

- > Imogen Lloyd-James
- > Fieldwork Notebook

SAINT FAGANS
25/09/19

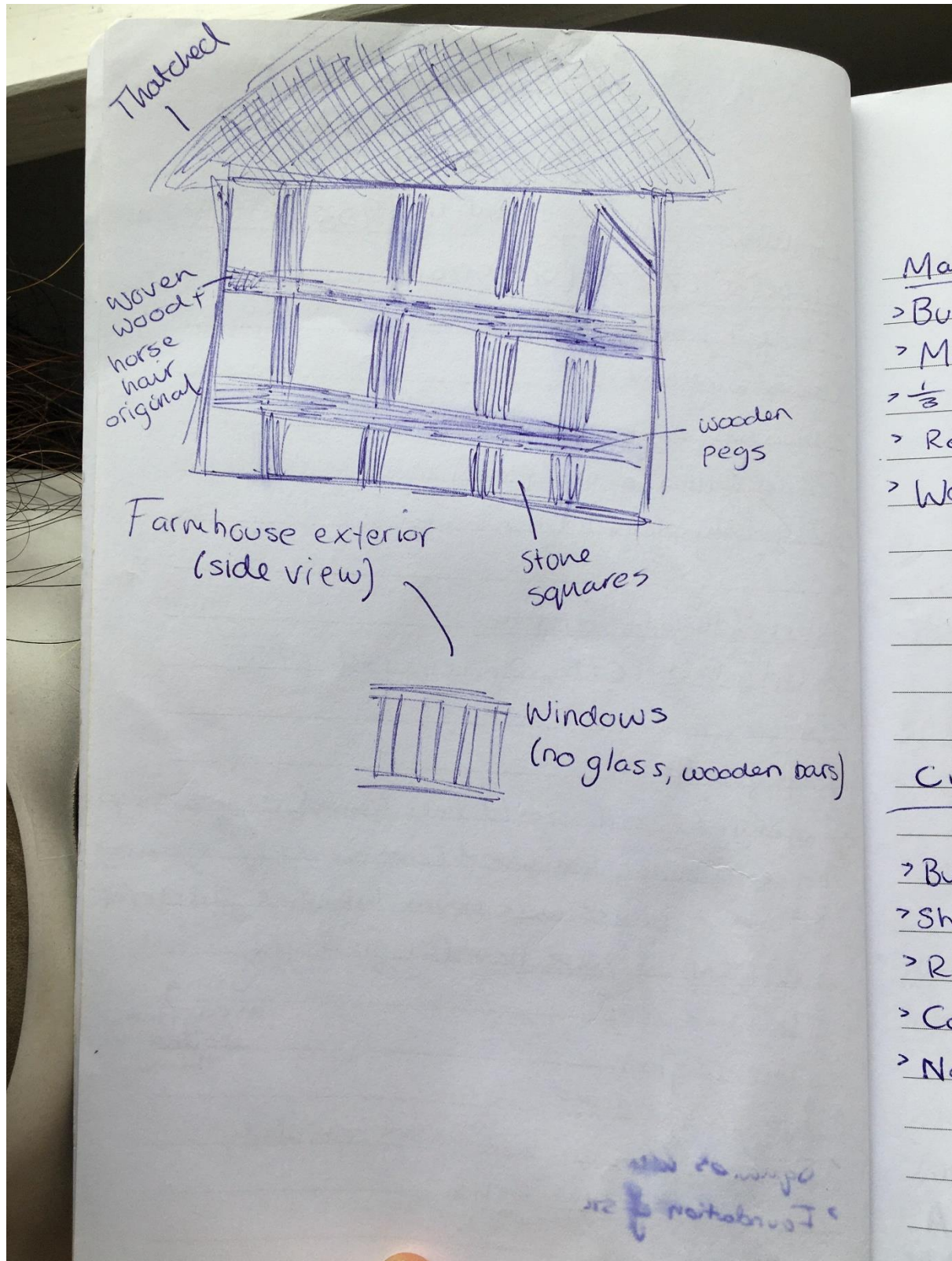
Pen-Rhiw / Re-erected in 1956 in St Fagans
Chapel - 1777 (unitarian)

- > Stone + wood interior
- > Glass windows
- > Wooden suspension beams
- > Take building apart (lego) move + rebuild it
- > Originally plain interior

