INT: So it should just pop up.

INT: So I think the best way to do this is if I just for the background just go to you individually and then in terms of the other questions, perhaps I’ll just ask generally as a group, and then you can just jump in when you've got something interesting to say, and so we’ll go like that so it's quite quick but try and get a lot of information.

So to each of you perhaps you could tell me a bit more about your role for [design and engineering company] and that what your role does. So start with DEU13 maybe.

DEU13: So, I sit within our [design and engineering company]’s environment consulting team and then I’m sustainability consultant within that team. So yeah I can talk a bit about that if that's of interest to you and I also work on the [wildlife protect project]as like a project facilitator, and so I help with partner coordination and help with their green space update and there biodiversity data, and just generally this coordinate different aspects of the project on that. And yeah I can talk a bit more about my role at [design and engineering company], but again I’ve really don’t know what is of interest to you really.

INT: No, that's brilliant.

DEU14: yeah as I’m talking already I've worked here for eight and a half years ish I think I started in 2012. My background is ecological and I worked in a different company for a couple of years before that and various other kind of small smaller consultancies and units before that too. I started off looking specifically at protected species survey and mitigation and have laterally moved on towards ecological architecture and design. And also engagement with clients. So acting the trusted advisory capacity for clients of varying sizes and abilities and helping them understand the risks and dependencies around biodiversity and how to address those either through their actions or through corporate strategies.

DEU15: And I’m landscape architect at [design and engineering company] in integrated city planning department I haven't been in landscape architecture that long just a couple of years. And I work on a variety of different projects I’m working on a big scheme in London at the moment with a lot of roof terraces and public realms and green roofs and things. But then work on some kind of transport, an active travels strategy for a couple of cities, at the moment and have worked on a good couple of different things, looking at improving air pollution for children in schools in different boroughs. Those are the kind of things I’m working with and on [wildlife protect project] I kind of support, where there is any landscape design work involving planting but also assist with kind of general partnership facilitation and engagement.

INT: That's great Thank you very much.

INT: And so I’ll move on to purposes for species records data right now.

DEU14: what's your deal.

INT: My deal yeah sure.

INT: I’m working on the citizen science side of the DECIDE project and so looking at the insights of biodiversity data end users and so we've been we've been talking to Environmental consultancies like yourself, conservation groups, local authorities, just to gain a bit more insight. On a personal level, I've just graduated in corporate sustainability. So, this is my first role since graduating.

INT: And so, what species record data, do you use, and this includes species groups and spatial extent.

DEU14: Are you asking specifically for the [wildlife protect project]

INT: I think so, we'll concentrate on the [wildlife protect project].

DEU14: For every project that goes on, with biodiversity in mind good practice dictates that you should do an ecological data search that would comprise ordinarily a record check from your local environmental record centre for an appropriate distance from your site so in an urban situation, that might be a kilometre two kilometres. It is really unlikely to be higher than because you're less likely to have an impact on things, so the further you go from your site in urban environments. Whereas if you're in more in a greenfield environment, the impact pathways i.e. the ways which you could impact something far removed from your site of far easier to imagine you know connected. It's already separated by urban development noise lighting, which is already effectively cutting off those pathways for ecological connectivity. So every project as far as good practice goes should do an ecological records check, even if you're not going to environmental impact assessments, even if you're just doing a basic environmental study all of them should according to chartered Institute of ecology environmental management guidelines preliminary critical appraisal. And that chartered Institute is the main chartered institute under which ecological professionals act and everyone who signs up to it signs up to adhere to a professional code of conduct and work towards professional improvement and I don't think it's a requirement to work towards chartership, but you know you should and some of the regulations of being a member, are to adhere to good practice guidance as appropriate. So yeah we do do that there's green space information for greater London [ENVIRONMENTAL RECORD CENTRE] is the London records centre for our state wide surveys, we request a data search from them a bespoke one based around our land area out to a distance of I think we go 1.5 or two kilometres I can't remember what. We look for all species records, it’s every protected species or all species of conservation interests, sometimes people call it notable. I hate that term but it's things which are either protected by law, quite simply, or appear on annexes which by meaning they're not protected by law, but which you could set up a protected site for them at European level or international level, as we have to call it now or species which are of local conservation interests so things you know, to give you to give an idea of that we found a record of buttoned snout moths. So, given the West end is predominantly within Westminster at least have been previously we’re now moving into Camden, Kensington and Chelsea so we're looking for records which we could feasibly impact so we know there's hedgehogs in regents park but we're not likely to be building, you know. woodland at ground level at this stage, so we weren't so concerned about those records what we were looking at those records to go in our designs when we're when you know when ecological designers work with landscape architects, what can you recommend to you know. Whilst we concentrate on multi functionality what’s that biodiversity functionality that we get in the local context, because everything we do will attract cats and birds to a degree, but how can we get that location specificity of conservation interests and so that's how we've been using those records.

