



North California Seed Collecting Expedition
17th September – 2nd October 2011

In the spring of 2001 I started work for a commercial tree surgery company. Like many arboriculturists and climbing arborists, I have often dreamt of climbing some of the world's tallest trees. As my career has progressed, I have had some incredible opportunities, had the privilege of meeting some inspirational people and the combination of both of these and some hard work along the way, have resulted in my new post as Curator for the University of Oxford, [Harcourt Arboretum](#).



Whilst working at the National Arboretum, Westonbirt, I was introduced to James Aldred, Director of [Canopy Access](#). As a company, they provide rigging solutions and training for the television industry as well as providing training and safety at height for canopy scientists. As time progressed, James asked me whether I would like to work for him. Not long after, I found myself training canopy scientists, film crew and students.

Aims & Objectives of the Trip

The University of Oxford Botanic Garden and Harcourt Arboretum forms a collection of plants, which is more diverse and comprehensive than at any time since it's founding in 1621. The plants grown at the Botanic Garden and Harcourt Arboretum are not only grown for their amenity or structural value, but are used for;

1. Reference; e.g. plant identification, education and interpretation.
2. Taxonomic, conservation, horticultural or ethno-botanic research.
3. Ex-situ plant conservation.

The Botanic Garden and Harcourt Arboretum has a diverse and rich history, not only in the landscape but in the development of botany as a science. The Botanic Garden being the oldest in the country, 390 years old, with Harcourt Arboretum dating back to 1835. Archbishop Harcourt instructed one of the main exponents of the Picturesque landscape movement, William Sawrey Gilpin, to lay out a Pinetum. Gilpin achieved this in the years following 1835, using many of the newly introduced conifers from the West Coast of America.

The Botanic Garden and Harcourt Arboretum are living and dynamic collections of plants. To continue the great works that have gone before us, it is vital that through our management and utilization of these plants, we engage with plant conservation and renewal, not preservation. Harcourt Arboretum is synonymous with North American conifers, specifically from the North Pacific West Coast, and in order to continue this legacy for future generations, it is of paramount importance that we work actively to build a future into the planting at the Arboretum, ensuring the age structure of our plants reflects this.

As an organization, we agree to adhere to the rules outlined in the Convention on Biological Diversity. Of the targets identified in the convention, we aim to:

1. Contribute to the conservation of threatened plant species in accessible ex-situ plant collections
2. Accession properly documented and verified plants of known wild origin, collected under permit. Many of the older plants at the Botanic Garden and Harcourt Arboretum have little or no accession information. We are constantly seeking new material with good provenance information to plant in the living collection to enhance the age range, amenity, landscape, research and education potential on the sites.
3. Promote education and awareness about plant diversity and the increasing influence of climate change.

As an organization we are signed up to help deliver the Global Strategy for Plant Conservation as approved by decision VI/9 of the Conference of the Parties to the Convention on Biological Diversity (19th April 2002)

The University of Oxford Botanic Garden and Harcourt Arboretum also contribute under the following:

- 60% of threatened plant species in accessible ex-situ plant collections ;
- through properly documented and verified plants of known origin, collected under permit ;
- promoting education and public awareness about plant diversity and the need for conservation.

We also wish to interpret how these plants survive in our climates with the overall message of the need to conserve plants.

For these reasons, we intend to collect seed material for propagation, to address the over mature age structure of the conifers present at Harcourt Arboretum. Not only will these plants contribute to our continuing commitment to ex-situ plant conservation whilst playing a vital role in the Grade I listed landscape, continuing W. S. Gilpin's legacy, but perform an equally vital role in our wide ranging education programs.



17th September Saturday

It was with great anticipation that this day had finally arrived. After all the planning, I found myself sat at the Kitchen table, writing a piece for my blog, waiting for 4am to arrive - too excited to sleep! Eventually, the time arrived, and Karen and I were driving to Costa coffee to rendez-vous with James Aldred. This was our arranged meeting point, where bags were transferred from one car to another and after a brief good-bye, James and I were Heathrow bound.

