

# Estonia Expedition Report

Dates: 29<sup>th</sup> August – 20<sup>th</sup> September 2016



**Aim:** to fast-pack over 375km from North to South Estonia



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## Introduction

In September 2016, we completed a 375km fastpacking expedition across Estonia. The route formed a north-south traverse of the country along the RMK route, and the trip was funded by the Imperial College Exploration Board and the Royal School of Mines Association.

## Background to fastpacking

Fastpacking is a cross between backpacking and mountain running. It involves:

- 1) Rapid, long-distance travel, on foot, over multiple days.
- 2) Refined equipment choices and practiced skill sets that allow for both rapid movement and self-sufficiency in a remote setting. Gear selection, ingenuity, and a streamlined approach are the primary tools for maximising speed and minimising overall effort, without overly compromising safety or comfort.

**Source:** <http://www.sagetosummit.com/fastpacking>

We completed the trip self-supported but in order to minimise weight and ensure we had sufficient food for 2 weeks running, we arranged additional supplies to be delivered to lodgings and facilities along the route in advance.

## Why we choose Estonia

Over 50% of Estonia is covered with natural forests and another 25% is peatland. There are also numerous wetland habitats including 1,400 lakes and many peat bogs. This means there is a huge wildlife diversity. The planned fastpack route includes swamp areas and forests.

The route is sea to sea and, as many of the coastal areas are untouched due to them being closed to the public during Soviet occupation, they will be a highlight of the start and end of the expedition.





Ruby Whiteface



Chestnut Heath



Pygmy Owl!



White-backed Woodpecker

Estonia has 8 different species of woodpeckers, which is extremely uncommon in Europe and in a 24 hour birdwatching competition carried out in 2007, 194 bird species were recorded, the 2<sup>nd</sup> best result after Spain. This makes Estonia a great location for bird watching.

There is apparently some interesting geology which is of particular interest to us as we both study Earth Science.

## Team

We have been running together for over 2 years, training for our first half-marathon and first marathon together. We have spent weekends away hiking and know we work well together.



LHS: prior to our first trail half marathon and RHS: after our first trail marathon

## **Tom Raven**

I'm a fourth year Geologist and a keen runner, hiker, cyclist and footballer. I run regularly with Imperial Cross Country and Athletics Club, have done many weekends hiking throughout the UK and have spent over 16 weeks on fieldtrips since I started studying Geology. I have also completed the Merlin field safety and first aid training course.

### **Experience**

- Bacchus Trail Marathon (9<sup>th</sup> overall)
- Numerous half marathons
- Yorkshire 3 Peaks Challenge (x3)
- Silver and Bronze Duke of Edinburgh awards, spending in total over two weeks orienteering and camping
- 3 weeks camping alone in Scotland in July 2014
- 6 weeks independent mapping in El Pont de Suert, Spanish Pyrenees, walking on average 10 miles a day

## **Catherine Spurin**

I am in my 4th year, reading Geophysics and am a keen runner and swimmer. I run regularly with Tom and also with IC Cross-Country and Athletics Club. I am IC 2nds captain for Mixed Waterpolo and am on the 1<sup>st</sup> team for Women's Waterpolo and RSM Women's hockey. I have also completed the Merlin field safety and first aid training course.

As part of Geophysics I have spent a lot of time in the field, with 2 weeks mapping in Spain and 2 weeks conducting geophysical surveys in Morocco. The Morocco trip returned less than a week before the Surrey Spitfire 20 miler I competed in, so I had to train whilst in the desert.

### **Experience**

- Bacchus Trail Marathon (4<sup>th</sup> woman)
- Yorkshire 3 Peaks Challenge (completed less than 2 weeks after the Bacchus Marathon)
- Surrey Spitfire 20 Miler
- 2 trail half marathons
- 3<sup>rd</sup> in Borough Cross Country (2012) and competed at County level (2011, 2012).
- Hiking weekends in the UK

## Itinerary

Day	Date	Detail	Distance
1	29/08	Fly in to Tallinn London Gatwick – Tallinn (easyjet) 11:15 to 16:05 2x 20kg hold luggage Stay at hostel in Tallinn	
2	30/08	Arranging food drops and preparing for start Stay at Fat Margaret Hostel	
3	31/08	Bus from Tallinn to Altja, run to Oandu	4km
4	01/09	Run. Oandu to Nommeveski campsite	26.5km
5	02/09	Run. Nommeveski campsite to Jussi.	30.9km
6	03/09	Run. Jussi to Nikerjarve (via Aegviidu Nature Centre for food drop)	20.3km
7	04/09	Run. Nikerjarve to Hiieveski.	36.6km
8	05/09	Rest. At Hiieveski. Food drop at Ardu.	
9	06/09	Run. Hiieveski to Hirvelanne.	29.3km
10	07/09	Run. Hirvelaane to Lelle	33.2km
11	08/09	Run. Lelle to Mukri.	21.2km
12	09/09	Run. Mukri to Saeveski forest hut. (food drop at Farm Museum in Kurgja)	28.7km
13	10/09	Run. Saeveski to Oksa	29.2km
14	11/09	Run. Oksa granary to Sooma Nature Centre for food drop)	12km
15	12/09	Rest. Sooma to Kopra Tare Forest Hut.	33.9km
16	13/09	Run. Kopra Tare to Kilingi Nomme	12.8km
17	14/09	Run. Kilingi Nomme to Kabli Nature Centre	45.5km
18	15/09	Run. Kabli to Krappi.	13km
19	16/09	Run. Krappi to Ikla.	7km
20	17/09	Latvia.	
21	18/09	Latvia.	
22	19/09	Latvia.	
23	20/09	Fly home to London Riga – London Stansted (Ryanair) 11:30 – 12:15	

Red = long run day

Green = rest day or easy run day

The itinerary was updated during the expedition because we felt we didn't really need full rest days and so could do short walking days instead. We also had to update the route when we lost a food drop.

## Route

The route was the RMK Hiking Route - a 375km long hiking trail that goes through the whole of Estonia; from the sea at the northern edge to the sea in the South-West that lies near the Latvian border. It starts in the Lahemaa National Park, goes through the Kõrvemaa Landscape Reserve, Soomaa National Park and Pärnu County and finishes at Liivi Bay. It includes 6 counties, 2 national parks and 9 nature reserves.



