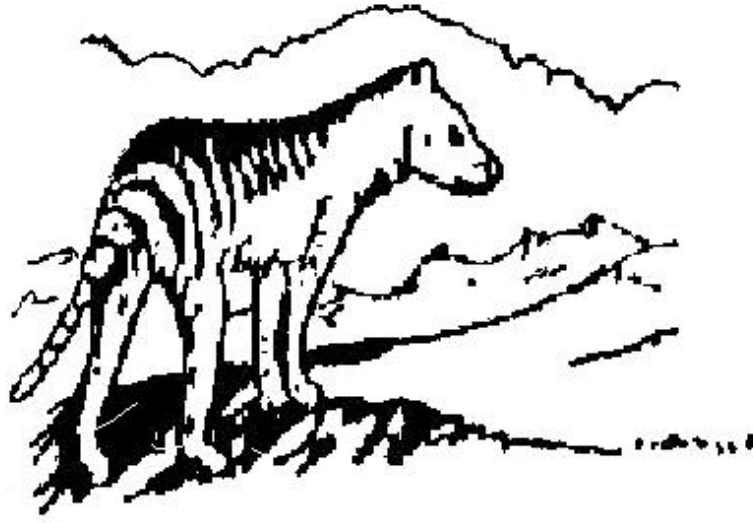


THE LAUNCESTON NATURALIST

Issued to members of the Launceston Field Naturalists Club as a contribution to club activities.



Volume XLII No 4

April/May 2009

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- Committee** : G Cameron, A Pegler, J Simmons, M Simmons,
R Skabo, T Treloggen

Meetings held monthly Feb-Dec on 1st Tuesday of month at Scotch-Oakburn College,
Penquite Rd Newstead

Subscriptions: Year 2008-2009 \$25 Single, \$30 Family, \$2.50 Junior, \$35 Associate.
Due and payable on or before 4 Nov 2008

PROGRAM

Please note: From May 2009 all field trips will depart from the Inveresk carpark (near Museum entrance) at 9.00 am unless otherwise advised. Saturday all-day parking costs \$3.00. Sunday parking free.

JULY

Tuesday 7 Speaker: David Blackwood - *Ronald C Gunn*

Sat 11 or Sun 12 Field Trip: to be advised

Saturday 18 Skemp Day

AUGUST

Tuesday 4 Speaker: James Deghand - *Dyeing with plants*

Sunday 9 Field Trip: to be advised

Sunday 16 Skemp Day

The full program for July—December 2009 will be available shortly at
<http://www.lfnc.org.au/meetings.htm>

Skemp Report -

April: Track clearing and weed control continues. Some new engraved direction signs have been made and changes to plant names mean that plant labels need to be replaced.

May: A new track has been cut between the Bottom Falls and Targa Hill Road. Four waterproof mattress covers will be purchased for the use in the bunkrooms. A government geologist recently visited Skemps to examine the graptolites and to look at the geology of the area.

Puggle -

April: John Elliott asked if the following statement was correct “at Skemps today Jeff and I saw some crows harrying two Wedgetail Eagles”. If incorrect, what is the correction? John and Marion Simmons correctly said that the Forest Raven is the only Tasmanian corvid. John Elliott then asked how the statement could be made even more accurate? Jeff Campbell said that the eagle was a Tasmanian Wedgetail *Aquila audax fleayi*.

May: John Simmons questions was ‘why polar bears did not eat penguins’? Graeme Burton correctly answered that they live on opposite poles.

Sightings -

April: Roy Skabo showed a picture of a Bird-dung Spider and discussed how it caught male moths using pheromones. John Elliott had seen Wood Ducks near Bunnings. Maureen Johnstone reported seeing swans, cygnets and ducks at the West Tamar silt ponds. Jeff Campbell had seen 6 Black Cockatoos over Invermay. Tom McGlynn spoke about a platypus in their dam and seeing 7 Kookaburras eating together on a branch. Nye Evans had seen Black Cockatoos at Beaconsfield. Peter Ralph reported seeing large numbers of Fur Seals on Bruny Island and a Black Faced Cormorant, which is apparently uncommon. He had also seen a Sea Eagle which was completely unfazed by a flight of 12 helicopters. Tina McGlynn spoke about large numbers of White-fringed Weevils at Westbury.

