Chapter 4: PREPARING

On 6 March 2015, I meet Michael at the Zurich airport. We had finalised our preparations for fieldwork during the past few weeks. We take three flights to Arvidsjaur, stopping in Amsterdam and Stockholm. While Michael feels entirely at ease on this journey, which he has completed at least twice a year over the past 20 years, I am slightly nervous and uncertain about what to expect in northern Sweden. For Michael, it is a routine part of his research, but I have never travelled this route before.

Once we drop off our luggage, go through security, and get onto the plane, we take our seats next to each other. We start talking and Michael shares his general perspective on science. I make my first entries in my field notebook.[1] Michael shares that being a scientist does not mean that he wants to prove anything; instead, he wants to develop approximations to truth claims about the birds and their environment, and describe them as accurately as possible.[2] Michael learnt only some of his methods during his formal

1
Chapters 4–6 are written mainly in the present tense to reflect their foundation in contemporaneous field notes and to convey an authentic, immediate account of events, experiences, and perceptions as they unfolded during ethnographic observation.

2
I later saw a similar idea expressed in a film about evolutionary biologist Lynn Margulis, where the public's perception of natural scientific practice as offering definitive *proof* of natural phenomena, was depicted in the same way. The film suggested instead that scientific practice should be understood in Michael's sense. Cf. John Feldman (2017). Symbiotic Earth: How Lynn Margulis Rocked the Boat and Started a Scientific Revolution [Video]. Vimeo. https://vimeo.com/ondemand/symbioticearthhv.

education at university. Much of his practical knowledge was acquired before university through bird censuses and bird watching. Most of his skills in observing and experimenting were acquired in the field by accompanying others or as part of his own research or by teaching himself. In particular, he learnt methods for the Siberian Jay Project from Dr Jan Ekman, a biologist based at the University of Stockholm, Sweden, who joined the project in the 1980s. Michael then developed those methods further.

In Arvidsjaur, Michael studies the birds' behaviour. For Siberian jays to successfully adapt to their habitat and survive, the most important requirements are access to food, protection from predators, and opportunities for reproduction. In evolutionary biology, these three elements can be subsumed under the term 'behaviour'. Consequently, the birds' strategies to meet these needs and ultimately survive are the biologists' focus, and they refer to the birds' ability to adapt as their 'fitness'. The birds must maintain their fitness to survive – their primary focus throughout their lifespan. Their behaviours depend on their social and ecological environments, and their familiarity with other birds. Eventually, they are shaped by and depend on evolution, as their behaviours shape their chances of survival and the reproduction of their genes.[3]

Lindgren, the first to observe these birds in Arvidsjaur, defined how the generations after him would observe the birds and collect data. In a paper Michael co-authored with Sarah Lagerberg, entitled *Long-Term Effects of Forest Management on Territory Occupancy and Breeding Success of an Open-Nesting Boreal Bird Species, the Siberian Jay,* they state:

> We determined territory occupancy and reproductive success on the territories with the help of the field notes of an amateur ornithologist (Folke Lindgren)

3
For further information on behavioural ecology, see Paul Martin and Patrick Bateson, *Measuring Behaviour: An Introductory Guide* (Cambridge: Cambridge University Press, 2007) and Peter M. Kappeler, *Verhaltensbiologie* (Göttingen: Springer Spektrum, 2020).

> from 1952 to 2009 and data collected by the Siberian Jay Project (1989–2011). Folke Lindgren (FL) visited the territories repeatedly every year starting in February, to confirm the presence of jays. If birds were present, he regularly visited each group throughout the breeding season (March–May) to catch and colour-ring birds, locate nests and ring nestlings.[4] In autumn, FL revisited the territories to assess how many fledglings remained in the natal group. We confirmed the data on breeding success with help of the records of the Bird Ringing Centre at the Museum of Natural History (Stockholm).[5]

They still do much of what they describe here in relation to Lindgren. The biologists do fieldwork twice a year in spring and autumn to ring all unringed birds and assess how many birds have survived from the previous season. However, they have now developed and formalised their observation methods.

In the 1980s, trained biologists began joining Lindgren. Among them was Professor Dr Jan Ekman, from the Department of Zooekology, now known as the Department of Ecology and Genetics, at Stockholm University in Sweden. Following the encounter between the two, Lindgren's hobby was formalised as the *Siberian Jay Project* at Uppsala University, receiving government funding from 1989. Michael joined the group in 1998. In 2004, now based at the University of Stockholm, he took over the responsibility of fieldwork from Jan and introduced new ways to formally

4
Folke Lindgren, 'Iakttagelser Rörande Lavskrikan *(Perisoreus Infaustus)* Huvudsakligen Dess Häckningsbiologi'. *Fauna och Flora* 70 (1975): 193–232.