The trail is marked by kilometre posts, with signs on turning points (as seen in the picture) and white-red-white markings on trees. The trail can be broken down into 4 stages.

### Stage 1: Oandu – Hiieveski



The first part of the route was just over 100km long and was completed in the first 4 running days (days 4, 5, 6 and 7 in the itinerary).

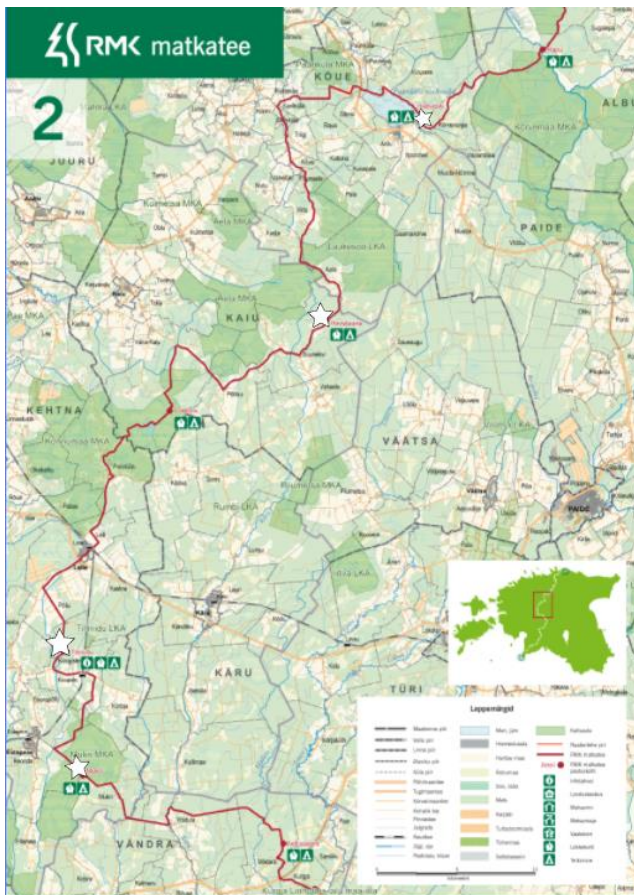
We visited Aegviidu Nature Centre at the end of day 4 of running to collect a food drop.

The highlights of this leg were the Kõrvemaa Reserve, Suru bog, Lake Paukjärv, Jussi Lake, Jussi Moor and Viru bog.

We stayed at the Nommeveski, Jussi, Nikerjarve and Hiieveski campsites respectively over the first 4 nights. They had drinking water, dry toilets and some shelter and were free of charge.

In this section of the route, we crossed a mixture of terrains including mud paths, hiking trails, gravelled roads and boardwalks.

## Stage 2: Hiieveski – Mukri



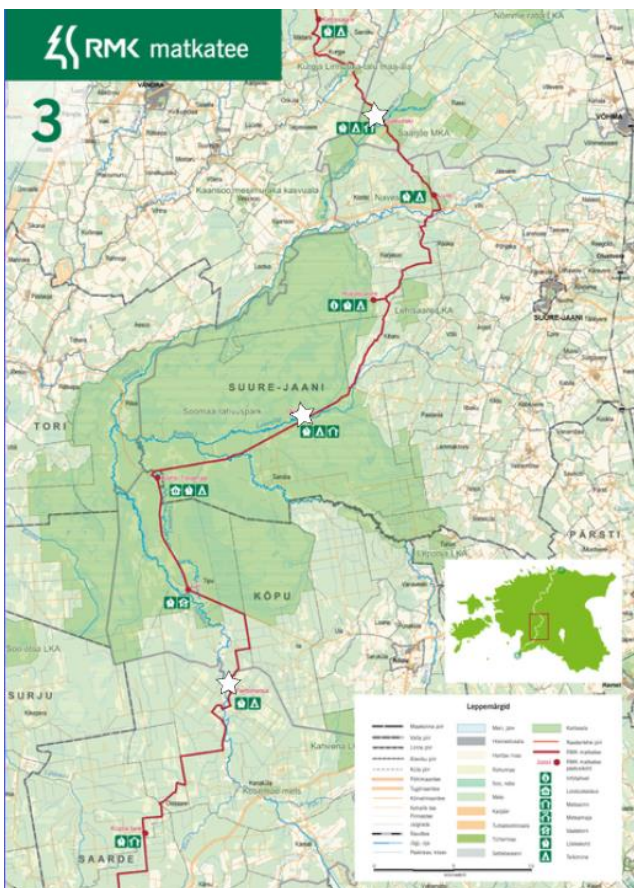
The second part of the route was just short of 104km long, and was completed in 4 days, with 3 hard running days and 1 rest day.

We aimed to collect 2 food drops along this route- 1 at Ardu (near the Hiieveski campsite) and 1 at Lelle (in between Hirvelaane and Tillniidu). But only managed to collect to food parcel at Ardu.

We stayed at the Hiieveski, Hirvelaane and Mukri campsites when running. For the rest day we stayed at a B&B in Ardu.

Remarkable sights along this section were Valgehobusemäe Hill, Noku Farmstead, Kakerdaja bog (with a 3.5km long boardwalk), Paunküla Reservoir Lake and Paunküla Hills and Loosalu and Mukri bog.

## Stage 3: Mukri – Kopra Tare



The third section consisted of 88km over 3 hard days, with a rest day in between. We picked food up from the C.R Jakobson farmstead (where we also retrieved the food drop that the courier service failed to deliver) and Sooma Nature Centre.

We stayed at Saeveski forest hut, Oksa campsite, Sooma Nature Centre and Kopra Tare forest hut.

The Sooma National Park was created to protect the bogs, meadows, forests and cultural heritage. For this part of the route we went through Europe's largest bog which meant there were lots of mosquitoes. This meant we did not stop for long during our breaks.



## Stage 4: Kopra Tare – Ikla



The fourth and final section was 92km long and will be completed over 2 hard days and 2 rest days. We picked up a food drop at Kabli Nature Centre on the second last day, so that we minimised the weight of food we were carrying over the 45.5km day.