Abernodwydd Farmhouse

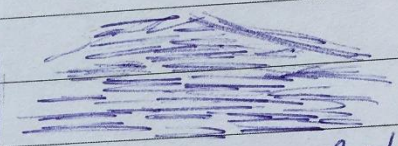
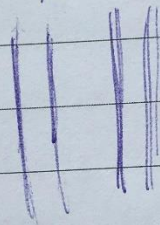
- > Build about 1678, Re-erected 1955
- > Timber framed
- > Rhys family
- > Furnished as it would have been 300 years ago
- > house is built from wood form series of squares
- > Between squares were woven branches plastered with Earth + horse hair (originally)
- > Thatched roof
- > Stone floor
- > No glass windows
- > Squares will have been moved separately
- > Foundation of stone bricks

using
everything
around
them



Maentwrog Hayshed

- > Built 1870, re-erected 1977
- > Made of Slate
- > $\frac{1}{3}$ of the slate pillars are hidden underground.
- > Re-erected really well
- > Wooden beam supports



layered slate

slate pillars

Cilewent Farmhouse

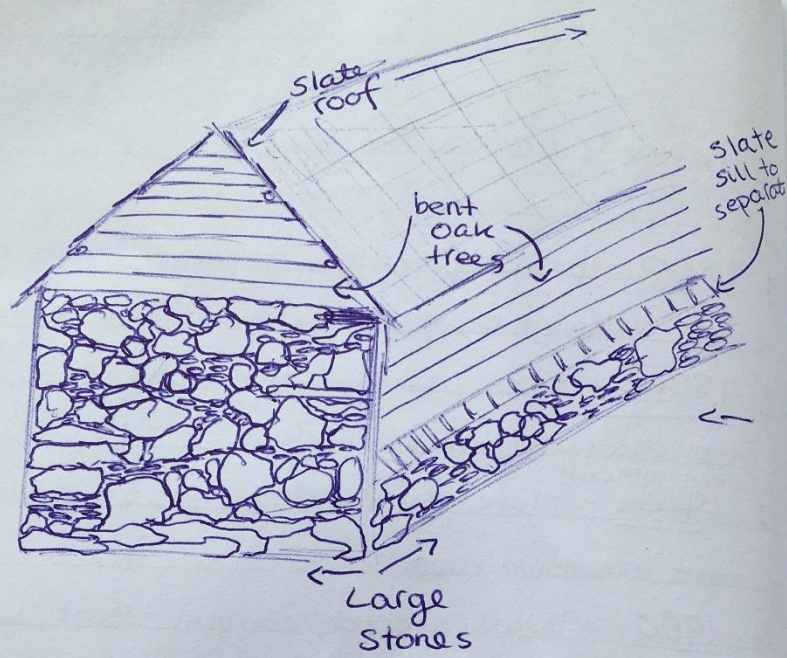
- > Built 1470, re-erected 1959
- > Shared house with live stock
- > Rebuilt in stone + extended into an 'L' shape
- > Completely rebuilt
- > Not great depiction of what it was like originally

Houses Through the Ages

1. 1800 - basic, fireplace central, stone floors, wooden ceiling + beams, stone walls, stone outside, ^{glass} window
2. 1850s - basic, central fire, stone floor, more decorated, glass window
3. late 19th cent 1900s - More decorated again, same structure more expensive decor
4. 1900s - Wallpapered, complex decor, wealthier, rugs, glass ~~door~~ windows
5. 1950s - Classic 50s, TV, carpet
6. late 1920s - Modernised, technology,

St Teilo's Church

- > Built 1200s - 1500s, re-erected 2007
- > Interior as it would have been in 1520s.
- > Found traces of wallpaintings hidden under plaster when dismantling
- > Colourful biblical interior > Similar to original
- > A' frame trusses - mortice + tenon joints
- > Wooden supported ceiling
- > Stone floor.



- Hondre
- > Built at
 - > Original walls.
 - > 200 years old
 - > Large lift. B
 - > Large bent o

Hendre - Wen Barn

- > Built about 1600, re-erected in 1982
- > Originally the roof was thatched + wattled walls.
- > 200 years later the walls were rebuilt in stone + the roof was slated
- > Large stones used in the wall, heavy + hard to lift. But last forever
- > Large crucks that hold up the roof were made from bent oak trees (sawn in half along their length)

Prior Notes / things to consider:

- Birch = pioneer species
- Oak = successional species
- Where the trees have died then regrown from same stump
- competition for light
- should grow better if mixed
- exposure?
- Competing plant species?
- water holding
- humous? Top soil
- correlation of TBH + health
- score each tree on vitality score
- surrounding biodiversity?
- what does it look like? is it protected by anything?

