



Social Research for Red Squirrels United

Annual Progress report from Forest Research

February 2019



Introduction

A number of activities have taken place in D2 and E2. A summary is provided below.

D2 – Socio-economic impact evaluation in local population and economy (FR)

- 🍪 Interviews with 6 x landowner/managers and follow up team interviews – Merseyside (June 2018)
- 🍪 Interviews with 10 x landowner/managers and follow up team interviews – North Wales (July 2018)
- 🍪 Hosted a Community Learning Lab (landowner focus) with Red Squirrels Northern England and follow up team interview (July 2018)
- 🍪 Interviews with 8 x landowner/managers and team interview Northern Ireland – August 2018)
- 🍪 Hosted a Community Learning Lab (landowner focus) with Mid Wales Red Squirrel Partnership (October 2018)
- 🍪 Interviews with 5 x landowner/manager - Mid Wales (November 2018)
- 🍪 Interviews with 5 x landowner/managers – Kielder (November 2018)
- 🍪 Mike Dunn co-supervising Newcastle University MSc student (with Aileen Mill) on acceptability of squirrel control and Wildlife Value Orientations (Jan 2019)
- 🍪 Circulation of redrafted volunteer motivations report for comments (Feb 2019)
- 🍪 Procured survey services for community knowledge and attitudes surveys to take place in summer 2019 (Feb 2019)

1. Landowner/Managers interview

Our previous research with volunteers and the Red Squirrels United (RSU) teams demonstrated that a lack of landscape level collaboration posed a key challenge to red squirrel conservation. This led to interviews with 34 landowners and land managers across the project delivery areas, encompassing a spectrum of differing management objectives, access controls and levels of engagement with squirrel management activities. Examples of the types of land featured in the study include public and private estates, farmland, charity/Environmental NGO sites and reserves, public and private woodland and forests, holiday parks, botanic gardens, schools and scout camps.

The interviews with those owning and/or managing these sites explored:

1. The different activities through which landowners and managers support squirrel management
2. Their motivations for becoming engaged in these activities
3. The barriers and challenges to becoming engaged
4. The factors/actions which could encourage greater engagement

We provide a short summary of findings below:

Activities



Landowners and land managers demonstrated a variety of ways in which they could contribute to squirrel management. These activities ranged from providing supplementary feed to red squirrels to altering habitat so that it favours red squirrels over grey squirrels. Landowners also reported roles in monitoring red and grey squirrels so as to establish current populations and to help understand changes in population size and range over time. For several publicly accessible sites, landowners and managers provided opportunities for visitors to become exposed to and learn about red squirrels. A number of landowners and managers also contributed to grey squirrel control efforts, either by actively carrying out control themselves or by working in partnership with third parties, such as RSU staff and volunteers.

“We’ve got a feeding station at the hide. We know people come specifically to see them and when it’s National Red Squirrel Week we run a week of walks and things” – Charity

“The policy is not to replant with broadband but it’s to plant with conifers, mainly pines, basically for the red squirrels” – Nature reserve

“We’ve obviously relied on [RSU partner] to provide information about the picture of the squirrels throughout the whole area, [...] that gives us a baseline, we can see where our sites sit within all that, we can see what their project is doing on an annual basis, we can see that it’s working and we see ourselves then as part of the jigsaw” – Charity

Motivations

Motivations for those landowners and managers engaged in squirrel management activities were often related to a desire to conserve the red squirrel owing to its native status and a belief that it belongs in the ecosystem. However, others noted that the red squirrel’s presence provided non-ecological benefits, such as instilling a sense of local pride, sparking public enjoyment and generating income for the local economy.

“They’re a native species [...] they have their niche and their relationships with other plants and animals, which has been maintained for hundreds of years” – Private woodland owner

“We’re proud of the reds, we’re glad they’re here, we’re managing for them, it’s something the public really likes” – Nature reserve

While the affection for red squirrels and an appreciation of their benefits represented the chief motivations for landowners and managers becoming engaged, others were found to be engaged because of their dislike for the invasive non-native grey squirrel and the problems they perceived the species to be causing (either to themselves or more broadly).