We stayed at Kilingi-Nõmme campsite, Kabli Nature Centre, and Krappi campsite. These provided toilets, water access and shelter. We passed 4 other campsites on the route but did not stop at any of them as they were all slightly off route.

The section started in the large forest masses near Kilingi-Nõmme and we passed the villages of Laiksaare, Massiaru, Kabli and Treimani. The expedition ended in Ikla village on the border of Estonia and Latvia.

## Day by Day Diary for Expedition

### Tallinn

We flew into Tallinn 2 days prior to the start of the expedition to organise the food drops and explore the old town. The courier company we used were more expensive than expected mainly because they needed a bribe to deliver to the Nature Centre in Kabli (not sure why even now as Kabli was a small and pleasant seaside town)

### Day 0

Bus from Tallinn to Altja and short 1 mile run to the sea and then back past Altja to Oandu which was the start of the RMK route. This day was very short as we only ran just over 2 miles but allowed us to mentally prepare for the expedition and save energy for Day 1. We had planned to stay in a guesthouse this night but decided to save the money and camp. The first night in the tent was very noisy because of the crickets and although we were the only ones at the campsite, we both still managed to worry about the axe for firewood near the campsite...



### Day 1

Day 1 marked the start of the RMK route and the start of our 375km journey across the bog lands and through the forests of Estonia. We were super excited to start the day, and were very happy to be able to get the day's water from a nearby well instead of the river which was pretty fast flowing.

Within 5 minutes of starting for the day, Catherine had about 20 louse flies buried in her hair, with Tom not far behind. For the rest of the expedition Catherine wore a buff to prevent the louse flies from biting her.



We camped that evening at a campsite with a lot of pinecones on the ground which took ages to clear before we could put the tent down. We then had to get water from the nearby river which was brown and required to be filtered and have a lot of chlorine tablets added to it before we could persuade ourselves to drink it.

### Day 2

Quite a long day with heavy bags. Managed not to see another person the entire day. Largely uneventful day once we got out the forests and away from the dreaded louse flies.

### Day 3

The start of the day was surreal- it was extremely misty and the first 8km was across a heather moorland which made us think we had mistakenly ended up in Scotland. Both of us felt great and covered the ground quickly (just over an hour) and thought that we would have lots of time at Aegviidu Nature Centre but then we came across a flooded bog; so flooded it could probably be

described as a lake. We tried to take a detour but the bog was vast and we still got wet feet. We ended up having to take off our socks and put plastic bags on our feet, then our shoes back on and just waded through the bog. This technique was relatively successful until Catherine slipped and got her leggings wet to match her socks. We did manage to get a shower in the Nature Centre but just before we were meant to be leaving, a heavy shower began outside. The storm lasted all night and the beginning of the next day but was the only bad weather we had throughout the trip.



#### Day 4

Day 4 was the only really wet day of the expedition. Unfortunately, the rain was torrential and we were crossing another large bog that day. The boardwalks for the bog were flooded again. We ended the day with purple, shrivelled feet and wet socks.



### Day 5

Rest day with a food drop pick up in Ardu. The guesthouse the food drop was delivered to was lovely and warm and cheap... So we ended up spending the rest day here so we could dry our socks and running clothes which was great as Catherine's leggings were still damp from her fall.



### Day 6

Both of us were in a great mood for this day as we both had a good night's sleep and our socks were now dry! However, having just got a food drop, our bags were really heavy and restricted the amount we could run. The day ended with us having very sore shoulders.

### Day 7

We arrived in Lelle too late to collect the food parcel and had to camp on a football field in the town.

### Day 8

The food drop in Lelle was not delivered by the courier company (for reasons still unknown to us) and the plan had to be changed so that we arrive at the next food drop location in 2 days instead of the planned 3. We had to buy supplies for the next 2 days from a local store which was mainly snickers bars.

### Day 9

At 12am a car pulls up to our tent and 3 people get out with flashlights. One of the group decides to open our tent and shine a light in. Thankfully, Catherine screaming the house down scared the intruders away and they drove off immediately after. However, the incident left us both visibly shaken and suddenly hating the evenings. We decided to extend the days and finish 2 days earlier than planned. We finished the day at a forest hut hoping it would be peaceful after having no sleep the night before. However, we were wrong as a cyclist also wanted to stay at the forest hut when he arrived at 10pm when we were already asleep and tried to knock the door down. Tom eventually lets him in.



### Day 10

This was meant to be a rest day with a planned 6.5km to the next campsite. However, after another bad sleep and when we saw the next campsite was basically a sand pit we extended the day to Oksa to stay at the forest hut there. When we got to Oksa, it turned out the forest hut was in fact a barn which didn't even keep the mosquitoes out so we decided to camp instead. We finished for the day at 5pm and had to spend the whole evening in the tent due to the mosquitoes.



### Day 11

Short but boring 12km to Sooma Nature Centre to get the food drop. The nature centre is lovely and has showers so we stayed there all afternoon. There were sheds that you could sleep in which Catherine was keen to do but a few mosquitoes could get in and it was too warm to sleep in a sleeping bag in the shed so we pitch the tent in the dark when Tom decides he has had enough of being bitten.

### Day 12

We increased the mileage for the day to get to Kopra Tare hut hoping it would be better than Oksa but are disappointed when we arrive. The surrounding ground is extremely muddy so we decided to pitch the tent in the hut which was quite a difficult feat that required a lot of our engineering genius

(and a lot of swearing). However, we still have a bad night's sleep as there was some sort of large rat or bird in the roof that moved around a lot. Catherine wakes up at 3am needing the toilet but is too scared to go out by herself. Tom isn't too annoyed though because we'd been going to bed at 8/8:30pm every day and hadn't seen the stars yet (they were amazing- it was such a humbling experience!).

### Day 13

The plan for this day was to progress to Killingi Nomme and stay in the guesthouse there as we both desperately wanted a good night's sleep after 2 weeks of rough nights. However, the guesthouse is full and check in for the local hostel was at 7pm which we thought was a waste of money so we camped instead. At 1am someone parks outside our tent which panicked us no end as the campsite was empty other than our tent and starts revving the engine for over an hour. Tom has to go out the tent to check the person isn't trying to commit suicide but the man had obviously been kicked out by his wife (maybe for being inconsiderate jerk?) and was now trying to warm the car up to sleep. He repeats the hour of revving again at 5am so we set off at 6:40 am the next day.