Our flight was at 9:15am, and it couldn't come quick enough! The journey consisted of Heathrow to San Francisco via Detroit, finally arriving at 17:15 local time. Car hire was picked up, communication between Brett Misfud and Grant Harris established, and off we headed out of San Francisco over the Golden Gate Bridge as the sun went down. We found the motel where Brett and Grant were staying, but having flown in earlier that day from Australia, they were already in bed. James and I however, although very tired, had spotted a steak house, so as tired as we were, headed out for steak and beer armed with maps to pour over, knowing that these trees were now in reaching distance.

18th September Sunday

Although we had journeyed for almost a couple of days by this point, this was the day it started in earnest. We drove north on Highway 101, heading for Avenue of the Giants. The Avenue of the Giants forms a 31 mile stretch of the old Highway 101, with over 50,000 acres of Redwood groves. The area is surrounded by Humboldt State Parks, which is the largest remaining virgin Redwood forest.



As we drove north, Brett made contact with Michael Taylor. (Michael is responsible for finding the majority of the tallest redwoods, a passion for him that started back in 1993. In 2006, Michael and Chris Atkins discovered Hyperion, the tallest tree in the world, measuring a colossal 115.68m). He arranged to meet Michael in the Founders Grove, just off the Avenue of the Giants.

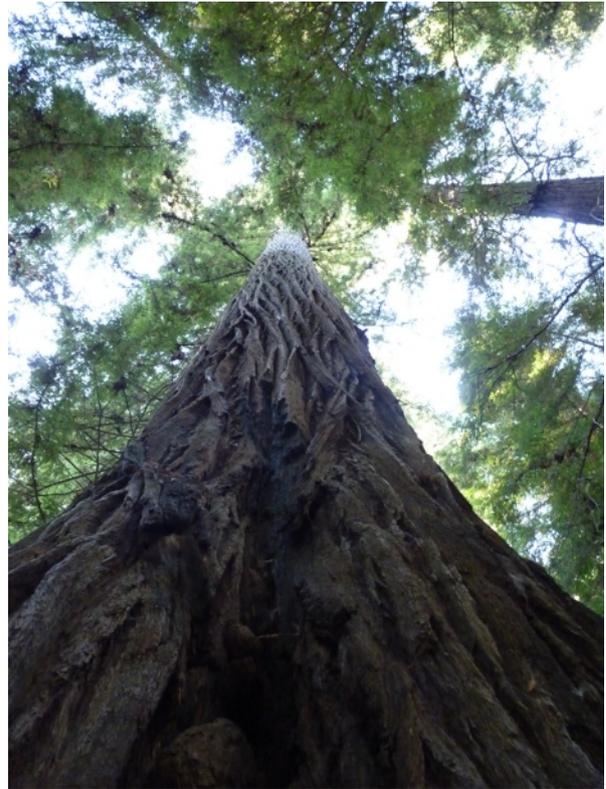
We arrived at Founders Grove, and it wasn't long until we met with Michael. (Left: Michael Taylor with *Sequoia sempervirens* cone.) It was great to finally meet him, having read about his adventures and watched him talk about discovering these big trees on National Geographic. In no time at all, we were off, and despite tiredness, I couldn't wait to get going. By the end of the afternoon, we had seen Federation Giant -112.62m, Stratosphere Giant - 113.05m, the seventh and third tallest trees in

the world respectively. First encounter with these cathedral like trees is one of absolute awe.

When you consider the energy and efforts required to grow and sustain on such a scale, is beyond remarkable. To think that these trees grow from a seed the size of a tomato seed, remain in one location for the entirety of their lives (almost three thousand years in some cases), source food, water and sunlight, defend against weather as well as insect and animal attack, is truly staggering.

Michael's passion and enthusiasm was palpable and infectious and before long, we were back in the car, heading for another location. We were on the hunt for an albino redwood! It all felt very surreal, but in no time, we were pulling over into a random layby, heading into the forest again.

After a while, your neck starts to ache from all the looking up. You can't help it, you simply want to take everything in. Every corner brings new surprises, different plants and noises. After a ten or fifteen minute walk, we come across the tree Michael was looking for. What appeared to be growing up the side of the 'parent' Sequoia, was this 'Albino' *Sequoia sempervirens*. Closer inspection revealed that not a drop chlorophyll could be found. Truly remarkable. I was somewhat sceptical when Michael spoke about it initially, thinking, "maybe a few white bits", but there it was, over thirty feet tall.