“We’ve had quite serious damage to the trees in recent years. [...] the tree from a commercial perspective, or a forester’s perspective then becomes pretty useless” – Private woodland owner

“Birds have a lot of predators but stealing the eggs and stealing the chicks and things like that. And the most important thing, they’re not native” – Farmer



In these cases, it was apparent that the landowners and managers were prepared to support or carry out grey squirrel control regardless of the local red squirrel population's status.

Barriers

Landowners and managers noted several barriers and challenges to becoming engaged in squirrel management activities, particularly in relation to supporting a landscape scale grey squirrel control effort. In terms of active control whereby the individual or organisation considers carrying out the control themselves, a lack of time and resources was noted as a key barrier. This was often paired with a perception of hopelessness leaving landowners and managers feeling that no matter how much effort they devote to carrying out control, the problem would persist as populations inevitably recolonised and regenerated. Although several landowners and managers had been prepared to carry out controls when funded to do so, there were accounts of these efforts lapsing as soon as funding ceased. Engagement with control efforts can also be tempered by landowners and managers apathy, lack of awareness and perception of 'no benefit', i.e. those who do not perceive grey squirrels to be a problem for their operation are less likely to be engaged in control efforts.

Similarly, a small number of landowners and managers referred to a conflict of objectives whereby a focus of red squirrel conservation activities would compromise their ability to achieve alternative goals, such as the protection of other species and habitats.

"it doesn't matter how many you shoot, there'll always be more because they'll regenerate, won't they? The only way to get rid of the grey squirrels would be to completely eliminate them and that's not possible. Well, I suppose it's theoretically possible if you put enough effort in, but it's not in practice possible" – Estate

"The broadleaves that we do have planted here, even if it does get hammered by the squirrels, once it's off and established and we don't plan to do anything with the majority of it, it's not even going to go for firewood, so it's plant it and leave it and if the squirrels hammer it, the squirrels can hammer it" – Private woodland owner

"We are trying to conserve woodland and red squirrels, alright yes they do very well in conifer areas, but we can't just keep conifers just because of the red squirrels if you know what I mean, or rather we're not going to" – Charity

In those cases where landowners and managers considered supporting grey squirrel control through partnering with a third-party, such as RSU staff and volunteers, safety concerns represent the most prominent barrier. This is particularly true for those sites open to visitors or accessible through an extensive rights-of-way network. Some landowners and managers were reluctant to have any external persons accessing their site for fear of damage or repercussions if something went awry.

"The health and safety is a little bit of a headache. [...] anybody that goes on to a site, has to have public liability insurance if they're working. So, I think that would be a possible stumbling block" – Woodland management company



Finally, a small number of landowners and managers noted that personal opposition to lethal controls or fear of opposition from others could serve as a potential barrier to engagement in squirrel management activities.

“In an effort to try to stop any grey squirrel control, so some people can really take it to quite extreme measures whether that be legal or otherwise. So, I’m a little bit wary about publicising it too much” – Nature reserve

Encouraging engagement

Several measures to foster greater levels of engagement in squirrel management activities emerged through the interviews. Firstly, it was noted that engagement could be encouraged by demonstrating that neighbouring landowners and managers had bought in to the idea of a collaborative approach, leaving those not engaged to see themselves as being opposed to the social norm.

“The last thing I want to happen is for my national nature reserve to be acting as a refuge then for grey squirrels in the wider area where so much grey squirrel control is taking place” – Nature reserve

The presence of a subsidy or duty to carry out (or contract) control through involvement in stewardship schemes can also encourage greater engagement. This was particularly apparent in Wales where the Glastir scheme had until recently made the trapping of squirrels viable for landowners and managers.

“All the trapping we were doing was Glastir-funded [Welsh grant scheme]. That’s now stopped, so I think that’s likely to be the end of our trapping programme, until we get more funding” – Private woodland owner

Some felt that greater awareness of the need for grey squirrel control (and red squirrel conservation) would be necessary before the engagement of certain types of landowner or land manager would be possible. This may be centred around the grey squirrels’ alien, invasive status and the negative impacts it has on native species and habitats. Additionally, a message focused on more personal impacts to property and economies could prove persuasive.