### Day 14

Our longest day, at 45.5km (this includes detour for ice cream though). Lots of long straight roads encouraged us to run despite being tired. We finish the day at Kabli Nature Centre with a shower. We pitched our tent by the nature centre that evening which meant Wi-Fi in the tent (this was super exciting and meant we could watch TV).

### Day 15

The plan was to run from Kabli Nature Centre to Lemme but when we arrived in Lemme at 3pm, the campsite was underwhelming especially for the last night and so we progressed to Krapu campsite which was by the beach and meant a beautiful sunset over the sea.



## Day 16

Fastest running of the trip as we were both really excited to finish and bags had no food so were light. Happy reunion celebration with Catherine's parents when we see them at the Latvian border. We had initially planned to get the bus from Ikla to Riga but Catherine's parents (read mum) were worried about the nature of the expedition and decided to book a tour of the Baltics at the same time of the expedition to ease their nerves and so could pick us up on the last day.

## **Travel**

**Air travel** – Outward journey: flight from London Gatwick to Tallinn. The flight was 11:15am to 16:05pm on 29/08/2016 with easyjet. We got 2x20kg hold luggage cases to transport our food, liquids and sharp objects, as well as the boxes we used to send the food parcels for the food drop off throughout the expedition. Everything else was taken in our 32l rucksacks as hand luggage.

Return journey: flight from Riga to London Stansted on Ryanair. The flight was 11:30am to 12:15pm on 21/09/2016. We used our 32l rucksacks as hand luggage again but only had 1x20kg hold luggage, as although our food will be used up, some equipment e.g. penknives wouldn't have been allowed in hand luggage. We flew from Riga instead of Tallinn, as Riga, the capital of Latvia, was closer to Ikla than Tallinn and, as we finished a few days earlier than the initial plan, we could enjoy a small holiday in Latvia with Catherine's parents.

**Buses** - We got the bus from Tallinn to Altja on 31/08/2016, a small coastal town near Oandu. This took just under 2 hours.

To get to Riga, we got picked up by Catherine's parents in Ikla (they conveniently booked a holiday in the Baltics at the same time we are going to be there...). Both Latvia and Estonia are Schengen countries and so there wasn't a problem crossing the open border.

## **Comment on travel**

There were no problems with either the flights or the buses – Google is apparently very reliable. And when we were in Tallinn, we found the public transport was free, so this was a nice benefit.

## Food

### Calorie intake

The table below shows our expected calorie burn for the 14 running days. We needed a high calorie diet throughout the trip to maintain energy levels. For the Marathon des Sables, it is recommended to consume 2000kcal a day. As we are spending more days running, we decided to consume more calories a day – nearer to 3000.

Day	Tom's kcal	Catherine's kcal
1 = 32.5km	2438	1833
2 = 30.9km	2318	1743
3 = 20.3km	1523	1145
4 = 16.6km	1245	936
5 = 20km	1500	1128
6 = 29.3km	2198	1653
7 = 40.2km	3015	2267
8 = 14.2km	1065	801
9 = 28.7km	2153	1619
10 = 29.2km	2190	1647
11 = 30.4km	2280	1715
12 = 28.8km	2160	1624
13 = 23.4km	1755	1320
14 = 40.1km	3008	2262

Catherine: 56.4 kcal per km

Tom: 75.0 kcal per km

Source: <http://www.runnersworld.com/fitness-calculators/calories-burned-calculator>

These estimates are based on a fast marathon pace, which is a similar distance to what we ran a day, but at a much faster pace, and therefore these calorie burn estimates are likely to be overestimated.

Having calculated a metabolic basal rate of 1778kcal a day for Tom and 1295kcal a day for Catherine and assuming a 3500kcal deficit loses 1kg of body mass, Tom will lose 3kg, or 4% of his body mass, and Catherine will (apparently) gain 0.6kg. These were crude estimations with Tom actually losing 0.7kg and Catherine gaining 0.2kg (although these measurements were post Latvian holiday).

### Breakfast

Breakfast consisted of 1 sachet of porridge each with water. Each sachet was 138kcal. For the 18 days, we needed 36 sachets. The packs weigh 36g and so total weight was 648g.

### Lunch

For lunch we had high-energy Clif, Builder's, Trek and Chia Charge Flapjack bars, so that we didn't have to stop and use the cooking equipment. We had 6 bars each a day and 8 when we got rid of the porridge after the lost food drop was recovered. A Clif bars contains 250kcal and a Builder's bar contains 270kcal, so in total this was 1290kcal each a day. In total we had 228 bars with a total weight of 15.5kg.



## **Dinner**

For dinner we had freeze dried meals, in the form of Mountain House big pouches. These packs contain 935kcal each. In total we needed 38 pouches, but took 1 extra as emergency food. Each pack weighs 179g and so total weight was 7.16kg.

These meals add up to a daily calorie intake of 2771kcal. We also had Nuun electrolyte tabs to replenish electrolytes. The tablets weigh 6g each. We also took 4 Mountain House dessert pouches for our rest days when we had longer in the camp. These weighed 90g each, so in total the added weight was 360g.

## **Importing**

As Estonia is in the European Union, there were no restrictions on importing the level of food we took. The weight of the food was 25.61kg (equating to roughly 650g each per day to carry), and so fitted into the hold luggage we took.

## **Resupplies**

We arranged 6 food drops throughout the trip, so that we were not carrying excessive weight on any of the days, as food was one of the heaviest component of our bags. There were 3 nature centres along the trail that agreed to accept food parcels from us, as well as 2 shops in villages along the route, and the C.R. Jakobson Farm Museum in Kurgja. This made it much easier to carry our bags that weighed, at a maximum, 7kg. We used CargoBus delivery service that operate out of Tallinn.

