

NEWS FROM THE ALPS

THE ALPS PROGRAM: WORKING
TOGETHER BEYOND BORDERS



Working in all weathers, specialist contractors have spent the last six months gently laying onto the landscape a customised, fire-resistant track up to the Yankee Hat rock art precinct.

LIGHTLY ON THE LANDSCAPE

Looking back, it's easy now to spot this 'silver lining' result. But back in 2020, as Namadgi National Park was still smouldering, no-one would have felt that something good could come out of the fires that had burned through. But that was then, and five years later we do have something to celebrate - a very special, better-than-before Yankee Hat Track leading to the only accessible rock art paintings in the ACT. It's been a complex project, delivered with skill and care. The result is a great outcome, not only in terms of fire future-proofing, but in an enhanced



experience for those that take a wander of discovery along the Yankee Hat Track. Adam Henderson, Ranger in Charge at Namadgi who project managed the rebuild, tells the tale.

“In 2020, when it became likely that the nearby Orroral Valley fires would spread to the Gudgenby Valley, we were frightened that the existing wooden viewing platform could catch alight and damage the rock art.” So, a team was sent in armed with the tools to pull it apart and remove the posts. “Within a week we knew it had been the right call to make: the fire front moved right through the area, burning adjacent vegetation as well as the wooden boardwalks lying further back up the track.”



The rebuilt track meets the new viewing platform in a way that sits more gently in the space.

Six months later - to everyone's relief - a post fire archaeological assessment showed there was no damage to the rock art. “The fire had come within metres but the rock art had been protected by the way it sat deep into an overhang with a large rock in front.” (As it turns out, there was luck in the way the rock art wall was facing relative to the fire: soberingly, the outer face of the shielding rock did show signs of fire damage in the form of exfoliation.) The track was closed and a cage placed over the rock art to protect it, ready for the next steps.

At this point, the two-year-long business of rebuilding the Yankee Hat Track and the rock art precinct began. Workshops were held with local Aboriginal representatives facilitated by heritage consultants, and environmental and heritage approvals were granted. A post-fire recovery grant was sought from the Commonwealth Government, then designs and plans were drawn for the boardwalk sections, signage and the viewing platform. When construction began in February this year, Adam was on-site most days until the work was completed in July, which isn't surprising given the complexity of the build and the sensitivity of the site.

“We went in aiming to build-back-better, using fire resistant materials – steel and rock. As part of the walking-track rebuild, we included a steel footbridge and board walks over the swampy areas. Timber steps were replaced with rock, and way-finders replaced in steel.” But the jewel in the rebuild was

always going to be the viewing area in front of the rock art. The challenge here was to install something that would leave no trace or disturbance if it needed to be removed in future. Something that would not burn. A structure that would improve the viewing experience and protect the rock face itself.



The stone and steel fabric of the new footbridge and boardwalks will better withstand future fires.

“Steel sections were custom designed leading to and from a steel platform which sits free of everything, on a series of steel plates. No soil was excavated: we didn’t even disturb the soil surface. Visitors now walk one-way past the art behind a handrail that has been carefully designed to prevent anyone from touching the art.”



Steel plates support the new viewing platform so that it stands free of the rock and leaves the soil free of disturbance.

Specialist contractors fabricated, transported (across rough 4WD tracks) and installed the steel. “It was a labour of love for them. They worked in all weathers, adjusting the plan to suit the site’s gradient, working carefully and closely around the boulders. The response has been wholly positive: local Ngunnawal representative Wally Bell inspected the works on completion and declared them to be “very impressive”. Everyone involved has a great sense of achievement, providing a standard of track that will protect the environment, carry many people and exist into the distant future.”



The last moments of the old viewing platform being removed ahead of the advancing fire.

YANKEE HAT ART - AT A GLANCE

Evidence shows that Aboriginal people have lived in the Canberra region for at least 25,000 years. The Ngunnawal people are the Traditional Custodians of the ACT, which was also a significant place for other people and families with a connection to the region. At Yankee Hat, carbon dating of the campsite deposits show that Aboriginal people began using the shelter more than 800 years ago.

The shelter at Yankee Hat is a granite boulder which has been rounded off and under-cut by weathering: water is kept off the art by the high roof overhang.

The white paint used at Yankee Hat is clay. The red paint is based on iron oxide or ‘ochre’. The different shades of red in the paintings may be the result of paint weathering or may have been deliberately caused by mixing some white clay with the ochre. Clay and ochre were normally mixed with a binding agent such as water, sap, blood or animal oils. The Yankee Hat figures represent animals and abstract and human-like figures, painted over a period of hundreds or possibly thousands of years. The earliest paintings are faint dark red/brown. The most recent are the well-preserved white and orange/red ones.