* Consider recorded growth rates of selected plots + assess the environmental factors that may have an impact on tree growth

Varteg Fieldtrip 15/10/19

PLOT C

A = Alder O = Oak GW = Groat Willow M = Mixed

DB = Downy Birch ? hybrids present
SB = Silver Birch

Vitality Index

0 = Disappeared/missing

1 = Stump/stick in group

2 = Poor foliage/insect infestation etc

3 = Average foliage with some leaf damage

4 = Good growth but uneven distribution leave/branches

5 = Excellent growth/form typical of species

Suggested analysis -

1. Correlation between KPN (fertiliser), species + tree vitality

2. Investigate the correlation between compost + tree vitality

3. Provide possible reasoning for any trends which may appear.

Industrial Background of Varteg

Coalmining + iron making (late 18th + 19th centuries)

+ steel (Blaenavon World Heritage Site website)

↳ During 1780s the land was rich in minerals + natural resources

Source - Historical Landscape Characterisation website -

> No of small quarries were scattered through the area

Contaminated Land

> Site of industrial heritage

> There is known to be a large amount of land contamination - due to coal spill - mine spoil

> Threatens to effect human health

↳ CIEH, 2014; NRW, 2016 sources

What contaminants?

↳ Heavy metals, threatens wildlife, Pb conc - loss of vegetation + genotoxic effects.

Problems

↳ Gullying, soil erosion, soil compaction
accelerated run off + poor vegetation cover

* Land reclamation since 1963 by National Coal Board

Project run by Earthwatch

Remediation is expensive

erals

Block C1 - 13 healthy trees, Oak is doing best

C2 - 6, Birch + Oak best

C3 - 7, Birch + Oak

C4 - 10, Oak + Alder

RESULTS

C1

201 - A

202 - A

203 - A

204 - A

Missing - V.S = 0

Not much shelter from N.
heather
Gorse surrounding
Many spiderwebs

205 - A - Dead - V.S = 1 - heather
Gorse + moss

206 - O - Missing - V.S = 0

207 - O - healthy - sheltered by tree from N - V.S = 3

208 - O - healthy but small - bushy, heather - V.S = 3

209 - O - healthy but small - V.S = 4 - Bushy - surrounded by heather
no shelter

210 - O - Missing - V.S = 0

211 - M - Fair + multiple shoots - V.S = 3 - mushroom sheltered from N.E

212 - M - Good - needle loss - gap on side - V.S = 2 - fungi + heather

213 - O - healthy but spirally thin - V.S = 3 - sheltered on E side.

214 - M - V.S = 2 - much leaf loss - many shoots - exposed moss base

215 - M - Missing - V.S = 0

Ideal Growing conditions for types of trees in Block C.

ALDER

Source - Woodlandtrust.org.uk
credit: WTML / Dave Fother

- Moist ground
- Near rivers, ponds + lakes
- Damp, cool areas e.g marshes, wet woodland
- Roots are useful to prevent soil erosion
- Can grow in drier areas
- Can grow in nutrient poor soils. Nitrogen fixing bacteria, Frankia alni

OAK

- Fertile soil
 - Saplings intolerant to competition
 - Poursous soil
 - Moist soil - gardeningknowhow.com / 2018
- } Woodland Trust.org.uk