May: Alison Green had seen a Sea Eagle over the South Esk at Longford and Black Cockatoos flying over Windmill Hill from the south-east. Alison had also heard her first Crescent Honeyeater of the year on 24 April and a Clinking Currawong on 25 April. Jenny Haslem tabled photos of birds on the Thames Estuary. Peter Ralph had seen jellyfish near Muddy Creek and Maureen Johnstone had also seen them at Supply River.

General -

Remission of rates: The Launceston City Council has remitted our rates. This is conditional on the Club being a non-profit, ATO-certified charity and continuing to provide a benefit to the Launceston community. Our eligibility will be reviewed annually.

Insurance: There are 2 parts of our insurance with Altiora/Austcover – public liability and general accident. Austcover have confirmed that the general accident component covers members on outings.

Australian Natural History Medallion: Club will donate \$50.00

Club Book: John Simmons has contacted the publisher about a new printing. A number of alterations and corrections would be made.

Country Club flora and fauna: A university student working as an intern has asked for information on flora and fauna in the Casino area so they can set up nature walks for their guests. Representatives from this Club will meet with him to discuss how we might be able to help and to have a look at the site.

Program: The Program Committee have a draft program for the next six months.

Field Trip Departure point: We will now meet at the Inveresk carpark near the Museum entrance at 9 am unless otherwise specified. Saturday all-day parking will cost \$3.00. Sunday parking is free.

New Members: We welcomed Andrew Pitt, the Hillier family and McDonald family to the club in May.

60th Anniversary : The Mayor's office has agreed to host a civic reception to celebrate the Club's 60th anniversary in early October or early November. Preferred dates sent to Mayor to enable date to be finalised. Sue Madden has had a meeting with choir volunteers.

Federation Get-together: North Eastern Field Naturalists Club has advised that the next weekend get together will be at South Mt Cameron on 14/15 November.

FEDERATION GET-TOGETHER 3 - 5 APRIL - Cradle Mountain

Six LFNC members attended the weekend which was hosted by the Burnie Field Nats, with most participants staying at Blandfordia Lodge near the Ronny Creek carpark.

Michael Thrush had been invited to lead the field trip on Saturday and those who participated spent a very interesting day looking at moraines, cirques such as Crater Lake, glacial smoothing of the rocks at one of the outflows from the Crater Lake cirque, glacial scratches on smoothed rocks, stoss and lee formations that show the direction of glacial flow and deep gouges in the rocks of the glacial bed. Michael also showed us the difference between straight, U-shaped glacial valleys and meandering V-shaped river valleys. Our evening meal at the Pencil Pines Lodge was followed by a power-point presentation by Michael which outlined the glacial history of the area. There have been about 4 glacial maxima in the last 300,000 years. The most recent glaciations ended 12,000 years ago.

Sunday was wet and windy but Michael still managed to show us some glacial erratics on the Middlesex Plains. These are large boulders different from the native rocks of the area that the ice has transported from elsewhere. The boulders we were shown had come from around Barn Bluff.

John Elliott

During the weekend we noted the following flora and fauna

Deciduous Beech (*Nothofagus gunnii*), Myrtle (*Nothofagus cunninghamii*), Sassafras (*Atherosperma moschatum*), Horizontal (*Anodopetalum biglandulosum*), Celerytop Pine (*Phyllocladus aspleniifolius*), Scoparia (*Richea scoparia*), Pandani (*Richea pandanifolia*), King Billy Pine (*Athrotaxis selaginoides*), Pencil Pine (*Athrotaxis cupressoides*), Hybrid pencil pine (*Athrotaxis Xlaxifolia*), Dwarf Pine (*Diselma archeri*), Alpine Heathmyrtle (*Baeckea gunniana*), Mountain Teatree (*Leptospermum rupestre*), Mountain Rocket (*Bellendenia Montana*), Mountain Pepper (*Tasmannia lanceolata*), Lemon-scented Boronia (*Boronia citriodora*), Thymeleaf Purpleberry (*Trochocarpa thymifolia*), Silver Banksia (*Banksia marginata*), Copperleaf Snowberry (*Gaultheria hispidula*), Shining Mountain Currant (*Coprosma nitida*), Spreading Cheeseberry (*Cyathodes straminea*), Snow Peppermint (*Eucalyptus coccifera*), Round Leaf Boronia (*Boronia rotundifolia*), Wiry Bauera (*Bauera rubioides*), Forked Sundew (*Drosera binata*), Trigger Plant (*Stylidium graminifolium*), Buttongrass (*Gymnoschoenus sphaerocephalus*), Batswing Fern (*Histiopteris incisa*), Hard Waterfern (*Blechnum watsii*), Alpine Coralfern (*Gleichenia alpina*), Spreading Clubmoss (*Lycopodium scariosum*), Beech Fingerfern (*Grammitis*

