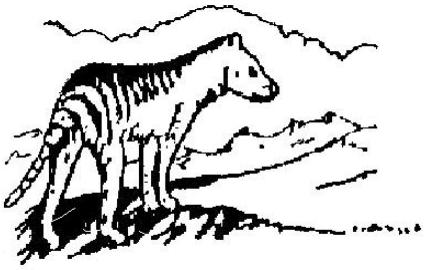


THE LAUNCESTON NATURALIST

Volume L No. 6 August / September 2017

The aim of the Launceston Field Naturalists Club is to encourage the study of all aspects of natural history and to support the conservation of our natural heritage

Patron	:	**Prof Nigel Forteath**
President	:	**Mrs J Handlinger, 52 Entally Rd Hadspen, 6393 6603**
Hon. Secretary	:	**Mrs P Wright**
Hon. Treasurer	:	**Mrs K Manning, 46 Robin St Newstead, 6344 2277**

Meetings 1st Tuesday of month, Feb-Dec at Scotch Oakburn College, Penquite Rd Newstead, commencing at 7.30 pm

Program:

October ~

Tuesday 3 – Annual General Meeting - Plough Inn, Brisbane Street, Launceston, 6 for 6.30pm start

Sat 14-Sun 15 - Field Trip - Winifred Curtis Reserve to explore the reserve and take photos of plants for new edition of club guide

Sunday 29 - Skemps Day - Macroinvertebrate monitoring & tree decline monitoring

November ~

Sat 4-Mon 6 - Field Trip - Maria Island

Saturday 5 - Excursion Central North FNC members: Birds, water and a little geology around Launceston. (more information page 3)

Tuesday 7 - General Meeting guest speaker Deb Hunter- *The Central Plateau fires of January 2016: how changes in the climate affect ecosystems and ecosystem services (landscape processes)*

December ~

Sunday 3 - Field Trip - visit the Central Plateau with Deb Hunter to look at vegetation recovery

Tuesday 5 - Members night - Year that Was, Photographic competition

Saturday 9 - Skemps Day - Christmas at Skemps (more information page 3)

For further program details visit http://www.lfnc.org.au/meetings.htm

Skemp Report August/September 2017
John, Noel and Rob have been cutting and splitting firewood while Grant has been moving it into the wood shed next to the barn. The firewood has come from the dead eucalypts in the overflow carpark as well as the falls along the track to the Federation Corridor. John asked if members could donate to the Club spare tip vouchers for Launceston Council Waste Management Centres for future clean ups at Skemps. At the August meeting Noel reported on the fire work shop that he had attended and listed the areas of concern at Skemps.

Puggle
August ~ Karen provided some background information on carnivorous marsupials described from Australia and New Guinea and then asked members to name the six species that occur in Tasmania. Most members were able to name the Tasmanian devil, spotted-tail quoll and eastern quoll, a few others the dusky antechinus and swamp antechinus, and the last white-footed dunnart was named by Mike who was awarded the chocolate frog.

September ~ The Puggle was presented by Judith on behalf on Mike who was not in attendance. Three images of birds were shown and members were asked to name the birds which have been seen in Tasmania and were also asked if an explanation could be given as to what the third bird was famous for. The birds were the hardhead duck (*Aythya australis*) named by Tina, juvenile kelp gull (*Larus dominicanus*) named by Tom T and the bar-tailed godwit (*Limosa laponic*a) named by Prue.

The Godwit had been recorded as making the longest non-stop flight of any bird. Satellite trackers have shown that some Godwits travel from New Zealand directly to Alaska without stopping once - a distance of up to 11,000kms, and taking them around 9 days.

Sightings
August ~ Tina noted a sea eagle and swamp harriers at Queechy Lake on August 1. On July 23, 5 spoonbills were back after a month's absence, and on July 30 noted 40 freckled ducks. Prue noted the lapwings are finally showing signs of nesting, and that little-pied and little-black cormorants are building up numbers at Gravelly Beach. Tom T noted a pair of Cape Barren geese on the roadworks at Perth on July 16 and on July 17, he saw an eastern spinebill in a Mulgrave Street garden.

September ~ Peter L reported hearing pardalotes calling during the 1st week of August and had seen a sea-eagle, with eel, join a 2nd eagle spiralling higher up. John reported an Eastern Barred Bandicoot at Skemps. Tom T and other members saw a wedge-tailed eagle in the driveway at Skemps on the last Skemps Day. He also saw a large flock of cattle egrets near Scottsdale and new Holland honeyeater at Warrawee, St Helens. Daphne reported 2 Australasian shelducks, (a male and female) in her garden near the river edge. Tina reported a golden whistler at Skemps.

Library Report ~ Tina advised newsletters had been received from other field naturalist clubs.

New Members ~ At the August general meeting we welcomed Vicki Elliott to the Club.