19th September Monday

We headed north for Orick where we had an appointment with James O'Barr. James is Park Curator for the Redwood National and State Parks. One of the main objectives for the trip was seed collecting, but in order to do so, we needed to collect under permit. It is also illegal to climb in these areas without a permit. After our meeting with James, we had our permits, and I have to be honest, I felt somewhat relieved. A huge amount rested on the permits and a large amount of work had gone into obtaining them. In order for the plants to be accessioned into the collection at Harcourt, the seed material needed to be covered by permits, as part of our CBD commitments.

Michael Taylor had arranged to meet us at a Mexican restaurant in Orick, where over a fajita, he discussed what was in store for the afternoon.



The Coast Redwoods he wanted to show us were;

- 1.Stratosphere Giant
- 2.Giant Tree
- 3.Terex Titan
- 4.Drury

Just walking to these trees is an incredible experience. Almost every corner you turn, you say to yourself 'Is that it? Surely that's got to be the tree?!'

What the first settlers must have thought arriving from Europe, goodness only knows, but even with a huge amount of anticipation, I was blown away. Stratosphere Giant was truly remarkable. At over 370 feet tall, its trunk disappeared into the forest canopy. If it wasn't for Michael, we would never have found it, in part because of its remote location, but also due to the fact that everything else around it was so big. One of the many remarkable characteristics of these trees is the fact that there appears to be no taper to the trunk. It's as wide at 100 feet as it is at the base.



The problem with being so absorbed with these trees is that evening suddenly appears out of nowhere. As the sun started to set, we were in need of accommodation. As we were near Prairie Creek, the campsite was an obvious choice. That evening we sat around going through the days images and listening intently to Michael's tales. At the end of the night, Michael had to go home as he had had problems with bears. Well, more to the point, his chickens were, so additional measures were required!

The next day, we planned to head north to Orick.

20th September Tuesday

The day started with a trip to the local visitor centre where we acquired our day permit for the 'Tall Trees Trail'. It came with a combination code for the padlock on the gate, one of the ways the Parks authorities control the number of tourists in these parts. Permits in hand, we were off to meet up



with Michael once again. We all met up at the designated car park, and headed into the forest. On the way down to the creek, descending over 600m, I was reassured to see a much wider range of tree and shrub species. *Tsuga*, *Pseudotsuga*, *Lithocarpus*, *Chrysolepis*, *Rhododendron*, *Acer*, *Rhamnus* and *Cornus*. More importantly, I was able to collect as we went.

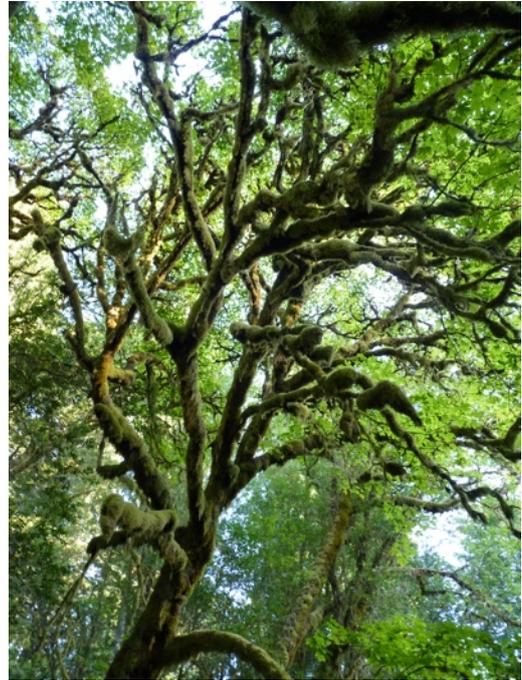
This really was a whistle stop tour as we headed through the creek. Emerald Giant was first, a mere 108m tall. Plenty of evidence of bear activity, but even still, this was the chosen location to lighten our load and stash our rucksacks for the day. Water and food hoisted up to above 3m to avoid it being taken by bears, with the rest put into smaller packs. Other notable trees we saw that day were Redwood Creek Giant, Deadwood Giant, Melkor, Nuggett and Quintuple Tower. Each with their own character, and an ability to captivate you for many hours. I could have stood and stared at just one of them for many an hour.