5
M. Griesser and S. Lagerberg, 'Long-Term Effects of Forest Management on Territory Occupancy and Breeding Success of an Open-Nesting Boreal Bird Species, the Siberian Jay', *Forest Ecology and Management,* no. 271 (2012): 59.

document data.[6] Michael continued to develop the project in conjunction with master's and PhD students, visiting Arvidsjaur at least twice a year to maintain a complete dataset. However, it was not until 2012 that Michael became the PI of the project when Jan retired. In addition to Michael, my main interlocutor, I met the other biologists who are part of the field study. They include two master's students, Julian Klein and Kate Layton-Matthews, who I met in the spring season of 2015 and two field assistants, Marine Quintin and Camille Toscani who joined in the spring of 2020.

Over time, the number of territories surveyed increased to approximately seventy. By conducting fieldwork, the biologists produced increasing volumes of data and research output on the birds.[7] What appears to be forgotten from the biological perspective is that this knowledge is not only scientifically valid and factual but also implicit and informal, collected by the researchers when working with the birds, and enhancing their scientific knowledge. I aim to make this forgotten knowledge visible again.

As this chapter is called 'Preparing', I focus on the requirements of fieldwork, such as arriving in the field (4.1), preparing for fieldwork (4.2), and learning fieldwork practices (4.3). For this, I draw on my observations while accompanying the biologists during fieldwork. I develop the concept of *situated enskillment* in this chapter to analyse how novices, such as master's and PhD students, learn to do fieldwork at this formal level. The concept of situated enskillment

6
Papers published about the Siberian jays since then are, for example: Michael Griesser and Jan Ekman, 'Nepotistic Alarm Calling in the Siberian Jay, *Perisoreus Infaustus*', *Animal Behaviour* 67, no. 5 (2004): 933–39, https://doi.org/10.1016/j.anbehav.2003.09.005; Michael Griesser, 'Referential Calls Signal Predator Behavior in a Group-Living Bird Species', *Current Biology* 18, no. 1 (2008): 69–73, https://doi.org/10.1016/j.cub.2007.11.069; Michael Griesser, Peter Halvarsson, Szymon M. Drobniak, and Carles Vilà, 'Fine-Scale Kin Recognition in the Absence of Social Familiarity in the Siberian Jay, a Monogamous Bird Species.' *Molecular Ecology* 24, no. 22 (2015): 5726–38; Filipa Cunha and Michael Griesser, 'Who Do You Trust? Wild Birds Use Social Knowledge to Avoid Being Deceived', *Science Advances* 7, no. 22 (2021): 1–6, https://doi.org/10.1126/sciadv.aba2862.

7
Griesser and Lagerberg, 'Long-Term Effects of Forest Management on Territory Occupancy and Breeding Success of an Open-Nesting Boreal Bird Species, the Siberian Jay', 59.

relates to Haraway's situated knowledges, which is knowledge that is relational and dependent on its context. Enskillment refers to the bodily and sensory skills that must be learnt. I refer to Barad in my analysis of how research objects and subjects intra-actively co-constitute one another.

My analysis includes everyday life in the field, with a focus on how novices learn to collect data. This is analysed with reference to wayfinding practices that the biologists must develop to navigate the field and find the birds. To discuss the concepts and parameters of wayfinding practices (4.3.1) and a specific kind of cognitive knowledge, I refer to Kirill Istomin and Mark Dwyer, and Tim Ingold's research on the relationship between the body and the environment.

In the second part, I discuss the registration of birds (4.3.2) as one specific situated enskillment based on my observations of how Michael taught Marine and Camille to catch and register birds. To describe the kinds of practices and knowledge necessary for this step, I refer to Barad's concepts of touching and boundary-making. I question these as situations in which nature–culture dichotomies are transformed into naturecultures. Last, I turn to Thyssen and Grosvenor's (2019) concepts of sensory and bodily learning to discuss how learning environments are shaped by sensory enculturation. There I address the actual data collection, which follows a situated enskillment, in Chapter 5 of this book.

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Figure 1:
Arrival of Michael and me at Arvidsjaur Airport in the late afternoon. Arvidsjaur, 2015.

Figure 2:
The field house. Arvidsjaur, 2015.

Figure 3:
Having just entered the field house, looking to the right: A hand-carved fox and cat, fridge with hand-made figures, breadmaking machine, and kettle in the background. Arvidsjaur, 2015.

Figure 4:
Living room. Arvidsjaur, 2020.

Figure 5:
Photograph of a drawer in the field house with tools and media used for fieldwork. Arvidsjaur, 2015.

Figure 6:
The 'office-corner' with tools, media, and traces of everyday life. Arvidsjaur, 2020.

Figure 7:
Unused, old centrifuge. Now, blood samples are stored in a tin can (Figure 38 e) in a freezer and transported back to the universities for analysis once a year. Arvidsjaur, 2015.