magellanica subsp. nothofageti), Bladderworts (*Utricularia sp*)

Common Wombat (*Vombatus ursinus*), Common Brushtail Possum (*Trichosurus vulpecular*), Tasmanian Pademelon (*Thylogale billardierii*), Bennetts Wallaby (*Macropus rufogriseus*)

Black Currawong (*Strepera fuliginosa*), Green Rosella (*Platycercus caledonicus*)

GENERAL MEETING 7 APRIL - Speaker Brendan McMahon ‘Tasmanian Climate’

Brendan McMahon from the Launceston office of the Bureau of Meteorology was the guest speaker at the April meeting where he spoke about Tasmanian Climate. Brendan has worked for the Bureau for 25 years and during that time has worked throughout Australia, including tropical islands.

Brendan explained the difference between climate and weather. Weather is what we get day to day while climate is the long-term records, trends and averages in the weather. He then asked the audience of their impression of the weather during the previous month. Mixed responses were heard, to which Brendon advised that the weather had been about average, which astonished quite a few.

Daily records of rainfall, temperatures and wind compiled over a long period of time, tell us whether the conditions we are currently receiving are below average, average or extreme. Cyclones are also recorded and statistics over a period of time indicate if frequencies have changed. A 30 year period is the normal recording time to ascertain climate averages.

During the last 12 months, rainfall was very much below average and this has continued over recent years. Autumn rainfall is decreasing due to the increase in frequency of high pressure systems over the last 30 years, which means less cloud.

Two major phenomena that have an influence on Australia’s weather, the Indian Ocean Dipole and the Pacific Ocean El Nino Southern Oscillation.

The Indian Ocean Dipole, sea surface temperature anomalies in the Indian Ocean, causes drought conditions in either the eastern or western Indian Ocean depending on which side is coolest. When the dipole sees the cold surface water in the east this limits precipitation there and reduces rainfall in Australia.

Atmosphere has major effect on climate and small changes can cause major problems and is linked to the El Nino Southern Oscillation. A fall in air pressure over the central and western Pacific region causes warmer water in the western Pacific. During El Nino the moist rain bearing winds reduce or move east resulting in dryer conditions in the west, including Australia and wetter conditions in the western Pacific.

Brendan also talked about tsunami, the Japanese word meaning harbour wave. The east coast of Tasmania is exposed to a tsunami if there is seismic activity south of New Zealand. Geoscience Australia has placed ocean monitors to detect seismic activity.

Referred to:

<http://www.bom.gov.au/index.shtml> Bureau of Meteorology

<http://www.climatechangeinaustralia.gov.au/> Climate Change in Australia

<http://ozforecast.com.au/> Oz Forecast

<http://www.ga.gov.au/> Geoscience Australia

<http://www.energy.gov/news/6442.htm> US Dept of Energy

Tom McGlynn thanked Brendan for his very interesting talk on behalf of everyone present.

SKEMP DAY 19 APRIL - Photographic Competition Judging

Fifteen members arrived at Skemps to a beautiful autumn day. Judging of the members photographic competition was the order of the day. As the displaying of the photographs had taken awhile to set up, it was decided to have lunch, during which time members could view the entries more closely prior to the voting.

A total of 61 entries had been submitted by members. The photographs of scenery, a sunset, wildflowers, trees, waterfalls, fungi and wildlife were all of high quality which made it hard to cast a vote. First and second winners were outright, but third place was tied with three photographs. Rather than vote again, members agreed to ask the family that had arrived to stay at Skemps to help out by casting an impartial vote on the three photographs.