The Year That Was ~ Images from club activities for inclusion in this presentation should be submitted to Peter Ralph via email or USB storage device, as soon as possible after the event.

Club Calendar ~ the calendar for 2018 is available. A4 sized and professionally printed on quality paper and spiral bound, it contain 13 fantastic images taken by members and would make a nice inclusion with a Christmas gift. The cost is $13 each and they will be available at meetings, field trips and Skemp days. If you are unable to attend a club activity to make a purchase contact the Treasurer.

Field Trip with Central North Field Naturalists Club (CNFNC), Sunday 5 November ~ Birds, water and a little Geology around Launceston

Our Secretary recently received an invitation for members to participate in a field trip with CNFNC members. The following details were provided by Patricia Ellison, Walks Coordinator for CNFNC.

"In the morning we will be in Norwood on the NE outskirts of the City. Meet at 10.00 am at the car park at Queechy Lake from where we will take the short drive to Punchbowl Reserve for a toilet stop and walk to the Natural Fissure. We will then return to Queechy Lake for a birdwatching session until lunch time. In the afternoon, there will be optional visits to Mc Donald's Farm (Stonesthrow) and Tamar Island Wetlands. Contact either of the walk leaders: Erika Cox (6343 2097; 0409 746 322) or Patricia Ellison (6428 2062; 0437 282 073; pellison@iinet.net.au) for more information."

Photographic Competition, General Meeting Tuesday 5 December ~ the competition will be held during the general meeting in December. Due to time limitations to erect the display of entries and judge them there will be a limit of three entries per member. Members at the meeting will judge and vote on the entries; prizes will be awarded for the first three places.

Conditions of entry

- **Print topics:** subjects are to be related to Tasmanian flora, fauna, minerals, Tasmanian landscapes and astronomical events observed in Tasmania. Animals and plants must occur naturally in Tasmania. Introduced species or garden varieties of Tasmania are not acceptable.
- The subject of each print must be identified. For landscapes, the identification must include the aspect of nature study that it illustrates.
- **Print size:** up to A4 (30cm x 21cm)
- **Print medium**: colour or monochrome (black and white)
- Must be simply mounted on cardboard at least.
- Entries to have been taken since January 2016.
- The competition is open to members only and prints should be brought in on the night.

Christmas at Skemps, Saturday 9 December ~ Members are reminded that they are welcome to invite their family and friends to join them at the end of year function at Skemps.

If you and your guests would like to participate in the Secret Santa (optional), please provide an appropriate wrapped gift up to $10 to put under the tree and ensure your name is placed on Santa's list when you arrive at the Centre. Please label your gift 'male' or 'female' if the gift is gender specific. If you bring a child you can bring a gift for them, well labeled with their name, which will be given out separately. We hope that Santa will make an appearance prior to afternoon tea. Everyone attending will go in the draw for the lucky door prize so get your ticket on arrival.

Please bring your own lunch, the BBQ will be lit if you would like to bring something to cook, and a plate of food to share for afternoon tea would be appreciated. Hot drinks will be provided.

GENERAL MEETING AUGUST ~ GUEST SPEAKER JAMES PAY ~ *WEDGE-TAILED EAGLE MONITORING*

Judith introduced James who was to talk on his PhD project to see how human activity impacted on the endangered Tasmanian wedge-tailed eagle, *Aquila audax fleayi*, and to study their behaviour in general.

He started by describing the eagle as Australia's largest raptor occurring throughout the mainland and New Guinea with the Tasmanian one being a sub species. Genetic studies suggest the Tasmanian one separated only a few hundred years ago and even if it is not a sub species it is in serious decline in Tasmania.

This decline is due to a low natural abundance, the low breeding success rate, birds abandoning nests if disturbed, a high unnatural mortality rate and loss of habitat. At a guess there are only one thousand birds in Tasmania and not all breeding pair chose to lay an egg and there is a 60% failure rate for the survival of the chick. If human activity encroaches on the nest the birds will readily abandon the chicks, unnatural mortality includes wind farms, power lines and cars while habitat loss affects breeding behaviour and James told us that his project concentrated on human activity and habitat loss.

James' study is funded by forestry to see if the current regulations are working and he has found a problem. Where there is a nest it is required to leave 10 hectares around it and, although the reason is unknown, the birds build many nests while using only one for breeding. Regulations place a ban on human activity within 500 metres of a used nest as well as 1 kilometre line of site ban on activity from that nest and James was investigating whether this was enough.

The study involved building bird hides from 100 to 200 metres from a nest before the breeding season and during the season two people walk in and one walks out. The theory being that eagles cannot count and will think that the disturbance is over and will return to the nest. This study had to be abandoned as the birds did not return to the nest and James told us that in one case the eagle chick was attacked by forest ravens.

The only alternative was cameras and James told us of an unusual situation where a nest was within 200 metres of a house and these birds were accustomed to human activity.

