishonest about their motives: their sole aim is to gain a large salary

It is interesting to note that despite their current popular appeal in Italy, squirrels have always been hunted for their meat and valuable hair and pelts – as can be seen in these pictures from an exhibition in Cervo.
Although Italy seems to have had a less sentimental relationship with squirrels in the past, these forest animals are often used as an archetypal symbol to promote forest tourism;

However there seems to be much less reference to red squirrels in art, film and literature in Italy than in many other parts of Europe, and although children are familiar with the story of Bambi turned into a film by Walt Disney in 1942, squirrels do not have the place in children’s fiction that red squirrels hold in the UK such as Beatrix Potter’s ‘The Tale of Squirrel Nutkin’ nor indeed the road-safety conscious ‘Tufty Fluffytail’ character used by the Royal society for the Prevention of Accidents.

This may have been a defining factor in raising popular support for the plight of the red squirrel in the UK, whilst the media were able to manipulate public feeling in Italy by referring to the introduced grey squirrels as ‘Cip e Cop’ – the Italian name for the 1948 Walt Disney characters Chip ‘n’ Dale, revived in the 1980’s and features in comic books, so popular in Italy.
Current Grey Squirrel Control Situation in Northern Lake District, UK

Red Squirrel Conservation in Northern England is focused on seventeen stronghold areas chosen as the last best chance of Red Squirrels surviving in the wild in England. Landowners and managers are encourage to work towards managing these areas for the benefit of Red Squirrels and to control Grey squirrels, which are widely acknowledged to be the main reason behind the decline in the Native Reds. Cumbria in the North West of England hosts four strongholds, Whinfell, Greystoke, Thirlmere and Whinlatter. I live and work within the Whinlatter Red Squirrel stronghold.

The Whinlatter Red Squirrel stronghold is centred on Bassenthwaite Lake. The Forests of Whinlatter, Wythop, Setmurthy and Dodd, managed by the Forestry Commission, fall within its boundaries. These four forests cover over 2050 Ha of the reserve and are vital to the long term survive of Red Squirrels in the area.

Whinlatter and the surrounding area were nominated as Red Squirrel Strongholds due to the fact that it was regarded as Grey Squirrel free, had a strong population of Reds, and could be defended from future incursions of Greys and the Forestry Commission were able to commit to long term management of the forest for the benefit of Red Squirrels.

The Forestry Commission made a committment to controlling Grey Squirrels on the land it manages within the stronghold. The way this has been carried out has evolved over the last few years arriving at the robust methods used in 2010.

When the stronghold principles and management strategy was first unveiled in 2005 Whinlatter Forest at the heart of the stronghold was deemed the most important to keep grey free. At the time this was a very contentious decision, as many local people felt that other areas of dispersed woodland held viable populations of red squirrels that were being ‘abandoned’ as outside of a stronghold.

The FC had no firm evidence of how close to the forest the advancing Grey Squirrel population had got so two trapping lines were set on the boundaries, one to the South of Whinlatter using 14 traps and one to the North of Wythop using 16 traps, to indicate whether Greys had reached the forest.
In 2006 the traps lines were in place for six weeks with only two Red Squirrels caught at Whinlatter, with a further eleven at Wythop. The traps at Wythop also caught six greys. During the summer two grey squirrel were shot at Dodd wood.

For 2007 the same trap lines were laid to give year on year comparable data and complemented by a further twenty traps spread between Dodd wood and Messengermire, which was suspected of being the potential source of the Grey Squirrel incursion around the Northern end of Bassenthwaite Lake into Wythop the previous year. During three weeks of trapping only one grey was caught in Messengermire, with no other squirrels being caught.

2008 saw resources being made available from the Save Our Squirrels project which employed a Trapper to work with the Forestry Commission staff for sixteen weeks, the original trap lines were used and then the trapper went into Dodd and Messengermire, reacting to what he found. During the sixteen weeks seventy six reds were caught from various locations. Fifty seven greys were caught, with the majority from Dodd wood and a handful from the northern end of Wythop and Messengermire.