“Estates are really much more commercially minded [...] hammering home the fact that grey squirrels will damage their crops which actually then might make [control] worth their while [...] Sometimes they don’t quite realise the extent” – Charity

In the case of those landowners and land managers considering a partnership with a third party to implement controls, it is clear that a high level of trust must be established. In the first instance this may be achieved through an association/recommendation from an already trusted group and the use of branded clothing or formal identification, completion of training courses (e.g. to demonstrate an ability to carry out controls safely and humanely) and possession of insurance. Trust can also be grown over time by an operator’s effective communication and a willingness to be flexible in their approach so that it is tailored to the landowner or manager’s expectations and desires.



“You wouldn’t want any Tom, Dick or Harry, [...] you’re maybe not here, they’re sitting there, they’re on your property for however long. You have to have a good relationship and you have to trust them and know them” – Farmer

Finally, engagement may be increased by the use of new control methods which are deemed more acceptable to the landowner or manager and their influencers. For example, the use of new methods may assist in reducing opposition to control activities if they are perceived to be more humane. There is also some optimism that new methods may prove to be less resource intensive.

“the contraceptive thing I think is possibly our only chance long term for the survival of the red squirrel because that’s going to make it easier for land owners who haven’t got the investment or the ability to put feet on the ground. That’s less labour intensive. So, I think that’s very positive if it comes off” – Charity

By understanding what motivates and prevents particular landowners and managers from becoming engaged, wildlife management staff and volunteers will be better equipped to tailor their message and approach as they attempt to establish a more joined-up approach to squirrel management.

2. Community Survey

As the RSU project is coming to an end, Forest Research were tasked with conducting another survey on attitudes towards red squirrel conservation/grey squirrel control. The aim is to assess the impact of RSU activities and engagement on public attitudes. The first survey was nationwide and carried out by an online panel company (see Dunn et al 2018). However, we felt that the follow-up survey would be more effective if we concentrated our efforts with communities based in the case study areas as this sample is most likely to have engaged with RSU. As several of the case studies are sparsely populated, we have engaged a survey company to spend time in each area to conduct questionnaires face-to-face/by telephone. The company has been chosen and contracted. The questionnaire is under development and the survey will take place over the summer 2019

E3 – Dissemination for IAS policy makers and scientists (FR)

- 🍷 RSU Knowledge Fair, North Wales. Presentation on Volunteers’ attitudes motivations and challenges (March 2018)
- 🍷 Presented RSU social research at LIFE Platform meeting in Estonia (Sept 2018)
- 🍷 Evidence Review Group session at Mammal Society (Nov 2018)

Presentations from the RSU Knowledge Fair are available on the RSU [website](#) and the LIFE Meeting in Estonia is available on request or via the RSU programme manager.

As part of the RSU Evidence Review Group (ERG) process, Aileen Mill and Mariella Marzano facilitated a session at the Mammal Society Autumn Symposium in November



2018 on what would be needed to promote collaborative wildlife management at a landscape scale. The workshop was divided into two sessions with the first session focused on informative presentations relating to grey squirrel and mink control. This was followed by a panel/audience discussion on the feasibility, opportunities and challenges relating to future landscape-scale, multi-species management.

Session 1 was introduced by Aileen Mill and consisted of presentations from Nikki Robinson (Red Squirrels United) on community engagement with the project, Gwen Maggs (Saving Scotland's Red Squirrels) on the volunteer hub, Xavier Lambin (Aberdeen University) on landscape scale Mink control in as part of the Scottish Invasive Species Initiative and Tony Martin (formerly Dundee University) on whether mink eradication is possible in the UK. Aileen highlighted that this session was about learning more from each other, sharing best practice and how to increase collaboration. She highlighted that previous talks were relevant to this session such as the impact that invasive species can have and societal values around different species. Aileen highlighted that for landscape scale collaboration it was important to be clear about the management objective, to identify data needs and how it will be recorded, who should be involved, resources needed and who should do the coordination (e.g. who is responsible). Aileen highlighted a few projects and their approaches that were of relevance to the session including recruitment of volunteers (e.g. Gillies on the Tweed River to help with invasive weed management).