The problem was to find something unusual to test the eagles which would be common throughout Tasmania. Their study involved a speaker at 500 metres playing all sorts of unusual sounds while people moved about with multi-coloured ribbons. The test and control nests produced similar results so that it can be assumed that 500 metres is enough to not cause disturbance to nesting eagles. The bad news was that not all pairs chose to produce an egg and the failure rate was still 60%.

There was also the issue of the long term affect, that is, whether a disturbance this breeding season would cause the bird to abandon that nest and use a different one in future seasons and information on used and disturbed nests would be checked again in future seasons.

The second part of the project involved looking at their general behaviour and this meant tracking eagles, a bird known for its speed, its wide ranging travel and for being difficult to see when not on the wing. We were shown the solar powered GPS which was attached to the bird's back by harness and which connects to a computer through the mobile phone network allowing James to monitor the bird's movements, including the height of their flight.

The GPS monitor is put on the young bird while it is in the nest during the short time when it is fully grown in the body and before it is able to fly away. An eagle monitoring team member went with the forestry survey pilots looking for birds to tag and of the 230 nests sighted only 40 were active and of these only 15 to 20 were suitable for the task.

Using a picture of Winifred, they were all given names starting with W, James pointed out the features that indicated that the bird was of a suitable age. Another picture was of a bird too old to put a GPS on and the indicators were pointed out to us. Wanda, Walden, Wilbur, Wyatt, Winifred, Woldja, William and Wollowra were given as the names of the eight tagged birds, although we had been told that 10 to 20 would be a better sample for the study.

We were shown a massive and very old nest which was about five metres across and James described the process for putting on the GPS. One person climbed the tree and lowered the bird to the ground for another person to put on the GPS. We learnt that the beak was not the big danger with these large birds it was the talons and during the process the legs were always held.

A falconry hat was put on the bird which made it placid and when the GPS was in position the wings were flapped to make sure that it was secure, a blood sample was taken to confirm the sex of the animal, it was tagged with identification in case it died before the project ended and it was then returned to the nest.

One bird, Walden, was underweight and food was left in the nest and he is doing the best of the animals in the study and after a member question we were told that the study had no adverse effect on any of the birds.

Slides showed maps of where the birds were and their flight patterns and we learnt that Walter lived in a small patch of remnant forest surrounded by agriculture and had flown to Campbell Town some 20 kilometres away, visited other forests and had achieved the highest flight of about 1 kilometre. One bird was lost to a motor vehicle hit and run.

Subsequent images showed the range of the birds and the variety of flight patterns of the individuals and James told us that the equipment could tell, with 95% accuracy whether a bird was standing, running or eating or whether it was flying actively or passively and this allowed the study to log what a bird was doing in each area it visited. It was hoped the study would identify the habitat types where birds fly low so that disks could be added to Hydro wires to reduce that causing deaths.

During 10 minutes of questions we learnt of the process to go through to get permission to work with the birds starting with the animal ethics committee. The committee would assess whether the value of data collected would outweigh the risks to the animal and then the permit came from DPIPWE. To our amusement James showed a short movie of a drone, used for getting the climbing rope into the tree, being chased by an eagle.

Tom Treloggen thanked James and asked members to show their appreciation. During supper members examined the eagle and tracking device that James had on display. Noel Manning

FORICO AT SKEMPS ~ TUESDAY 8 AUGUST

Forico employees Jay and Lindsay joined members Danny (with daughter Abigail), John, Noel, Prue, Tina and Tom to listen to our concerns about their plans to spray the adjoining property in preparation for the next tree planting. Our concerns focused on this proposed new plantation as it has a slope toward the property with the possibility of runoff and there are a number of winter creeks entering Skemps from this direction.

Over a warm drink Lindsay explained the protocols for handling and deploying chemicals used in modern forestry practices to safeguard surrounding properties, especially those with natural values such as Skemps. With his knowledge of the forest industry and the chemicals used Danny's questions were probing.

While John worked on the property the rest of us walked along Skemps Road to look at the proposed forestry area and to see how close or otherwise it was to Skemps and to listen to Jay and Lindsay explain their plans further.

We gained a better understanding of the processes involved in protecting managed regrow forests from pests and Jay and Lindsay went away with a better understanding of the Skemps property and its relationship to the proposed regrow forest.

At a small area, just past the creek crossing where the small dam is, it was noted that it is too close to Skemps for safe spraying and we were promised seedling trees to bring this area back to native vegetation and that it would be outside the re-planting area.

John and I then continued our task of cutting, splitting and stacking the dead eucalypts in the paddock just beyond the driveway. Noel Manning

FORICO AT SKEMPS ~ WEDNESDAY 16 AUGUST

As a follow-up to last week's visit from Forico employees, Lindsay returned today with Adam who will be organising the seedling trees that are being donated for members to plant as a buffer zone to the plantation.