In 2009, the report the Forestry Commission funded a position that enabled them to carry on the work from the previous year. The original lines in Wythop and Whinlatter were trapped first and the trapper was directed to various locations by the Wildlife Ranger, Matthew Easton. Whinlatter and Wythop had a count of forty four reds and only one grey caught. Howgill and Dodd both had high numbers of greys, proportionally more than reds caught in the same period. For the first time exploratory trapping was carried out in Parkwood Isel which had a high count of reds but greys were present.

In September 2009, the Natural England Commissioned Report NECR019 ‘Review of red squirrel conservation activity in Northern England’ was published and partly in response to concerns raised, later in 2009 the Forestry Commission held a meeting with Dr Craig Shuttleworth of the Red Squirrel Survival Trust, who has been involved with the successful Anglesey’s Red Squirrel Project, to gain some knowledge of what he thought of their achievements and areas that could be improved. One of the action point that was taken from the meeting was that, although beneficial to Red Squirrel survival, the trapping work that had been carried out in the Whinlatter Red Squirrel reserve and buffer on Forestry Commission land would not stand up to scientific scrutiny. There was no methodology to the way traps were set and therefore ultimately not guarantee that Whinlatter is a Grey squirrel free area. This led to the Forestry Commission developing a three year project to address these points.
The main aim was to run trapping lines through the Whinlatter reserve and any land owned by the FC in the buffer zone in a methodical fashion in all suitable habitat to gain baseline data over a three year period to show the distribution of red and grey squirrels and their population trends, maximising time and financial resources.

A method of work was developed and costed for the three year period. In spring 2010 a contractor was employed to work alongside the Forestry Commission Wildlife staff. One hundred and fifty traps were used in all suitable habitats over a three month period working through the forest blocks.

The trapping caught thirty two greys along with four hundred and sixteen occurrences of Red squirrels. The GIS data has been plotted onto detailed maps. Encouragingly the data shows that area where grey squirrels have been removed, for example Dodd Wood, in previous years red squirrel began to repopulate.

The trapping program was carried out again in 2011 using the same contractor and started at the same time of year following the original lines. The trapping caught thirty four greys along with five hundred and seventy six occurrences of Red Squirrels. The data has been plotted onto maps. From the trapped Greys this year samples were taken and submitted for DNA profiling to understand the dynamics of the grey spread though the UK. The project also came into minor conflict, with the public finding and destroying traps through a lack of understanding of issues involved.

The Forestry Commission wildlife Rangers in the North West have long eluded to the need to engage with other landowners locally if the long term goal of maintaining a viable red squirrel population in the Bassenthwaite area is to succeed. Mathew Easton in particular, voiced the need for a constant and measurable level of monitoring and control throughout the whole area, on a landscape scale; with the data submitted using a common format which can be collated and redistributed to ensure all stakeholders feel involved and well informed. He explained that this method may require the Forestry Commission to invest resources off the Public Forest Estate in the long term, as it meant they wouldn’t be trying to manage just fragmented blocks holding isolated populations of reds, but also grey incursion potential from any part of the boundary.

The future direction of the project was re-evaluated for 2012 and beyond given the changes in the structure of the Forestry Commission during 2011 and the confirmation support from RSNE. Red Squirrels Northern England, a new project hosted by the Northern Wildlife Trusts launched in February 2011, it builds on red squirrel conservation work carried out by Wildlife Trust projects (Red Alert and later Save our Squirrels) since the early 1990’s. The project is managed by a Steering Group made up of representatives from Natural England, Forestry Commission, the Northern Wildlife Trusts and the Red Squirrel Survival Trust. I was fortunate enough to be employed by RSNE as North Lakes Red Squirrel Ranger.

