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### MESSAGE FROM CHRIS HAWKES TRUST CHAIR

Generating revenue for the Sanctuary to support its purpose of restoring an ecosystem should be relatively straightforward but is very hard. On a recent application through DOC for conservation funding initiatives restricted or confined to the protection, establishment, care and wellbeing of an endangered species (we ticked every box with kakariki karaka) the application considered by a ministerial decision process was declined. In the big picture the amount applied for was not great (\$150,000) however would have made a significant difference to our financial resources to meet exactly that for which the Sanctuary applied.

Consequently, serious cutbacks across our operation have had to be undertaken in the 2023-24 year.

A recent internal review of the Wildlife act at DOC will likely present more change to fenced sanctuaries like us who are attempting to complete successful translocations and species introductions.

According to Minister of Conservation Willow-Jean Prime press release the 70-year-old Wildlife Act will be replaced with modern, fit-for-purpose legislation to better protect native species and improve biodiversity, has announced. A new Act will help to address threats they face, including impacts from climate change, invasive species, and habitat loss. The announcement follows a Department of Conservation review which determined that the current Act lacked a clear purpose and did not effectively protect at-risk or threatened species. As one example, not all native species are currently covered by the Act. Repealing and replacing the existing Act will follow a standard legislative process during the next parliamentary term.

The implications to the Sanctuary trust board and senior management of this reprioritising of conservation objectives, which will influence funding and financial support, has identified that the government priorities of conservation will dramatically change.

As a board and management team, we have to rethink or realign our approach to securing support, particularly with seeking funding support from the conservation sector to ensure we can and do meet our conservation objectives.

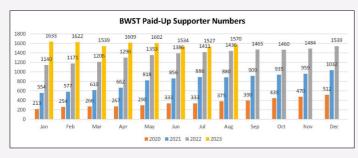
Ngā mihi, Chris Hawkes



### STEADY GROWTH AT THE SANCTUARY

The Sanctuary can report visitor numbers increased between July and August this year over past years. This is very pleasing, and we appreciate that some visitors do become supporters. Over 2023 Supporter numbers have stabilised and we are on a drive to attract more individual, household and lifetime subscribers.





### ANOTHER SUCCESSFUL GLOW WORM SEASON

The glowworm tour season was completed on the 16th of September. Thanks to volunteer guides, we hosted over 30 tours! The feedback on these tours has been consistently positive. All of the wonderful guides created such positive and memorable experiences for tour guests, with each bringing something a little different and special. These tours generated around \$7,000 in sales revenues for the Sanctuary, drawing in over 400 people! We look forward to next year's glow worm season, keep your eyes peeled on our website and social media for when bookings open.

#### SANCTUARY SUCCESS KĀKĀRIKI KARAKA

Since implementing our kākāriki karaka introduction program in November 2021, seven translocation events have taken place with 125 birds successfully being introduced into the Sanctuary.

In July of this year, an official bird population survey was undertaken by DOC rangers and Sanctuary volunteers in the Sanctuary. We are proud to report that the survey produced outstanding results; a significant step towards securing the survival of this native species. Data from this report will be published in the next e-news. As an interim result 170 birds were recorded, and most were unbanded. It has been great to be part of the effort to protect this nationally critical species. This result is very exciting for us at the Sanctuary as it confirms the importance of all the work we do to remain pest free.



#### **AGM REMINDER**

All are welcome to attend, but only paid-up supporters (aka members) are entitled to vote at the annual general meeting. If you're not currently a supporter and would like to become one, sign-up by clicking <a href="https://example.com/here">here</a>.

This year's AGM will be held at the town office located in Morrison Square, Nelson, from 1 pm.
All supporters and volunteers should receive an invitation by 12 October. A Google team link will be made available for those who can't attend in person.

The AGM will feature four resolutions: approving the 2023 annual accounts, approving the 2022 minutes, confirming trustees for 2023-24, and the appointment of an auditor for 2024. Nick Robson will also give an update on current Sanctuary projects.

For anyone who wishes to be nominated as a trustee, please contact ru.collin@brooksanctuary.org.nz before 12 October. If no nominations are received by then, the incumbent trustees standing for reelection this year being Maurice Woodhouse and Deryk Mason will be reelected unopposed.

### THE VC ENHANCEMENT IS NOW COMPLETE

On Tuesday 8 August the final piece of the Visitor Centre enhancement project was completed with the installation of four 'journey boards' panels.

These four large structures are designed to tell visitors the story of the whenua (land) on which the Sanctuary is sited; the journey boards take the visitor 'back in time'.