Prue, Vivien, Noel and I went with them to look at where the trees will be planted and we discussed where the buffer area would begin on the other property. Numbers of seedlings required

was discussed as was the wildlife monitoring that they undertake prior to the area being re-planted. Returning to the Centre, we had a hot drink and talked some more before the guys headed off.

Karen Manning

FIELD TRIP ~ WEEKEND FIELD TRIP TO HOBART ~ SATURDAY 19 & SUNDAY 20 AUGUST

13 members travelled south to visit the Mt Pleasant Radio Telescope Observatory at Cambridge, which was open for tours for Science Week, and to visit the Chauncy Vale Wildlife Sanctuary.

After a mostly wet trip south and a cold night in the comfortable accommodation we arrived at the observatory before the 10am opening to be directed to parking by young fellows in UTAS tops.

Once inside the grounds we met with Tina and Tom on a chilly and windy morning and walked around the observatory as people were setting up for the open day. After a quick look at the largest of the antenna dishes and the museum we walked to the front door and waited for the first tour. Young Jonathan started the tour to be soon replaced by Professor Simon Ellingsen who explained the distances of our immediate area of space with the earth represented by a basketball. The international space station circles only 7mm above the earth at this scale and the moon, represented by a tennis ball, would be about 7 metres away.

Simon gave us some information about the largest antenna including its size and how it had been part of a NASA installation near Canberra and was donated to UTAS when decommissioned in the 1980s. He then showed us the 16 metre dish before moving to the control room for a look at the equipment and a talk about the work done there.

A clock in the control room showed GMT time and the facility worked on time correct to some incredibly small part of a second to be able to do their work with such accuracy and synchronise with dishes throughout the world.

The data collected from the antenna could be sent direct to UTAS Hobart by a dedicated data cable or stored in blocks of connected hard drives fitted into an Italian data storage unit. This was necessary as UTAS worked with arrays, their dish combined with dishes from around Australia and other parts of the world connected together, and some did not have the capacity to send such large amounts of data.

Arrays are important as the data collected from multiple dishes is greater than the sum of the individual dishes involved. In one such array the dishes were so far apart that there was less than an hour between the object rising over the horizon at one dish and setting at the other. Arrays examine the sky at a particular frequency and must be aligned very accurately to the same position in the sky.

UTAS and their dishes are a major part of geodetic astronomy, mapping the movements of the continents and providing data to keep our GPS machines accurate.

A visit to the Grote Reber Museum followed where we were able to look through the displays, and participate in or observe activities run by UTAS students. Many of us were finished with the observatory and museum visit around lunchtime and used our free time for our own activities. We heard that some visited Richmond Village and local wineries while the Manning family went on a Pennicott boat tour from Hobart to Storm Bay. Captain Kate gave a humorous running commentary as she took us down the western shore, then to the Iron Pot with the return along the eastern shore. We met later that evening for our evening meal at Nate's Family Restaurant which was conveniently located at the holiday park and served Italian food including pizza.

On a cold Sunday we assembled early for a convoy to Chauncy Vale Wildlife Sanctuary trusting the GPS in the Ralph's car for directions. Two left turns within 20 metres had all but the tail-enders doing a u-turn, though we did arrive on time for our schedule visit to the Nan Chauncy museum. Chauncy Vale is a private reserve bequeathed to the local council in 1988 and we were there to visit Day Dawn, Nan Chauncy's former residence which is the museum, look around the reserve and find the cave featured in Nan's book, *They Found a Cave*. Our guide from the council was there as promised and told us about the house and the reserve and answered many questions. We stepped back in time entering the house with the small rooms furnished with the older, heavy furniture of the 1950s while

paintings on the walls, crockery, magazines and newspapers added to the impression of a house still lived in. The newspapers and magazines from the 1950s and 1970's bought back many memories. There was a library of the books Nan had written, including copies published in other languages, and members made purchases from the many items on sale at the house. These included bookmarks and greeting cards featuring native animals and birds, copies of Nan's books and a DVD of the movie version of '*They found a Cave*' which were all inspired by the bush setting of Chauncy Vale.

We then visited an information shelter near the carpark within the Sanctuary to look over the interesting boards which had colourful photos and information on the birds, native plants and orchids, birds, mammals and reptiles that we might see during our visit.