## **Comment on food**

The porridge wasn't very nice and would take a while to make in the mornings, so after a few days we decided to not use it and have bars for breakfast instead. The bars were all quite nice, but after a few days they became very boring. The freeze dried meals were actually really nice, especially the chicken korma and the chicken tikka (I've had much worse takeaway curries...). The food drops were slightly problematic. The company we used, CargoBus, had agreed via email to deliver the parcels to anywhere in Estonia and advertised a small price for each parcel. When we went to CargoBus in Tallinn, each parcel ended up costing 12€, and they wouldn't deliver to the final location, as it was too close to the border and was therefore dangerous...(although we found the area close to the border to be one of the nicest parts of the country!). Also, CargoBus failed to deliver a parcel to the post office in Lelle, and instead of telling us, they waited until we were in Lelle and rang them to let us know it was still in the delivery office. This meant we had to get it delivered to the next location the following day, and survive for two days on white chocolate Snickers bars (which were actually incredibly nice). This experience has meant that if we were to do an expedition again, we wouldn't rely on food drops, and would pick up food along the way.

## Kit list

A balance had to be struck between warmth and lightness. We also needed clothes to wear in the evenings and on rest days.

- Baselayer, short-sleeve technical t-shirt, midlayer fleece and long-sleeve technical t-shirt
- Leggings
- Shorts
- Running socks x2
- Underwear x2
- Hat
- Gloves
- Bandanna
- Waterproof trousers
- Jacket
- Trail shoes (with trail laces + spare)
- Camp socks and boxers
- Camp top
- Camp trousers

Lightweight camping equipment:

- Zpacks duplex tent (567g) (includes groundsheet)
- Zpacks 6.5 inch Orange Tough Titanium Tent Stakes (64g)
- OMM Rucksack with floor mat – 32L classic and OMM leanweight msc compressor (740g)
- ZPacks 900 Fill Power Down Sleeping Bags (1 Medium, 1 Long) (349g)
- Zpacks Medium Dry Bag (24g) each
- Alpkit carbon ultra light walking poles (272g) (compatible with tent)
- Alpkit drybag 2l, 4l, 8l, 20l (139g in total)
- Alpkit Viper headtorch (118g)
- Travel towel

Cooking:

- Spork (15g)
- Mug (80g)
- Pocket rocket (85g)
- Fire steel (9g)
- Windshield (110g)
- Water purification tablets
- Fuel
- Water bottle (159g)
- Water pouch (88g)

Other:

- GPS (141g)
- Satellite phone and charging equipment (rent from uni)
- Maps
- Passport/EHIC/Booking forms
- Mobile phone and charging kit and battery pack
- Toothbrush and toothpaste
- Toilet roll
- Money/debit card
- Swiss army knife
- Plastic bags (for inside wet shoes)
- Waterproof bag cover
- Camping light

First Aid Kit:

- Imodium, ibuprofen, paracetamol, hand gel, sun cream, duct tape, tweezers, wet wipes
- Sam splint, bandages (triangular and crepe), blister plasters and plasters
- Emergency food (one Mountain House big pouch at 179g)
- Emergency survival bag (241g)

### **Bag weight**

Basic bag- 1655g

Group items- 1406g

Food- maximum 4 days food at 670g a day = 2680g (though most days it will be less than this)

Total – 5741g

This is excluding some items such as the satellite phone, some of the first aid kit, the maps and other smaller items, but this is much less than the 7kg maximum we wanted to carry.

### **Safety**

- First aid course specific to outdoor safety
- Availability of water. There is drinking water near all the huts and nature reserves (once boiled or after using water purification tablet). The water in the bogs is also drinkable once boiled.
- Maps. We purchased maps prior to going to Estonia and marked shops and locations of food drop off points prior to leaving.
- Satellite phone and registering at huts so people know we are not lost, as well as the use of a GPS device.
- Emergency kit. The largest risk is an ankle injury, which will result in the end of the trip. Sufficient equipment so that we are prepared to deal with any injury until emergency services arrive.

### **Landscape and wildlife**

Probably the worst part of the trip was the abundance of louse flies and mosquitoes wherever there were trees or standing waters (i.e. everywhere in Estonia). This meant we often had to stay in the tent throughout the evening for fear of getting bitten. And when we were in the bogs, there were literally hundreds of mosquitoes following us, so we definitely regretted not taking mosquito spray. Other than insects, we didn't see many animals, except for a couple of extremely cute and timid deer, and two bear cubs which ran away pretty quickly. Oh and a lot of dead snakes, and one alive snake.

### **Weather**

We were extremely lucky with the weather. The humidity wasn't that high at all, the temperature was between 15 and 20°C every day, and we only had one day of rain in the entire trip. Towards the end of the trip, as we approached the end of September, the nights were getting fairly cold, but we had planned for this so we had enough warm clothing.

## Risk assessment

Risk/ Hazard	Consequences	Likelihood	Seriousness	Risk Factor	Control Measures
Blisters	Pain when running and possible infection	3	2	6	Take blister plasters and deal with blisters immediately. Make sure shoes are worn in beforehand.
Dehydration	Dizziness. Possible death if severe	2	4	8	Carry extra water. Use purification tablets
Sunburn	Painful to carry rucksack. Blisters prone to infection	2	2	4	Use suncream (SPF 50) and reapply. Keep shoulders covered.
Gastrointestinal sickness	Diarrhoea leads to dehydration. Vomiting and blood/mucus in stools	1	3	3	Filter all water and practice strict food hygiene. Do not share water bottles. Drink plenty and take rehydration tablets. Contact medical help if symptoms are severe or are persistent.
Muscle injuries	Pain running and progress slower	2	2	4	Stretch at the beginning and end of each day. Take care of uneven paths to avoid pulling muscles. Sufficient training also helps avoid injury
Broken bones	Unable to run. Unable to move if large bone. Could mean heavy bleeding	1	3	3	First Aid training so broken bone can be stabilised quickly. Location of hospitals near the route has been created. Contact emergency services
Small cuts and minor burns	Might be painful to run	2	1	2	First Aid training to treat burns and cuts.
Deep cuts and severe burns	Confusion and dizziness due to blood loss. Possible death	1	3	3	First Aid training for preliminary treatment and to stem blood loss for major cuts. Contact emergency services and keep injured member warm and comfortable
Sprains	Painful to run	2	2	4	Appropriate footwear and caution when running on uneven or slippery surfaces. First aid training to stabilise area and reduce pain
Exhaustion	Slower progress	2	2	4	Use rest days to recover. We have shorter days that can extended and harder days shortened if a day needs to be cut short for rest
Too unfit	Increased risk of injuries. Slower progress	1	2	2	Adequate training plan and practice of multiday events
Heat exhaustion	Body temperature too high. Possible dehydration. Can cause dizziness and tiredness, delaying progress	1	2	2	Drink plenty of water and avoid running at maximum sunlight. Wear hats and take regular breaks to cool down