Sensitive design shows in the detail where steel meets the rock, bringing people up to the rock art face at a safe distance: the art can be glimpsed at right but is best experienced by walking the track.

CRAYS IN THE ALPS

What follows is a snapshot moment, showing hero-science in action. For the last ten years Matt Beitzel and his ecologist colleagues have been steadily gathering information about crayfish living in the Australian Alps. It's fascinating work which is also hugely practical – the more information Alps parks agency staff have on these animals, the more likely they can help protect them against the usual trilogy of stresses: feral animals, drought and fire.

Matt, an aquatic ecologist with the ACT Government, and his colleagues have been studying spiny crayfish – *Euastacus* – which live where there is permanent water in the bogs and fens and in alpine streams. These crayfish are part of the interconnected living boggy landscape that gathers, filters and slowly releases the water we drink. Protecting this functioning landscape is a given, so it makes sense to learn as much as we can about these crayfish and the role they play in wetland health.

Matt explains that many species of spiny crayfish exist across the Great Dividing Range and along the south-east coast of Australia, with 27 new species of *Euastacus* found by colleagues just recently in a 2020 post-fire survey. Matt's work in the alps is focussed on just two known species: *Euastacus crassus* and *Euastacus rieki*, which are found generally favouring differing watery habitats: "*E. crassus*, Alpine Crayfish or Murunung narrawi (cold crayfish in Ngunnawal) in the forested areas of Tidbinbilla and at the northern end of Namadgi, and *E. rieki* in the bogs, fens and streams to the south into Kosciuszko National Park."

But the discovery of the 27 new species also revealed a major adjustment in distribution of both *E. crassus* and *E. rieki*. "We believed they had a much larger distribution range, but the new study has chopped that back significantly. Areas over the border in New South Wales that we thought were inhabited by *E. crassus* are actually populated by an undescribed species, and our known range of *E. crassus* has therefore been reduced by 80%, making the animals more vulnerable."

The current trapping and testing program aims to identify distinct populations: so that if drought or fire threatens a colony, land managers will have a clear idea of which species is being affected. In future

there may be programs of assisted recovery, where all that's being learned about these crayfish can be used to re-establish populations.



Euastacus crassus: pic by Mark Jekabsons.

WHAT YOU NEVER KNEW ABOUT CRAYFISH

These crayfish are large and females need to grow to at least 15cm before breeding. They are also long-lived, taking six years to reach maturity and living to at least 20 years. Mating in late autumn, the female carries 60 to 100 orange eggs under her tail, sitting in the burrow under the snow, waiting until late spring before releasing the hatched juveniles. Burrows are dug deeply, often with multiple entrances, into the bogs or the banks of streams; sometimes relatively shallow bolt-holes are dug, possibly to provide shelter when crayfish are too far from the home burrow.

These animals are predominantly nocturnal, eating a wide range of vegetation and detritus on the bottom of ponds and streams; it's thought they help to keep the bog pools open.

Scientists trap crayfish at night with hand nets or by setting traps baited with fish.

One way of distinguishing one species from another is via the structures inside the gastric mill: a powerful series of grinding plates within the crayfish stomach that effortlessly smash apart woody plant structures including seed pods.

When crayfish moult, they must leave their burrows to shed their skins; the calcium in their skins is absorbed and stored in a stomach stone, then released to harden the new shell.

E. rieki has recently been listed as endangered under EPBC Act and it is hoped *E. crassus* will be listed soon.

WHAT CRAYFISH DON'T LIKE

They don't like being in the open as they are preyed upon by species such as ravens, so they move mostly at night and are known to use tunnels through grassy tussocks used by other animals like the Broad-toothed Rat.

Fire removes the cover in the bogs and exotic predators can move in. Foxes also clearly find the

crayfish good to eat as 80% of fox scats picked up after fire were found to contain remnants of crayfish. Post fire, heavy rainfall also washes sediment into streams which smothers food at the bottom of streams and fills the crayfish burrows.

Pest species such as introduced deer, horses and pigs damage streams and bogs, destroying crayfish habitat.

Drought and shifting rainfall - thanks to climate change - alter the presence of permanent water needed for the crayfish to live.



Euastacus rieki : pic by Mark Jekabsons.

TELL US YOUR STORY: We are always looking for stories to include in this newsletter. What's happening in your part of the Alps? Have you built a new bridge, cleared a track, managed pests, done vegetation restoration works or worked on threatened species recovery. Or have you been for a particularly fabulous walk and would like to share your experience? Why not send Elaine Thomas a photo and a quick line and she'll take care of the rest. We're always happy to hear from agency staff members, volunteers and of the general community.

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