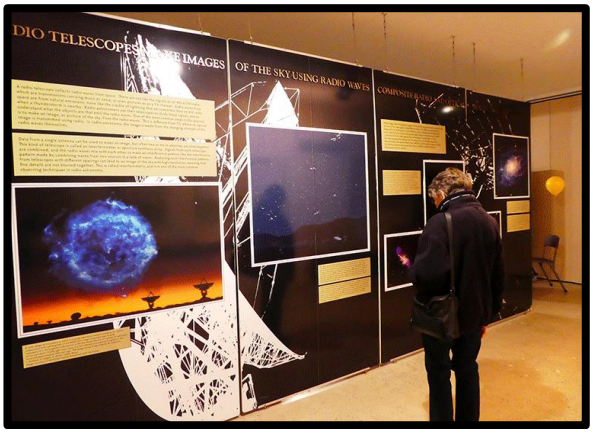
Going along the Old Road Track we registered at the visitors shed before heading up the Caves Track which was steep with parts consisting of rocky uneven steps. Some members decided not to continue instead they looked at the plants on the lower slopes before returning to the shelters near the entrance for lunch. Noel, Tom & Tina, Tom T, Judith, Karl, Claire and Karen continued up the steps to look though the caves disappointed to find no evidence these were used by animals for shelter and the only reptile we saw was a skink who popped his head out from under a rock, but refused to come out any further. There were great views down into the gully from the caves area and back across to Bagdad.

After the cave system Noel continued on, doing the circuit walk along the river, to get back to the picnic area, while everyone else decided to return the way they had come, finding a skull and partial jaw of a devil on the way and seeing fresh wombat scats. We checked a white deposit on rocks in an overhang on the way back, which was a big area of bird droppings.

We all lunched at the picnic area and head back to our cars when the weather turned cold, for the return trip to Launceston after an interesting weekend in sunny although cool weather in the south.

Karen and Noel Manning

Acacia dealbata, silver wattle; *Acacia melanoxylon*, blackwood; *Astroloma humifusum*, native cranberry; *Boronia anemonifolia*, stinky boronia; *Bursaria spinosa*, prickly box; *Dodonea viscosa*, hopbush; *Eucalyptus tenuiramis*, silver peppermint, *Eucalyptus viminalis*, white gums; *Exocarpos cuppressiformis*, native cherry; *Indigofera Australis*, native indigo; *Lindsaea linearis*, screw fern; *Lomandra longifolia*, sagg; *Olearia* sp. daisybush; *Pomaderris apetala*, dogwood; *Pteridium esculentum*, bracken fern *Rhipidura albiscapa*, grey fantail and a skink



Display at the Grote Reber Museum (KM)

One of the caves on the Chauncy Vale Reserve (KM)

SKEMPS DAY ~ TREE MAINTENANCE ON SKEMP CREEK ~ SUNDAY 27 AUGUST

Fourteen members and a visitor arrived at Skemps today. The warm sunny day was just perfect for undertaking tree maintenance along the creek. Eight of those in attendance continued working on the removal of tree guards, pruning of the trees and placement of larger tree guards around the species most browsed. John walked the tracks to check for blockages and Noel did a few jobs around the Centre

Jill and Taylor with visitor Barbara had arrived as we returned for lunch. The BBQ was used and we found that the new screen door worked well with us coming and going, not having to open and shut the back door continually.

Most of the talk over lunch was about the replanting of the hill behind the Zig-Zag and Bedfordia track areas and above Skemp Road by Forico employees. The Club had also been offered a large number of Eucalypts to plant to provide a buffer zone between the plantation and the Skemp property.

Before returning to our work along the creek, we decided to visit the site where the donated trees were to be planted. We estimated that we could not use all the trees offered in that area and would also not have the time to plant such a large number before the weather changed. We also looked at what replanting preparation we needed to do, set a date and had the names of people who would be available to assist with the job.

We then continued back to our current work along the creek finishing up shortly after 3.30 pm, when we collected up the last of the removed items and returned to the Centre for a coffee and chat prior to heading home. Karen Manning

GENERAL MEETING SEPTEMBER ~ GUEST SPEAKER TANYA BAILEY ~ *TREE DECLINE, CLIMATE CHANGE AND IMPLICATIONS FOR REVEGETATION*

Judith introduced Tanya who was giving us an update on the revegetation project in the Midlands that she had previously talked to us about in September 2014.

Tanya started by telling us that she was able to use her knowledge gained in her midlands replanting project to revegetate a property she purchased at Westbury and that her talk would concentrate on the work done by Peter Harrison who had taken over her job at the university. His work complemented hers as he was able to, as Tanya said, 'crunch the numbers and look at some of the early results we have been getting' from the experiments done in the earlier replanting.

Many early images from her slide show featured treeless landscapes or areas with few trees or dying or dead trees. After mentioning others involved in the study, including her PhD supervisor Neil Davidson who had been studying tree decline in the midlands for decades, Tanya talked about the seven main reasons for this decline.

Fragmentation sees small patches of forest left intact which are subject to drying winds, temperature extremes, fertiliser runoff, pests and diseases and reduced biodiversity. A map showed the areas of Tasmania divided into three levels of fragmentation. Approximately 1/3 of the state (mainly the west) was intact with <90% of natural vegetation remaining, around half of the state (to the east) was classed as variegated with between 60% and 90% of the natural vegetation remaining and a strip across the NW turning south into the northern midlands was considered to be fragmented with only 10% to 60% of natural vegetation.