By far, the highlight of the day was a tree called Hyperion. At 115m tall, this is the tallest tree in the World. Discovered and measured by Michael Taylor and Chris Atkins in 2006, this was one of the trees we had travelled so far to see. The trek in to this trees is remarkable. Six crossings as the river meanders, then up a tributary. I had read accounts of log jams, but nothing had prepared me for this. I guess if I had thought about it, it would have been obvious, but when these trees are metres in circumference, you end up with log jams on an epic scale. As we went, James was recording his parts for BBC Radio 4



The journey to Hyperion was everything it ought to be. Wading waist deep in water and wildlife such as Salamanders, toads and banana slugs simply added to the adventure. After over an hour, we finally arrived. Set back behind an *Acer macrophyllum*, Hyperion soared into the sky. The tree is not at all obvious, and



certainly, had Michael not been there, we would have walked straight passed. Whilst the ground flora was relatively low in terms of diversity, *Umbellaria californica*, *Lithocarpus densiflorus* and *Acer circinatum* predominately, the Big leaf Maple, *Acer macrophyllum* with all its moss draped all over the branches gave the location a real sense of being somewhere incredibly special. We spent a good hour or so, just sitting, chatting, trying to absorb as much as we could. At one point, I climbed up the hill a short distance, trying to imagine the changes this tree would have witnessed. How close the logging companies got, their work evident all around.

James interviewed Michael at the foot of Hyperion for the Radio program and it was great hearing Michael's views and opinions. James asked Michael what he thought Hyperion would say if it could talk. His response, after a short pause, was "*Lower your expectations*".

That night, somewhat fittingly, we made camp on the creek. Firewood was gathered, water boiled, food cooked followed by a glorious night under the stars.





21st September Wednesday

Spent the morning seed collecting, packing up sleeping bags and camping kit. I woke, trying to come to terms with the fact that after all the planning and excitement, we had now seen the World's tallest tree. Not that it was an anti climax, just wanting to be able to absorb as much of the moment as possible. The walk out from the creek was somewhat strenuous, although late September, the daytime temperature was reasonably high. We arrived back at the vehicles, still intact (bears are very active in the area), and headed down to Ladybird Johnson Grove. The afternoon was spent looking at some huge *Pseudotsuga*, wondering what David Douglas must have thought all those years ago. Having spent the night put on the creek, we opted for a night in Hotel Arcata.

22nd September Thursday

Well, this was the day. Finally, I got my harness on. After a quick breakfast in Arcata, (some incredible muesli with grated apple!), we were off into the forest. Steve Sillett had given us the heads up in terms of trees already rigged so off we went. Our target was Zeus, a Coast Redwood towering in the forest at just over one hundred metres. As James and I drove up Highway 101, Grant and Brett ahead of us, we were both quite quiet. We knew what was ahead of us, and having spent sometime with Michael