- 1st Mantis Fly by Roy Skabo
- 2nd Bull Kelp by Marion Simmons
- 3rd Eucalypt Coccifera by John Simmons
- Excursion entry Mountain Rocket by Noel Manning

During the morning Helen Jones had found an earthstar fungus on the Skemp driveway that could not be identified and will send a photo to Fungimap for identification.

Peter Ralph and other members wandered down to the Old Homestead site following the judging to try out Peter's new metal detector and Jeff Campbell used a chainsaw to clear three fallen trees from walking tracks, while other members dismantled the very picturesque display of photos. The day was considered very successful and enjoyable, and an event to be repeated next year.

GENERAL MEETING 5 MAY - John Skemp Memorial Lecture

John Simmons outlined the background of this yearly lecture that commenced in 1967 following the death of John Skemp, prior to Al Pegler introducing this years lecture presenter, Dr Lisa-Ann Gershwin who is Curator of Zoology in the Queen Victoria Museum Launceston. Following the very stimulating speech, Jeff Campbell, as acting Chair, thanked and presented Dr Gershwin with a medallion to mark the occasion.

Dr Gershwin spoke about her research specialty, Jellyfish, especially the ways in which these animals can affect people and places. She included spectacular illustrations.

Jellyfish are free-floating members of Phylum Cnidaria. A characteristic of this group is the presence of stinging capsules which, when stimulated to discharge, can inject venom. Dr Gershwin dealt with medical, ecological and economic problems caused by jellyfish, world-wide, followed by remarks on the situation in Tasmania.

Medical problems: All jellyfish possess stinging capsules which are used to subdue prey but many species do not seriously harm humans. The two most dangerous kinds are both Cubomedusae which, typically, have four-sided bodies. They differ considerably otherwise.

Box jellies are tropical and often large. Their stings are extremely painful and fast-acting. A box jelly, such as *Chironex fleckeri* in the sea off northern Queensland, can

kill a healthy adult in two minutes. Survivors bear permanent scars where venomous long tentacles touched their skin.

Irukandjis are much smaller and more widely distributed. In Australia they have been recorded as far south as Queenscliff, Victoria. Their stings may be painless initially and the results develop more slowly. Then severe lower back pain, extreme nausea, breathing problems, profuse sweating (which risks dehydration) and a feeling of doom, follow in succession. Intravenous treatment with magnesium sulphate stops the symptoms and most patients then recover. However, the venom of some irukandji species causes very high blood pressure which is likely to be fatal.

Irukandji is the name of an aboriginal tribe whose homeland is on the coast near Cairns, Queensland. The danger posed by irukandji jellyfish was recognised initially there. Since her move from USA to Australia, Dr Gershwin has described and named many species of our jellyfish, including irukandjis.

Ecological trouble: A slight change in local conditions, perhaps in water temperature pollution can trigger a population explosion of a jellyfish species. Massive increases in numbers cause jellyfish blooms which are increasingly common internationally. Ecological balance is upset when too many jellyfish feed on other animals or on the latter's food supply. Local fisheries are destroyed. In Australia there have been problems in Spencer Gulf, S.A.

Economic costs: Tourism businesses lose custom due to scares about dangerous species. Dr Gershwin has given advice to troubled tourism interests in Thailand. The medical costs of treating jellyfish victims are high. Destruction of fisheries by jellyfish blooms can have devastating results for people who depend on these.

In Tasmania, no dangerous jellyfish have been recorded from Tasmanian waters, yet. From 1999 onwards salmon farms in the Huon Estuary have lost valuable fish. When jellyfish collide with walls of cages they become stressed and so release mucus and discharge stings. The salmon's gills are clogged with mucus and damaged by stings, so they die.

In January 2009 there was a bloom of saucer-shaped jellyfish, *Aurelia*, in Hobart. Blooms of *Catostylus* have occurred in the Tamar Estuary. Tasmania is not immune for the events experienced elsewhere.