Salinity has been known since the early 1900s and is a major issue in Western Australia. Trees take water from deep underground and keep the water table down while grasses transpire less water and allow the water table and salt to rise to the surface. The map of the issue in Tasmania showed small areas with a moderate problem in the midlands and north east, tiny patches dotted around the midlands with a severe problem and areas in the midlands, south, NE and the Furneaux Islands where the problem is caused by irrigation.

European farming practices introduced exotic animals which caused soil compaction around trees, exotic grasses, nutrient enrichment and the removal of the understory. Pasture grasses and introduced weeds compete with native trees for moisture and change the soil microflora. Native trees prefer mycorrhizal fungi dominated soil while introduced grasses prefer bacteria dominated soil.

Animals, such as the brush tail possum, and insects find the leaves of native trees more palatable due to the increased nutrient content from fertilisers and trees are then stressed by defoliation, while small insectivore birds are scared off by noisy miner and bell birds which favour the more open landscape.

Ageing trees are not being replaced as they may not produce seed or only poor quality seed and farm animals graze the few seedlings that result from these fragmented populations.

Fire is missing from the landscape and it is important to the health of eucalypts. Aboriginals used a patchwork of fires to manage the vegetation resulting in open grassy woodlands and the eucalypts did not have to compete with tree regeneration and tall shrubs.

Climate change is the overarching driver of tree decline and a graph showed the rise in temperature since the 1970s. Tanya told us that there is a pronounced dry in the late summer/autumn season and there is a change in the timing of rain during the year which is stressing trees.

A slide showed the areas of expected tree decline based on three models with all predicting loss in small areas of the east midlands and two in the general area of the midlands driven by a projected change in mean annual rainfall and water availability. This would see a higher mortality of trees with reduced recruitment and growth.

Increased temperatures are a problem for eucalypts which have a fine thermal tolerance with half of all species having a range in mean annual temperature across their distribution of less than 3°C. Extreme heat events may become more common and this is implicated in the ginger tree syndrome which is affecting particularly *Eucalyptus viminalis*, white gums, especially in the north and north east. *E. globulus*, blue gums, are also affected and the problem has been linked by forestry studies to an extreme heat wave event in March 2013 which followed a hot dry summer. Another signal of change is the loss of *E. gunnii*, cider gum, since the 1980s, a frost resistant highlands tree, which is already at the highest, coldest parts of Tasmania with nowhere colder to go.

The government has committed $70 million to plant 20 million trees by 2020 which Tanya does not believe is near enough and to improve the chance of the success of future plantings, Peter Harrison has been looking at how tree type and provenance may affect replanting. He has concluded that up to 63% of trees may not be adapted to the future climate of where they are presently found, while some trees are already adapted to hot dry conditions and may flourish in the midlands.

Tanya suggested 5 scenarios for trees exposed to climate change starting with no change for trees not directly exposed or sensitive to climate change. Others may tolerate change through plasticity, their own adaptation to change, such as varying their leaf size or others may adapt through genetic variation passed on to the next generation. Some trees may migrate, even if that is by us planting them in places where we expect them to survive such as at a higher, cooler altitude, or lastly they may die.

Maps showed a possible future for two endemic species as suggested in a study by Neil Harrison. *E. risdonii* would be either stable in most of its present habitat and expand into the midlands while *E. gunnii* would remain stable in small parts of its habitat and contract in most. Whether it gets better or collapses will depend on individual species as each will react differently and it is difficult to predict.

A slide showed the importance of provenance with two individual *E. globulus* being so different due to genetic variation. While *E. globulus* trees in sheltered wet forests grew up to 70 metres there were others on exposed coastal cliffs growing as a small stunted tree to less than three metres. In other locations each would grow to their usual size, although they may not survive.

E. pauciflora, one of the study species, has a larger lignotuber in trees growing in dryer areas. This large growth in the root system is a storage organ which allows the tree to survive drought, fire and excessive grazing and this may be an important factor in choosing trees to survive climate change.

If predictions for climate change are correct then we need the tools to correctly identify the prevenance of trees suitable to a restoration area and Peter Harrison has developed a software package to best identify where to go to find seed to suit areas subject to climate change. This software suggests that soon there will be nowhere in the midlands to find trees suitable to the Cressy area.

Tanya pointed out that all these models and predictions have assumptions, issues and problems and that is why, using funding from Greening Australia, she was planting these test sites. Seeds from over 800 different trees were used in these trials and the mother tree was recorded in each of the 50,000 trees propagated and as a follow up she goes back to measure survival, height and fitness measurements as well as how they have responded to insect attack, drought and frost notes when they strike seed as it is important that these trees are a self-sustaining population.

There are about 1,000 hectares of trees planted in the midlands and Greening Australia would like to see another 5,000 hectares of trees planted in the midlands.

The two main trees of the study are *E. pauciflora* and *E. ovata* and a map showed the predicted change with increases in temperature. While *E. ovata* would hold its own in most of its range, *E. pauciflora* would contract throughout most of the midlands.