Ever since moving to the Lake District in the 1990’s my husband and I have been involved in Red Squirrel Conservation; initially working with the local community, and the newly established volunteer groups, caring for road casualties brought to the Lake District Wildlife Park by the public and over the next two years hand-rearing several young red kits, through a local vet. During this time, road traffic accidents seemed, to the general public, including myself, to be the biggest threat to the red squirrels.
As the situation in the area changed with the coming of greys, first reported in 1997, then hearing of Alan Beck’s being taken on by LDNPA in 2001 I turned to grey squirrel control, mainly around Bassenthwaite Lake and responding to requests in the Bewaldeth area for shooting greys attracted to feeders.

Experience has since taught me that trapping is more efficient and I did what free time allowed locally whilst continuing to teach in a local secondary school – particularly encouraging neighbours to take a trap, demonstrating its use and responding to calls that a trap contained a grey then dispatching/removing it, to avoid untrained people needing to attempt cranium dispatch.

After taking a decision to make a full-time commitment to grey squirrel control now that my husband and I ‘empty nesters’, I contacted RSNE. As North Lakes Ranger I have taken responsibility for the Whinlatter Stronghold since April 2012. Although aware I was working on a 10 month contract, I was eager to contribute to a long-term monitoring strategy and to leave behind a legacy of both grey control and data collection that is of use to people re-assessing the issue in a decade’s time.

Without the luxury of being able to wait for RSNE monitoring results to inform control, I aimed to establish some base line data whilst trapping, by running trap lines, through the stronghold, in a methodical fashion in suitable habitat to show the distribution of red and grey squirrels and their population trends, to maximise time and financial resources.

In effect, I took over management of grey squirrel control one year before the end of the Forestry Commission’s three year plan, and whilst wanting to give due regard to previous
work, with a wider area to cover and less ‘man hours’ available through my contract, compromises and adaptations had to be made.

Therefore the method I chose was that by using is that using aerial photographs, maps and local knowledge I highlighted possible areas of concern and potential incursion routes for grey squirrel in broadleaved or mixed woodlands, within the Whinlatter stronghold, regardless of landownership or funding/management issues.

I selected 15 prime sites to methodically trap, giving really good coverage of the area, in terms of both grey control and red/grey population monitoring.

I set out about 35 traps at a density of about 1 per hectare, by pacing the distance and then using experience to determine the most productive site according to RSNE protocol.

To maximise the optimum trapping period until autumn, I developed a system of 4 days pre-baiting and 10 days live trapping. To facilitate this, my week ran as follows – Friday collecting, cleaning/repairing traps, re-laying traps (with assistance from a volunteer – pre-arranged with each landowner/manager). Late Saturday evening I re-baited and set live my traps, I then trapped all week with the following Friday and Saturday as days off, whilst again baiting the open traps, re-setting live on the Saturday evening.

This meant that traps were always working on pre-bait or live, to avoid wasted time. This allowed me to attend to trap lines for 3 – 4 hours (5 – 10 minutes per trap depending on terrain etc.) twice a day, allowing for meeting of landowners, public interaction and admin in the middle of the day, plus around 6 hours every other Friday and 3 hours each Saturday evening (a total of approximately 41 hours a week), although in practice the working day was frequently much longer.

This methodology gained respect from local stakeholders, including farmers, landowners, game-keepers householders and so on. This systematic, measurable and transparent approach appealed to local people, who whilst on the whole are happy for people to control greys as they see fit, were much more impressed by RSNE’s professional approach, which as well as removing potentially 80% of the grey population in trapped areas, also gave an accurate ‘snap-shot’ of the red and grey population.

Local people tended to be only too aware of the finances of the RSNE project and liked to see careful use of this funding, particularly after several years of Save Our Squirrels, perceived in the vicinity as shying away from effective grey squirrel control. This tactic also had the added bonus of allowing me to carry out control in sensitive areas where there was a history of distrust.