GOAT WILLOW

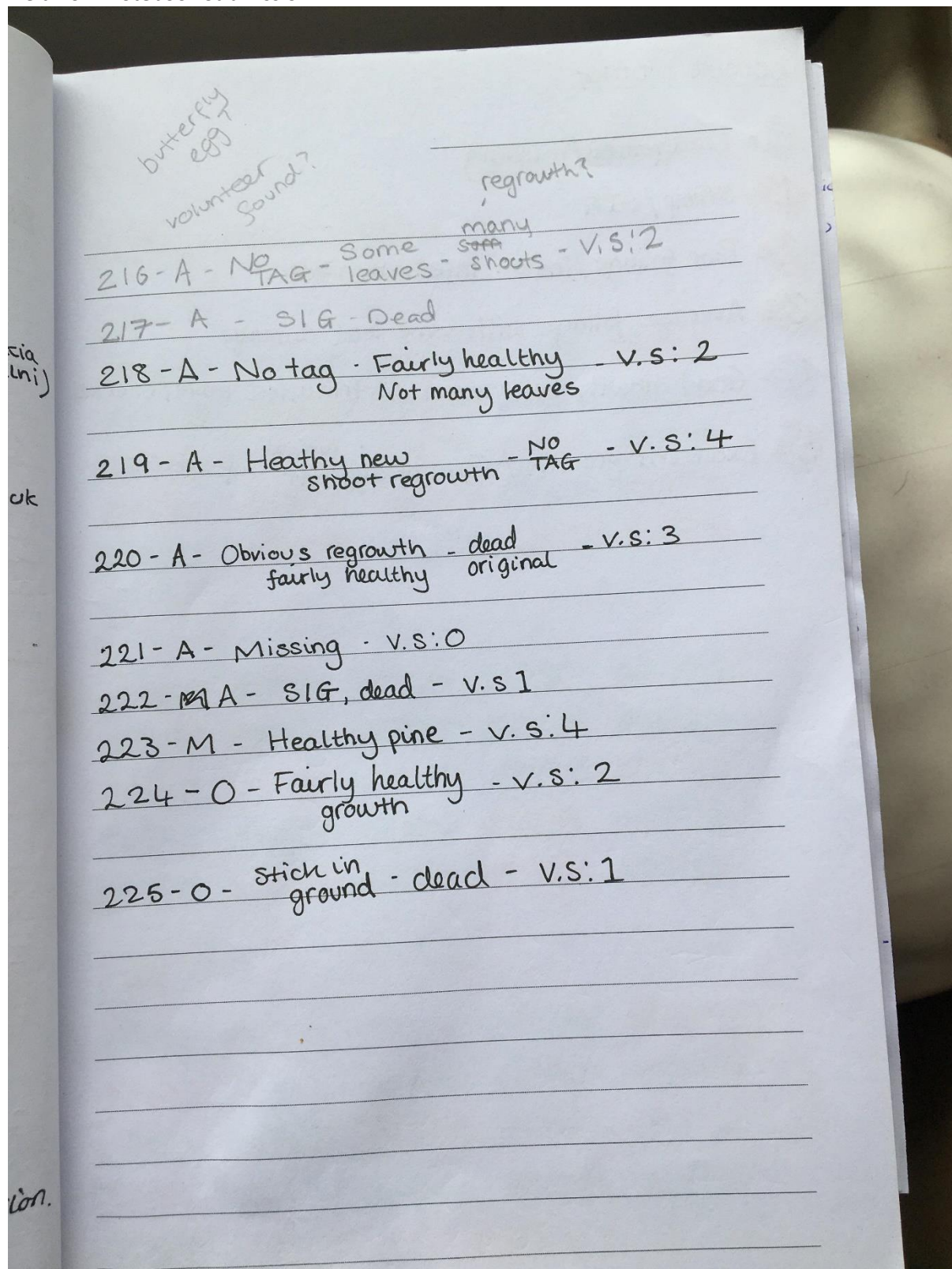
- Found in woodland, hedgerows + scrub
 - Damper, more open ground
 - Near lakes, streams + canals
- } Woodland trust

DOWNY BIRCH

- Damper soils than S.B.
 - Tolerate peat bogs + clay
 - Grow at higher elevations
- } Woodland Trust

SILVER BIRCH

- open + sunny site
 - Not fussy about soil types
 - Can tolerate water logging
 - Able to colonise open land
 - Prefers lowland
- } Scotland Forestry commission



COLOUR CODING

- 0 = Disappeared/missing
- 1 = Stump/SIG
- 2 = Poor foliage/Insect Infestation ect
- 3 = Average foliage with some leaf damage
- 4 = Good growth but uneven distribution leave/branch
- 5 = Excellent growth / Form of ^{typical} difficult of species

VITAL

(C1)

201

206

211

216

221

(C2)

226

231

236

241

246

(C3)

251

256

261

266

VITALITY INDEX - Block C

(C1)

201:0 202:0 203:0 204:0 205:1
206:0 207:3 208:3 209:4 210:0
211:3 212:2 213:3 214:2 215:0
216:2 217:1 218:2 219:4 220:2
221:0 222:1 223:4 224:2 225:1

(C2)

226:0 227:0 228:0 229:0 230:0
231:0 232:0 233:0 234:0 235:0
236:3 237:2 238:0 239:0 240:5
241:4 242:0 243:0 244:3 245:0
246:0 247:3 248:0 249:1 250:0

(C3)

251:0 252:0 253:4 254:0 255:23
256:2 257:4 258:0 259:0 260:0
261:0 262:0 263:3 264:0 265:0
266:2 267:0 268:0 269:0 270:0
271:0 272:0 273:2 274:0 275:0

(C4)

276:0	277:1	278:0	279:3	280:3
281:0	282:0	283:0	284:4	285:0
286:0	287:0	288:43	289:0	290:0
291:0	292:5	293:4	294:2	295:3
296:0	297:5	298:5	299:0	300:0

Ilston Report Results

Velocity of point 2 in river -

7.72

* Re did these with pebble
in the bottle

5.97

6.63

5.79

6.64

Kick Sample (1 place, 1 min):

↳ Looking downstream

look
UP

Centre - Fresh water leech + black thing?

