ARTICLES FROM THE LAUNCESTON NATURALIST

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3 April General Meeting: Evolution

Our speaker, Dr Alistair Richardson, an evolutionary biologist from University of Tasmania gave an informative lecture on this, sometimes controversial subject. He prefaced his speech with what he called a 'proactive statement'- 'nothing in biology makes sense except in the light of evolution'.

He cited several publications defining Darwin's theories and felt that the more religious society of the time was bound to come into conflict with his theories that are regarded today as a catalyst in the changing theories of evolutionary thinking.

Dr Richardson took us back to the times of Plato and Aristotle, the latter an early biologist, who classified many animals and plants.

The invention of the microscope opened a new area of knowledge, bringing details of rocks, fossils and time based changes in strata of rocks into focus. Change now was conceivable, together with extinction and transformation of species.

Charles Darwin's 1832-1837 voyage around the world on the 'Beagle', including a visit to Australia, marked a new era in thinking. His writing of 'The Origin of the Species' was published in 1859, but it took a long time for these new ideas to be accepted.

The question 'what evidence is there that evolution has occurred' was put. Dr Richardson offered examples of differences that had developed in, for instance, birds like house sparrows. There is a marked size and colour difference between those from warm areas as opposed to those from colder climates. Among the many other instances of change, differences in domestic stock and over time the changing shapes of sharks , fish, dolphins birds and frogs were cited. He told us that sometimes the fossil record actually catches speciation in action and how birds, insects and even plants adapt to ensure their safety from predators. Bill Stephens thanked Dr. Richardson for his stimulating lecture. MHS

EXCURSION TO STANLEY 14/15 April

The Manning's departed Launceston on Friday to make a long weekend of the trip to Stanley. After sorting our accommodation in Stanley, we ventured to the Nut. We were pleased to see a lot of regrowth of trees since our last visit 10 years ago.

Whilst other members were meeting in Deloraine on Saturday morning we had headed off to Dismal Swamp, a little over 30 kilometres past Smithton. A short

gravel drive off the Marrawah Road brings you to the spectacular visitors centre and the most impressive toilet block I have ever seen.

Visitors can either walk to the swamp floor or take the slide which is fast and bumpy and hard on the back and neck.

Very well made boardwalks cover a large area of the driest swamp I have ever seen, allowing viewing of the Blackwoods, Dogwoods, Myrtle, Sassafras, Native Laurel, Tea-tree and various ferns. It is a paradise for the Engaeus fosser as their mounds are numerous and are much larger than those of the engaeus found at Skemps.

After an enjoyable lunch in the on-site café and some family members taking another ride to the swamp floor, we headed back to Stanley, sighting 3 raptors prior to Smithton.

Rather than return to our accommodation in the early afternoon, we went to Highfield House where we viewed an example of the preservation of Tasmania's colonial history. NJM & KW

Seven members arrived at Deloraine for the usual 10 am stop. The Manning family was missing but they had driven to Stanley on the previous day.

Our first stop was in Burnie at the Creative Paper premises where we admired the beautiful life sized papier mache figures that were located in every room. There were five or six different groups in a variety of arrangements, all very animated in life-like poses.

In the gift shop, as well as creations by local artists, many examples of hand made paper of different thicknesses, textures and sizes were available for art or craft work, These were made from a wide variety of recycled materials ranging from denim jean fabric, beer and the famous 'roo poo', to name a few. The latter has made Creative Paper widely known in Australia as magazines and TV programmes took up the story.

Lunch was taken in the Fern Glade before we took to the highway once more. Our next stop was a place called 'Wild Wood Gallery' and after a few wrong turns, we finally made our way north to find it very close to the road to Stanley. What an interesting place it was. It has the most comprehensive range of first quality wooden objects made from a variety of mostly Tasmanian timbers, huon pine taking pride of place. After spending quite a time admiring the beautiful pieces, inspecting the huge range of timber blocks salvaged from the West Coast available for craft people and the metal cut-out work being done there we left to find our way to Stanley and our varied accommodation.

We all met for dinner at the local pub and next day for morning tea before visiting the Seaquarium located on the Stanley Wharf.

Huge sea water tanks held a fascinating array of fish from the humble puffer fish

to the large local crayfish, not all in the one tank, of course. All native fish included morwong, snapper, black back salmon, leather jackets, spotted catfish, various species of cod, flathead, squid, immense conger eels, skates and small sharks (Port Jackson) and crabs by the score, many with fascinating patterns on their shells and of course there were the lobsters, from small to very large. I noted that a c. 3kg 'cray' could be 60 years old! There were more species than I have listed. It was a wonderful exhibition, full of interest.