Prior to Dr Gershwin's lecture it did not occur to me to bring together different kinds of information to gain an overall understanding of how jellyfish significantly affect people and places. Many thanks to Dr Lisa-Ann Gershwin for her enlightening and very entertaining presentation.

Alison Green

FIELD TRIP 10 MAY - Jellyfish in the Tamar River

Dr Lisa-Ann Gershwin was called to Hobart at short notice and was unable to lead club members in search of jellyfish in the Tamar River area. 13 members met at Inveresk and travelled to the pier at Rosevears. Many Moon Jelly (*Aurelia aurita*) were seen in the shallows at the pier, unfortunately only one of these was alive which we caught in a fine net and were able to look at more closely. We then travelled to the Supply River where again only dead jellies were seen. After walking up the river to the ruins of the first water driven flour mill in Tasmania built in 1825, we lunched in the picnic area overlooking the river. We then went on to Paper Beach where again only dead or decaying jellies on the beach were seen. Dr Gershwin had warned us at the

meeting that we may not see any jellies as the water temperature was now a little cold.

Although disappointing not to see many jellies it was a very pleasant and enjoyable day. The following flora and fauna were seen in the Supply River and Paper Beach areas.

Silver Wattle (*Acacia dealbata ssp dealbata*), Coast Wattle (*Acacia longifolia ssp sophorae*), Black Wattle (*Acacia mearnsii*), Blackwood (*Acacia melanoxylon*), Wattle (*Acacia mucronata sp.*), Sheoak (*Allocasuarina sp.*), Sea Parsley (*Apium prostratum*), Native Cranberry (*Astroloma humifusum*), Pinkwood (*Beyeria viscosa*), Prickly Box (*Bursaria spinosa*), Sedge (*Carex sp.*), Bird-orchid (*Chiloglottis sp.*), Native Currant (*Coprosma quadrifida*), Mountain Correa (*Correa lawrenceana var lawrenceana*), Forest Flaxlily (*Dianella tasmanica*), Black Peppermint (*Eucalyptus amygdalina*), Common Native-cherry (*Exocarpos cupressiformis*), Sedge (*Lepidosperma sp.*), Teatree (*Leptospermum sp.*), Sagg (*Lomandra longifolia*), Coast Paperbark (*Melaleuca ericifolia*), River Tridentbush (*Micrantheum hexandrum*), Native Olive (*Notelaea ligustrina*), Southern Storksbill (*Pelargonium australe*), Southern Reed (*Phragmites australis*), Bushmans Bootlace (*Pimelea nivea*), Coast Dogwood (*Pomaderris apetala ssp maritima*), Hairy Dogwood (*Pomaderris pilifera*), Bracken (*Pteridium esculentum*), Nodding Greenhood (*Pterostylis nutans*), Coastal Salt Bush (*Rhagodia candolleana ssp candolleana*), Glasswort (*Sarcocornia quinqueflora*), Common Cordgrass (*Spartina anglica*), New Zealand Spinach (*Tetragonia tetragonoides*)

Eastern Spinebill (*Acanthorhynchus tenuirostris*), Black Cockatoo (*Calyptorhynchus banksii*), Australian Wood Duck (*Chenonetta jubata*), Black Swan (*Cygnus atratus*), White-faced Heron (*Egretta novaehollandiae*), Brown Falcon (*Falco berigora*), Pied Oystercatcher (*Haematopus longirostris*), Silver Gull (*Larus novaehollandiae*), Pacific Gull (*Larus pacificus*), Brush Bronzewing (*Phaps elegans*), Green Rosella (*Platycercus caledonicus*), Grey Fantail (*Rhipidura fuliginosa*), Common Blackbird (*Turdus merula*), Brown Tree Frog (*Litoria ewingii*)

AUSTRALIAN PLANT SOCIETY MEETINGS

LFNC members are welcome to attend APS meetings held on the third Tuesday of each month at Max Fry Hall, Gorge Road Trevallyn at 7.30 pm. Each meeting has a 'Plant of the Month' which is presented by a member, followed by a guest speaker.