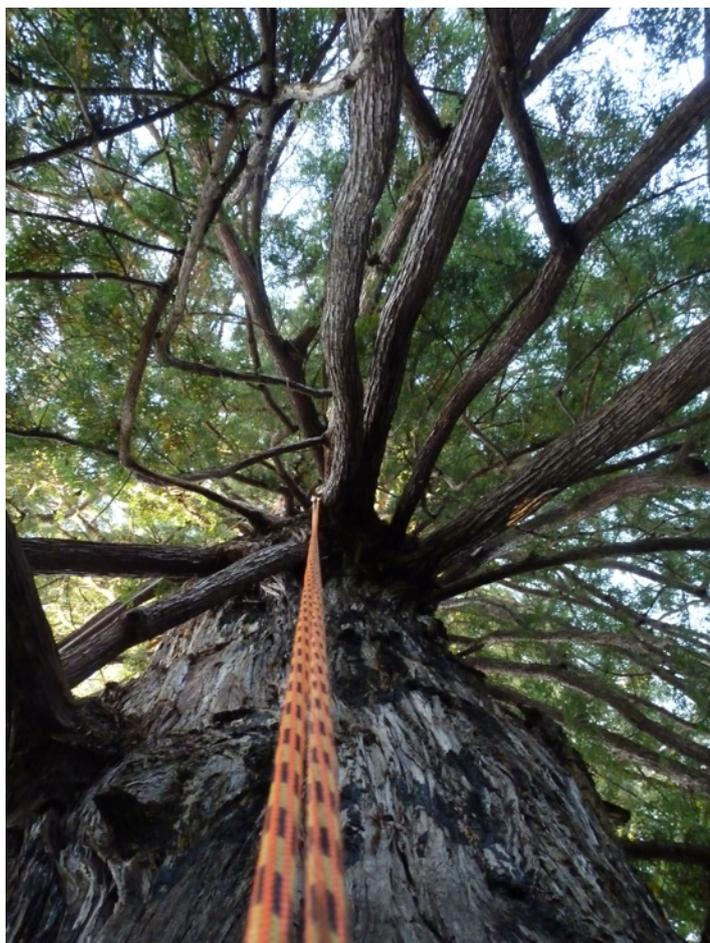
looking at these trees, were in utter awe. For me, all the excited talking and planning was over. It was now time to concentrate on what had been dreamt about for so long. I was desperate to collect from a Coast redwood, amongst others, and was also anxious to get going with the climb. The tallest trees I had climbed previously were sixty metre *Pinus oocarpas* in the Cloud Forest of Honduras the summer previously. These trees were almost twice as high! In the UK, I have been privileged enough to climb the



London Planes at Blandford Forum, which for broadleaves, are the UK's tallest at 51m.

The climbing was made substantially easier by the fact that Professor Steve Sillett, allowed us to use his rigging. This meant that we did not need to spend hours trying to install lines into the tree. He had a pulley already pre rigged at 100m, which meant all we needed to do was pull our climbing ropes up. We installed our climbing lines and one at a time, we started to make our ascent.

One of the first things that strike you is the sheer scale of the main trunk. Up against the trunk, looking left or right, you can barely see the sides. Above you, it simply towers into the atmosphere, and as you climb towards it you start thinking about the flora and fauna you may encounter. These trees have been here for over a thousand years in some cases, supporting generations of fauna and



weathering innumerable storms. The climb was even more strenuous than I thought, but the sheer exhilaration of the experience carries you through. The first limbs don't appear until a good 60 or so metres up, after which you've still got almost the same again of canopy. Once in the canopy, the climbing was relatively straight forward. There were plenty of anchor points to use as you climbed up through. As I neared the top, I could hear the voices of James, Grant and Brett. Every now and again I would stop to look around, completely unable to see the ground, looking up the the rest of the group, feeling encapsulated in this green canopy. Once at the top, the views were incredible. We could see across Prairie Creek and right across the top of the forest canopy.

Brett called across to me. He had spotted what looked like cones on a neighbouring tree. He

explained roughly where they were, so I set off through the canopy. I made my way to the edge of the canopy to have a closer look at the the coast redwood next to us. Sure enough, there were cones, tantalisingly close as well. Although I was over 300 feet high in the canopy, in part, it didn't feel like it as you couldn't really see the floor, and without that context, you could be any height. Before long, I had negotiated my way to the extremities of the canopy and managed to pull myself into the neighbouring tree, cones were collected. After an hour or so exploring the canopy, it was time to descend and head for Arcata for a celebratory steak and beer!



23rd September Friday

After yesterday's first climb, we were anxious to get going again. Today our target was to return to Emerald Giant. This time, James and I were to record for the Radio program, and this tree seemed to fit the bill. After quite an epic walk through the forest down to the creek, I was somewhat concerned about carrying 30kg of kit back up after climbing a 108m tall tree. Anyway, the prospect of climbing soon put that out of my mind, and we set about the climb. James was first up, and as he disappeared into the canopy, I readied myself. Radio equipment was on, mics working and I was ready for the off. I had also made the decision that in true British style, a cup of tea was required, so up I went armed with a stove, milk in a hip flask, water and a couple of teabags.



