North-Eastern Tasmanian Field Naturalists Club Inc.

The North Eastern Naturalist

Newsletter of the NE Tasmanian Field Naturalists Club

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MISSION STATEMENT: It is the mission of this club to encourage the study, appreciation and preservation of our natural and cultural environment, the animals, plants, geology and landforms, including those of the coastal and marine areas in the North East region of Tasmania.

From the Editor: In addition to a very comprehensive report by Lou Brooker on our May visit to the Springfield Hatcheries, this issue contains submitted articles by Ross Coad, Mike Douglas and Deb Searle. Ross's article is about a rather sticky (but sweet) subject—marshmallows. Mike writes about the natural history of Granite Point and Adam's Beach. Deb describes her first experience as a 'sedge-twitcher'. My thanks to Lou, Ross, Mike and Deb for taking the time to write their articles, and a reminder that submitted articles are always welcome.

Correction: Mike Douglas has pointed out that an editorial revision I made to his report about the February activity—a walk at Williams Hill and Pearly Brook—inadvertently introduced an error. As published, the article implied that all eucalypts require a hot fire to achieve regeneration. Mike's intended meaning was that regeneration of *Eucalyptus regnans* requires a hot fire. That is, although exposure to fire is a requirement for reproduction of *E. regnans*, this does not necessarily apply to other Eucalyptus species.

Photos of north-eastern Tasmania by Lesley Nicklason

Sunrise over Georges Bay

Rattler Range (N-E Tasmania)

Program for June–October 16

NB Please read the notice at the bottom of this page about the cancellation process

JUNE 11: RALPHS FALLS

This is a short walk on marked tracks and is suitable for most fitness levels. After a 150 mm rain event caused serious damage to the lookout and tracks here, Parks have spent $100 000 upgrading the tracks and installing a new lookout. All reports indicate that a fantastic job was done. Meet near the swimming pool in the main street of Ringarooma at 10 am to car pool.
Contact person: Louise Brooker 0417 149 244.

JULY 9: AT THE LINC, SCOTTSDALE

This function will be an opportunity for members to participate by either talking about or showing pictures (or both) of their favourite places. Meet at the Linc at 11 am. We are hoping lots of members will take part. Bring lunch to share.
Contact person: Louise Brooker 0417 149 244.

AUGUST 13: ANNUAL GENERAL MEETING, 20 Edward Street, Bridport

The usual format—meet at 11 am for the meeting, then lunch, then guest speaker [TBA] around 2 pm. It's our chance to catch up with members who, for whatever reason, we don't see very often. Shared lunch, BYO drinks (except for tea and coffee, which will be provided). Contact: Louise Brooker 0417 149 244.

SEPTEMBER 10: CUBE ROCK - MT. CAMERON RANGE

Scenic outing to Cube Rock where the endemic granite heath should be flowering. A walk on a good track, steadily uphill for two kilometres with some steep rocky sections near the top. Meet at 10 am at the Little Blue Lake car park on the Gladstone Road [signposted], or if you wish to carpool, meet at the Pavilion car park, Bridport at 8.30 am.
Leader: Mike Douglas 6356 1243.

OCTOBER 8 : ROY SKABO'S BINALONG BAY

Roy will lead this outing to his favourite parts of Binalong Bay and surrounds. The focus will be on botany. There will be the opportunity for staying overnight/camping. More details will be provided as we approach October.

Cancellation of Field Nats Outings

If there is unpredictable and severe weather, or for any other reason, it may occasionally be necessary to cancel with short notice. Here is the process for cancellation: an outing will be cancelled if the leader considers that the conditions are not safe. If an activity is cancelled, a global email will be sent by 0700 (i.e. 7.00 am) on the day of the outing. If members are uncertain, it is their responsibility to contact Jill, Lou or the leader. Note that phone reception is not always available, so you may have to try alternative numbers.

HOT CHOCOLATE WITH MARSHMALLOWS … and Cola, a Model Plane, a Shirt and a Durian

Article and photos by Ross Coad

A mug of hot chocolate, a balsa wood model plane, a packet of marshmallows, a bottle of cola, a cotton shirt and a durian fruit—what do they have in common? Central to the answer to that question are the marshmallows, those familiar, fluffy, sticky, sweet confections dusted with corn flour.