The first panel introduces the Sanctuary as it is now, a community taonga created by the efforts and hard work of countless volunteers that will become a legacy for future generations.

The second panel tells of arrival early European settlers to the area and their efforts to thrive.

The third panel describes the area when Maori arrived - a land lush with possibilities.

The fourth panel describes the valley before the arrival of humans in Aotearoa - a cathedral of birdsong and life.

NAU MAI, WHĀIA TE ARA KI TE AO O ĀPŌPŌ, ME ŌNA ĀHUATANGA WHAKAMĪHARO, I TAKEA MAI I NGĀ MAHI ĀTAAHUA O MUA... COME ON A JOURNEY TO A VIBRANT FUTURE, GROUNDED IN A RICH PAST...

I tênel haere ka kôpikopiko koe ki waenga ot têtahi o ngā punanga kolora ā-hapori motuhenga rawa o Aotearoa — The Brook Waimārama Sanctuary. He vabi I fênel i hangala e te tini o ngā tina nga tênel ka ti tonu mö ngā whakatupuranga maha. He purākatu whakamāharo tênel mö te pakari o te tangata, me te ƙaha ruli o te talao kia or amal kia puiwai mai. Tênel mātou te powhiri atu nei i a koe kia haere mai koe, mā te talao. Mā roto hoki I te wā.

Nā te talao, mā roto hoki I te wā.

Nā te talao, mā roto hoki I te wā.

The bilingual signs invite the visitor/reader to imagine what was once, and to ponder what might be again one day.

The journey board signage was designed by Downing Design and installed by Cutting Edge Signs and volunteers; the large red beech boards were prepared and worked by Sanctuary volunteer Brian Pollack who has done an amazing job.

We envisage that at a later date, we will create similar journey boards imagining what the Sanctuary might become for future generations.







# MOUSE EXCLOSURE PROJECT UPDATE

A 3.7 ha mouse exclosure has now been completed, thanks to the hard work of the Sanctuary volunteers. This has involved the construction of 550 metres of mouse proof fence, the formation of 590 metres of new monitoring tracks, the creation of 5 mouse proof culverts to handle the stormwater, selective removal of branches to avoid mice climbing through the trees over the fence and a lot of time removing invasive weeds. The monitoring team have now started eradicating mice from the area, which will be followed by continuous pest monitoring to check for any mice that manage to get back in.

The exclosure is close to the Visitors Centre and will benefit mouse sensitive species such as geckos, skinks and invertebrates. It will also allow us, in partnership with Ngāti Koata, to bring tuatara back into the Sanctuary.









Ecological Plan eNews September 2023

### ECOSYSTEM RESTORATION ECOLOGICAL PLAN

Earlier this year the Sanctuary commissioned the writing of an Ecological Plan; we've received a first initial draft recently; we've asked for some changes/additions.

Once draft two is received the plan will then be circulated to key stakeholders for their review and input - we expect to do this by the end of September. Once stakeholder feedback is received it will be considered and the plan presented to the Trust Board for approval/adoption and then for implementation.

### So what's the plan intended to do, what would we like to get out of it?

- The plan will clearly define the BWST's ecosystem restoration goals, set priorities, and guide us over a specific period (to 2035) with tasks to achieve the goal (milestones).
- The plan complements the aims and goals of the current BWST 15-year strategic framework to 2035.
- Consultation with stakeholders, especially Sanctuary supporters, BWST staff and trustees, local iwi, as well as DOC, NCC (Nelson Nature) and Kotahitanga mō te Taiao is required.

### It's intended that the plan will document what we want to achieve:

- Show a clear path to restoring the forest ecosystem of the Sanctuary
- Prioritise ecosystem restoration goals and actions
- Outline a suitable research and development framework

#### The over-arching framework for the plan:

- Restoration visions and objectives
- Ecological restoration, ecological integrity, and desired future ecological states: restored, fully functioning forest ecosystem
- Connectivity of BWS with surrounding landscapes: Emphasis on the high connectivity with surrounding conservation estate (especially the Mount Richmond Forest park of ~166,000 ha) which provides continuous native forest connectivity from the BWS to the southernmost point of Fiordland which is unique for a fenced sanctuary.

The plan is being written by Wildland Consultants, their head office is in Rotorua with offices across the country.

<u>Wildlands</u> provides specialist skills and project implementation in relation to ecology, biodiversity, ecological restoration and revegetation, survey and monitoring, assessments of ecological effects, environmental monitoring, indigenous flora and fauna, exotic pest plants and animals, and wetland restoration.