The next meetings will be on:

June 16 - Dave Marrison and Chris Lang '*Native Plants at Royal Tasmanian Botanical Gardens*'

July 21 - Prof Rod Seppelt '*Sub Antarctic Flora*'

For further information about the Northern Group of the Australian Plant Society go to <http://www.apstasnorth.org/index.htm>

CLIMATE CHANGE ADAPTATION INFORMATION SHARING FORUM

To be held 22 September 2009, Canberra. A multi-organisation showcase of experiences, tools, projects and courses from practitioners, policy makers, researchers and educators.

The aim of the forum is to share information on how organisations, communities and regions are adapting to climate change. Participants will learn of experiences and developments underway across many sectors. It will enable you to identify relevant information and players which you need to build better networks and partnerships.

Call for presentations open until 30 June 2009.

Information; http://www.homelandsecurity.org.au/files/Events/climate_change_adaptation_forum.pdf Email admin@securityresearch.org.au
www.climatechange-infrastructure.org.au/

Natural History

Water Quality in the Tamar Estuary

The Tamar Estuary is the longest navigable waterway in Australia. A number of man-made pressures impact on the health of the estuary. Storm water and urban runoff, agricultural runoff, historic and current industrialisation, sedimentation and, commercial and recreational vessel activity are all contributors to the welfare of our waterway. This field trip identifies how these anthropogenic pressures influence estuary health and how natural processes such as tidal flushing provide a balance to these sources of pollution.

DR. TROY GASTON

WQTE1-AL01 UTAS, Launceston

Sat 13 June 8:30am - 1:30pm

1 session of 5hrs

\$34.10 Conc \$23.10 SC \$28.60

What Lives on the Rocky Shoreline

This four-hour field trip introduces the diverse and specialized species inhabiting the intertidal zone and highlights the environmental factors that determine which organisms live where. This course would suit any person with an interest in the natural environment, the marine environment or those that enjoy using beaches and rocky shores. It is designed to be accessible to the complete beginner, whilst providing information to anyone that has existing knowledge of the intertidal zone.

DR. TROY GASTON & DAVID MAYNARD

WLR51-AL01 UTAS, Launceston

Sat 27 June 8:00am - 12:00pm

1 session of 4hrs

\$34.10 Conc \$23.10 SC \$28.60

What Lives on the Rocky Coastline

If you and your child have an interest in the natural environment, the marine environment or just enjoy using beaches and rocky shores, then this is an opportunity to learn more about the creatures that live in the intertidal zone. This field trip is designed to provide children with a greater awareness of the plants and animals living on the rocky shoreline and the environmental influences affecting them. Ages 8+

DR. TROY GASTON & DAVID MAYNARD

ROSH1-AL01 UTAS, Launceston

Sat 8 August 8:00am - 12:00pm

1 session of 4hrs

\$47.30 Conc \$36.30 SC \$41.80

These courses are from the Adult Education, Winter courses 2009 North Guide

If you are interested in any of these courses either:

book online at - www.adulteducation.tas.gov.au

phone - 6336 2802 between 9 am to 5 pm, (please have your credit card on hand)

call in - Launceston Centre at 51 York Street Launceston, between 9 - 5 weekdays

TASMANIAN HERITAGE FESTIVAL - Skemps 16/17 MAY 2009

The macroinvertebrate monitoring this year was carried out on the open days of 16 and 17 May. This was the Club's contribution to the Tasmanian Heritage Festival. This time we checked 2 sites: the usual monitoring site in Skemps Creek between Bob's Bog and Top Falls, and the top pond. This was planned to entertain the crowds who would throng to Skemps, to view our activities with breathless excitement.

Unfortunately, the crowds didn't throng but one of the 6 or so visitors was breathless with excitement and some of the others were mildly interested.

Results from Skemps Creek

Major Group	Grade	Found
Acarina (Water mites)	6	1
Coleoptera (Beetles)	5	1
Diptera (Flies)	3	1
Ephemeroptera (Mayflies)	9	1
Hemiptera (Bugs)	2	1
Nematoda (Roundworms)	3	1
Plecoptera (Stoneflies)	10	1
Trichoptera (Caddis)	8	1

Eight major groups were found. The grade for each group indicates its sensitivity to disturbance and pollution. Groups with high grades are indicators of high-quality waterways. The sum of the grades for the groups found divided by the number of groups is the Signal 2 score, which measures stream quality. The Signal 2 score here was 5.8, indicating that the creek at this site is more or less unaffected by anything on the surrounding land. The next table gives all the Signal 2 scores for this site.