Nikki introduced RSU and provided some background to the project. Nikki highlighted that although red squirrel conservation has been going on in pockets, this was the first time it had been brought together under a national framework. She then focused on community engagement and the contribution they can make to red squirrel conservation highlighting that it would be too costly to do conservation if all actors were paid. Nikki provided some evidence collected by Forest Research via a public attitudes survey and also interviews with volunteers on their motivations to participate in squirrel conservation which can range from a passion for the natural environment (since childhood) to a sense of duty to help remove non-native invasive species. She highlighted several challenges for volunteering: people are time poor; it is difficult to keep volunteers; fear of public backlash against controlling grey squirrels. Nikki then highlighted the range of activities that RSU has organised and funded to engage communities and volunteers such as information provision and awareness raising, training, organisational/group/individual collaborations to share knowledge and best practice and supporting self-sufficiency.

Gwen Maggs from Saving Scotland's Red Squirrels introduced their HLF funded project on landscape scale control of grey squirrels across Scotland. She highlighted that 75% of the remaining red squirrel populations are in Scotland. As the area is large they take different approaches in different areas to managing incoming grey squirrels – long-term management is required which is a big commitment. The Scottish Wildlife Trust who are the lead partners have committed to protecting Scotland's red squirrels for the next 30 years. This project is funded for five years and the focus is on community engagement and empowerment to take ownership of protecting local red squirrels. Gwen introduced the project's web-based community hub, an online resource that provides information and training but also facilitates data recording. The aim of the hub is connect interested publics, volunteers and landowners across a large country. The hub accommodates simple activities such as reporting a red



squirrel sighting to being able to view volunteer survey/trapping data and results. The hub also facilitates members to track their training and record volunteer hours and allows you to create a network.

Tony Martin talked about mink control and suggested that eradication may be possible (even if you think it is impossible) if you approach it in the right way. He used the example of rat eradication on South Georgia, a seven year project that he led where they used poisoned bait noting the associated risk to other wildlife. To eradicate mink, you would need to make sure that coverage was 100% (to access every mink). Tony questioned why people were spending time and money on controlling mink just in their local area when a landscape scale approach might lead to better results and potentially eradication. He introduced the potential of a trapping device which alerts you to the presence of a mink in the trap. Citing personal experience, Tony believed this device leads to a reduction in volunteer effort as traps do not have to be checked every day. Thus, there is scope now to rethink whether mink eradication is possible and re-evaluate resources (fund, people-power) needed. He raised a number of questions for consideration e.g. Is it desirable and do we want to get rid of mink? Is it a priority? Will eradication be publicly acceptable? Would the goal of eradication be worth the (monumental) effort? Is eradication feasible and affordable (thinks it will be £10-20 million) and is it urgent? How many years would eradication take? Is eradication permanent and sustainable? For it to work, Tony suggested that you would need central coordination to help identify gaps in control effort and provide funding to make sure every mink is captured.

Xavier Lambin from Aberdeen University talked about mink control through the Scottish Mink Initiative. He highlighted that mink spread rapidly and that the invasion is not yet complete. Xavier said that they did not have eradication in mind but had the ambition of control over large parts of Scotland. Funding has been an issue as it has never been long-term and activities have been the result of a series of small projects that grew into a programme as well as a reliance on volunteers. Xavier questioned whether they were lacking in ambition in terms of eradication but highlighted the difficulties of trapping in rural, isolated areas. The project originally started on a small scale which Xavier said was useful for learning but not very effective for control of mink. They moved onto a national park where there were a number of people skilled in shooting and with an interest in control efforts (e.g. game keepers, fishers and park staff). Xavier explained how they have built the skills of confidence of volunteers starting with monitoring and slowly moving them to the trapping mode and then dispatch. However, he noted the challenges of continually motivating volunteers. Legacy has been achieved by handing the project over to stakeholders. Xavier emphasised that research evidence is needed on what works and doesn't work and funding is crucial for this. He highlighted that no conservation funding has been spent on research activities. The next step is to assess whether control efforts can be focussed in hotspot areas, attractive to mink so control can be more targeted. They did develop a mink app several years ago for volunteers to use but now they are looking to have an app that incorporates a number of invasive species. Long-term plans is to move towards invasive species management rather than just focussing on mink. However, the question still remains – how many mink is too many mink (how many can the water voles tolerate)?