Left bank - only soil, rocks etc.

Right bank - caddisfly (stone case) + worm +
pollution
intolerant ✓

Cross section - 50cm intervals

12cm depth - section close to waterfall (5m)

13cm

2cm

- start left side looking downstream +

5cm

across

17cm

18cm

18cm

36cm

42cm ~~44cm~~ 41cm 17cm 11cm

Hypothesis 6 + 7 - ROUNDNESS OF SEDIMENT

- Rocks =
1. Very angular
 2. Angular
 3. Well rounded
 4. Subrounded
 5. Very angular.

A group of First year environmental conservation students travelled to Ilston River in Gower to assess the changing characteristics of the river from its source from Swansea Airfield to the Estuary ~~in~~ at Three Cliffs. The weather was extremely wet, causing ~~with~~ the river to be flowing extremely fast.

There was roughly 10 ~~of~~ people altogether on the trip, and we were split into two groups of 4. The two groups decided to alternate the points of the river between groups. Our aims were to assess 8 'hypothesis'. They are as follows -

- 1- The river becomes wider + deeper downstream
- 2- The cross-sectional area of the river increases downstream
- 3- The river velocity increases on the outside of a meander
- 4- The highest velocity is to be found in the centre of the river
- 5- The river velocity decreases downstream
- 6- The ^{shape} size of the bed load gets smaller down becomes more rounded downstream
- 7- The size of the bed load gets smaller downstream
- 8- The discharge of water in the river increases downstream.

Both groups were given equipment and a sheet to write down results. The apparatus:

- | | |
|--------------------|------------------------------------|
| • 1:25000 Map | • 2 surveying poles |
| • Data sheets | • Plastic bottle |
| • 25m tape measure | • Current flow meter |
| • Metre rule | • Waders |
| • Clipboard | • Powers Scale of roundness Chart. |
| • stop watch | |

~~However,~~ We should have been in Gower ~~the~~ whole day, mapping the whole river. However, as the weather ~~was~~ was so bad and the river was flowing so fast, ~~that~~ we could no longer safely carry out our tests.

CONCLUSION -

Due to the incomplete data we collected, a viable conclusion would be difficult to come to. Therefore we will have to use data from previous years to write up a full report.

Beach Clean with the
Environmental Society
09/10/2019

Myself and the environmental society went to Swansea Bay to pick up litter that had been left on and around the beach. The site was in usual condition, with the amount of litter increasing as we went along the beach and up by the tide line. We all met at the € The Tower in Meridian Quay and walked toward the marina. Altogether there was 12 of us in the group.

We didn't officially split into small groups/pairs but we naturally split up to cover more area of the beach faster. We either had our own blue bin or we shared one between 2 or 3. Each of us had a litter picker each. We met at 12 roughly and finished at around half 2/3.

We altogether, collected around 14 bags of litter and left them on the walk way by the beach for the Swansea Council to pick up.