As I climbed, I recorded audio for the program, trying to describe as best I could. Sights, sounds and smells, trying to capture every sense of the experience. It was mid to late afternoon and the sun was beginning to set which only added to the atmosphere and I couldn't wait to meet the others at the top of the tree. Having climbed up through the canopy, I was greeted by James and we set about making our cup of tea.



24th September Saturday

After the last couple of climbs, we decided to head north to Jeddediah Smith National Park with Michael. First stop was the World's tallest Sitka Spruce, over 300 feet tall, called 'Raven's Tower'. Another notable tree that day was a Douglas fir called 'Honeywell Honey'. A similar height to Raven's Tower, you could see why these trees have become such valuable timber trees in the UK and wider afield. Other notable trees from the day were;

1. Howland Hill Giant
2. Del Norte Titan
3. Lost Monarch
4. El Viejo
5. Earendil
6. Screaming Titans



25th September Sunday

The main focus of this day was Hyperion. As with the first visit to this tree, the hike in was strenuous to say the least. This time however, we had all our climbing equipment. At best I had dreamt that I would see this tree, not even daring to imagine that I might one day actually climb it. There I was, climbing kit on my back, trekking to the World's Tallest Tree. At 379 feet or 115m tall, it stands almost twice the height of Nelson's column. This tree is of epic proportion. The first thing that strikes you with the climb is the fact the no branches appear for at least 75m. At this point, you still have a distance to climb which is the equivalent of a very tall UK tree. The tree itself is a single stem, an evenly structured canopy, and dare I say, other than its height, a very straightforward climb.

Like many other trees of this magnitude, as part of scientific canopy work, there are metal tags at 5m intervals, which is quite a good reminder of where you are and how far you have until the top. Whilst in the canopy, you become very aware of the fragile ecosystem that survives, and the last thing you want is to have a detrimental impact on the tree. Once off the main access lines, I removed my boots and climbed in my socks. This way, I can reduce the impact on the canopy flora.





Eventually, I descend to the forest floor and set about packing up our climbing equipment. Tired, hungry and utterly exhilarated, we headed back for Orick. The walk out from the creek was as physically demanding as the climb, but I wouldn't have wanted it any other way. After two or three hours, we arrived in the dark back at our cars, and headed for civilisation. That night we opted for a local motel and hot food.