The company has a strong track record, and is staffed by experienced and committed ecologists.

Producing a detailed ecological plan that will guide the Sanctuary over the next 10+ years comes with a hefty price tag, this project has been funded by an environment grant from the Nelson City Council and a grant from the NZ Community Trust - our grateful thanks to both these funders.

eNews September 2023 Sanctuary notices

#### **ENSURING VISITOR SAFETY**

We have worked hard on developing systems and processes that support safe and enjoyable experiences for all visitors to the Sanctuary. Our volunteer and staff hosts talk to all visitors about health and safety and potential hazards before they enter the Sanctuary. Visitors are required to sign in and complete an intentions sheet and it is ensured that all visitors are out of the Sanctuary by the end of each trading day. VC hosts spend a great deal of time checking that everyone signed in (digitally on our tablets), has been accounted for and signed out. Recently, after a busy Saturday involving over 100 visitors, staff worked through these processes and couldn't account for one person at closing time. Despite working through camera footage, making multiple calls and texts to the contact number we had on record, we couldn't raise a response and by 5pm the police were called. Eventually the police made contact with the person at 6pm. She hadn't signed out, however she was safe and well.

This example shows that our systems are working. It is highly important that all visitors sign in and sign out while at the Sanctuary

#### WHEELCHAIR DONATED

We now have a wheelchair available for visitors to use on accessible tracks in the Sanctuary.

A volunteer has kindly funded a new wheelchair for the BWST; the donor is keen to support those in the community with mobility difficulties.

Access Mobility, located in Richmond also supported the chair by offering a good discount. The Brook Sanctuary should be accessible to all who want to experience this unique place- our new wheelchair will help to make this happen. The chair will reside at the Visitor center.

# SOFA WANTED FOR THE

VISITOR CENTER

We are on the lookout for an outdoor 2 seater sofa and 2 chairs set, in good condition - that would be suitable for the Visitor Centre, that you'd be happy to donate. If you do have something that's suitable we'd love to hear from you - please contact <a href="mailto:ve@brooksanctuary.org.nz">ve@brooksanctuary.org.nz</a> or call 03 546 2422

WE NEED YOU!
VOLUNTEER AT THE
SANCTUARY

Join the Brook Waimārama Sanctuary volunteer community and be part of conservation in action! We currently have a variety of volunteer roles available including track cutting and maintenance, wildlife monitoring, fence line monitoring, weed control, events and fundraising, visitor centre hosts, tour quiding and more!



Please get in touch with Sabrina at <u>volunteerconnector@brooksanctuary.org.nz</u> or visit our website for more information. (website link - <u>Become a Sanctuary Volunteer - Brook Waimārama Sanctuary (brooksanctuary.org.nz)</u>

### PLANTS FOUND IN THE SANCTUARY

Chelsea and Henry, two staff members from our weeding team have recently updated the list of plants found in the Sanctuary. It is great to see the list grow from 250 species found in 2014/15 to 329 found today. These species include:

- 237 native species of trees, grasses, shrubs, mistletoe, vines, orchids and trees
- 92 exotic species

This list will help as a reference for our series of plants signage. Chelsea and Henry also provided input in the flora sections of our draft ecological plan.

### RECORD YOUR SANCTUARY OBSERVATIONS ON INATURALIST

The Sanctuary is rich in biodiversity.

iNaturalist (a free app) is a great way to share your observations and enable fellow naturalists and experts to help identify and discuss what you have found.

Check out the Brook Sanctuary on https://inaturalist.pz/ (search for The Brook Sanctuary)

https://inaturalist.nz/ (search for The Brook Sanctuary community project)

There are over 595 observations with 324 different species observed!

Planting team profile eNews September 2023

#### PLANTING TEAM

Early on in the development of the Sanctuary, it became obvious that replanting would be needed. There were open areas which had been cleared of weeds, and areas where the ground had been cleared for the development of the access track. If these were not planted, weeds would have again taken over, or erosion would result.

A group was formed about 2005 to collect plants from the Sanctuary where track makers were clearing tracks. Initially, they were planted directly where needed as well as potted up for future areas. At one point, the pots extended from the Visitor Centre to nearly the Big Dam. Where particular plants were needed, we foraged in the Sanctuary or grew them from seeds which were then potted up. All plants are from the valley or nearby in order to protect the genetic makeup of the region.