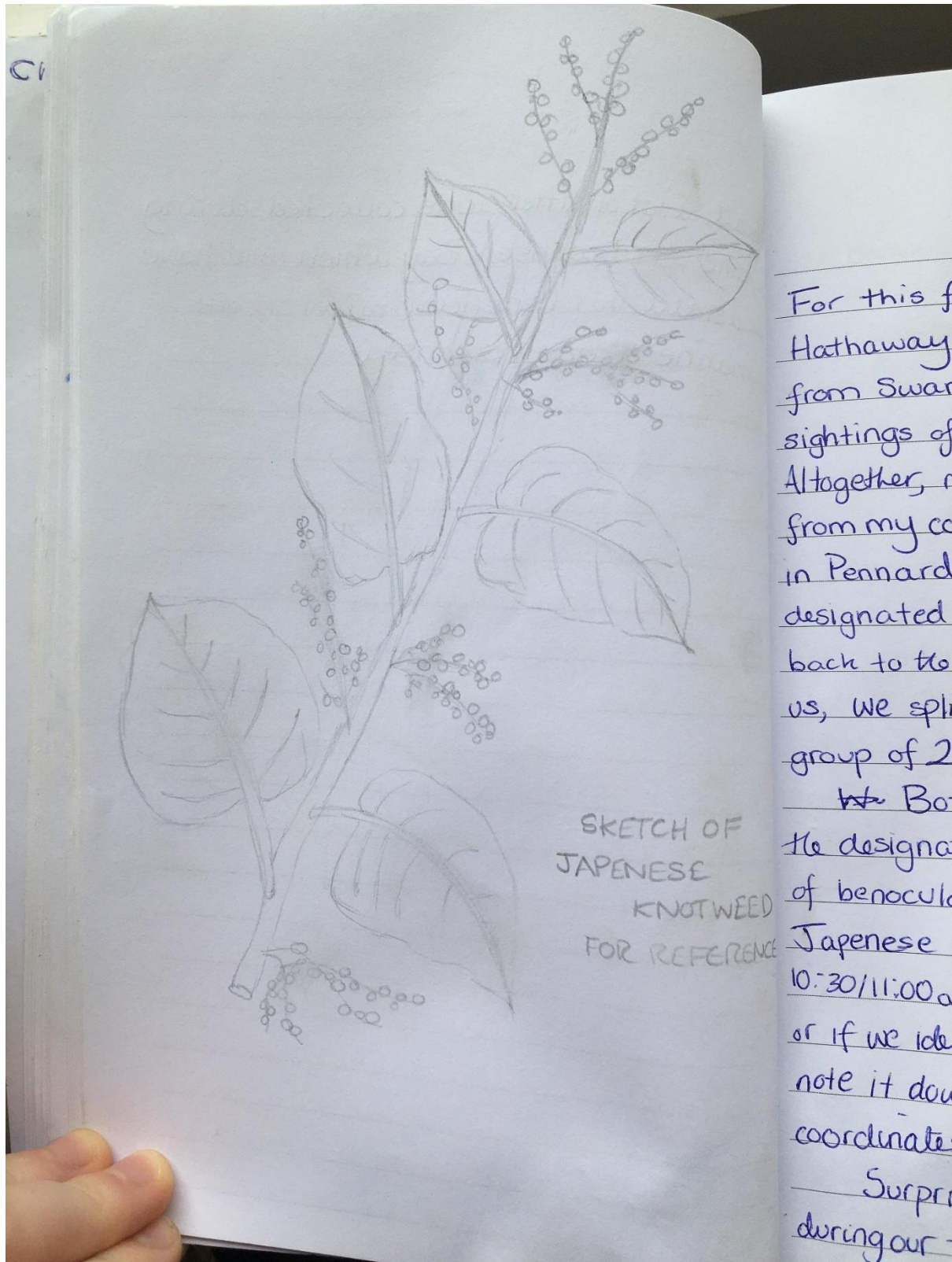
There were certain types of waste that were more commonly seen:

- Tampons (other sanitary products)
- Plastic bottles + straws
- Needles
- Thin plastic fishing line

The high amounts of sanitary products shows that the Swansea ~~sea~~ sewage overflow is being released onto Swansea Bay and making its way into the ocean. This will have an extremely damaging effect on the marine ecosystems as sanitary products don't break down. It also proves that people are still flushing their tampons + pads down the toilet, which is a toxic mindset that needs to be changed.

The same can be said for the other items on the list above. Plastic bottles, needles and fishing line is proof that people are still not putting their waste in the bin and leaving it on the beach to make its way into the ocean + damage vital habitats and aquatic species.

Overall, a lot of litter was collected during our time on Swansea Bay which will have made a small but beneficial affect on ~~out~~ our marine area of swansea

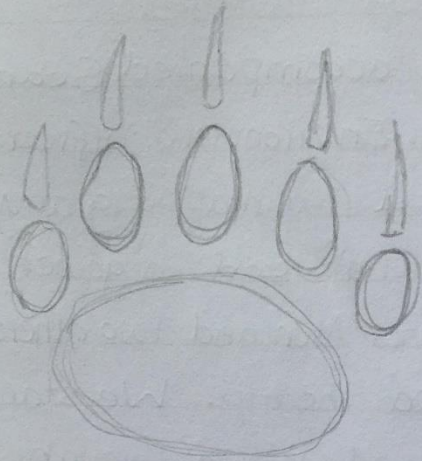


Japanese Knotweed Survey at Gower Peninsula

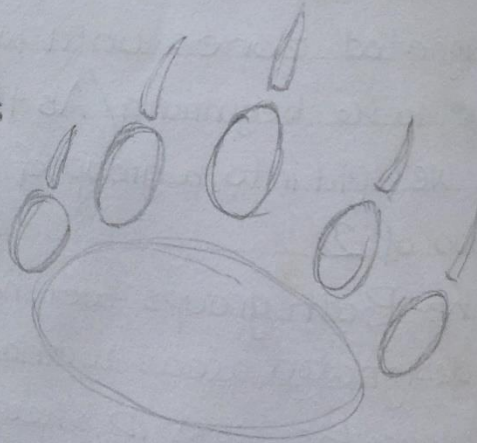
For this fieldtrip we accompanied Sean Hathaway, ~~who is~~ an Environment Officer from Swansea Council, in mapping any sightings of Japanese Knotweed in Gower. Altogether, myself, Manor Alun and two others from my course attended the trip. We started in Pennard in Gower and walked through designated zones until we looped around back to the beginning. As there was 5 of us, we split into a group of 3 and another group of 2.