Okay.

INT: You talked about the [environmental record centre]. And how frequently are in contact with them regarding data.

DEU14: Rarely, I mean I don't pick up the phone from every week is like we whenever we're doing one of these projects we get in contact with them and request an update we do it at a state level, so for the whole of the [wildlife protect project]partnership we request records at that level, and we do it every couple of years or every four years. It depends because landscape changes so quickly and logical slow in an urban environment we're not likely to get fast improvements in the green space in the space of two years, so the records that we have from 2018 aren’t likely to have been updated significantly since then. Nor, I mean but that's, not to say that the records wouldn't show something interesting. But that's how we do it. We don't we don't speak to them a lot. We are only just starting this now, but we're trying to make sure that all of the data that we do collect I mean this is a requirement of [wildlife protect project]when you sign up to be a partner. When you sign up to be a partner you agree to share your data with the appropriate environmental record centre which is [environmental record centre] so we're just altering our data collection so it can just be copied and pasted into their archives, so that there's kind of a seamless transition, as opposed to the moment that needs to be a little bit of fiddling around with it, but our GIS expert Nikki has on their part to assimilate.

INT: DEU15or DEU13 any information to add?

INT: that's fine, I just wanted to check that's brilliant.

INT: So, in terms of the data what essentially do you use it for Is it for informing decisions.

DEU14: yeah.

DEU14: Obviously, we do it because we have to because it's part of a tick box exercise, so it is worth you, you know, it is worth you understanding the part of the reason that we do those things, because we have to every few years but that's actually but that's just average practice what we actually do is you know. We don't like to do that as a practice our APP or on behalf of the Wildlife protect project and most of the point we get that data so that when we're making design decisions or not. [design and engineering company] doesn't make design decisions for Wildlife protect project, by the way we just offer high level advice about way the partners should act, there are certain areas where we do tell them, you know as a consequence if you're signing up to be a partner here, you must do X, Y and zed. We do not get into the nitty gritty of design. What we do do, though, is summarize the data collection, that we collect from the green space information for greater London. And you know we tell them these are the kinds of species that in this particular area, you could impact. And so, traditionally if DEU15and I, working on one of these designs, we will look at those species list and go right well it's located within 250 meters of last known record of this thing this thing only exists on you know this particular species. And so, we'll design that in so, for instance, you know the buttoned snout moth it's really good example actually because moths and butterflies though some are quite needy as they require specific plants, because the caterpillars can only feed on that particular species buttoned snout moth it's hops. So it is literally the only plant or, at least as we've been advised it's the only it's the only plant that that thing can lay it’s eggs on so by putting hops that gets an opportunity to bring this stuff across to bring to bring this species in. yeah whereas without that we can say with you know for certain species with 100% confidence if we didn't do that wouldn't be there because they can't. Same with stag beetle. stag beetle require piles of wood just deadwood and they require them to not be disturbed for six seven years, while the larvae go in there and just develop. Beetles lay their eggs inside rotting wood and the larvae hatch and you know, help the rotting process. Then, after six or seven years old turn into a stag beetle so we know that there are certain things that, based on the records that we've got if we do an action related to that species, we can provide an opportunity for that species to come back. Which wouldn't otherwise exist, but we do the same resilience flowering plants there and it'll be early flowering and late flowering and night flowering, and I mean early like seasonally so you know, try and get a full spread of resource for pollinators from February through to November to try and give that resource for pollinators so we can look at the data records that we get back from places like [environmental record centre] or whatever and say here are a couple of species that reflects the ecology of the area and that we know that if we do it right, it could and should provide a resource for those species.