Issues and questions raised

- Should we be careful about the language we use when describing invasive species?



Using terms such as 'killers' or 'bullies' can potentially inflame tensions with those against control. Although what was presented was empirical evidence, it is understood that this data may increase tensions and there should be some thought about appropriate venues for sharing

- Why is volunteering for invasive species management so popular in the UK as compared to other countries such as Italy?

In Scotland (and the UK) they love red squirrels and so volunteers are willing to get involved. In Scotland certainly they can see the threat coming and why it's worth protecting native species. It is important that projects are engaging, supportive and open to all ages and demographics and show that you can make a difference. It is also important to understand your volunteers and what motivates them. Also, there is something cultural in the UK in that we have a public who's really interested in wildlife generally, very supportive of wildlife conservation and culturally is an animal loving country. This can work to the benefit of conservation charities which you may not have in Europe. It can lead to conflicts with people who are concerned about animal welfare but mostly people are very motivated and engaged in conservation. Another point was made that they are sectors of society such as hunters who are generally supportive of killing. One participant commented that it is not just the UK that has strong volunteering activity but northern and western Europe are also very good at wildlife data recording.

- The language used in the UK points to the origin of the invasive species such as American mink and American grey squirrel. It is potentially a good thing as you instantly understand that it should be here. Is this the same in other European countries?

It is common to identify the provenance of invasive species across Europe.

- There has been comments that volunteer motivations consistently need to be refreshed. How do you monitor this?

In Xavier Lambin's project there has been an analysis of volunteer sustainability and there is a difference between professions. Gamekeepers tend to drop out after a while whereas those in fisheries tend to stick around. The longer that volunteers are involved the more likely they will continue to volunteer. The art of working with volunteers is to find the right volunteers, those who want to nurture the environment

- Lots of the landscapes discussed are large and generally will be owned by lots of different people with variety of views. Did you look at your landscape and decide how much you could cover and whether it was worth starting? Or did you just start and hope that you were going to get enough to create a difference?

Gwen Maggs pointed out that before the start of their project there was a lot of work on feasibility and reality and that's why some areas were prioritised. The project sent out surveys to farmers to see if they'd be happy with working with neighbouring landowners and get involved with squirrel conservation and the response was very positive. Xavier Lambin point out that in some their areas, land ownership was very fragmented, which can lead to problems especially if you are unable to find out who owns pieces of land where you need access.



Session 2 focussed on a discussion between the audience and panel members consisting of Aileen Mill (Newcastle University), Connor McKinney (Ulster Wildlife Trust), Xavier Lambin (Aberdeen University) and Sarah Crowley (Exeter University). Mariella Marzano facilitated the session and started off by asking the question *can we do a GB scale collaboration?* Is it possible for us to join forces [across species and institutions]?

The following themes emerged:

There was support for *collaboration across different organisations*, especially NGOs as they often utilise the *same volunteers* who are very involved in the natural environment whether they are squirrel volunteers or mink volunteers or cat volunteers. One panel member highlighted that it could be enormous cost saving although there were warnings of *volunteer fatigue*. The challenge is that *institutions might not work so well together* (e.g. they want the credit and the funding) but also that volunteers are often very passionate about certain species and it's then about inspiring them to become passionate about something that they may not necessarily care for or even be aware of. For example, would squirrel volunteers be keen to control ruddy duck? There are also a number of actions that organisations need to do to *retain and motivate volunteers* such as feedback and training but does this become more complicated if there is more than one species? An example was given of the Wildlife Trust that managed to eradicate floral non-native invasive species such as giant hogweed and Japanese knotweed from an entire catchment which would have required a number of different treatments. Conservation success can be challenging for volunteers as it can be disappointing to be continually checking traps and not find anything. A multi-species approach may be positive in that you could check traps but also monitor for other invasive species. One conservation volunteer emphasised that volunteers need to have something they can believe in e.g. a charismatic species. They need to be able to see a result and it shouldn't be difficult 'no findings' if that is the result but what organisations often forget is that volunteers need to feel appreciated for what they do (whether it contributes or not). A panel member pointed out that for invasive species management to be sustainable there needs to be a grassroots element to it and volunteers need to get something out of the practice volunteering. In the UK we are successful at recruiting conservation volunteers but not at uniting them under one banner

One panel member highlighted that we already have *UK wide policy coordination* through the Non-Native Species Secretariat and it is their role to make those linkages. However, an audience member pointed out that the Secretariat consists of a staff of 3.5 people and their primary role is risk assessment and providing advice but not managing conservation on the ground. One panel member also highlighted the UK Squirrel Accord which is a partnership between a number of agencies and organisations. However, some organisations do not want to be seen to be killing animals for fear of public backlash or losing members. Some UK wide organisations have regional offices that don't talk to each other. An audience member suggested that there was a parallel to the Squirrel Accord called the Deer Initiative which is divided into two parts. One part is a charity and it is a partnership where 22 organisations sign up to an accord in same way. There is a set of principles that they agree to abide by. The second part is the delivery arm with a group of employees that coordinate volunteer activity. After 25 years they are seeing evidence that it works in terms of landscape scale collaborative management. There is a caveat and that is it needs ongoing



management to coordinate volunteer activity. The audience member asked the panel if they knew of any national landscape scale invasive species management programs that are being delivered by volunteers. The panel couldn't think of any but highlighted that statutory bodies and other high level organisations need to be involved as there is going to be true collaboration and a joined up approach.

Discussions moved on to the impacts of *Brexit and CAP reform* and whether these may provide an incentive for invasive species control. There were mixed views on whether Brexit will be positive or negative but issues like the border between Northern Ireland and Republic of Ireland highlights that invasive species management needs to be joined up across borders including England and Scotland where data sharing can be very poor. There was a call for a common framework for *data collection and sharing* across all countries and a step that could potentially be easily implemented. One audience member with water-based experience highlighted that the UK is already divided up into catchments and there is already a growing movement of partnership working. Invasive species management could tap into this way of thinking as well as funding and volunteer groups.

When talking about UK wide approaches it is important to keep in mind the *context specificity of local conservation*. It was highlighted by one panel member that in the Saving Scotland's Red Squirrel's project, they have different approaches in three areas for the same species. There was a caution to avoid a one-size-fits-all approach and suggestion that an expanded version of what the GB Non-Native Species Secretariat does to ensure coordination where appropriate and a *common agreement about the main aims* without constraining projects. One audience member felt that *funding for conservation/management* of the same species should be more equitable so that there is complete coverage across countries and not just some pockets that have been successful e.g. with National Lottery Heritage Funding. We need better coordination for one species within and between UK countries with joint bids for funding rather than organisations competing with each other. A panel member highlighted that it was worrying that there was so much reliance on volunteers to carry out research activities. It was suggested that this a political move as funding is cut and resources moved into other areas so that individuals are left with the responsibility. Grassroots volunteers are important for sustainable invasive species management but there needs to be funding, structure and investment from government. It won't work with just volunteers goodwill alone so we need to resist leaving the job of invasive species management to volunteers alone. Another panel highlighted that funding bodies such as HLF ask you to focus on community and volunteer engagement and there is sometimes a tension between recruiting the sorts of volunteers that are informed, engaged and committed versus trying to diversify the types of people involved. The resources from these types of fund have to be spent on community engagement which reduces funds for actual conservation work. An audience member suggested that we should be asking the government to set up a large central fund for invasive species management. It would be cheap compared to other countries because of the large volunteer base and the government would get a massive return on investment. *Government should take the responsibility of funding* invasive species management.