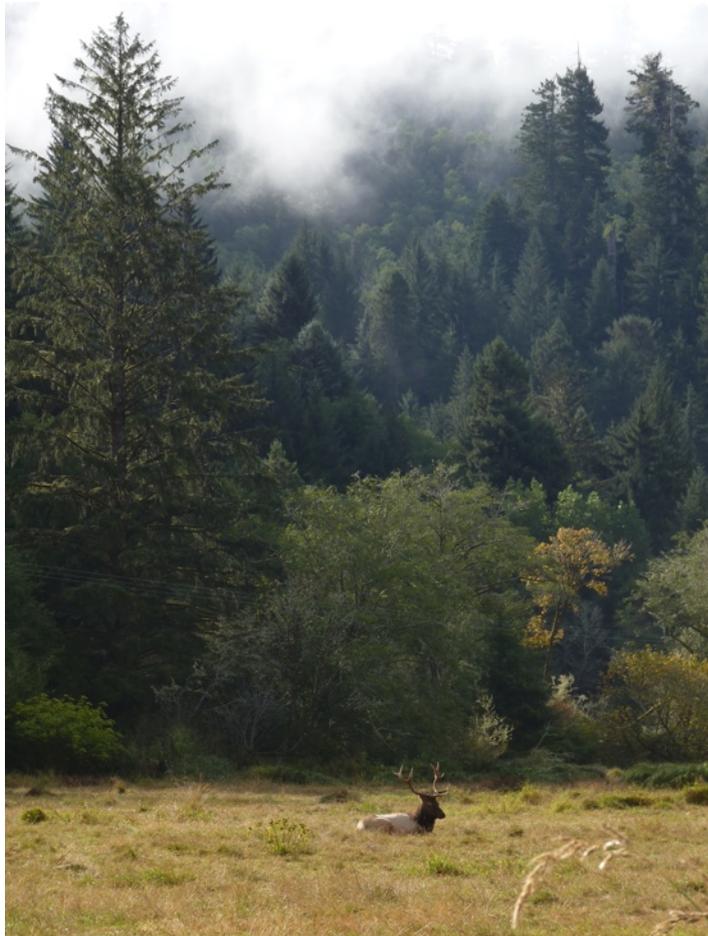
26th September Monday

After yesterdays climb, I spent a very enjoyable day on my own down on Redwood Creek seed collecting. It was great to have the chance to just explore, searching for plants, collecting and cleaning seed and simply taking it all in. I could have stayed down on the creek for a considerable period of time, just wandering, but as the sun began to set, it was time to make tracks and meet up with Grant and James. We headed back to the campsite for a hot shower, food and a good nights sleep.



27th September Tuesday

After the previous days collecting, we spent today visiting Fern Gully. On the way, we drove through Prairie Creek, famous for the Elk that reside there. It was early morning, and seemed quite used to people .



As you drive to the gully, you go through a forest section, and one thing in particular catches your eye. Where old growth trees have been felled, the new growth forms as rings around the old stump, producing what the locals call 'Fairy Rings'. In itself, this shows us how well equipped this tree is for surviving, showing its ability to regenerate.

Fern gully is right next to the coast and is quite a remarkable sight. The walls of the gully are almost forty feet high, and are completely covered with a number of different species. Water cascades down the gully wall which is one of the reasons for these plant thriving and doing so well.



28th Sept Wednesday

We set off early from Arcata, leaving the Coast Redwoods behind. It began to feel as if the trip was coming to an end, and we headed south down the Highway 101 armed with strong coffee already planning our return. Ahead of us was over 700 miles of driving, which we shared between us. It was a typically sunny Californian day, and we made our way to the Sierra Nevada excited at the prospect of seeing the Giant redwoods.

We eventually arrived at the outskirts of Kings Canyon, in the pitch black, 11 o'clock at night. There were no motels, or any with room, so we simply slept on the forest floor, thermal mats and sleeping bags.



29th Sept Thursday

As I woke, the change in flora became immediately apparent. Pines, Nutmegs and a Firs amongst many others. More importantly was the fact that there was seed abundant! Over the whole trip, plants collected were;

1. *Cornus nuttallii*
2. *Sequoia sempervirens*
3. *Sequoiadendron giganteum*
4. *Rhamnus pushriana*
5. *Calocedrus decurrens*
6. *Acer macrophyllum*
7. *Acer cicrinatum*
8. *Alnus rhombifolia*
9. *Juglans hindsii*
10. *Torreya californica*
11. *Aesculus californica*
12. *Quercus lobata*
13. *Pinus monticola*
14. *Pinus jeffreyei*
15. *Pinus lambertiana*