As well as the above, several galleries in Stanley were visited and these showcased some beautiful craftwork, paintings, photographs, ceramics and jewellery as well as Tasmanian crafted furniture.

Most members headed for home on Sunday morning after a very pleasant, interesting and informative weekend. MHS

20 April : Tamar NRM field day at the Harveydale Rodeo Ground - Managing Your Bush

Private Property Conservation Program – Louise Mendel
Dry sclerophyll covers 45 x 10^6 ha. Most of it is or was in the more settled areas so more has been cleared. Most dry sclerophyll is on private land. The Private Property Conservation Program is concentrating on this bush type. It includes sub-programs such as Private Reserves and Land for Wildlife.

Photopoint Monitoring - Louise Mendel

Monitoring is needed to detect changes so remedial action can be taken. Photopoint is one technique. The basics are:

- Take photos at regular intervals eg annually
- Take the photo from the same fixed point
- Focus on the area
- Have another fixed point to establish a line eg north – south
- Take the photo from the same height each time
- Locate the site on a map eg with GPS.
- Include some landscape features (trees, rocks)
- It needs to be done for 3 – 5 years to detect change.

Weed Control - Jamie Cooper
The site should be disturbed as little as possible to minimize regrowth from seeds. Respraying should continue for 5 years to deal with seedlings

Associate (Mesulfuron) (Access?) is cheap, effective and safe to use.

Blue marker dye is also safe to use, easier to remove from clothes and can be seen by anyone who is colour-blind.

Fire Control — Steve Summers Fire Management Officer, Parks and Wildlife Service
Fire is part of the bush.

Eucalypts have many adaptations to fire:

Different bush types have different optimal fire intervals:

- Dry sclerophyll 4 – 25 years
- Wet sclerophyll 20 – 80 years
- Mixed sclerophyll/rainforest >100 years
- Rainforest 400 – 800 years
- Alpine >2000 years

A low-intensity burn could favour bracken and *Gahnia*. Repeated low-intensity burning could be counter-productive if these species become dominant. A high-intensity burn sterilizes the soil so slower-growing plants can become established.

Ecological burning requirements are less than other uses eg hazard reduction burning. Burning needs to be understood before it is used. Help is available from the State Fire Service and Parks and Wildlife.

Grazing livestock in bush areas — Andrew Cameron, Landholder

Native grasses are best in infertile situations. Kangaroo Grass is not the most valuable species. It does not grow in winter but it responds to summer rain. It does not compete when fertility is high.

Wallaby Grass, Weeping Grass and tussocks (*Poa* spp) all compete better in higher fertility.

Spear Grass is not very good food and the spears can penetrate the skin.

Improved pastures increase macropod numbers. Grazing displaces macropods so grasslands can recover when sheep are removed in spring as fewer macropods remain to graze them.

It is important to spell native pastures when they are growing. They should be spelled according to the season, not according to tradition.

Wildlife Pressures and Alternatives to 1080- Graham Hall, Game Management Unit

Property-based game management plans are in place on 600 properties totaling 1.5×10^6 hectares. They are a partnership between the owner, the Department and hunters.

1080 is the best of the poisons if a poison has to be used. It is fairly discriminating if it is used properly.

Repellents often do not work and do not last.

An integrated approach combines shooting, fencing, 1080 and other methods such as traps. There is little evidence that sonic devices are effective. JE

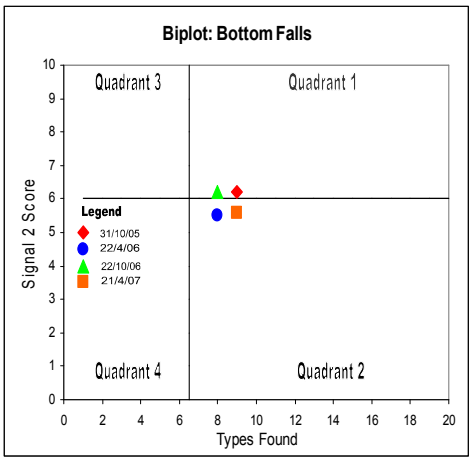
21 April: Watermonitoring at Skemps

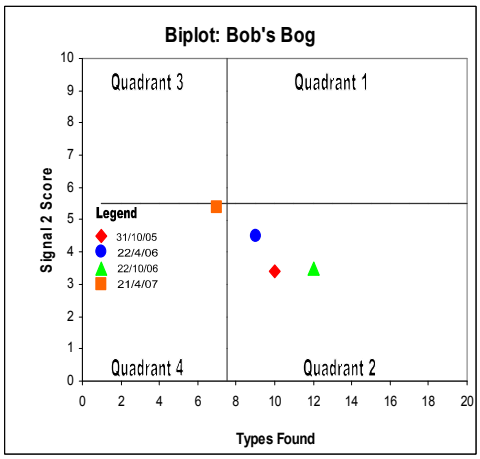
Debbie Searle from NRM North Water Monitoring visited Skemps today and

assisted with the monitoring. The creek was barely flowing and water levels were the lowest since monitoring began.