Hypothermia	Body temperature too low. Can cause dizziness and tiredness, delaying progress	2	2	4	Have multiple layers available. Know where nearest town is for shelter if necessary. Pitch tent if needed. Emergency kit available.
Allergic Reaction	Death if severe	1	2	2	Know of all possible allergens, and avoid consuming.
Bogs	Possible drowning and wet clothes drops body temperature	4	1	4	Use the bridges provided. Be careful not to fall in when taking water.
Wildlife e.g. bears	Bear attack could result in death. Injuries from lynx and wild boar	2	2	4	Do not approach wildlife. Go outside spring when young are born to avoid protective mothers.
Bridges e.g. the Koonukorve Bridge on Soodla River is currently in bad shape	Possible drowning and wet clothes drops body temperature	4	2	8	Check updates of route prior to going. Maps at suitable scale to reroute if needed. Alternative routes e.g. biking routes are available.
Getting lost	Could run out of supplies, therefore possible death. Substantial delays to trip	3	2	6	Continue using navigational skills. Multiple maps taken. However, route marked. Sign in at huts and use satellite phone. Carry GPS and spare batteries at all times. Be able to triangulate.
Theft	Supplies and equipment stolen	1	3	3	Stay away from main roads unless necessary, and don't show any valuables in clear sight.
Bad Weather	Increased risk of slips and falls. Also wet clothes drops body temperature	3	1	3	Check weather forecast. Other hut locations noted if we need to stop.
Air Disaster	Death	1	4	4	Not flying over any hazardous areas.
Road Crash	Broken bones or possible death	2	4	8	No hitch-hiking. Use qualified drivers.
Fire	Burns and possible death	1	3	3	Keep flammable items away from cooking equipment when in use.
Rucksack breaking	Unable to carry equipment	1	2	2	Make sure equipment is in good condition prior to start of expedition.
Satellite phone breaking	Unable to contact emergency services etc.	1	2	2	Have backup phones charged.
Tent breaking	Wet or damaged equipment	1	2	2	Know how to fix tent with supplies, and make sure tent is used prior to expedition so it is in good condition.
Food drop lost	Delay in progress. Unexpected expense	1	3	3	Use a well-known company with good reputation. Arrive at food pick up point early.

Likelihood and Seriousness scale = 1-4, with 1 being low and 4 being high.

Risk Factor = Likelihood x Seriousness. Max value = 16.

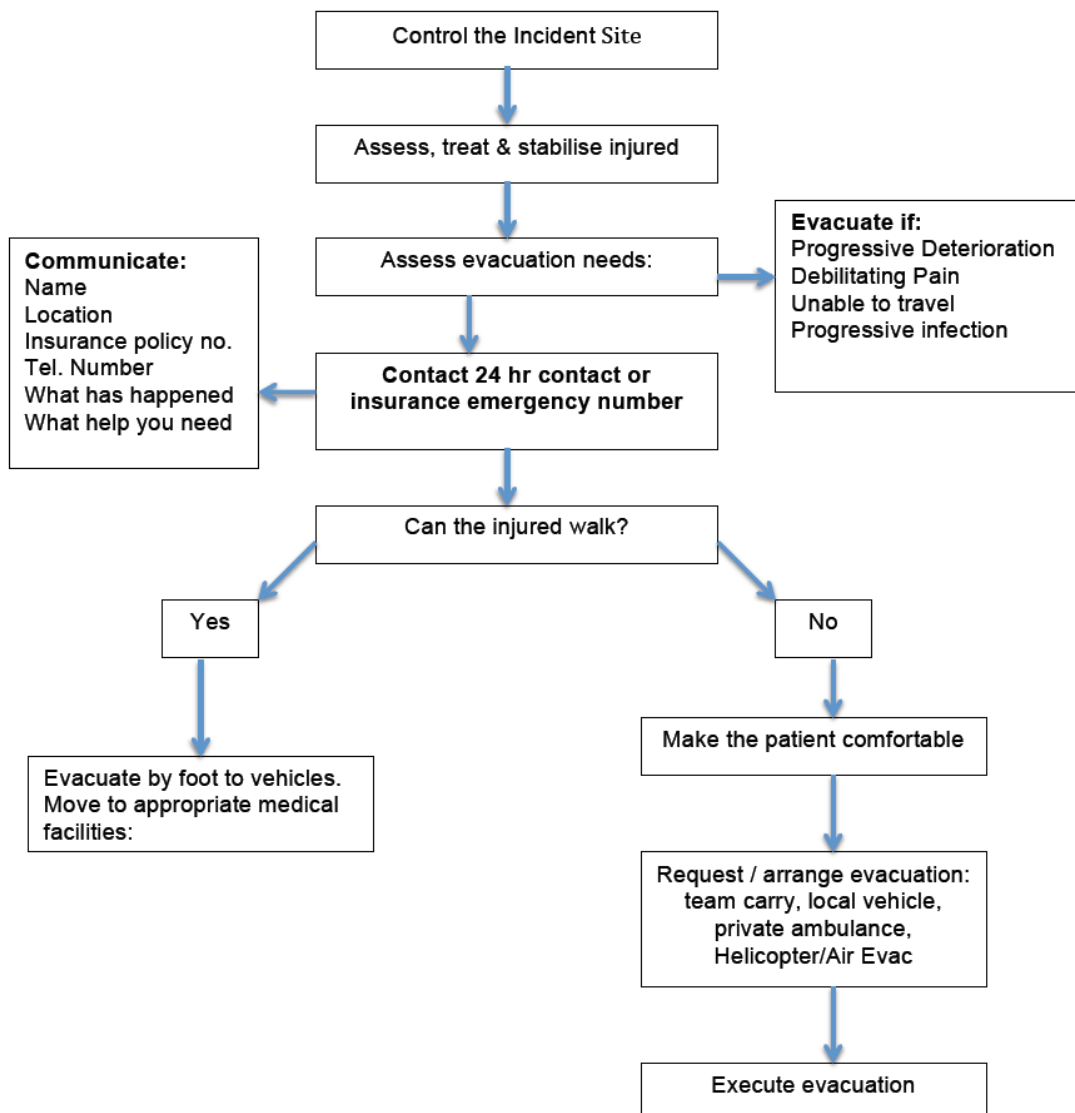
# Evacuation Plan

## Emergency Contact Numbers

In case of an emergency the satellite phone provided by the Imperial Exploration Board will be used.