Marshmallows can be made at home by beating a sugar solution with gelatine until the mixture is light and fluffy, coating with corn flour, cutting into pieces and dusting with more corn flour. Some recipes use egg whites instead of gelatine.

These are relatively modern recipes dating back to the late 19th century. Commercially manufactured marshmallow is made using a similar mixture processed on an industrial scale, extruded, cut into pieces and dusted with corn flour. The French version—pâté de guimauve, or simply guimauve—traditionally contains an eggwhite meringue flavoured with rose water.

Hot Chocolate with Marshmallows

Before we continue looking at recipes and ingredients, let's have a look at the etymology of the word 'guimauve'. The first part, 'gui', is the French word for the Latin 'viscum', meaning 'birdlime' (Talbot, 1847), a sticky substance prepared from holly, mistletoe or other plants, and smeared on a branch or twig so that a bird that lands on it becomes stuck.

The second part of the word, 'mauve', from the Latin 'malva', is the name given to a purple dye named after the colour of the mallow plant. The word mallow has also been used as a name for the colour mauve.

The word 'mallow' comes from the middle English 'malue', from old English 'mealwe', from the Latin 'malva' (Dictionary.com, 2015). By now you have probably had enough etymology, but it's not over yet.

Menage's Dictionary states that 'guimauve' means 'malva-viscum', 'because its root is used to make glue', hence the name Malvaviscus which has been adopted by botanists to describe a genus of flowering plants in the mallow family, Malvaceae (Talbot, 1847; Wikipedia, 2015c). Malvaceae also includes the genus Althaea, which includes *Althaea officinalis*, the marsh mallow plant.

The marsh mallow plant is indigenous to Africa but has spread across the western Mediterranean region and Europe. It prefers coastal wetlands and salt marshes. The plant has some value as a food—the root extract is sometimes used as a flavouring for the Middle Eastern snack, halva; the roots can be boiled then fried; and the flowers and young leaves can be consumed fresh, boiled or fried (Wikipedia, 2015a).

Having exhausted the etymology, let's get back to the marshmallow confection.

In the early 19th century, French confectioners extracted the sap from the root of the marsh mallow, whipped it up and sweetened it to make a confection similar to the modern marshmallow. This provided a sweet that was not only tasty but was also good for you.

In 1856, the English chemist Sir William Henry Perkin – at the time only 18 years old – was trying to make artificial quinine, and managed instead to make the first aniline dye, 'aniline purple'. This was an important discovery as purple dye – Tyrian purple – was very expensive and difficult to produce, being made from the glandular mucus of certain molluscs. Aniline purple became Perkin's mauve or mauveine, was marketed by Perkin in 1859, became known simply as 'mauve', and Perkin became simply rich (Wikipedia, 2015d).

The original process was very labour intensive, but with the introduction of egg whites, or gelatin, corn starch, industrial strength processing of equipment and new food processing techniques, the sap of the marsh mallow plant could be written out of the recipe. But the name, like the marshmallow, stuck!

Now, what about the mug of hot chocolate, balsa wood plane, bottle of cola, cotton shirt and durian fruit? What do they have in common with each other and marshmallows?

It's easy to pair up the hot chocolate and a couple of marshmallows—they go together very well indeed, but it's not the right answer.

As you might have guessed by now, the link is that all belong to, or are derived from, members of the mallow family, Malvaceae.

The key ingredient in chocolate is the roasted and ground seed of *Theobroma cacao*. The soft wood of *Ochroma pyramidale* is known as balsa wood and is popular as a light-weight craft wood for making model planes.

Althaea officinalis is not to be confused with *Malva parviflora*, an introduced species that has become a weed in Tasmania and all mainland States and Territories. Its common name is the small-flowered mallow, but it is also known by several other common names, including marshmallow (Anon., not dated). This weed species has become more prevalent in grain-growing regions in recent years, partly due to intensive weed control removing competition (Stuchbery, 2010).