Therefore grey control in the Whinlatter stronghold could start to be managed at a landscape scale, combining the vast wealth of skills and experience of volunteers, private pest controllers, National Trust staff, gamekeepers, and Wildlife Rangers.

Data was collected, sending relevant details to RSNE’s Dr.Adam Seward, and with the loan of a GPS and assistance from Matt Easton (FC Wildlife Ranger) was also turned into population density maps, visually appealing and easily for visitors or landowners to understand.

As this method built on work already carried out by the Forestry Commission and many others, I felt that is has helped towards developing a co-ordinated strategy for control that although fragmented has been excellent, in some cases outstanding, over the years. Unfortunately Red Squirrels Northern England took the strategic decision to concentrate more funding in areas such as Slaley Forest, one of the seventeen stronghold areas with an exceptionally high proportion of grey squirrels, and therefore did not renew my contract as
North Lakes Red Squirrel Ranger. I felt that I had a responsibility to local landowners and residents who had trusted me in my assertions that the newly formed RSNE would help address the need for coordinated, methodical grey squirrel control. I therefore chose to try to make ends meet as an independent wildlife manager, despite only being awarded a five month contract and no help with expenses such as squirrel feed, feeders, bait or transport costs, I truly believe that at least I have the freedom to continue to develop the work initiated by the Forestry Commission to the best of my ability.

However, when speaking to Dr Luc Wauters, in Italy this summer, he asked about the current red/grey situation and what underlying problems still exist in the UK. To my surprise he laughed at my response, before explaining that in my naïvety I had repeated almost word for word a conversation he had had with Professor John Gurnell in the 1980’s and with Peter Lurz in the 1990’s despite the ‘Review of red squirrel conservation activity in Northern England’ in 2009, formation of Red Squirrels Northern England and millions of pounds of money spent on the conservation of Red Squirrels.

Without any sense of irony, I had described to Dr Wauters that in respect to engagement activities, whilst the leading role was played by SOS Red Alert, the number of regional newspaper articles related to the issue of red squirrel conservation indicating that the campaign successfully delivered the red squirrel conservation message; and presumably awareness levels in the general public have been increased. However, it is unclear how this increased level of awareness ground and indeed had stirred up a lot of distrust, suspicion and dissatisfaction in the North Lakes.

I recall clarifying that as an independent Red Squirrel Ranger, I encountered three main problems that are currently impacting on my red squirrel conservation work in the northern Lake District: lack of resolve from Red Squirrels Northern England to support a full-time Red Squirrel Ranger for the Whinlatter Stronghold, (despite the 2009 review recommendations that to maintain high standards of animal welfare during control operations, it would be preferable if full-time, professional operatives carried out systematic grey squirrel control), a fragmentation of effort with a lack of a joined up, coordinated strategic direction and public disagreement between official organisations.
In my experience, the different approaches by the organisations, such as National Trust, Forestry Commission, Red Squirrels Northern England, Allerdale Red Squirrel Group and Penrith & District Red Squirrel Group, and even different staff, rangers and volunteers within these organisations have led to a lack of focus on an overall conservation strategy. This has been exacerbated by a number of factors and perceptions, such as the organisations differing ethos, personality clashes, and feelings of marginalization from the planning and delivery.

Additionally, data recording is still largely fragmentary, unsystematic and non-standardised between different organisations and groups, despite RSNE efforts, each group modifies recording forms and different interpretation on the information required, places on slightly In general, insufficient data are recorded to allow anything other than a rudimentary evaluation of conservation efforts. Data collated by RSNE is not disseminated down to the ‘man in the woods’.