The Signal 2 score for Bobs Bog moved from Quadrant 2 to Quadrant 4 because fewer macroinvertebrate types were found this time. This may have been due to the low water flows.

A Signal 2 score in Quadrant 4 implies lower water quality. Probably not too much should be made of this, however. Finding one Stonefly would move the Signal 2 score back into Quadrant 2.





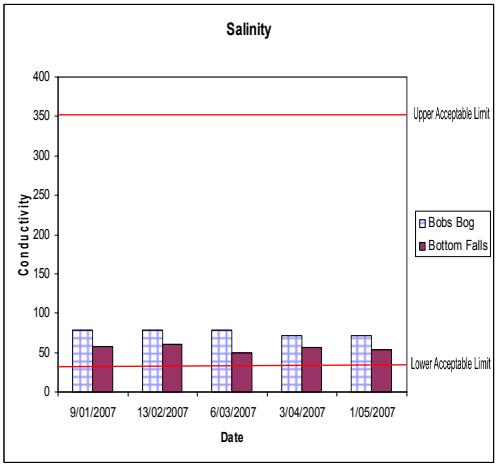
Interpretation of Quadrants

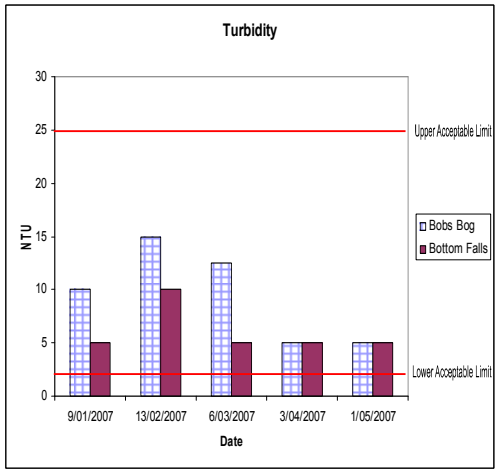
Quadrant 1	Undisturbed
Quadrant 2	Agriculture
Quadrant 3	Mine water
Quadrant 4	Sewage treatment plant, Storage dam

Salinity and Turbidity Monitoring

Since January, we have been measuring salinity and turbidity at Bobs Bog and Bottom Falls, using equipment loaned by the Launceston Environment Centre.

The results are summarized in the following graphs. Basically so far salinity and turbidity levels have been well within the satisfactory range. JE





1 May General Meeting: Wetland Birds

Stewart Blackhall a wildlife biologist and Project Officer with DPWE (Hbt) was our guest speaker for May. He has the privilege of being our first American speaker. He spent 3 years in Alaska studying Snow Geese and Golden Plovers.

He explained to us that of the 140 varieties of waterfowl -ducks geese and swans, Australia has 19 varieties. However we have 6 varieties which are endemic to Australia only. These are Magpie Geese, Freckled Duck, Cape Baron Geese, Pink-eared Duck, Maned Duck (Wood Duck) and Musk Duck. These species are completely different to those found around the world.

Australian waterfowl are well adapted to Australian conditions. They don't migrate. They are very resourceful in surviving drought. Birds travel from state to state. Duck shooting has some impact on

their decline however the biggest impact is the weather conditions. They must have fresh water to breed. Older birds can survive on salt water, but young birds need fresh water to survive. In 2002 thousands of Maned Ducks (Wood Ducks) arrived in Tasmania.

When the Tanami desert flooded 500,000 birds flocked there, and when Lake Eyre flooded thousands of birds diverted their course to fly to Lake Eyre. **Amazing survival instinct!**

Bird population is declining because of land reclaiming, and as the wetlands are being drained they are losing their habitat. Another problem is the Mallard Ducks which are not a native species are competing with native ducks and also interbreeding with them.

It was a very informative talk and Julie Nermut thanked Stewart for coming and speaking to us. RT

6 May: Field Trip to 41° South Salmon Farm & EcoExperience, Montana Road, Deloraine.

What an interesting place! Six club members met at Deloraine before travelling to the establishment in wet sclerophyll forest on the edge of the fast flowing Western Rivulet.

Ziggy and his wife welcomed us and we sampled their excellent smoked salmon and salmon spread before being invited to take self guided walks along the rivulet and up as far as Montana Cascades. We did not see many birds but John and I did see a beautiful Firetail Finch and heard other birds calling, including Thornbills and Black Cockatoos.