Seed from *E. pauciflora* has been collected from 37 different locations across Tasmania as well as from the mainland to be part of this trial and while mainland species grew well at first as time has gone by the Tasmanian ones have done better. *E. pauciflora* from most provenance (from over a 500 metre altitude range) are doing well in the midlands and the mainland trees, although not doing well, are surviving and will add to the genetic diversity.

Another factor when considering the provenance of trees is the dependent communities and it has been established that there is a greater diversity of insects on trees from lower altitudes and that this may affect other dependent communities such as the birds.

Tanya told us that deer rubbing themselves on trees at Dungrove had cracked them so a deer proof fence was built at Connorville. It is 2 metres high, cost $26,000 and encloses a 17 hectare site with *ovata* and *pauciflora* being the eucalypts chosen for this area and a similar unfenced site nearby. *Ovata* survived well in the fenced site and not so well in the unfenced site while *pauciflora* did not do near as well in the fenced site, although only slightly less well in the unfenced site. All this good work with provenance can be undone by the presence of an introduced pest such as deer.

In conclusion Tanya told us that the trees planted today for ecological restoration would need to grow and reproduce in unfamiliar environments and that climate change is just one contributing factor. Also, that these field experiments into restoration are essential to guide future plantings.

After 30 minutes of questions, answers and comments Peter R thanked her and asked members to show their appreciation then Tanya offered to host a follow up look at the Connorville replanting.

Noel Manning

FIELD TRIP ~ CONNORVILLE WITH TANYA BAILEY ~ SUNDAY 10 SEPTEMBER

Eight members met at the park in Longford in preparation for a follow up trip to Connorville with Tanya and while waiting we noted that it was a warm, sunny day compared to our trip in April 2015.

We followed Tanya onto the property and parked to look at a new planting. In a paddock with a sparse covering of original trees more eucalypts had been planted with individual wire surrounds. The small cages needed a flexible wire top to stop the deer and possums from browsing on them although the tops proved difficult to remove. The inter-planting with mature trees will provide a future corridor to existing plantings and increase the number of trees in that paddock to the optimum number for future health.

It was then onto a, new to us, experimental trial site involving direct seeding under a plastic film. The neat rows of mainly small trees and understorey *Lomandra* showed a variety of growth from around 30 centimetres to two metres and we learnt that small areas in this site had been treated in different ways to provide valuable insight for future plantings. These included insecticide added

during the planting, small areas with a wire surround, follow up watering and the staged removal of the film. The plastic film formed an ideal microclimate for seed germination however when it was removed the understorey *Lomandra* died due to the sudden change in the microclimate.

The cages were about four metres long, one row wide, around 1.4 metres high and made of a thin wire which easily flexed making it difficult for animals to get in, although there was some browsing through the wire and one cage had been trampled. Far too many silver wattles dotted this site with Tanya explaining that the deep planting of this seed meant a high survival rate and that there would be less wattle in future trials. The wire surrounds combined with the insecticide proved to be the most successful propagation method in this trial.

In a nearby paddock we visited an area seen on the previous trip with caged trees. As well as single trees dotting the paddock there were large cages about 2 metres across with up to four varieties of trees in each. To my surprise nearly all had survived in the two larger cages we looked at so that around two different and healthy eucalypts, an understory tree and an *Allocasuarina* competed for this limited space. What a shame that almost certainly only one would survive as these trees reached their full potential.

Next we returned to the large, fully fenced paddock of our previous visit and were surprised at the growth, although patchy, in the nearly two and a half years since, with the largest trees being up to four metres high and there were trunks of 15 centimetres in diameter. We saw many birds and insects and argued for some time about the digging in the ground, eventually deciding it was echidna. Before we left we saw an echidna and a burrow which everyone agreed must have been dug by a wombat. As we returned to our cars we saw breaks in the fence, some with torn wire and one which was big enough for wallabies. This area was surrounded by a deer proof fence, although Tanya told us that two intrepid bucks had managed to jump in and do some damage.

The planting included two eucalyptus subgenus, symphyomyrtus and monocalyptus, as they should be able to co-exist as they source their nutrients from different levels and inter-planting will mean that they can protect one another with one providing a deeper anchor into the soil, reducing the water table allowing the more shallow rooted varieties to spread their roots without being waterlogged or toppled over by strong winds. Insects and grazing animals will also be attracted at different times.