Therefore overall, efforts to control grey squirrels are still uncoordinated and patchy. In essence, grey control by the volunteer groups is largely reactive, in that removal was carried out in response to sightings, rather than being a proactive systematic removal. Amongst many rangers the style of control work most commonly undertaken is the shooting of free-ranging individuals, often attracted to feeders, supplemented by live trapping, heavily dependent on the efforts of volunteers, either to carry out the trapping (trap loan schemes) and despatching of squirrels, or to allow trapping to be carried out on their land; there is a serious a lack of consensus on best practice.
Future Strategy as a result of Winston Churchill Fellowship

I had always thought somebody should be doing something about the lack of communication and cooperation within conservation, wildlife management and red squirrel groups. Then I realised I’m somebody. As an independent Wildlife Manager/Red Squirrel Ranger, working in Cumbria, I’ve joined forces with many other wildlife managers, gamekeepers, conservationists and biologists in carrying out targeted control of grey squirrels in and around the Whinlatter Red Squirrel Strongholds.

There has proved one sticking point; everybody has their own ideas about squirrels and their management. Whilst in Europe I realised that it is essential to listen to different opinions and to cooperate with diverse interest groups with sometimes contradictory values. My time with Luc Wauters and the Varese University team has given me the confidence to continue to both expand my own knowledge and skills base; having received no formal conservation training, and crucially, to continue to build bridges between warring factions in the world of red squirrel conservation.

Firstly, in order to create a future strategy, nationally, in the north of England, within a stronghold or even within the local microcosm of a local estate/wood, we need to experiment with and build on the practical methods for monitoring red and grey squirrels developed by both Professor John Gurnell and more recently Dr Peter Lurz. Not just in large conifer plantations but on a landscape scale across dispersed woodlands and urban and sub urban areas, including non-invasive techniques to distinguish between red and grey squirrels to improve detection rates, in different habitat types and to improve our ability to detect changes in population size.

RSNE’s attempts to establish a monitoring programme in spring 2012 have proved wonderful PR and a good exercise in drawing people together. This large scale systematic survey is repeated every year in spring and autumn, the work samples 300 different sites across northern England, using standardised repeatable methods, including walked transects through woodlands, observing feeders in gardens and using electronic trail cameras. A truly valiant effort and an interesting overview, however serious doubts have been raised locally about the validity of such a program as headlines in the national press claim “Red squirrels are finally on the rise after 140 YEARS of decline in Britain’s woodlands as efforts to repel invading greys pay off”

Red squirrels expanded territory by 7% across 300 woodlands in north
Grey squirrel distribution declined by 18% in same areas

Local residents, in many cases country-wise, amateur naturalists, farmers, and fieldsportsmen, worry that data based on in some cases a well-established feeder in a private garden, in another a visual transect on a walk through a huge block of commercial conifer and yet others on one stealth camera operating somewhere within a two kilometre square, often including gardens, private mature woodland and small commercial conifer plantations, can only throw up misleading results.

In my experience, admittedly not informed by formal conservation training, only through trial and error and a vast amount of background reading, live trapping at a density of one cage-trap per hectare, as practiced by the Forestry Commission in the Whinlatter Reserve (until less intensive practices requested by RSNE) and across Europe, seem to give the best ‘snap-shot’ of squirrel density. In Italy, all squirrels thus trapped have as much biometrics recorded as
possible, before grey squirrels are dispatched or red squirrels ear tagged, micro-chipped and radio transmitters attached if appropriate.

Whilst in Italy I had my first chance to learn about these direct survey methods involving trapping and handling squirrels. As red squirrels are fully protected under the Wildlife and Countryside Act 1981, a licence would be required for any study that would interfere in any way with the animals or their nests in the UK.

I would very much like to learn more skills in this area, perhaps through a PTES internship, and then apply for a schedule 5 licence from English Nature, this would enable me to make better judgements about populations of squirrels in the stronghold and inform future conservation efforts, whilst giving a comparison to other indirect survey methods – with a view to improving the reliability of these in the future.