Figure 8:
Kitchen from the inside on a day off. Arvidsjaur, 2015.

Figure 9:
Michael indicating an imaginary line where the study site starts while driving to the study area *Managed* on a snow-covered road. Arvidsjaur, 2020.

4.1. Arrival

Once Michael and I arrive in Arvidsjaur (Figure 1), we find ourselves in a peaceful, snowy landscape, where buildings are scarce and the winter sun makes all surfaces glisten. When we leave the airport building in Arvidsjaur, a couple around my age are waiting for us on the bonnet of the field car. They introduce themselves as Julian and Kate and mention that they arrived from Zurich a few days earlier. Kate is a master's student in the Department of Ecology at the University of Zurich and Julian is a former master's student of Michael's in the Department of Anthropology at the University of Zurich, where Michael is employed as a Swiss National Fund research professor at this point. This scene will repeat similarly the following season when I meet Marine and Camille, volunteer field assistants who had previously studied biology.

Before continuing our drive to the field house, we stop at the local supermarket to buy some groceries. Besides the groceries that will sustain us during the next few days of fieldwork, our shopping carts are filled with several packs of fatty sausage, wrapped in an orange-red plastic and covered with pig fat and skin. Eventually, we simply refer to this as 'fat' or 'feeder', as it serves as food for the birds and helps to attract them. More precisely, however, the term 'feeder' refers to a stick onto which two pieces of fat are attached.

Once we finish our shopping we continue driving through the snow-covered landscape of Arvidsjaur, our boot filled with the (still) frozen fat and sausage. On our way towards the house that serves as a field camp, it becomes clear that Michael has now entered the field. During the journey, he starts discussing the conditions of the field with Julian, who had been in the study area the previous year, and what they had been able to prepare thus far. He frequently peeks outside and studies the sky, trees, and forests as we

pass. He seems to be looking for birds or changes in the landscape attributable to forest management, preparing himself for what he will encounter the next day when we start our data collection from the jays.

While Michael first had to arrive in Arvidsjaur to enter the field, I had entered the field a few months earlier when I visited the biologists' office, where they were still evaluating data from the previous seasons. I had casual conversations with Michael about the use of drawings, colour coding, and maps, and how evolutionary biology constructs knowledge based on translation processes supported by visual aids that transport the research object to research offices, similar to how Latour described the process in 'Circulating reference: Sampling the soil in the Amazon Forest'.[8] Subsequent office visits involved planning the fieldwork: clarifying the biologists' research questions and objectives, outlining data-collection methods, determining my preparations, and defining our collaboration. Now, the theoretical concepts I had explored in the university offices were about to be translated into practice.

The Field House

After a 20-minute journey, Julian makes a left turn, and we enter a driveway. The beams of the car light up a beautiful wooden Swedish house, like those I have seen online and in travel magazines. We have arrived at the field station (Figure 2). The field station – recently named *Luondu,* the Sámi word for nature – has long vertical wooden panelling. Its south-facing wall is painted white, blue and yellow, which makes it appear warm and inviting. It is located on a property close to one of the main roads. The road was quiet on our arrival, although occasionally large trucks drive past, their bright lights shining to avoid running over any reindeer crossing the road.

8
Latour, 'Circulating Reference: Sampling the Soil in the Amazon Forest'.

To the left of the house is a smaller cottage, named after the Sámi term for growing lichens, 'goavsak biesse'. It is equipped with a stove, useful during the initial days of fieldwork when the main house still needs to heat up. A large building stands behind the house and includes the garage, a storage room for field equipment, and a room for firewood, as well as another small wooden cottage. The lighter colour of the wooden beams that cover the house gives the impression that it was built more recently. Inside, one sees that it functions as a sauna. Next to the large building there is an adjacent outhouse. The neighbours' houses can be spotted faintly through the trees; behind the houses is a large empty space covered in snow, making it difficult to discern whether I am looking at a frozen lake or a snow-covered field.

We enter the main house through a porch with windows; this is where we would eventually store our field equipment. On entering the house, I find myself in an open corridor that is separated from the kitchen with a low wall and a wooden balustrade on top of it (Figure 3). There is a bathroom to the left of the corridor: a long, narrow space with a toilet, sink, and shower. The bathroom and corridor were refurbished with a wooden cover between my two field studies in 2015 and 2020. Michael seems to be constantly improving the house together with friends and assistants.

Next to the bathroom is a small nook with a washing machine, and at the end of the corridor another door leads to the first of three bedrooms. The living room was converted into an office in 2024, but in 2020 it was still one large space with futons and fieldwork equipment (Figure 4). In one cupboard, I find several smartphones and tools that Michael will use during the study (Figure 5). Walking through the room, past the big window on the right that faces the main street, I find the door to my room. To the right, there is another nook that functions as an office (Figure 6), with a desk and chair, cables, camera chargers,

gear for the fieldwork, an unused centrifuge (Figure 7), and a shelf of books on behavioural biology. The third bedroom is to the left.