INT: Okay yeah. To obtain your data from anywhere else other than what you've mentioned already.

DEU14: In London, no not really because green space information for greater London is really the one stop shop for it. If we work in Essex, for instance, I will look at the local record centre and I know that I would have to also reach out to the Essex badger group for instance to get their confidential records. But in London it's less required there are specialist groups so you know if we expand down towards the Thames a little bit further, no doubt, we will be talking to the London Peregrine partnership about their results, and there nesting maps relating to where the peregrines are. But right now it's just not. Where we are it's not as important, the most important supposedly is that one of our partners on [wildlife protect project]is [wildlife charity]. And they have a huge data set of their own, which they do share as well, so by virtue of being in partnership with them, we do have their oversight and we do take that well, so you know take they give. [Name] who's the projects in the interim project director, or [Name] our actual project directors been on maternity, he is an avid bird fan. So he actually does genuinely yeah look you both stifling smiles that I can see both. But he does he does keep a lookout. [serious break in recording] What should go where, so now we know that there's a black red start breeding near the ones that we've already recorded along Regent street, for instance, it’s probably the same on. [ break in recording] All this just feeds into our kind of overall data sets but not, but we can't use those records on our website because they’re not ours. Unless we have written permission we can't.

INT: The data that you do attain is that raw data hasn't been processed in any way, shape or form.

DEU14: As we obtain from [environmental record centre]?.

INT: yeah so yeah.

DEU14: Usually, it is just however they send it it's often as a PDF. Okay, a locked PDF with data in various states of utility. Polite as I can be.

INT: Presumably, that makes it difficult for you to use that effectively?

DEU14: it's in the first to use it for the purpose that we need it for. I don't think there's a lot of use and some of the records we get because you know we I don't care I don't think anybody cares we got pipistrelle record in Central London from you know 1890. But we get that. There is some post processing that we have to do for relevance, you know wetland species that you get selected, a bearded tit that you get from the serpentine, is it really useful to know that a bird’s flight migrating 1000 miles in central London, probably not. We try a use a restorative lens to that data I say something. There anymore doesn't mean that we can't try and create those in the near future to. Well, to try and attract them back so, on the one hand, we do have to disregard things which are very like. Every now and again, a bird just gets blown in on an Atlantic hurricane and it gets lost from the east coast of America and ends up in Europe poor thing we don't think that we should be necessarily recreating habitats, for that, but there’s other things that we do look at.

INT: that's great. And in terms of the resolution is that different for different purposes.

DEU14: Differs as to who's collected it and how private they're being about the data. 8 figure grid reference sometimes it's just down to a grid Square. For the multiple species like birds and it doesn't matter as much because we know that, whatever happens certain hurdles and in the way but realistically that far range of issues and go up and above any kind of barrier within reason so it's the less mobile species that that resolution becomes far more important. Because we need to know kind of where they are and then make a certain number of inferences about their ability to travel as well, so if we've got a lot of species of lower ability that we know is never going to move more than 25 meters in its lifetime. And they can't fly, for instance, that really will impact our ability to design for because of the design is supposed to be to count towards our targets of creating green corridors within the West end of London, they should be separated by hundred meters or less. And it should be 100 meter squared or greater but then, if we happen to have a record of a species that's slightly lower than ability maybe we need to increase sorry decrease that distance of separation. We haven't come across that yet because I don’t think you’ll be too surprised to learn about the number of species and the kind of species that we get. You know, in an exceptionally urban part of London but it's something that we are always open to exploring further if you do happen to get the records that.