Marsh mallow plant (*Althaea officinalis*) in flower. *Downloaded from www.flowerpictures.org which provides images free for personal and non-profit use.*

The nut of *Cola nitida,* along with a healthy dose of cocaine, is the original source of the flavour in the bottle of cola. Cotton is made from the fibre of *Gossypium hirsutum*. The fruit of *Durio zibethinus*, the durian, is well known in south-east Asia as a fruit that 'smells like hell, but tastes like heaven'.

So, next time you and a friend sit down to relax and chat over cuppas of hot chocolate with marshmallows on top, you might recall that chocolate and marshmallows go together in more ways than one.

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VALE JOY RAYNER – by Lou Brooker

Recently we said good-bye to one of our Life Members, Joy Rayner, who passed away aged 92.

Joy devoted her life to her family, to gardening and the outdoors, to reading and listening to music.

She was an original member of our club, having joined in 1983. Here is a quote from the club newsletter of that date: 'One of the rewards for becoming our newest member was a flat battery in her car … We do not normally hand out flat batteries to mark the occasion of new memberships … in fact we had nothing to do with it'.

Over the years, Joy served as a committee member and publicity officer, a leader of walks, and offered her home for Field Nats Meetings. Her biggest project was the Bicentennial Endemic Planting in North-East Park in Scottsdale. During her active years with the Club, Joy was a keen Coast Care contributor, and was active in having the status of the Bridport Wildflower Reserve upgraded and protected.

Joy had a quiet, tactful manner and was an inspiration to all who had the honour of knowing her.

Rest in Peace Joy.

FAREWELL NITA MCAULEY – by Lou Brooker

A member who has been among us for a number of years, quietly learning about our environment and enjoying our company, is Nita McCauley. We knew Nita intended to return to the North-West Coast, where she spent her earlier years, but didn't think it would happen quite so soon.

As a result, many of us did not have a chance to farewell her. May I say we all enjoyed Nita's company and we wish her happiness and many more interesting Field Nats outings in the future.

Nita's new address is Unit 2, 57a Saunders Street, Wynyard.

GRANITE POINT AND ADAMS BEACH

Article and photos by Mike Douglas (photo above shows Mermaids Beach)

Twenty thousand years ago—barely the blink of an eye in geological terms—Bridport had no seaside. Instead, a vast sandy expanse stretched beyond the horizon to Victoria.

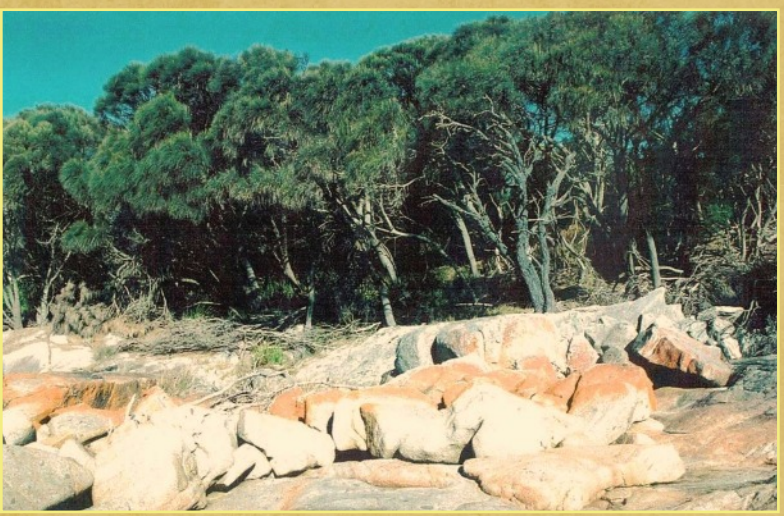
An explanation of this situation can be found in the latest edition of my book, 'Granite Point and Adams Beach – Bridport'.

Various walks in the Granite Point Conservation Area are described, and there is a comprehensive description of the coastal vegetation and rocks, including a heritage-listed geological feature that is unknown to most locals.

Sand movement, sea level rise, coastal erosion and weed invasion all get a mention in this revised edition, which has many maps, sketches and photos.