Who or What	Number
Ambulance and fire brigade	112
Police	110
Tom's next of kin (Deborah Raven)	07446932124
Catherine's next of kin (Jane Spurin)	07740359164
British Embassy in Estonia	+372 6674 700
Department of Health Overseas Healthcare Team (only needed if we misplace EHC cards)	+44 191 218 1999
Imperial College Security on call Support No. (24/7):	020 7589 1000 or 0207 594 8910

The Emergency Response Procedure for this expedition is detailed below. Extracted from the Evacuation Procedure created for the Geophysics Society Fieldtrip to Mount Etna, where Catherine was one of the group leaders for the excursion.



## Scenarios

### Broken leg or ankle

Stabilise the leg or ankle and make sure person is comfortable. It is unlikely in this situation that evacuation on foot is possible but situation serious enough to warrant evacuation. Call ambulance if area accessible from road or in forest area. If not call air ambulance. Location must be known for this. We can do using the GPS tracker we have on us. A broken leg or ankle would mean the end of the expedition. After treated at hospital either make way back to Tallinn or get the bus to Riga and fly back to the UK.

### Broken arm or wrist

Stabilise the wrist and arm in a sling to prevent movement. Assess if evacuation is possible on foot. The map of hospitals shows that we are typically within 50km of a hospital. So either call an ambulance or walk to a medical centre for proper treatment. If only a cast is required, the trip could continue with added caution. However, a sling would be dangerous to fastpack in and thus journey back to UK would need to be considered.

### Accident crossing a river or bog

Assess the situation. If just a slip then the issues arise from losing heat. If more serious then rescue is needed. Catherine is a trained swim teacher and has training in poolside rescue so can safely rescue Tom if needed.

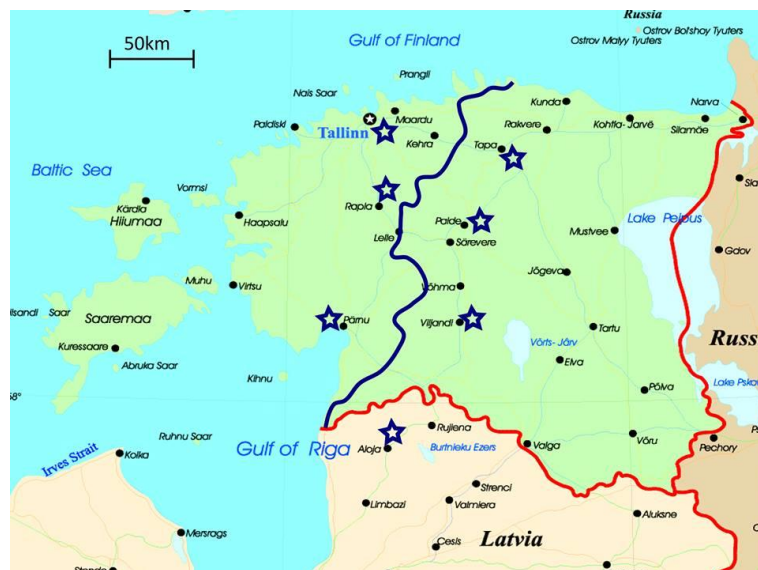
If someone falls in along the boardwalks across the bogs. First leave boardwalk and start fire to warm person up. Take break and wear rest clothes until running clothes have dried.

### Getting very wet overnight

Start fire to dry clothes. Monitor for signs of hypothermia. If they deteriorate then an ambulance must be called.

## Hospitals in Estonia

The route is shown in blue and the towns with hospitals in have blue stars next to them. We are never more than 50km from a hospital.



## Training

We run 4-5 times a week, with Tom playing football and hockey and Catherine playing hockey and water polo as well so had a good base for our training. We did the following events as training:

- Kingston Half Marathon 28<sup>th</sup> February (Catherine)
- Training weekend Chilterns 12/13<sup>th</sup> March
- River Thames Half Marathon 28<sup>th</sup> March
- Training weekend in Yorkshire Dales – June
- Wimbledon Common Half Marathon 30<sup>th</sup> July (Tom)
- Thames Meander Half Marathon 13<sup>th</sup> August (Tom)
- Ashridge Trail Half Marathon July (Tom)

This training plan involved both training for the distances that we ran, as well as getting used to using and carrying the equipment. The Chilterns training weekend in early March was the first opportunity for us to practice running with heavy backpacks for extended time periods, running 10-12 miles a day.

Training for the expedition was difficult. Catherine spent the summer in Boston while Tom was in London, and so after June we had to train alone. Additionally, a variety of injuries meant Tom couldn't run the Thames Meander Marathon in August. But we were both fit enough for the distances we did in Estonia, although the weight of the bags was a problem at times. For future expeditions we would probably do more weighted training weekends, as the weekend in Yorkshire was a great dress rehearsal.

## Finances

### Travel

Flight London to Tallinn - total cost 104.98

Hostel in Tallin - total cost for two people for two nights - £37

Bus to Oandu – 10 euros (£7) each maximum

Stay at Haaviku Holiday Home - total cost for two people for one night - £22

Bus to Riga – 10 euros (£7) each maximum

Stay at Rafael Hotel Riga - total cost for two people for two nights - £28

Flight Riga – London Stansted -total cost 64.00

Total travel expenditure - £281.