INT: In terms of helping these priority species what is the [wildlife protect project] doing to facilitate this, so you talked about us you got the green roofs that DEU15 talked about are there any other examples you've got.

DEU14: I mean look I can I could talk to you about those for the next two hours but it's a good opportunity to let DEU13 or and or DEU15 go nuts.

DEU15: We have a whole list of different kind of habitats, I guess, or green space types and we sort of get data from the partners on what they're doing to sort of we aim to encourage them what a partnership is for them to create more better quality green spaces which we then map and keep track all those are the areas that are then monitored for biodiversity, so there's green roofs, but it park that pocket park is keeping an eye on the street trees that they've got unit they're just not planters or you know. And buildings with lots of window boxes, there’s ponds, water features are important and it's also this order number and type or different habitats like housing that they have for invertebrates for birds, specific birds for bats. I probably missed a few there greenhouses, allotments where there's kind of two.

Okay.

INT: And how often do you monitor these areas.

DEU15: Do monitoring every two years. For general species for well birds and bats I could be wrong butterflies and things come into that today as well when every six years we do invertebrates for it's not sure where supplies and things come in actually DEU14's gonna have to butterflies don't have a spine man you're on it you've done it.

DEU14: Every year it's every two years, we monitor the birds, bats and green spaces and then every five or six well we every six years we do invertebrates so this year is actually the first year we've been doing it because realistically [wildlife charity] is a primary NGOs. And there guidance was really about green roofs and open biodiversity was saying that the newly created habitats can take 10 to 15 years. Biomass and diversity in terms of invertebrates so with that in mind, we said well there's no point in us doing investment surveys, for at least the first 10 years. At a push two yearly cycles, and so the fact, that we chose to do 6 years is a very sensible choice to make because you know you can go and install the green roof, and then the next day you'll have a butterfly rugby on it, because they're far ranging things but the more interesting data comes from actually collecting stuff later down the line to see what's actually taken a precedence there and stay there, in the long term, so last summer [wildlife protect project]engaged the university of east London, Student [Name] and [Name], who have been involved in several very high profile projects funded by the European union's horizon 2020 program looking at urban biodiversity, and specifically the responses of invertebrate communities and other communities to green roofs and other environmental features so they've been doing our invertebrate surveys for us, they did one last summer and they’re going to be doing two this year as well. The monitoring of the species it's not just an audit of what's there for birds, I mean for bats it is because we're just doing passive monitoring of passes literally passes like stick a microphone out a window and see if any bats come past. [Poor audio] I'll make any in for a quarter million calls, is it one back passing a million times a million passing once because it's going to be somewhere in between those two probably more like 100 but it's. But for that we can look at the timings about throwing past So if you record them three minutes after sunset the recent there by the coordinate two in the morning can't really say a lot. But for birds it's more interesting because. We know that when there's no green space birds aren’t doing anything apart from sitting on the roofs. Whereas the results we’re getting now showing that we've got you know 2018 and by the 20th 2018 we one of my colleagues went on a roof above Piccadilly. And there was a green space that was largely dead, because that was something where we got no rain three months, but they record that a black red star one most. One of the rarest of about dangerous but it's the least common species in the UK very well protected species, and it was feeding on that roof, and it was going around in the grass and that barely surviving flowering plants picked up a beak full of invertebrates flew away and came back to three minutes later so from that’s obviously nesting behaviour it's apparent going and feeding young have been asked that's brilliant. But the most important thing about the data collection in terms of the monitoring is that it's looking at what the activity is of the species that. So we're not just saying blue tit flew over it's blue tit flew over or blue tit landed blue tit was calling it was it was doing you know singing. Different types of mating activity nesting, for instance, is obviously what we're after. But you know we've been able to show that, within two or three years, certain spaces that have absolutely nothing going on just things flying over on nearby have now got roving gangs of things like goldfinch coming and landing there at the same time, every morning it's now. You know the green roofs at once St James's market are now an important place on these you know they the quite habitual animals in some in some regard in some in some places. But go from roof, the roof, the roof, and they know where they can where they can get food so it's that kind of monitoring that shows by creating this, this is the direct impact. Whereas habitat monitoring is different, because we look at the condition. So you know we go and say every couple of years, this is performing adequately against what it was designed to do or it's failing and if it's failing. We can you know whoever's doing the survey can recommend remedial actions if it's if it's a success. Then whoever's doing the monitoring can say well it's a success because X, Y zed and then that goes back to the partnership to say this is great do this next time you know it's that positive feedback loop. That to address the positives and the negatives is really important.