At the end of this walk we lunched near the entrance before heading off via the back roads to Campbell Town for afternoon tea and a visit to the cemetery to the south of the town. We were looking for the rare plants known from this site including the graveside leek-orchid, *Prasophyllum taphanyx,* which has not been seen since 2001, the knotty speargrass, *Austrostipa nodosa* and the grassland flaxlily, *Dianella amoena* which are both rare within Tasmania. We did see leaves that were possibly of the flaxlily amongst the grass. Ann, Karen, Noel and Tina

Image April 2015
eucalypt under 1 metre tall (KM)

Same site September 2017
eucalypt over 4 metres tall (KM)

Tanya Bailey with members at Connorville (TMcG)

The birds identified at Connorville were: *Acanthiza pusilla*, brown thornbill ; *Cacatua galerita*, sulphur crested cockatoo ; *Cacomantis flabelliformis,* fan-tailed cuckoo ; *Cracticus torquatus,* grey butcherbird ; *Hirundo noexena,* welcome swallow ; *Lichenostomus flavicollis,* yellow-throated honeyeater ; *Malurus cyaneus.* superb fairy-wren ; *Pardalotus striatus, s*triated pardalote ; *Petroica phoenicea,* flame robin ; *Phaps chalcoptera,* common bronzewing ; *Platycercus caledonicus,* green rosella ; *Rhipidura fuliginosa,* grey fantail ; *Tadorna tadornoides*, Australian shelduck.

SKEMPS DAY ~ TREE PLANTING ~ SATURDAY 23 SEPTEMBER

Launceston's bright sunshine of 6:30 am soon disappeared and the day became overcast and during our morning drive to Myrtle Bank it rained.

The rain started at Skemps as we enjoyed a warm drink so I set up the saw under cover and John finish putting a point on the last of the wooden stakes. Karen brought out the barrow with pliers, gloves, various digging implements, wire and wire cutters and with everything ready for the days task the rain miraculously stopped. Eventually there were 14 members in attendance and the work progressed well until we called a late lunch around 1.30 pm.

While Jill and Claire put in the last three trees after lunch, Noel and John finished the planting by adding the plastic sleeve, weed mats and secured the cages to sticks. Tina, Karen, Jill and Claire then cleaned up and put the tools, left over cages and posts in the trailer, then removed cages surrounding the *Allocasuarina* and other trees in the area that no longer needed the protection. Prue and Tom were working on the far side of the creek carrying out similar work.

While I took the leftover cages, sticks and plastic bags to the fire shed, tools were put away, the Urn gum was planted on the bank behind Mary Cameron's South Esk pine and the washing up and cleaning was done in the Centre.

Prue suggested setting up the wildlife monitoring camera and as we were running late drove to the lower ponds to look for a suitable site. Trying to follow my poorly given instructions on how to do a U-turn she managed to bog her car. A little bit of ingenuity and hard work pushing by Karen and myself soon saw her free and the camera ended up attached to a tree facing the bridge of the middle pond.

We were running seriously late which had an interesting bonus. If we had left earlier we would not have seen neighbour Greg with his furry surprise. He had captured a wombat to relocate to the property as it was in danger of being run over where he found it as the animal had a burrow on each side of the highway, which it regularly crossed.

Prue suggested it not be released anywhere near the Forico plantation as there would be regular firearms culling of native animals. Greg eventually released this tame and healthy looking animal at the edge of the forest seen from the kitchen window and we hope it does well.

With all our work complete we had decided not to stay the night and the last three left quite late pleased to know the trees were in place and happy to have seen the wombat. Noel Manning

Banging in sticks for plant guard (KM)

Digging a hole for water collection (KM)

Tidying up *Allocasuarina* from a previous planting (KM)

AUSTRALIAN PLANT SOCIETY (APS) MEETINGS

LFNC members are welcome to attend APS meetings held on the third Tuesday of the month at Max Fry Hall, Gorge Road Trevallyn, commencing at 7.30 pm. The next meetings will be:

October 17 – Guest speaker Mark Wapstra – *What is Tasmania's most fascinating plant? Tales of Giants and Pygmies.*

November 21 – Guest speaker Alan Gray – *What Eucalypt is that?*

Additional Information

Club Outings:

- All outings depart from Inveresk carpark (near Museum entrance) at 9 am unless otherwise specified. Internet site updated regularly to reflect short notice changes. Saturday all-day parking cost is $3.00. Sunday parking free.
- Provide your own food and drinks for the outing and wear/take clothing/footwear suitable for all weather types, camera and field guides.
- When travelling by car in convoy, each driver is responsible to ensure that the vehicle behind is in sight immediately after passing a cross road or fork in the road.
- When carpooling, petrol costs should be shared between all the passengers, including family of the driver, and based on other clubs the Committee suggested $11 per 100 km. This is a guideline only.

Name Tags: Please wear your name tags to meetings and on outings.

Tea/Coffee: A levy of 50c is currently charged for supper provided at meetings.

Field Centre: All members have access to the John Skemp Field Centre, but should contact our booking manager, John Elliott on 6344 9303 or skempbookings@yahoo.com.au regarding availability and keys.

Field Centre Phone Number: 6399 3361

Postal Address: PO Box 1072 Launceston 7250

Internet site: http://www.lfnc.org.au

Email: secretary@lfnc.org.au

Find us on