When the fence track was being cleared, there were a number of open areas which were planted before the weeds took over. There was also planting around the Picnic Area. In all, well over 2000 trees have been planted. For a time, we received one dollar for each tree we planted. This raised \$600.

Another responsibility has been planting and maintaining all green space and gardens surrounding the Visitor Centre, an ongoing effort as the building has gone through various revisions and development. The space is meant to be pleasant and inviting for visitors as well as being representative of native plants found at the Sanctuary. Signage has been added to indicate various of the species in the valley.

A condition of the resource consent for the fence was that we should plant trees to block the view of the fence from the Motor Camp. There were many problems with this as it was a very weedy area and in addition, many of the trees failed to grow even after numerous attempts. It was then found that a large herd of deer were eating them. Once this was realised, only plants which were unpalatable to the deer could be planted.

The proposed mouse free exclosure area will be planted with trees which are specifically chosen to benefit gecko's, skink's and in time tuatara. (we aren't going for a belt of trees for shade loving plants, but we are letting the sunlight in for the lizards).







#### **BIRD CALL PLAYERS**

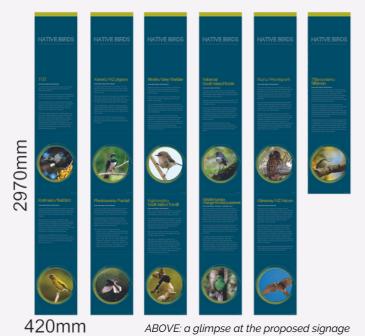
For many years, the bird song buttons in the VC were very popular with children, and a great tool to demonstrate to visitors the different calls you might hear in the Sanctuary. Due to the enhancement and rewiring of the VC, this system no longer worked, and we had to come up with a new exciting system. Inspired by the audio players used in the Remutaka Forest Park; we approached the Remutaka Conservation Trust seeking advice. After some discussion, they offered to build five devices for Brook Sanctuary.

RCT member Alan Thompson who designed and built the players describes them as a bit of classic "number 8 wire" engineering to meet a rather unique need. PVC plumbing pipe for a case, some wooden brackets and a handful of components from the local electronics shop put together in his basement workshop. The players in the RFP have been cranking out bird song for 5 years now and have proven to be reliable in a relatively harsh outdoor environment, not to mention the attention of enthusiastic children!

The bird song players will be located just inside the Sanctuary access point where visitors can enjoy generating bird calls. We have personalised the calls, firstly welcoming visitors to the Sanctuary and then providing instruction on how to play the different calls. The bird calls initially featured will be the tūī, korimako/bellbird, kererū/NZ pigeon,

pīwakawaka/fantail, riroriro/grey warbler, ngirungiru/ South Island tomtit, kākāriki karaka/orange-fronted parakeet, kakaruai/South Island robin, ruru/morepork and the kārearea/NZ falcon.

A big thank you to Alan who kindly put these units together for us!



# HELPING LOCAL SCHOOLS GET TO THE SANCTUARY

One of the biggest barriers for education (ECE and School) groups visiting the Sanctuary is the cost of transport. Thanks to the Rātā Foundation, the Sanctuary can now offer assistance in covering this cost. We have recently secured funding to offer subsidised transport costs. and free educational Sanctuary visits for up to 20 groups from the Nelson and Tasman region.

To take advantage of this offer, simply complete a 'school enquiry form' and an application form will be emailed to you to complete.

https://www.brooksanctuary.org.nz/education-inspiring-the-next-generation/book-a-school-visit

### BIOSECURITY THREAT MYRTLE RUST

#### What is myrtle rust?

Myrtle rust is a leaf fungus that infects plants in the myrtle family. It is native to South America, where it has evolved in parallel with myrtles native there. It disperses its spores via the wind and has blown to New Zealand multiple times.

It threatens our native myrtles by infecting their new growth, it lives within the cells of the plant so it can't be cut out or removed.

#### How do I find myrtle rust?

In spring and summer, it can be found on the underside of leaves, especially new leaves. The fruiting bodies are bright yellow; leaves with a reddish tinge can indicate damage and may have rust underneath.



#### How does it spread?

Myrtle rust can build up in residential areas on exotic plants like feijoas and lilly pilly as well as Lophomyrtus. Spore loads can be high in these areas and can lead to blooms in summer that spread into the wild. It can also be spread by hikers that have brushed up on or walked over infected areas. Unfortunately, once a plant of a vulnerable species is infected, there is little that can be done to save it. Infections will spread to vulnerable juveniles and will affect recruitment of older plants and slowly kill them.