INT: And would you say essentially you, you want a story with each record or monitoring rather than just a statement.

DEU14: Stories engage people far better than data does. Yes, I think one of the things that's important for the [wildlife protect project]partnership and one of the reasons behind it a success is the ability of our membership to, and then the willingness, I suppose, to look at what they're doing and then come up with a way of sharing it that people respond well to, and not just people within their businesses, but the public as well it's really important for us to be able to well again, one of the guiding principles of [wildlife protect project]membership is you agree as a partner to talk about the benefits of green spaces for people and biodiversity, to encourage interaction with your Program. And to encourage others to set up their own systems in other places in the world. So, yes it's really important to actually capture people's imaginations like that, and not just not just stories it's a there was a bird here isn't that great which you know, presenting the right way is good also so what? Who cares, why does that matter to people and making sure that people understand that health and wellbeing aspect of interactions with nature. You know, saying that showing people that they're able to actually interact with these fairly cryptic species on a daily basis it's really important.

INT: If you want to say anything just you know I mean and that's fine.

INT: brilliant.

INT: Have how so, how would you consider data gaps and is that a major challenge for you.

DEU14: Can you clarify the question, please.

sure.

INT: So, in terms of.

INT: Interpreting data that you've collected say from [environmental record centre].

INT: How do you deal with data gaps.

INT: No.

DEU14: No.

DEU14: that's I don't think it applies I don't know what you I don't I don't know sorry I don't know what you're expecting. From that because you know we get the data we're not exactly told by the way, we've redacted 10,000 records. We just we just make do with what we're given. The closest we get to a data gap is having yeah like I said earlier, the spatial references to lower resolution for us to make much use out of it. But beyond that, but with that we can infer you know you're not going to achieve certain species of birds aren't going to be You know inside the apple store and it's going to be probably if they're a wetland species are probably going to be on the serpentine you know there's things like that that we can infer we just most important thing is making sure the expertise ecological expertise is part of the process to do that sift that's how we make the best use of it.

DEU15: Yes, it is a sense of the area that we cover that we're able to monitor from the you know the who's in the partnership and as that's expanding that also can help is helping to fill some gaps in the sense there's no.

DEU14: yeah it's pretty close yeah that's hard I think yeah.

INT: that's fine.

INT: Do you share process or map the data in any way.

DEU14: yep.

INT: Have you got any examples.

DEU15: on our website.

DEU15: Okay, we update every six months ish.

DEU15: Loosely.

INT: And it's.

INT: A range of audiences or specific audiences.

DEU15: For the public so.

DEU15: yeah.

DEU14: I just sent you the link in the chat what we yeah that's what we're trying to do is make sure that it is accessible to everybody. Right now, it yeah i'm in the process of making sure it was well we're always trying to increase the interactivity of it, I mean right now, you can come to that website now and go by dates. I would call the map currently passive outreach it relies on various partners to direct people to contribute to it. We do the contributions by doing the surveys, but we are always.

INT: I’m not an expert in this by any means you know, probably, this is probably work in your field, and so, essentially, I just want to show you what part of the design team has created and whether you would find these useful in your work so I’m just going to share my screen. are you able to interpret this and, if so, are they useful.

DEU14: No, no.

DEU14: Like.

DEU14: I mean, what does the scale at the bottom mean.

So.