The plants along the walk included, first of all, several plots of ginseng together with interpretation signs. Then there was an interesting wooden water wheel

built in 2002 that had been used to produce power for the property and still had water running through and over it. Quite a lot of exotic trees like oak and alder had been planted beside the ponds and the usual weed species found in such wet habitats were to be seen.

Among the taller native trees were Silver Wattle (*Acacia dealbata*), Black Peppermint (*Eucalyptus amygdalina*), Black Gum (*Eucalyptus ovata*), and Blackwood (*Acacia melanoxylon*). The shrub or small tree layer included Dogwood (*Pomaderris apetala*) and Woolly Tea-tree (*Leptospermum lanigerum*).

On the path to the Cascades in a dryer area a slightly different flora occurred. Here we noted Silver Banksia (*Banksia marginata*), common Native Cherry (*Exocarpos cupressiformis*), the Cheesewood (*Pittosporum bicolor*), Native Olive (*Notelaea ligustrina*), Prickly Beauty (*Pultenaea juniperina*), Prickly Box (*Bursaria spinosa*), Christmas Mintbush (*Prostanthera lasianthos*), Prickly Moses (*Acacia verticillata*) and Yellow Dogwood (*Pomaderris elliptica*), Geebung (*Persoonia juniperina*), Mountain Pepper (*Tasmannia lanceolata*), Hop Bitterpea (*Daviesia latifolia*), Native Currant (*Coprosma quadrifida*), Wiry Bauera (*Bauera rubioides*), a Guineaflower (*Hibbertia species*) and Sagg (*Lomandra longifolia*).

In the swampy areas Tassel Cordrush (*Baloskion tetraphyllum*), Water Ribbons (*Triglochin procerum*) and large patches of Coral Fern (*Gleichenia*) were noted. Other ferns occurred along the way as well.

The waste water from the ponds empties into a wetland where it is filtered and finally recycled. We finished our walk with seeing a fish feeding frenzy as the salmon, rainbow and brown trout flashed to the surface after the food was spread on the water. A large native eel appeared near the shore to get its share of the food. A very interesting project and visit. MHS

23 May: Tasmanian Devil Facial Tumour Disease Lecture, QV Museum Inveresk Theatre

Professor Hamish McCallum introduced the subject and gave the following overview.

There is no virus associated with this disease. All the tumour cells have a very similar genetic make up indicating that the disease is a cancer that probably started as a genetic mutation on one animal. It is thought to be spread through biting during either mating or food sharing and possibly from cells left on food carcases and possibly through their cannibalising of dead devils.

The Tasmanian Devil has very little genetic diversity and the devil's immune system does not see the cancer as non self and therefore ignores it. It develops over about 18 months and stops the animal from eating which then starves to death.

Fencing disease free areas is impractical, vaccination has not worked for human cancers and selective breeding may be possible over time. The best option for the future of the devil at this stage is the ark, establishing disease free colonies away from Tasmania.

This would involve captive animals in mainland zoos where there is a risk of the loss of natural behaviour. The other would be to establish free range colonies on islands and possibly the Forestier Peninsular, with the risk to the ecology of the islands. Maria is one of the islands considered and although inhabited by rare animals and birds these have encountered devils on the Tasmanian mainland.

There is a risk that if the animal dies out in the state that it may not be possible to reintroduce it.

Nick Mooney started his talk by telling us that there was an unusually high level of cooperation between the various state government departments involved in helping the devils, although it took a few years for any action to really start.

The disease was discovered by chance at Mt William in 1996 and overall monitoring is backed by excellent data from the numerous and widespread studies done on the devil in the past when they were healthy. Current monitoring is done by spotlighting, fixed cameras and special traps that prevent outside contact with the captured animal.

There is little evidence of the disease in the far west, north and south west and in the parts of the state where the disease is established there is up to a 90% loss of animals. There is a greatly reduced age of the devil population with few animals over 3 years and these animals are breeding only once instead of the usual three times.

If the devils do not breed in one year because of drought the population could be wiped out very quickly and devil road kill is far harsher on the population since the disease took hold.

In other parts of the world the loss of one large predator causes an increase in another. This is the biggest risk to the Tasmanian ecology as the devil is a large carnivore with an increase in wallabies a possibility. Also, there is estimated to be around 70 tonnes of extra food each night in affected areas and this will impact on all other predator populations, including the feral cat, fox, both quolls, wedgetail eagle, raven, wasp and blowfly.

Keep your calendar free for the other lectures at the same location, 6pm Wednesday 25 July and 6 pm Wednesday 12 September. NJM