The kitchen is the main meeting point and workspace in the house (Figure 8). This is usually where the field-day planning and discussions on previous excursions take place. A small router with poor Internet connection is installed here; in 2020, it was replaced with a smartphone with a hotspot that requires one to be close to get a signal. Access to the Internet and digital notebooks does not appear to be a top priority here. The only reason we use the Internet router is to occasionally send emails or call our loved ones. Michael also video calls his colleagues at the house when he is not able to join them in Arvidsjaur.

A table with some chairs and a bench stands in a corner. A large fridge appears to be placed almost in the centre of the room, with a floor hatch in front of it that leads into the basement, where we store our groceries. There is also a freezer, and we fill several of its drawers with the frozen fat and sausage. The field house is a homely place, and everyone appears to be comfortable from the moment they arrive, which is important for productive collaboration. Michael tells me that a good group dynamic and team are essential to collecting valuable data. The group requires pragmatic people: skilled fieldworkers and those who do the 'care' work. 'Care' in this context refers to those that take care of the cooking and have the capacity to create a homely atmosphere, while others might be more technically focused, preparing tools and organising fieldwork. Researchers' children also sometimes come to the field house and need looking after.

Establishing Relations

Michael tells us that he renovated the field house with the help of friends with carpentry skills who were paid, but in turn could live in the house for free while working on it. There seems to be a correlation between the people who come to Arvidsjaur to do fieldwork and having these types of skills. Julian is not only a biologist but also a trained plumber; he helped fix the plumbing in the field house. Filip, a friend of another PhD student, helped renovate the house and stayed there during the off-season. Currently he is occupied with building an additional cabin in the back of the land so that Michael can host more biologists and field assistants in the coming seasons, or the accommodation could be used for those that bring families along and require a more private space. Michael also fixed, installed, and built several features in the house, such as the new wooden porch at the entrance and the sauna.

Thus, the field house is not just any Swedish house. Michael owns it and comes here often, and its features tell stories about the people who have stayed here and helped to build it. The house serves as an archive of stories about the *Siberian Jay Project*.[9] The features of the field station, *Luondu,* are not simply the result of functional decisions; further details of the house reveal a social network that goes beyond biologists doing fieldwork. The way Michael uses the house renders it not just his house, but the house of a (scientific) community centred around a common interest in fieldwork. This may be from both a biological and artistic perspective; photographers, filmmakers, and musicians have also joined Michael here in the past. Some of them were not only there as artists but also inscribed themselves into the house through their carpentry skills.

9
When Jan Ekman took over from Folke Lindgren and secured funding from the Swedish Research Council between 1989 and 2011, the project was named the 'Siberian Jay Project'. While the research no longer receives the same funding, the name is still used informally when discussing the project.

During our stay with Michael over the course of several weeks, he shares stories of people who have left their mark, for example, a friend who is a photographer. One day, when I visited my neighbour in Zurich, I found an old black-and-white photograph of Michael on their kitchen table, taken in Lappugglan in Arvidsjaur in 2003. It turns out that my neighbour is the partner of the photographer who had taken the photograph of Michael in the early 2000s. In this way, new connections are continuously being made, and new stories can be told, densifying the network of people around Michael's field house and the research project beyond scientific results and publications.

These are not the only anecdotes about Arvidsjaur; there are others about the traces people have left in and around the field house. Moreover, the study sites are shaped by the people engaged in the study. Each bird territory receives a name, and these names are often related to stories about events that occurred during fieldwork.[10] Thus, they serve as an oral history of the research project and as mnemonic techniques to aid memory of a specific territory's name. The stories are passed on by each new generation of biologists and continue to circulate. They reveal insights into the environment in which the territories are situated and tell stories about events, shaping the identity and culture of the team.

Anecdotes

Lord, Troll, Fat Moose, Fat Jana, Take 5, Impossible, Akkavare, and *Angel* are examples of territory names that circulate among the group but are not usually published in scientific journals. These names are inspired by a variety of

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Anecdotes that give insight into the origin of selected territory names are presented at the end of the book. I collected these partly during fieldwork and partly during interviews with Michael. As the territories are constantly developing, with some disappearing and new ones appearing every year, I included only the main ones I refer to in this work.

sources: natural phenomena, such as animals that have been spotted (e.g. *Fat Moose*); characteristics or names of people involved in fieldwork (*Nadine, Kara, Fat Jana, Basilika, Impossible*); films – particularly the black-and-white movies of Fritz Lang, on which Jan was an expert (*Metro* and *Mabuse*); books being read during fieldwork (*Lord* and *Baggins*); memorable incidents while working with the birds (*Angel, Take 5, Blot*); and notable landmarks or traditional place names (*Akkavare, Mader, Måskomyran*). They also reflect the changing culture of the research team. In the early days of the Jay project when Jan was the main researcher, the names he chose for territories were strictly Swedish. More recently, the territory names show a shift to names that are not exclusively Swedish, reflecting the more diverse cultural backgrounds of the participating researchers. Thus, the maps with the territory names that also appear in Excel sheets and in field notebooks are not only valid as scientific data but also represent a dense network of narratives about the research conditions and other unique and exceptional aspects, thus working as mnemonic techniques. As territory names, they remain in the reference system established by the biologists and continue circulating throughout the study.