I know I’m a small cog in a big wheel, but I have set out to renew relationships with a rather dysfunctional local squirrel group and to try to really listen to the ideas of animal rights activists with radically different view to mine. I have met with and discussed a way forward with Matthew Easton of the Forestry Commission, RSNE and local residents – the end result being the formation of Green Fire, a Cumbrian based local action group which, inspired by the land ethic of Aldo Leopold and guided by Christian Stewardship engages in community-based conservation projects, environmental education and citizen science. The main aims of Green Fire are promote biodiversity, in particular the native red squirrel, to advance the education of our community in the subject of wildlife management and grey squirrel control, to ensure a consistent, proportionate, transparent, targeted and accountable approach and to promote citizen science by sharing experience, expertise and supporting creativity and innovation in research particularly in our young people.
In response to community discussion, Green Fire was organized with the following goals in mind:

- To consolidate and support wildlife management activities, in particular grey squirrel control and monitoring already carried out in our community.
- To bring the majority of land in our community under proven successful wildlife management practices by highlighting and encouraging the work community members are already carrying out, sometimes in isolation.
- To encourage community members to become better educated about land & wildlife management practices which enrich wildlife habitat and to encourage the implementation of those practices in the community through the sharing of best practice.
- To encourage wildlife management, in particular to promote the support of red squirrels and control of grey squirrels in our community using legal, recognised & established techniques.
- Organise environmentally themed youth events and training days to celebrate creation and strengthen our community’s connection with the earth.
- To obtain accurate environmental monitoring records for the entire managed area through citizen science monitoring & recording.
- To work in partnership with a wide variety of organizations and individuals who share our concerns.
- Maintain a flexible approach to wildlife management so that emerging issues, such as animals or plants newly at risk or concerns expressed locally, such as wildlife crime, can be taken into account without difficulty, ensuring that we remain representative of and sensitive to the needs of our community.
Appendix

Pilgrimage to Assisi

One major outcome of my fellowship travels has been a reflection on my own motives and agenda. Dr Fasce of Genoa University had been exasperated by what he felt was the dishonesty of the campaigners who fight the grey squirrel control plan in Nervi Park, although he could understand completely that people feel very emotionally attached to these charismatic animals – having visited the park to feed them as a child himself – he sensed a hidden agenda more involved in money and politics.

As I returned to the solitude of my pilgrimage, I had time to contemplate. Right from the outset I had decided to lengthen the time I would be away to allow me to undertake a Franciscan pilgrimage. I felt that the time was auspicious; I grew up always aware of the importance of the saint whom I was named after St Francis of Assisi; as a little girl I loved the stories about him, and I was further inspired when Pope JP II declared him to be patron saint of ecology when I was 12 years old. Of course the new pope has taken the papal name Francis, and I aimed to be in Assisi on the feast day in October. I linked several ancient pilgrimage routes; all of which the great saint had walked himself, to allow me to make the visits to colleagues and carry out fieldwork and to eventually arrive in Assisi in time for the feast day and papal visit. The routes through Italy can be tough; but it is also a tremendously rewarding experience. The pilgrim who takes up the challenge finds untamed territory, resembling the Camino as it was before its revival. Yet the landscapes are more varied the cultures more diverse and fascinating, the sense of history just as overpowering. As I walked on I reflected on Dr Fasces comments and his questions including ‘Are we all dishonest about our motives/the truth?’ ‘Should we be open or ‘sugar coat’ the truth?’ and ‘Does the end always justify the means?’ bringing to mind all the conflicts that arise within wildlife management back here in Cumbria.

Near Turin, famously the home of the ‘Turin Shroud’, I walked along the River Po and on to The Monte dei Cappuccini.
Here the Alpine Museum nestles in the old friary. It is a natural symbiosis to Italians; the spiritual and the austere love of mountains. It may be controversial to claim that mountaineering has a religious significance, but that mountains do is universally recognised. Their visual form makes them natural symbols of religious aspiration. ‘I will lift up mine eyes unto the hills, from whence cometh my help’ sings the Bible Psalmist. More than any other natural phenomenon, mountains suggest the soaring of the human spirit and its expansion into new worlds. ‘It was no accident’, claims Arnold Lunn, mountaineer, skier and religious thinker, ‘that the Gothic revival coincided with the new-found enthusiasm for mountain scenery. The trite comparison between a Gothic spire and an Alpine aiguilles is not so shallow as it seems...’ Here the addition of a pilgrimage to my WCMT fellowship travels seemed so natural.