There is also a detailed examination of the wetland behind Adams Beach, including that little gem Frog Lagoon, which harbours seven of Tasmania's eleven species of frogs.

The revised publication is available at the Pavilion (Bridport) and the Scottsdale Art Gallery for $20. Also available from the author (Mike) for $15.



Drooping sheoaks at Granite Point

Bridport coastcare volunteers removing sea spurge from Adams Beach

MAY 2016:VISIT TO SPRINGFIELD HATCHERIES

Article by Lou Brooker, photos by Lou and also by Claudia Bohme

Editorial comment: *The May outing was a tour of the South Springfield fish hatcheries with Ian Cameron and Debbie Pallister as guides. Lou Brooker provided this very comprehensive illustrated report. My sincere thanks to Lou (and to Claudia Bohme for additional photos).*

On the hills all around the fish hatcheries are reminders of the past. There's the pine plantation, coming to the end of its second cycle since this area was first set up as a Forestry Headquarters. Nearby there's the Myrtle Grove Forest Park, another Forestry Scheme set up to grow experimental plots of exotic trees to see which were best suited to Tasmanian conditions.

Everything changed in the 1970s when Alec Purves set up a hatchery here to grow rainbow trout, and since then the site has been used continuously as a hatchery.

Now owned by Huon Aquaculture, Springfield Hatcheries is one of three places in Tasmania where brood stock are held, their eggs stripped so that young Atlantic Salmon can be produced, grown and distributed to aquaculture 'farms' in various places in Tasmania and throughout the world.

Just a kilometre away, in the foothills of Mt. Scott and Mt. Helen, is the water intake for the Scottsdale and Bridport water supply, and the water from these hills is of a very high quality.

Myrtle Grove Creek, on whose banks the hatchery sits, provides water for the hatchery. The water quality is monitored and tested regularly.

As we step through the disinfectant shoe bath and over the bridge in the early part of our tour, we are told stories about the water rats and platypus who have built their dens right under our feet in the banks of the stream.

Crossing the footbridge over Myrtle Grove Creek through one of the foot-baths which are critical for bio-security at the site. There are similar baths at the entrance and exit to all buildings.
– Photo by Lou Brooker

There, under the footbridge, is a freshwater crayfish, species *Astacopsis gouldi,* feeding on a chunk of salmon. We wonder if these could also be farmed, but learn that their growth rate is too slow.

Ian has caught a couple of crayfish for us to see up close. This is the largest freshwater crayfish on earth and it is endemic to (i.e. occurs naturally only in) Tasmania. In fact, it is found only in rivers flowing into Bass Strait. Its numbers have decreased seriously due to over-fishing and habitat loss. In 1994 a spill of pyrethrum from a holding dam near the Great Forester River (less than 10 km away) devastated the local population. The species was listed as 'vulnerable' in 1995 and is now listed as 'endangered'. It is illegal to catch *A. gouldi* without a permit and carries a fine of A$10 000.

Tanks like this hold the young fish as they develop. The amount of feed required has been calculated for the different stages of development and is fed automatically at optimum intervals. The pellets are 50% protein. The waste [feed and excretion] is sucked off the bottom, and transferred to a tank where it is fed to bacteria and ultimately returned to a pH of 7.
– Photo by Claudia Bohme

At the Springfield Hatcheries, crayfish specimens are micro-chipped and their movements monitored.

Ian Cameron and Debbie Pallister, our hosts for the day, have a keen interest in all the wildlife here. They tell us stories about fights between wedge-tailed and white-bellied sea eagles, and about the masses of big black cormorants who want to eat the fish from the dams. But the funniest story is about a 'trap-happy' long-nosed bandicoot who keeps coming back into the traps that are set to catch feral cats. He was in the trap this morning, having had his feed of peanut butter, but really wanting to be somewhere else having a snooze.

The list of other regulars includes tiger cats, quolls, kookaburras, devils, the great white egret and the occasional kingfisher.

Inside the many hatchery buildings a very complex process takes place—complex and interesting. Basically, adult brood stock are stripped of their eggs and sperm; these are mixed manually and managed in a very controlled environment. The salmon go through various stages of growth, hatching to alevins, developing into fry, then parr and finally to smolt.