The territory names work as immutable mobiles and create consistency. Their narrative nature means they are valuable data for an STS and design analysis. They do not become data, but as part of the reference system, they add meaning to individual data points. Data become data only in reference to other data; thus, they always gain their meaning in relation to these immutable mobiles, creating entanglements between research objects, data points, and results in a way that the biologists can make sense of. However, this is a side effect. On the one hand, the biologists aim to categorise nature with objective tools and methods, but on the other, they must use these methods to master the field, maintain an overview, and organise the study.

Biologists working with this group over time can usually recall the events to which the territories owe their names. Experienced biologists remember specific events of the study. Michael, in particular, can recall almost every anecdote or origin of the territories' names. The biologists use these narrative units as a very effective mnemonic technique to support their research, as it helps them remember and discuss the specific territories more easily. However, they never seem to reflect on its impact on their research practices.

The territory names and side-note entries that the biologists make in their field notebooks are one of the few instances where the emotional, sensorial, or social conditions of this biological study become visible beyond ephemeral moments during fieldwork. In most other cases, the biologists must 'disenchant'[11] the birds and the boreal forests for the sake of scientific integrity, robust data collection, and development of valid models of their encounters. However, with this name 'trick', the biologists themselves briefly undermine the scientific norms of objectivity, neutrality, and reproducibility with which they hide themselves in the scientific process. This time, though, the trick is one that situates them within the network of their own stories rather than outside it.

When it comes to publishing papers, these colloquial names of the territories are replaced by more formal ones, such as number codes that filter out these aspects and eliminate the names from the scientific discourse, along with the associated stories (Chapter 6). Lastly, from an STS perspective, these names reveal insights into the conditions of knowledge production and the overlap between the two ontologies, nature and culture, which are usually conceptually divided in theoretical discourse.

11
Kohn, *How Forests Think: Toward an Anthropology Beyond the Human*, 90.

Shifting Meanings of Spaces

Different spaces have different meanings to the biologists and to me. For the biologists, the field house is, in the first place, their accommodation, a storeroom for their equipment, an office, and a meeting room; to me, it is part of the field, and so are the car, supermarket, village, boreal forests, study site, university offices, and online calls.

One location can serve several functions depending on the person who enters it. To the tourist, the forests are a place of leisure and vacation; for local residents, it is home and part of their everyday life; to the Sámi people, the forests are part of their agricultural economy, like reindeer herding; to landowners, the forests must be 'managed', and for the biologists conducting research, it is their work environment and study site: 'the field'. Michael always points out when we enter 'our study site', crossing an invisible border between the town of Arvidsjaur and the village of Auktsjaur where the field house is located (Figure 9). When speaking to one another, the biologists do not speak of 'the forest'; instead, they call it 'territory', 'field', 'study site', or they use the unique names assigned to the three main areas, *Managed, Fat Road,* and *Reivo*.

Occasionally, in places such as the supermarket, the different groups of people come together with the same goal of buying groceries. One encounters locals doing their grocery shopping after work, alongside the biologists and me (wearing field clothes with big boots, gaiters, and many layers of insulating and waterproof clothes), and seasonal workers from the car-racing track in Arvidsjaur, situated near one of the study areas, disturbing the winter silence with the engine noise of their racing cars.

The boundaries between the field, fieldwork, and everyday life in Arvidsjaur differ for the biologists compared with me. I collect data on aspects concerning both work and everyday life because fieldwork is only possible through the

combination of the two. From an STS perspective, both serve as data collection. To the biologists, data collection occurs only during fieldwork, and even then, only a small number of observable aspects become data when working with the Siberian jays. To them, other practices are an inevitable part of preparation; they are not data collection.

Accordingly, depending on the expectations and the purpose with which one visits Arvidsjaur, the concept of what this place is shifts and, with it, how realities are constructed around it. In our case, Arvidsjaur can be viewed from two research perspectives, biological and ethnographic. Therefore, it must also be understood as a space of twofold knowledge production, as I elucidate in the following section.