The panel generally agreed and one member highlighted that there was a gap between what was happening on the ground and what is currently achievable at the national level (with 3.5 people focused on prevention). Another audience member questioned whether government should be in charge of funding as there is a danger that this may externalise



the agenda which can be de-motivating and stifle enthusiasm. This participant then suggested that we stop thinking that we can manage invasive species at the national scale and focus on the regional in the hope that they can join up eventually. It is more realistic to stay small until finances are available to achieve something bigger. When asked about timescale (e.g. when will it be time to join up), it was proposed that it might take decades as invasion takes decades and eradication takes longer. One panel member pointed out that this timeframe is incompatible with volunteer motivations where people have expectations of a much faster response and are motivated by their own environment. It will be very hard to engage volunteers when the timescales are as long as 20 years to see results.

There was a question from the audience of how *important wildlife conservation* would actually be for government when a significant part of its budget is focussed on TB eradication in livestock and there will be other, greater concerns on the horizon. You couldn't trust that invasive species management and wildlife conservation would be consistently prioritised if funding was centralised. A panel member responded that there is potentially a concern with leaving control up to central organisations where the situation could end up in a better or worse. However, they re-emphasised the importance of grassroots leading efforts with the support from academic and NGO organisations. Another panel member emphasised the important of getting support from *local government* that can *provide access to public lands* so that grey squirrel populations can be controlled properly. It was noted that different local authorities have different opinions (and fears about public backlash) and as such government could play a role in insisting that local authorities collaborate in species management. It should be an obligation not voluntary. NGOs also have an influential role to play in ensuring landscape-scale collaboration. NGOs have a duty to be clear to members about their beliefs in species management and show leadership and influence. An audience member also highlighted the *role of consultancies, developers and private businesses* which are a huge source of money which is often spent on ad hoc projects rather than being coordinated. Private businesses also have staff that can assigned to projects. It was questioned whether the money and resources could be used more strategically the invasive species management forum rather than relying on HLF and EU Life that can be too short-term? Another panel member reflected on the possibilities of coordinated species management but wanted to know *what success should look like and how do you demonstrate success?* Indeed, what level of coordination is needed to demonstrate success (and what level of recording needs to take place) and facilitate knowledge sharing and learning? It was emphasised that a lot of volunteers are not 'on-line' and so to be collaborative we should not be relying solely on web-based applications and communication. Also, some volunteers don't like to collect data and have to be convinced of the benefit of what they are expected to collect. Projects may need to lower their expectations of what can be collected through volunteer networks and not push too hard. There wasn't a ready answer to the issue of data collection but one audience member emphasised that there needs to be a professional function/role that focuses on mobilising and collecting data.

In the context of volunteering, a number of students who also volunteer highlighted their frustrations at *not being able to get paid employment in species management* unless you have higher degrees. A lot of volunteering effort is required to get experience but students are finding that they are not given the contacts or support to find employment. In addition, students are trained in their degrees to collect data but they often find it difficult to know where to get experience. A panel member responded that having paid professionals within



a project makes a huge difference to its success (they cited the Red Squirrels United project) and outreach. While some starter jobs in species management may not be paid well there does need to be a focus on training and skills development. An ending comment noted that we may be too hung up on counting what is there and what has died rather than thinking through what the landscape currently or should look like.

Opportunities for joined up management	Challenges
Common frameworks/ ambition	Individual Institutions want credit and funding
Coordinated data and knowledge sharing	Political engagement
Cross-country collaboration	Lack of national strategy
Reduced competition for resources	Local context important so beware of oversimplifying
Could cover multiple species	Competition for funding
Could use a catchment approach	Being open about control activities difficult for some membership organisations
Local volunteer enthusiasm	Too much reliance on public volunteers to carry out conservation activities
CAP reform as a funding instrument	Too reliant on HLF funding
	How to enthuse volunteers to be passionate about multi-species?

References

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