#### What can you do at home?

- Monitor garden plants for myrtle rust like feijoas and the garden variety lophomrytus bullata
- Wash hiking gear between walks using water and soap. Soapy water breaks down spores and disables them from spreading
- · Compost infected plants;
- Never burn an infected plant as this releases spores into the air
- Avoid touching or walking through infected areas when going from place to place
- Do not plant lilly pilly; this species is exceptionally susceptible to myrtle rust. Removing susceptible plants can help stop the spread into the sanctuary and wider natural areas.

#### Myrtle that can be found in the Sanctuary

- Mānuka (Leptospermum scoparium)
- Kānuka (Kunzea ericoides)
- Climbing rata (Metrosideros colensoi)
- White rata (Metrosideros diffusa)
- Akatea (Metrosideros perforata)
- Southern Rata (Metrosideros umbella)
- Rōhutu(Neomyrtus pedunculata)
- Rōhutu (Lophomyrtus obcordata)



Avoid planting lilly pilly







#### How to prevent a spread in the Sanctuary?

- Keep an eye on our myrtles where you see them.
- Maintain gear hygiene- walking shoes, tools etc.
- Report any suspicious fungi on myrtle sightings to Chelsea with added photo and location <u>Chelsea.Haley@brooksanctuary.org.nz</u>

# BROOK BUSINESS CLUB PROFILES



Taylors Contracting is a family-owned business established in 1971 that employs more than 150 people. It is based at its purpose-built facility in Brightwater and has a regional office in Christchurch. Taylors delivers high-quality infrastructure solutions that work for people and the environment including civil construction, forestry roading and infrastructure, rivers and environmental maintenance, and quarry products and services.



Locally owned. Friendly people. Great advice.

Paper Plus Nelson are locally owned and operated, proudly serving the Nelson community for over 35 years. Specialising in books, stationery and gifts, as well as providing essential New Zealand post services.

#### **NEW SPONSOR PROFILE**

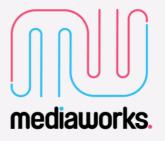


We are very pleased to announce a new bronze sponsor to the Sanctuary whanau. Digitella specialise in creating bespoke digital solutions for businesses looking to level up their online activity, and we take immense pride in educating our clients along their journey to digital success. Whether it's Google ads, paid social media, email marketing, search engine optimisation, or web analytics that you're interested in, our team of platform specialists are great at identifying the best channel mix and strategy for your business goals. When working with us, you can consider us an extension of your team - ready to assist and effortlessly merge with your company to enhance business intelligence and drive meaningful results. Daniel Raats at Digitella will manage our Google account. The first project involves an advertising campaign to promote the Sanctuay's Open day set for late October.

#### **UPCOMING PROMOTIONS**

#### **MEDIAWORKS**

We entered into a promotional agreement with Mediaworks for 12 months starting May this year to utilise three of their seven radio stations in the Nelson and Tasman region. The team have been great to work with and have changed the messaging to support the Sanctuary's plans like events. We will see their support being part of the upcoming Open day.



#### **FLAGTRAX SIGNS**

Thanks to support from the Nelson airport and Nelson City Council, we will be rolling out a series of promotional flags to help promote people to visit the Sanctuary. The public should see these flags flown at the airport and over the summer months on Nelson city owned flag poles throughout the Nelson CBD area. Downing design generously produced a series of initial four designs depicting the species in the Sanctuary and we hope more people will visit the Sanctuary.









#### **MAKESHIFTSPACES**

With support from makeshiftspaces, who are dedicated to brightening up the Nelson CBD with artworks and promotional displays, the Sanctuary will utilise part of our Dean Raybould art collection to increase public awareness. The interesting display will be seen soon in Bridge Street and hopefully stimulate more people to come and visit the Sanctuary.



#### **UPCOMING EVENTS**

26 October	Brook Waimarama Sanctuary Trust Annual General Meeting Venue: town office 1pm
29 OCTOBER	Sanctuary Open Day, 10am- 4pm. Free entry
5 NOVEMBER	Date 5 November 2023 (TBC) Three waters discussion with Dr Mike Joy
15 DECEMBER	Volunteer sausage sizzle, at the Sanctaury , from 4 pm

# SANCTUARY OPENING HOURS SEPTEMBER-OCTOBER

26 September-8 October, Tue-Sun, 9am-4pm 13 October-31 October, Fri-Sun, 9am-4pm Labour Day, 23 October, 9am-4pm



#### **OPEN DAY- 29TH OCTOBER**

The much-anticipated Brook Waimārama Sanctuary Open Day is happening on Sunday 29 October from 10am – 4pm!