Both groups ~~were~~ had a map showing the designated areas we had to check, a pair of binoculars, and ID sheets to help us identify Japanese Knotweed. We started at around 10:30/11:00am and finished around 1:30pm. When or if we identified any knotweed then we had to note it down on our maps, by using simple coordinates.

Surprisingly, we did not find any knotweed during our trip. This tells us that either land owners



ROUGH SKETCH
OF BADGER FOOTPRINTS
(NOT EXACTLY TO SCALE)



are doing a
plant, or
eye on the
didn't come
find badger
using google
shown on
overgrown
with scate
care is be
of the foot
There w
growing in
surprising
dense thick
+ moist +
an impor
For exam
while we
telling v
recreation

are doing a good job at removing the invasive plant, or the council is keeping a close eye on the situation, which is why we didn't come across any. However, we did find badger footprints, which we identified using google. Also there were many paths shown on the map that were completely overgrown, so we had to clear our way through with secateurs. This proves that not enough care is being shown towards the maintenance of the footpaths in Gower.

There was also a lot of Hawthorne growing in gower we noticed which wasn't surprising as Hawthorne grows in large + dense thickets, where the soil is fine textured + moist + deep. This is good as Hawthorn is an important source of sustenance for wildlife. For example, birds, squirrels^{and} rabbits. In addition, while we were there, we heard of gun shots, telling us that the area is being used for recreational use.

CONCLUSION: No Japanese knotweed found.
Good care being taken for its removal. Good
Healthy habitats in general, areas rather
overgrown.

Post Bonfire Night
Beach Clean with
Swansea Uni
06/11/19

Both UWTSD Environment Society and the University of Swansea Environment Soc teamed up to do a beach clean on Swansea Bay. Altogether there were about 17/18 of us. We started from Swansea University Singleton Campus and towards the Singleton Park.

We all spread out across the beach to cover more ground, and each of us had litter pickers and bin bags. We spent about 2 hours at the beach clean. We collected about 20 bin bags full, which would have been collected by Swansea council.

Obviously as it was the day after bonfire night so there was even more rubbish than usual. ~~the~~ The rubbish that was mostly is stated below:

- Plastic bottles + glass bottles
- Disposable barbeque's
- Remnants of fireworks
- Needles

Due to the high levels of people on the beach the night before, we ~~werrnt~~ ^{would be} were not surprised that there ~~was~~ a lot of rubbish on the beach that day. The fact there was a high number of needles ~~shw~~ highlights the drug issues in Swansea, and the attitude towards leaving drug contaminated items on the beach. The general ~~ttt~~ amount of ~~til~~ rubbish found proves how careless people are towards throwing away their waste.

CONCLUSION: Lots of rubbish collected, beach cleared after bonfire celebrations.

Marram Grass Planting +
Dune Protection on Swansea
Bay
06/11/2019

We went down to Swansea Bay with
~~Sheen~~ Sean Hathaway from Swansea
Council to help with the dune protection
and plant marram grass on the dunes.

Marram grass is very beneficial to dune
areas as it stabilises the dunes, its fibrous
+ matted roots bind the sand down and
helps to encourage the colonisation of
other plants.

There were 8 of us altogether in the
group, we were all given a pair of gardening
gloves ^{and} a hammer between 2 of us.

From first looking at the state of the dunes,
they are small but are well vegetated. We saw
some half buried fences which suggests
Marr previous Marram planting and restoration
in the last 10 years. It seems to have been
effective as there was bare sand before the dunes
began forming.

We spent about 3 hours doing both tasks.
Sean provided us with ^{long lengths of} ~~g~~ coir matting and

pegs. Using the hammers and spreading the matting over the dunes, we all gave each other tasks and proceeded in hammering the pegs through the matting into the sand. Along the sides they were 5 metres apart, and we also pegged the middle of the matting. This will ~~have~~ hopefully help with stability in the future, being covered over by sand.

We then were provided with small Marram plants in trays to plant into the dunes. We had one tray between 2 of us and any leftover ones. We all spread out and used our hands to dig small holes to place the individual Marram plants into. We had to make sure that ~~th~~ we planted them at least ~~2~~ a metre away from each other.