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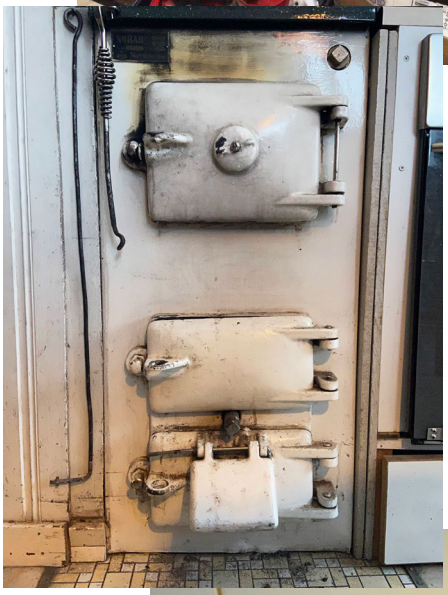

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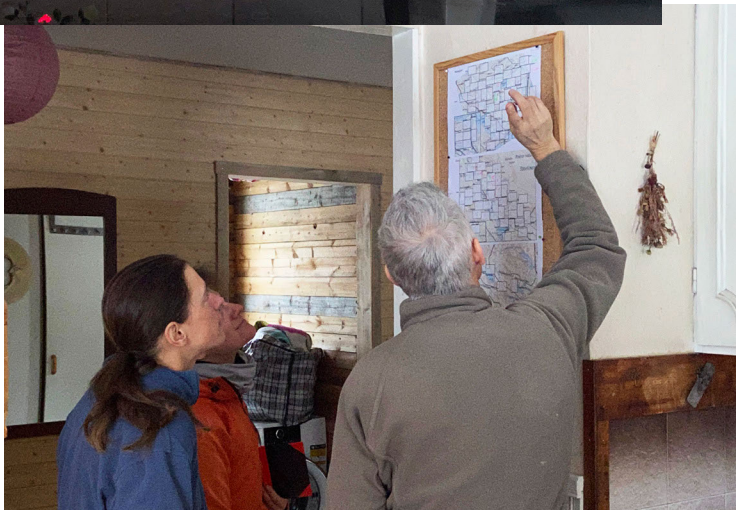

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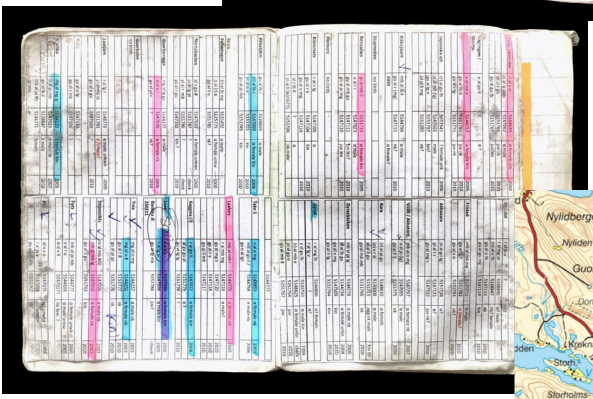

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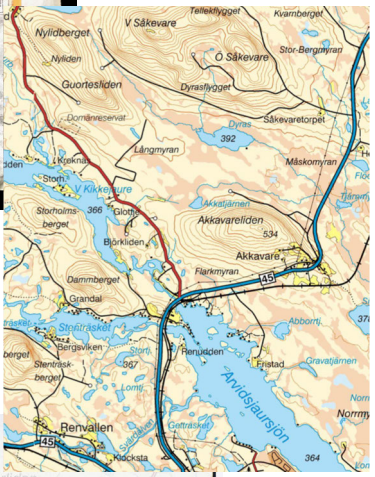

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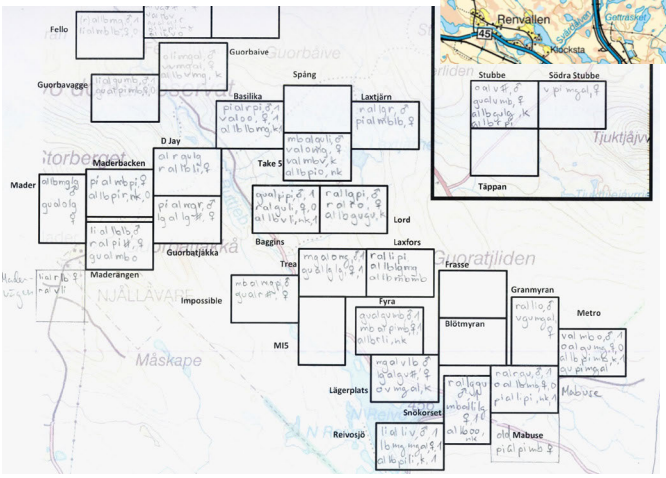