Season	Types Found	Signal 2	Stream Assessment
Spring 05	9	6.2	Good quality stream, little or no disturbance
Autumn 06	8	5.5	Reasonable quality, slight agricultural disturbance
Spring 06	8	6.2	Good quality stream, little or no disturbance
Autumn 07	8	5.8	Good quality stream, little or no disturbance
Spring 07	9	5.4	Reasonable quality, slight agricultural disturbance
Autumn 08	8	5.4	Reasonable quality, slight agricultural disturbance
Spring 08	7	6.3	Good quality stream, little or no disturbance
Autumn 09	8	5.8	Good quality stream, little or no disturbance

This latest result is consistent with previous results from this site.

A seasonal trend could be emerging from these figures. In the table below, the figures from the table above have been re-ordered, putting the Signal 2 scores in ascending order. I think there is a tendency for the Autumn scores to be slightly lower than the Spring scores.

Season	Types Found	Signal 2	Stream Assessment
Spring 07	9	5.4	Reasonable quality, slight agricultural disturbance
Autumn 08	8	5.4	Reasonable quality, slight agricultural disturbance
Autumn 06	8	5.5	Reasonable quality, slight agricultural disturbance
Autumn 07	8	5.8	Good quality stream, little or no disturbance
Autumn 09	8	5.8	Good quality stream, little or no disturbance
Spring 05	9	6.2	Good quality stream, little or no disturbance
Spring 06	8	6.2	Good quality stream, little or no disturbance
Spring 08	7	6.3	Good quality stream, little or no disturbance

Results from the Top Pond

This sample was a much more interesting sample to examine. Animals were moving everywhere and there seemed to be much more variety.

Minor Group	Major Group	Grade
Water Mite	Acarina	6
Whirligig Beetle (adult)	Coleoptera	5
Whirligig Beetle (larva)	Coleoptera	5
Chironomid	Diptera	3
Mosquito pupa	Diptera	3
Mayfly	Ephemeroptera	9
Water strider	Hemiptera	2
Water Boatman	Hemiptera	2
Dragon Fly species 1	Odonata	3
Dragonfly species 2	Odonata	3
Stick Caddis	Trichoptera	8
Free-living Caddis	Trichoptera	8
Flatworm	Turbellaria	2

When these minor groups are collapsed into the major groups to calculate the Signal 2 score, much of this variety disappears.

Major Group	Grade	Found
Acarina	6	1
Coleoptera	5	1
Diptera	3	1
Ephemeroptera	9	1
Hemiptera	2	1
Nematoda	3	1
Odonata	3	1
Trichoptera	8	1
Turbellaria	2	1

There were 9 major groups and a grade total of 41, giving a Signal 2 score of 4.6. This indicates that the water quality in the top pond is reasonably good, but not completely undisturbed.

It is interesting to look at why the very lively and apparently varied sample from the top pond had a lower score than the sample from Skemps Creek. Finding macroinvertebrates in the Skemps Creek sample was a bit of a struggle. As already indicated, however, the numbers of major groups from both sites wasn't all that different. Next, look at the grades for the groups that were found on the 2 sites. In the top pond sample, 5 of the groups had grades of 3 or less and 4 groups had grades of 5 or more. In the Skemps Creek sample, 3 of the groups had grades of 3 or less and 5 had grades of 5 or more. Basically, the top pond had quantity while Skemps Creek had quality.

John Elliott

Additional Information

Club Outings:

1. 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.
2. You need to provide your own food and drinks for the outing unless otherwise specified. Morning tea is normally provided by the bus company on bus outings.
3. When travelling by car in convoy, each driver is responsible to ensure that the vehicle behind is in sight immediately after passing each cross road or fork in the road.
4. When car pooling, 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: Name tags are to be worn at 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. Contact our booking manager, John Elliott on 6344 9303 regarding availability and keys.

Field Centre Phone Number - 6399 3361

Postal Address: PO Box 1072 Launceston 7250

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

E.mail : lfnc@bigpond.com