Overall we successfully placed 3 large lengths of coir matting down and around 8 trays of Marram plants, at the dunes on Swansea Bay.

Craig-Y-Nos Fieldtrip
19/11/2019

~~Both~~ 1st and 2nd year Environmental Conservation students went on a trip to Craig-Y-Nos Country Park to help + learn about river side bank protection by coppicing willow trees nearby. Altogether However 1st year students focused on this aspect.

We were given a pair of long handled secateurs and a saw each and shown how to coppice trees. We chose an area that was overgrown with willows and causing the soil to become dry. We collected a large amount of solid branches and carried them to a riverbank which was slowly being eroded away.

We were then given hammers and were taught how to horizontally weave the branches around each other to create a barrier that would hopefully prevent the bank passing that point and encourage sediment deposition to increase the size of the bank.

While we were collecting the branches we found a badger den sett which was interesting.

Although we weren't 100% sure that that's what it was so Rhian collected a ~~pellet~~ droppings and took it back to the lab. The lecturers concluded that it was badger droppings.

In conclusion, we coppiced a lot of willow and used a majority of the branches for the bank barrier. However, we ran out of time so the barrier wasn't as sturdy as we would have liked.

Swansea Vale, Willow
Coppicing 20/11/2019

This was another trip with Sean Hathaway from Swansea Council. These trips are regular and give us a chance to take part in the upkeep of nature reserves. ~~We~~ On this trip we were coppicing ~~the~~ willow trees to help the hydrology of the wetland.

There was a group size of 3 that went on this particular fieldtrip, we went to Swansea Vale Nature Reserve. There was a lot of willow trees which causes a problem as Swansea Vale is a wetland. Willow trees have root systems that are very dense, they maximise water uptake as well as form thickets that divert water outside the main watercourse or channel. This leads to flooding and erosion where banks are vulnerable. The roots also slow the flow of water and reduce aeration.

List of equipment:

- Long handled secateurs
- Saw
- Gardening Gloves

For about 2 and a half hours we sawed through the base of the willow branches and put the branches in piles. We were sure to cut angled outwards to shed water. Having the Willows coppiced will be hugely beneficial as the uptake of water will decrease, therefore improving the flow of water and increasing aeration. The wetland at Swansea would therefore improve.

Overall it was a successful effort. We coppiced a large amount of Willows, however we had to leave the larger + thicker branches to be cut with larger equipment as our saws couldn't get through them. Hopefully our efforts will improve species diversity in that area.

Habitat Survey at Llys Nini Animal Centre.

12/02/2020

We went to Llys Nini Animal Centre in Penllergaer, Swansea to carry out a Phase 1 Habitat Survey. Myself and 3 others attended with Elanor ~~the~~ ^{the} head lecturer.

Before we went on the trip, Elanor gave us an introductory lecture that explained the basics of habitat survey and briefed us on what we would be doing at Llys Nini the following week.

As there weren't many of us we all stayed as one group. We were each given a map of Llys the site, a weather writer, and binoculars. We started at the car park and made a rough loop around the site. We would stop at each section and ask ourselves what kind of land we thought it was; scrub, grassland + marsh, woodland or marsh/marshy grass land. We would mark that down on our maps using a specific key. For example, scrub = A² and grassland + marsh = B etc.

We would also note down any dominant species perhaps, and include target notes to add more detail. For example, we noted down bodies of water, what state any sections were in, ~~wh~~ if there ^{were} ~~are~~ any interesting animal life found or if there was anything anthropogenic that could be affecting surrounding land e.g pylons.

Obviously we focused heavily on what kind of plant species there were. However its key to note that ~~we we~~ it was winter so tree identification was more difficult as nothing was fully bloomed / grown. Despite this, there were exeptions. We came across a few Hazel trees that already was exhibiting spring as there were already catkins on it. This is heavy evidence for the way climate change is affecting our native plant species.

It took us about 4 hours to walk around the site, overall we created thorough maps. It is obvious by looking at the map I created that the Llys Nini site has a wide range of

different species and habitats. In fact Red Kites have actually been spotted there, as well as the Greater Spotted Woodpecker. I can see that there a lot of the site at Llys Nini is marshy grassland, dominated by hard and soft rush. This kind of habitat encourages many different species such as Marsh Violet, Snipe, Otters, Lesser Spearwort etc. This habitat is very special for the varied species it supports. On our trip however, we saw many Robins, various tit species, and a vole when we were in the wetland areas.

Overall, a successful trip with a lot of information collected. Good practise for the students doing a habitat survey.