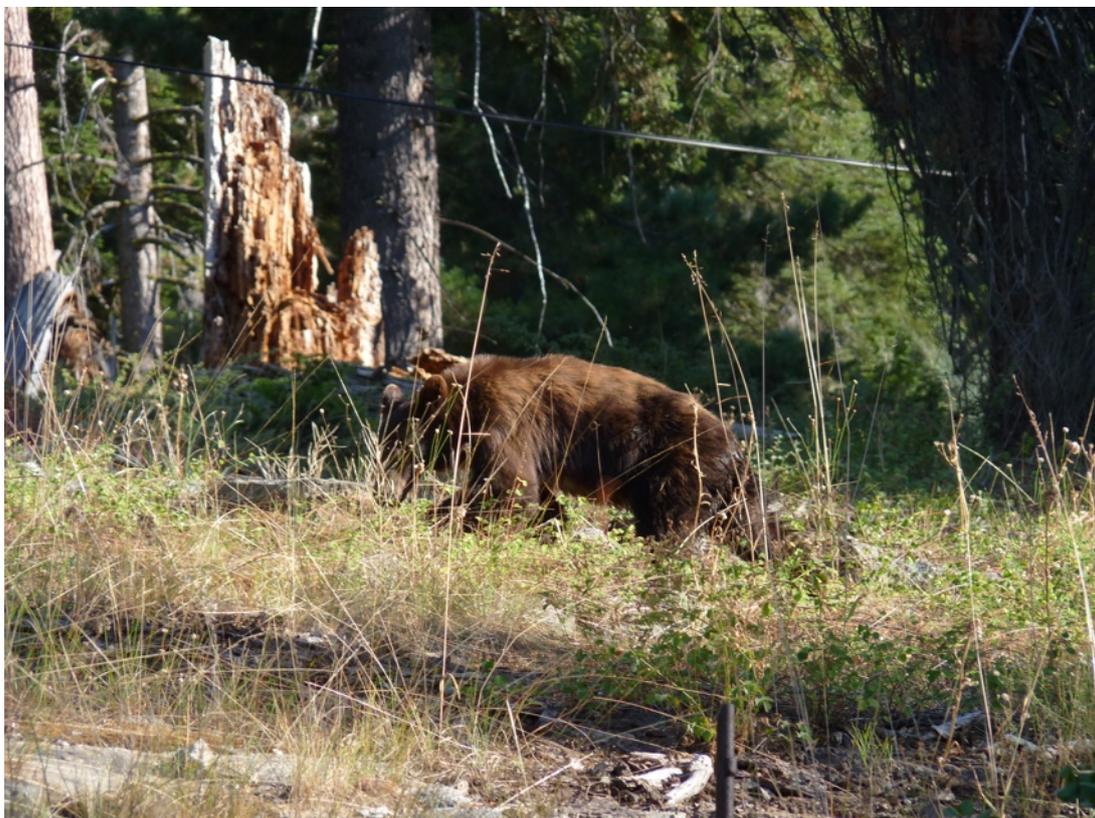
We headed down to see General Sherman, which is the largest Giant Redwood in the World in terms of volume, also making it the largest living organism. I thought having spent time in the forest looking at the Coast Redwoods that the impact of the size of these trees might begin to wear off, but not in the slightest. These trees are truly staggering, and the rest of the day was spent walking the Congress trail attempting to take it all in.





Towards the end of the afternoon, I decided to walk the four or five miles back to the campsite, collecting as I went. En route, and much to my excitement, I saw a bear. It was completely oblivious to my presence, (which I was quite happy about), as it wandered across the road in front of me carrying on its business.

In terms of plants, I was most excited to find Incense Cedar as historically and structurally (in terms of the historic landscape), this is a really important tree at Harcourt.



30th September Friday

The day started with some of the local deer population visiting the BBQ site next to where we had camped. They'd obviously got used to people, and more importantly realised that the BBQ grills were a good source of food 'bits' in the morning!



Spent the majority of the morning cleaning seed from the previous days collecting, making sure everything was clean, packed, labelled and appropriate field data had been recorded and was accurate. We stopped off at the visitor centre for lunch before heading back to General Sherman and General Grant. Ahead of us was a drive to San Francisco, so last few pictures taken, everything packed and off we headed. After four or so hours driving, via Google's headquarters, we arrived at Hanks. We were just in time for the BBQ which was great. Images were transferred between the group, making sure we had a copy of each others, then bedded down for the night. I had one more night out under the stars in Hanks garden, under a particularly large *Quercus lobata*. Retrospectively, this probably wasn't the best idea as I woke the next stay with the beginnings of an almighty cold.

1st October Saturday

After two exhausting weeks, physically and emotionally, it was time to go home. Even at this point, James and I sat in the airport, still coming to terms with what we had achieved. I could have only dreamt of experiences like this. Even now as I write this report, memories come back, making me sit and think those incredible plants, people's willingness to help and their enthusiasm.

The flight home wasn't great, full of cold and exhausted. Squashed between to passengers in the middle section of seating made it particularly difficult to get up and walk around. I didn't care though - I had managed to collect seed material under permit, climb the World's tallest tree, record audio for BBC Radio 4 and met some great people. When I reminisce about what we achieved, I feel on top of the world and for me, the trip was an amazing example of what can be achieved when people work together.