And yet as I walked and thought, realised that St Francis had no interest in “the environment.” No feeling for it whatsoever. Instead, he was in love with creation. And that’s because he was in love with the Creator, who he regarded not as some cosmic force or distant, detached monarch, but as “Father.” Now, this does not mean that Francis saw all creatures as his equals, as some animal rights advocates today seem to do. One animal rights philosopher, Peter Singer, goes so far as to teach that adult whales and chimpanzees are actually superior to human infants in both dignity and value. He would save the whales but allow infanticide.

St. Francis would be appalled at such a concept.

Human beings are given dominion over the rest of creation in Genesis 2 not to exploit however, but to cultivate, care for, and perfect. God entrusts Adam and Eve not with “the environment,” but with “the Garden” – a place of beauty in which we are made to walk with God.

So St. Francis loves the birds, but also presses them into the service of the gospel. He saves the wolf of Gubbio from the wrath of angry townspeople, but rebukes it for its ferocity and calls men and wolf to live in harmony.

Jesus taught that God takes notice a common bird – just one of millions. He also stressed that a single human is of greater value still. So Christians love nature and yet, Christians would do everything they could to stop rats from making people sick and eating food that people need to live. Jesus brings everything into perfect balance. A thought brought home hard when an Estate owner was talking to me and the EC-SQUARE team near Varese. He was troubled by the idea of continuing to allow the control of grey squirrels on his land – a real moral and ethical dilemma for him, solved in the end by his belief the guidance of Ghandi; that even
that great man, whose live was dedicated to ahimsa did not oppose the killing and mosquitos and other harmful animals.

Christians love nature because it is the work of the God they love. The loss of a single species is the loss of a unique display of God’s creative skill. I cannot sit back and allow the extinction of native red squirrels in the UK.

Caring for nature and the stewardship role of wildlife management makes so much sense. Christianity stresses the protection of the weak and the defenceless, and they raise the importance of the physical world, insisting that it is good and that nature is as much a work of God as our own spirits. The Bible begins with God giving humans the duty to look after nature, (Genesis 2:15) And it indicates that nature is so important that the final result of the death Jesus suffered will not only be the saving from hell of every person who will accept it, but the renewal of nature. (Romans 8:19-23)

The way we should treat nature is an example of how Christian beliefs fit real problems. By the time I arrived in Assissi, on a tepid autumn evening with the sky fading to orange, and the stones of the walled town turning violet I began to understand how the whole experience was starting to fit together.

Here as Gypsy and I ascended the charming path to the hermitage, I felt at home in the woodlands. Through the grove of holm oak, perhaps containing the very tree where according to tradition the birds listened to the saint, I remembered the prayer learnt at school many years ago:

Prayer of St Francis of Assisi.

Lord, make me an instrument of Your peace.
Where there is hatred, let me sow love;
where there is injury, pardon;
where there is doubt, faith;
where there is despair, hope;
where there is darkness, light;
and where there is sadness, joy.

Divine Master,
grant that I may not so much seek to be consoled as to console;
to be understood as to understand;
to be loved as to love;
for it is in giving that we receive;
it is in pardoning that we are pardoned;
and it is in dying
that we are born to eternal life

On my return to Cumbria I felt that this is the best solution to conflict within wildlife management and in particular grey squirrel control. If I can try to build bridges and live my professional live by this prayer, then I can start to make a difference, after all as the Dalai Lama says ‘If you think you’re too small to make a difference, try sleeping with a mosquito’.
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