Get the family together for Nelson's Big Green Day Out and celebrate Aotearoa's native flora and fauna in an idyllic setting. Enjoy delicious street food, learn about key conservation milestones, bask in the beauty of the pristine Waimārama stream, take a stroll along peaceful bush tracks or simply sit back and enjoy the birdsong!

This year our theme will be Freshwater Eco-systems, with some unique activities planned for all ages.

Thanks to the support of Tasman Bay Guardians and Nelson City Council, our Freshwater pop-up education space will be a place where you can discover information on everything from macro-invertibrates to measuring water quality and understanding our native fish species. There will also be workshops, a presentation on the recent Powelliphanta translocation as well as our usual activity offerings in the KidZone and of course inside the Sanctuary itself.

With Free Entry, the Big Green Day Out is the perfect educational and fun day out for everyone.

If you'd like to get involved through volunteering at the event or supporting the event in some way, please contact <a href="mailto:events@brooksanctuary.org.nz">events@brooksanctuary.org.nz</a>

### LOTS TO DO THIS SCHOOL HOLIDAY

School holidays are here, and we are always excited to see tamariki buzzing around the Sanctuary! From investigating the many wētā motels, to tasting the delicious honeydew from the beech scale insects, you could easily spend many hours exploring.

Don't forget to pick up one of our complimentary Nature Passports at the Visitor Centre at the start of your visit.

For beautiful colouring pages of the Sanctuary and the many taonga species that inhabit it, visit our website: <a href="https://www.brooksanctuary.org.nz/education-inspiring-the-next-generation/colouring-in">https://www.brooksanctuary.org.nz/education-inspiring-the-next-generation/colouring-in</a>



These beautiful illustrations were lovingly drawn by the very talented artist Steffi Kuenstle. Check out her Instagram <u>muci\_illustration</u>.

Also, we are launching a brand-new school holiday programme Te Taiao Rangers in collaboration with Natureland. It will be held at the Sanctuary on the 29th September and the 6th October.



# RECENTLY SEEN IN THE SANCTUARY

If you have some great photos taken in the Sanctuary that you'd like to share in future issues of eNews send them to: info@brooksanctuary.org.nz

Tūī

Prosthemadera

novaeseelandiae

© Jenny Meadows





Warou Welcome Swallow *Hirundo neoxena* © Jenny Meadows

Kākāriki karaka Orangefronted parakeet *Cyanoramphus malherbi* © Sean McGrath





Kārearea New Zealand falcon Falco novaeseelandiae © Sean McGrath

Kakaruai South Island Robin Petroica australis © Rebecca Bowater





Misty forest © Chris Bernard







Giant Moss Dawsonia Superba © Chris Ecroyd

#### RED ADMIRAL BUTTERFLY

#### KAHUKURA VANESSA GONERILLA

The red admiral butterfly or kahuhura, which means 'red cloak' in te reo Māori, is one of New Zealand's loveliest endemic insects.

Several generations of eggs are laid over spring and summer, preferably on the endemic tree nettle ongaonga, though the exotic scrub nettle Urtica incisa will do in a pinch. Eggs are laid singly, typically on a leaf near its stalk and often on the side of a stinging hair. They are green and barrel-shaped with 9 vertical ribs. Eight to nine days after the egg is laid the larva eats a hole in the top and climbs out. After the first 10 days of grazing the caterpillar is 2.5mm long. The caterpillars undergo 5 instars, which are the periods between moults. They are initially dull brown with white specks and a black head, but change colour with each moult to better enhance their camouflage. Spines along their backs, also known as setae, grow from small and simple to long and branched. For added protection against the elements and predators, in case living among stinging nettle is not enough, caterpillars make tents with folded leaves held in place with silk. When they have eaten themselves out of house and home, they move to a new leaf and repeat the process. By 4-6 weeks of age, the caterpillar has grown up to 36mm and is ready to pupate. Pupa vary in colour, depending on the palette that provides the best camouflage, from greyish-yellow to purple-brown with metallic gold spots. After pupating for 2-3 weeks, the beautiful 'red cloaked' butterfly, or imago, emerges. Red admiral butterflies have a 50-60mm wingspan. Females are larger than males. The imago feed on the nectar of houhere (lacebark) and hebe. Red admiral butterflies are relatively long-lived. Early season generations live 4-6 months while later ones overwinter and may live up to 9 months.

#### Written by Katherine Chamberlain



Photo by Chris Ecroyd