INT: that's a north eathings and eastings.

i'm sorry yes.

DEU15: Okay.

DEU15: Sorry.

DEU14: yeah the scale on the X axis supposed to be.

INT: Again yeah just nothing and nice things.

and

DEU14: I guess the heat mapping is supposed to be.

INT: So.

INT: The likeliness of that species being there.

DEU14: OK.

INT: So the dark and I say the green areas are where it's likely more likely to be and then pinker paler less likely.

DEU14: The probability of one being your hundred percent likely to come across it or.

INT: yeah.

INT: Obviously nothing's 100%.

DEU15: And then, what would the variation show.

INT: So this is calculated using a sample of a background data to give a range in the predicted probability. So the model is around 10 times on 10 different data samples and which include some points where there are target species records and somewhere where there are records of the lepidoptera species. The modellers have recently combined the profitability and variation data so that they're able to areas, whether whether it's both high probability and presidents and high uncertainty.

DEU14: yeah I don’t understand. You know, I have no idea what that's supposed to show, I mean probably doesn't help by the fact that it's all just one note the colour but yeah apart from mountains.

INT: yeah now.

INT: This is.

INT: Obviously, in.

INT: An early stage.

INT: Which.

INT: Do you use modelled data or not.

DEU14: If you're talking about the [wildlife protect project] nope. There isn't there just simply isn't the graded variation in habitat in that part of town to warrant going into this much detail I don't think. A country scale I could see the benefit potentially. But for this i'm not sure.

DEU15: yeah well, so I guess just thinking on other things that I do it might be that if you're looking at if there's an area. Where something's going to be happening or developed or their proposals or you're investigating it, it might be useful to know the probability that something would be there. But in the end, they would always be a survey and they would likely be local, like previous surveys that have been done and kind of conservation plans that would outline likely species.

DEU14: Has the data for this come from NBN?

INT: Oh yes, yeah.

INT: Do you find NBN not useful

DEU14: I used to find it really useful and then they changed it and it's practically worthless these days.

INT: Yes, I’ve heard that before. Is that because it's just not effective as a tool.

DEU14: The system as it as it is now is unintuitive and it is as if they they changed it from a user friendly front page, which you know my grandparents well that definitely could use it now, but you know they could have done at the time and they've now changed it so it's it's just horrendous to use usefully like. I haven't used it for such a long time well for a couple of years now, I did feed this back directly to them as well, we have a conversation about it, and why they've made the changes, but it was. It went from a very user friendly system to the absolute opposite and I had to stop using it, because it was so frustrating to try and find a single species record in the location. And then, if you're trying to have to on the same map God no luck like it used to be it used to be my go to for everything. If I had to you know for a couple of enough to doing a scoping for an area I would go there and say, well, where are the records nearby of these headlines species and they took that ability away and so what's the point.

INT: Did they give a reason why they had changed it?

DEU14: Not to my knowledge or my recollection. So looking not know to this but realistically, for I can't interpret the usefulness of this without accompanying information.

So. it's a such a high if you know if I could zoom into grid squares or even less than maybe it could be of some usefulness but at the same time like this chosen, you know that particular moth the difficulty is that you're then biased by your inputs, so when I previously used NBN, I would input that I wanted to know where great Christian new door mouse and badger were, for instance, and I would overlook 50 other species that might be that might actually have been there in the initial sift so if it's only one species, then it's always going to be a heavily biased output that isn't actually that might be really useful to somebody working in conservation species isn't actually that useful for somebody who needs to take a broad view of 30 5200 species. Now, make this a multivariate analysis that you can check site by site using the records that are there, and maybe it would actually be a lot more useful okay.

INT: No that's brilliant.

INT: I’ll stop sharing this. we've sort of covered most of the questions that I had intended to ask which is great was there anything else you wanted to ask me. You perhaps think I should ask.

DEU14: If you're satisfied with the questions that you've asked then I don't think we need to.

DEU14: I wouldn't have anything.

INT: that's brilliant.

INT: Thank you all for your time.