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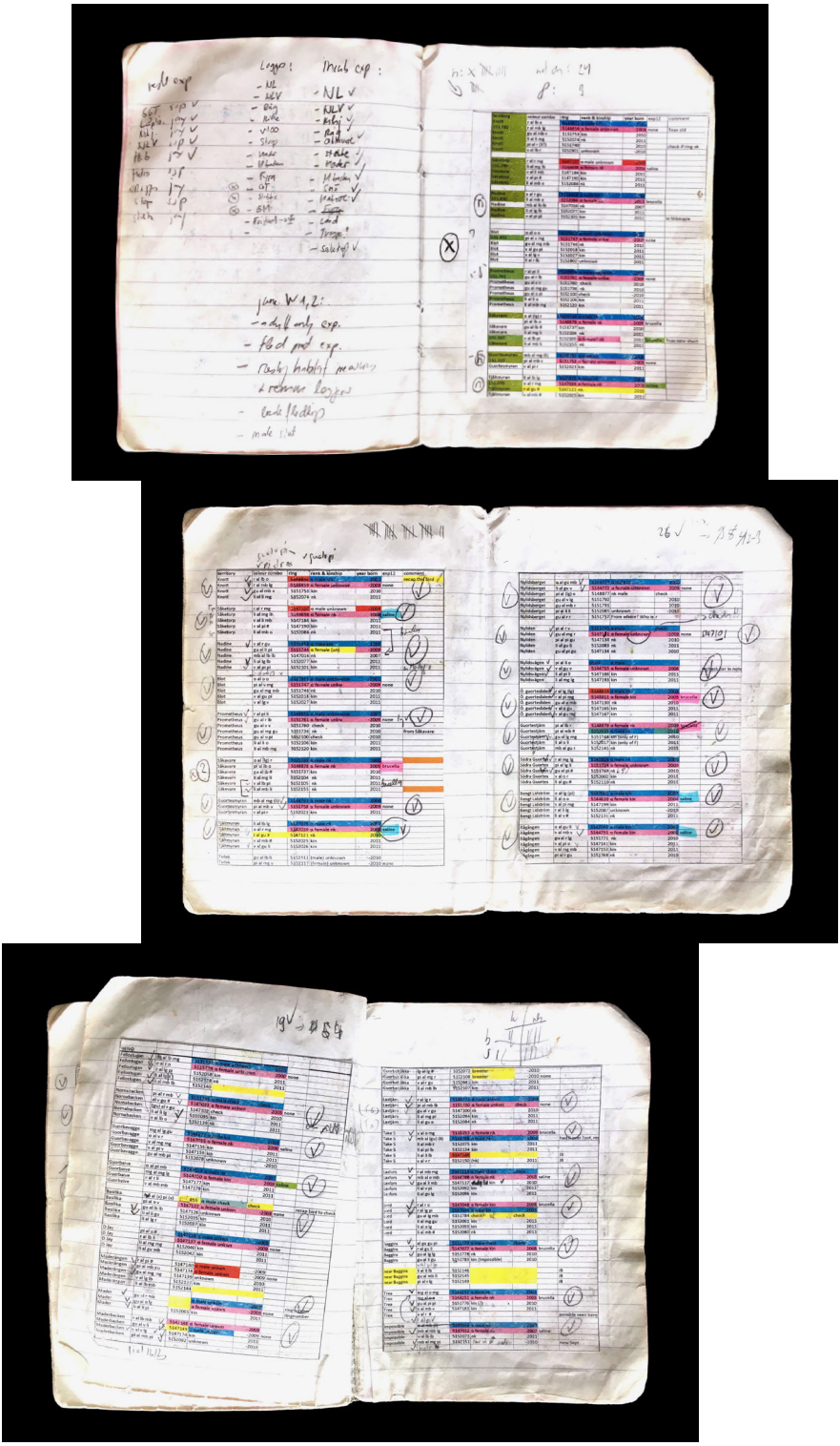
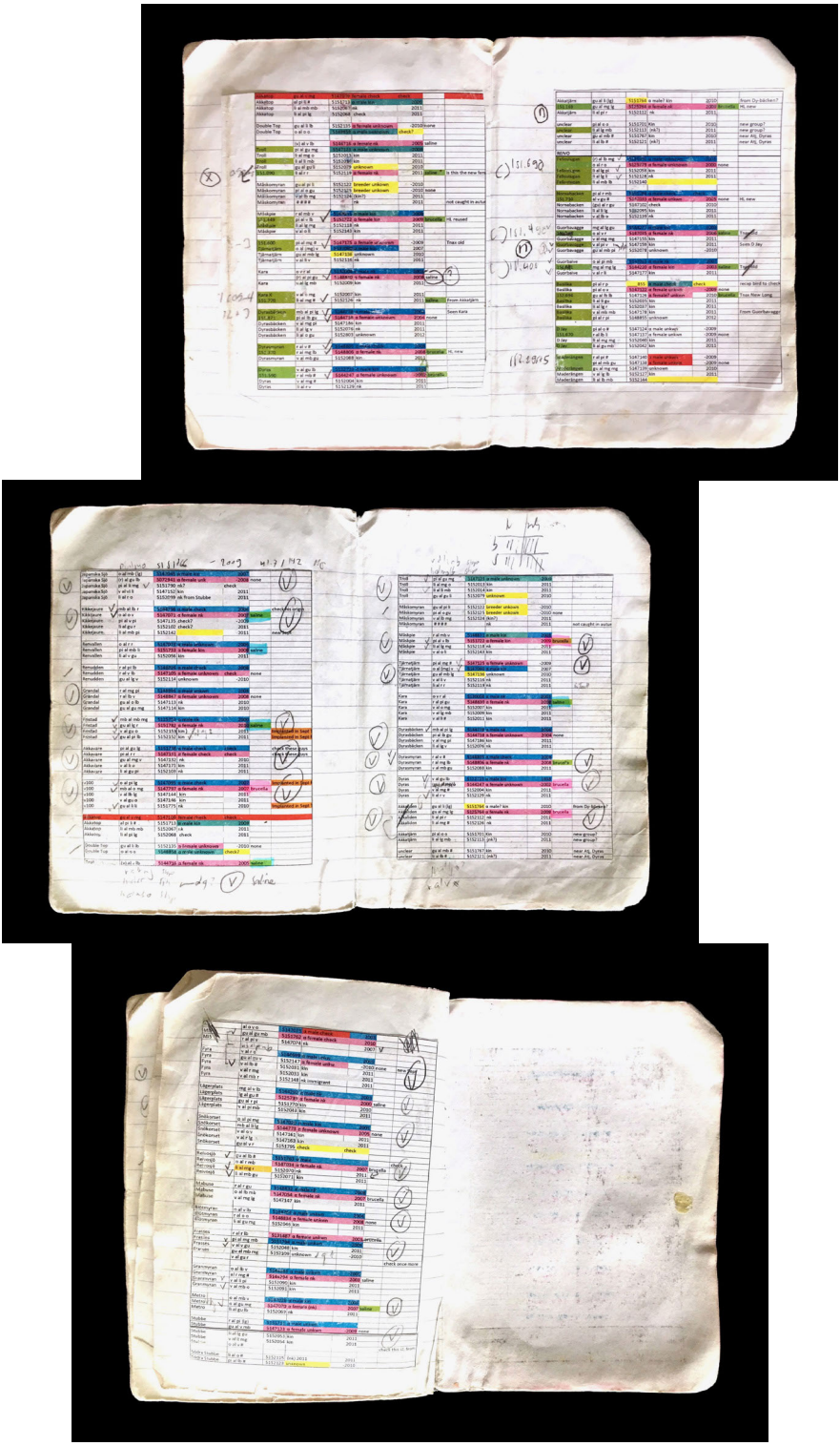