**£140.50 each**

### Kit

Tent - \$644/ £424 therefore £212 each

Sleeping bag - \$380/ £250 each

Tent stakes - \$20 / £13

Rucksack and compressor - £78 each



Headtorch - £15 each

Camping stove and gas – £63 therefore £31.50 each

Eating equipment – £35 each

Emergency kit – £72 therefore £36 each

Walking poles – £45 each

Drybags – £31.50 each

Towel - £4 each

Water storage - £39 each

Total kit expenditure -

**£783.50 each**

### **Food**

Breakfast – £2

Lunch – £211.15

Dinner – £162

Other - £40

Food parcels – 80 euros/ £69

Total food expenditure - £484.15

**£242.08 each**

This equates to **£1166.058** each, which is **£583.04** each when factoring in the £500 provisional funding given to each of us by Imperial College Exploration Board. We also received £100 each from the Royal School of Mines Association. A large proportion of this is dedicated to ultra-light camping equipment, which is necessary for a fast-packing expedition, and for the freeze dried meals and energy bars, which are needed to provide energy dense, lightweight food. For a 3-week expedition this seems very reasonable.

We claimed £500 each, and this covered the rucksacks, the flights, the sleeping bags and the food. When in Estonia, we spent more than we thought we would; we hadn't really planned for buying much food in shops along the way, but we often fancied an ice cream, and when the food drop disappeared in Lelle we had to buy 2 days' worth of food.

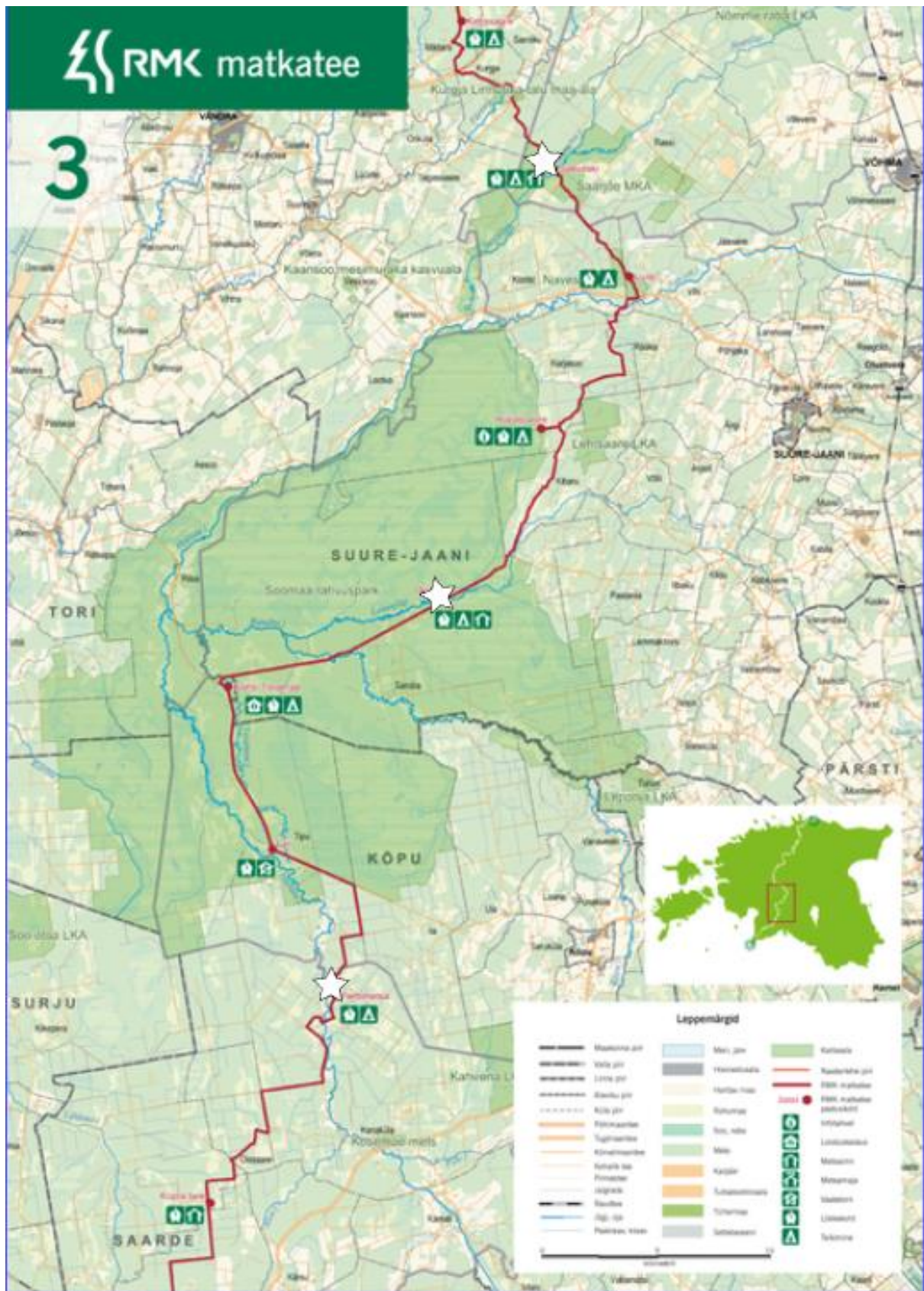
### **Acknowledgements**

We would like to extend our thanks to Imperial College Exploration Board, for their continued support and the provisional grant. Also thanks to Ellie Johnstone for her expertise and advice on specialist kit and for her support for writing this proposal. Acknowledgements also to Clif Bar, MountainHouse and Zpacks, for discounts on the specialist equipment we will be using.





Saeveski – Pertlimetsa section of route



# Kinlingi Nomme – Ikla section of route



### Food parcels information

Date	Parcel No	Contains (per person)	Leaves from	Goes to	Mode of transport	Cost
03/09	1	6 porridge sachets, 9 Clif bars, 6 Builders bars, 3 MountainHouse meals	Tallinn	Aegviidu Nature Centre	Cargobus express	€12
06/09	2	6 porridge sachets, 9 Clif bars, 6 Builders bars, 3 MountainHouse meals	Tallinn	Ardu shop	Cargobus express	€12
09/09	3	10 porridge sachets, 15 Clif bars, 10 Builders bars, 5 MountainHouse meals	Tallinn	Lelle pharmacy	Cargobus express	€12
15/09	4	4 porridge sachets, 6 Clif bars, 4 Builders bars, 2 MountainHouse meals	Tallinn	Soomaa Nature Centre	Cargobus express	€12
18/09	5	2 porridge sachets, 3 Clif bars, 2 Builders bars, 1 MountainHouse meals	Tallinn	Kabli Nature Centre	Cargobus express	€20 (bribe)