At this stage the fish changes from a freshwater juvenile to a mini salmon, ready for life in saltwater.

I was impressed by the rigorous environmental standards employed here. Ninety-five percent of the water used is recycled and a small amount gets used in other areas of the farm through composting and irrigation.

Ian has a permit to monitor the wellbeing of *Astacopsis gouldi*—the largest freshwater crayfish in the world—in this environment, and he had two of these monsters in a holding tank for us to see. – Photo by Claudia Bohme

I was interested in the 'bugs' living on the underside of the body of the crayfish. This is probably a symbiotic association where both creatures benefit (i.e. a type of symbiosis known as 'mutualism'). Imagine trying to clean yourself if you were a crayfish!
– Photo by Lou Brooker

I know there is conjecture about the environmental impact of farming fish in areas where there is insufficient current to carry the detritus away. But Huon Aquaculture is attempting to reduce the environmental impact by developing new lease areas where there is greater water movement and the sediment area under the pen is better oxygenated. In these deeper waters, with a different ecology, it is hoped that organic matter will be processed and distributed more quickly.

Here the fish are being stripped of their eggs so they can be manually mixed with the sperm to start things going
– Photo by Claudia Bohme

After the eggs and the sperm have been mixed—and they have a very short time frame for this to take place—the new embryo begins to develop. During this process, which takes eight weeks, there are many opportunities for influencing development; this is mostly around temperature control, with 8 °C being the optimum. If development needs to be delayed, the temperature can be dropped to as low as 2 °C.
– Photo by Lou Brooker

Once the fish are one year old they are referred to as 'smolt' and moved to open water pens like these. This is where they are at risk of predation from sea eagles, cormorants and and other birds of prey, so these pens are netted. As you can see, the surrounds at the hatchery are delightfully natural with bush close by and, to a degree, 'marsupial lawns' surrounding the ponds.
– photo by Lou Brooker

We had a great day at Springfield Hatcheries, and all present really appreciated the trouble taken by Ian and Debbie to give us such a thorough insight into the processes and the environment here.

SEDGES HAVE EDGES (EXCEPT WHEN THEY DON'T)

By Debbie Searle (novice sedge-twitcher)

Threatened Plants Tasmania (TPT) ran a weekend of training in May at Ross on threatened native sedges. Participants learned how to separate sedges (family Cyperaceae) from grasses (Poaceae), rushes (Juncaceae), cordrushes (Restionaceae) and fanworts (Centrolepidaceae).

Some perennial sedge species such as *Gahnia grandis* (cutting grass), do indeed have edges on their tough broad blades. Other sedges superficially resemble other families with soft, fine leaves or rounded, pithy stems or a cushion-like growth form. Closer examination of a true sedge will reveal that the flowers don't have any petals—except for scales—and the fruits are actually nuts.

I was fortunate to be a participant in the workshop, which was funded by TPT and sponsored by the three Natural Resource Management (NRM) regions. We had a fantastic weekend of learning, led brilliantly by Mark Wapstra and Phil Collier.

Mark is one of the authors of *Tasmanian Plant Names Unravelled* (for information about availability, go to: http://www.ecotas.com.au/wp/publications/). We worked our way through the identification of 10 genera of sedges and the 20 Tasmanian species which are listed as threatened.

Identifying sedges to species level usually requires some fresh material with fertile flowers and mature fruits, as well as a microscope or hand lens. Identification keys are found in *The Students Flora of Tasmania*, Part 4b, by Winifred Curtis and Dennis Morris (http://trove.nla.gov.au/version/44498666).

TPT is a volunteer Wildcare group, actively involved in the conservation and monitoring of Tasmania's threatened plants. They run regular field trips across Tasmania. If you are interested in becoming involved, contact TPT at www.tpt.org.au or become a member of Wildcare and register your interest in the Threatened Plants Tasmania branch.

***Carex longebrachiata* (drooping sedge) – found in the north-east, Central Highlands, Midlands and south-west of Tasmania. *Photo reproduced from a Creative Commons site that allows photos to be used with attribution.* Source: Landcare Research**