20 a, b, c



20 d, e, f

21 a, b

Figure 10:
Michael preparing the gear for the field day, fixing the binding of one pair of skis in the morning before fieldwork. Arvidsjaur, 2015.

Figure 11:
Fire stove that runs the heating system in the kitchen next to the cooker. Arvidsjaur, 2015.

Figure 12:
Firewood to run the stove and birch bark to start the fire, just brought in from the wood storage in the garage at the field house. Arvidsjaur, 2015.

Figure 13:
Prepared feeders for the Siberian jays, incised with a knife to make it easier for the birds to feed, and with two holes and wire threaded through them to attach to trees. Arvidsjaur, 2020.

Figure 14:
Kitchen stove with a coffee machine on the fire. Arvidsjaur, 2020.

Figure 15:
Marine, Camille, and Michael (l.–r.) standing in the kitchen in front of a cork board with the three territory maps, discussing and planning fieldwork for the day. Arvidsjaur, 2020.

Figure 16:
Double page in the front of Michael's notebook from 2010 with territory maps, markings, and notes of the territories that have already been visited. Zurich, 2018.

Figure 17:
Back of a student's field notebook from the 2011 season with a printed field list glued into the notebook. Zurich, 2018.

Figure 18:
Map of study area *Managed* as it is used for the territory maps. Zurich, 2018.

Figure 19:
Map of the study area *Reivo,* with boxes representing the individual territories and the relevant names near the boxes. Handwritten code with pencil, referring to the IDs of the individual Siberian jays that live in the respective territories and have been seen that season. Arvidsjaur, 2015.

Figure 20 a–f:
Field lists of all Siberian jays, glued into Michael's field notebook of 2012 with handwritten code to indicate the territories visited and the tasks fulfilled.

Figure 21 a, b:
Getting ready for fieldwork. Michael and Julian fixing the skis onto the roof of the field car. Barbara, who visited her partner Julian for a few days, and Kate, are waiting. Arvidsjaur 2015.

Figure 22:
Map of forest management in the study area *Managed.* Markings denote different management types. ArcGIS. Zurich, 2018.