

# Cape Turnagain pimelea moth

*Notoreas perornata* 'Cape Turnagain'

## The look alike



Adult moth. Kay Griffiths; The Conservation Company

## Quickfacts

A moth only known from Cape Turnagain on the southern Hawke's Bay coast

Feeds on native daphnes, *Pimelea* spp., that are thought to be rare at the site

Closely related to a pimelea moth found at nearby Castle Point

## Similar, but different

The Cape Turnagain pimelea moth *Notoreas perornata* 'Cape Turnagain' is a yet to be named species only known from one site, at Cape Turnagain in the southern Hawke's Bay. It inhabits a coastal turf community, which throughout New Zealand have been identified as a Critically Endangered naturally uncommon ecosystem, and the area the moth inhabits is less than 1 hectare in size. This site is a steep, naturally protected site, but is not legally protected.

The Cape Turnagain pimelea moth is a Geometrid moth that belongs to the *Notoreas perornata* species complex, a group of eight similar-looking moths which are currently all known by the same scientific name, *Notoreas perornata*, but scientists think each of the eight may be different enough to deserve their own name. In the interim they are known by their tag names as indicated by the 'Cape Turnagain' epithet. Previous taxonomic work had identified *Notoreas perornata* 'Cape Turnagain' as a subspecies of *Notoreas perornata*, however a lack of genetic distinctiveness in the *Notoreas perornata* complex, especially the North Island populations, was obtained in that study, and



therefore further genetic work is recommended. The *Notoreas perornata* complex is described as “..a spectacular example of rapid radiation and geographical polymorphism, and represents a flagship group to highlight the need for conservation of vulnerable coastal communities...”. The genus *Notoreas* in New Zealand is considered to contain 17 formally named species, and a further 18 possibly undescribed species or subspecies. The eight *Notoreas perornata* ‘species’ are each found in a discrete coastal area of New Zealand. *Notoreas* moths are a spectacular orange colour, and fly close to the ground (<0.5m), being active by day when air temperatures are above 12-15°C. Like butterflies, they hold their wings together above their bodies when resting.

The Cape Turnagain pimelea moths lay their eggs exclusively in the developing buds of the prostrate native daphne shrub *Pimelea* (both *Pimela carnos*a and *Pimelea prostrata* subsp. *prostrata*, and hybrids between these two). After 10-14 days the eggs hatch and the young caterpillars mine inside their host’s leaf bud. The caterpillars grow to approximately 16mm long and are green or pink in colour and larger caterpillars are often found in the loose leaves under the *Pimelea* shrub during the day and emerging to feed on the leaves at night. The pupae build a cocoon from soil and debris in the shallow soil underneath the *Pimelea* shrub. Adult moths hatch twice a year (bivoltine): once in October-November, and again in March-April.

A large part of Cape Turnagain, including the area inhabited by this moth, is protected in a QEII covenant and the invasive pampas grass *Cortaderia* sp. has been controlled in this area by Tautane Station since 2011.

Three surveys of the site in 2016 and 2017 by Kay Griffiths of The Conservation Company with support from landowners and the Hawke’s Bay Regional Council, found very few moths or caterpillars of this species (the most individuals seen at any site was 6), and that it did not occur in all areas of suitable habitat.

## What next?

The threats to the survival of the Cape Turnagain pimelea moth are:

1. Only being found at one site, that isn’t formally protected.
2. Potential damage to their habitat because of random events, such as landslips.

The habitat at Cape Turnagain is probably reasonably secure as this is a naturally wild place and protected by its steep nature. The steep nature also produces a number of slips and debris piles which are the natural habitat of the *Pimelea* plants that host this moth. The exact distribution of the moth in this area is not well known and mapping requires further survey effort and monitoring of the population is advisable. A careful

eye should be kept on the site in case a new weed species (such as pampas grass *Cortaderia* species) arrives that could swamp the open bare areas preferred by *Pimelea*.

Mapping the distribution of the Cape Turnagain pimelea moth is likely to cost c. \$15,000 and monitoring the population is likely to cost \$5,000 every five years.

## More information

Webpage: Landcare Research: *Notoreas perornata*. [Link](#)

Publication: A Photographic Guide to Moths & Butterflies of New Zealand. By Robert Hoare. New Holland Publishers, Auckland, New Zealand.

Article: Discovering New Zealand's Gorgeous Moths. By Brian Patrick. In: Butterflies and Moths of New Zealand. Issue 12 Autumn 2015. Moths and Butterflies of New Zealand Trust. [PDF](#)

Scientific paper: New Zealand's naturally uncommon ecosystems. In Dymond JR ed. Ecosystem services in New Zealand – conditions and trends. Wiser SK, Buxton RP, Clarkson BR, Hoare RJB, Holdaway RJ, Richardson SJ, Smale MC, West C, Williams PA. Manaaki Whenua Press, Lincoln, New Zealand, 2013.

Scientific paper: The Conservation Status of New Zealand Lepidoptera. By Ian Stringer, Rod Hitchmough, John Dugdale, Eric Edwards, Robert Hoare & Brian Patrick. New Zealand Entomologist Vol. 35 (2), pages 120-127, 2012.

Scientific paper: Taxonomy and conservation of allopatric moth populations a revisionary study of the *Notoreas perornata* Walker complex Lepidoptera Geometridae. By Brian Patrick, Robert Hoare and Birgit Rhodes. New Zealand Journal of Zoology Vol. 37 (4), pages 257-283, 2010.

Scientific paper: Conservation Status of the New Zealand Lepidoptera. By Brian Patrick and John Dugdale. Science for Conservation, 2000. Department of Conservation. [PDF](#)

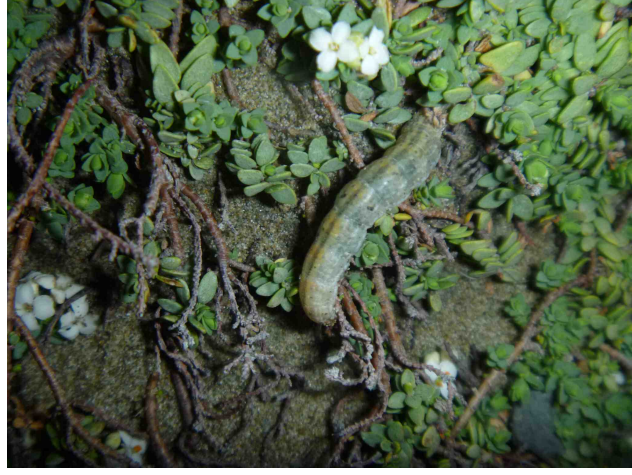
Article: Coastal moths: in place of butterflies. By Brian Patrick. Forest and Bird Magazine 289, 1998.



# Photos



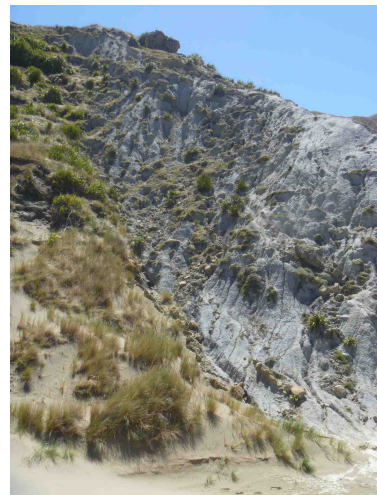
Moth beside *Pimelea* shrub. Kay Griffiths, The Conservation Company



Late-stage *Notoreas* caterpillar feeding on *Pimelea* leaves at night. Kay Griffiths, The Conservation Company



*Pimelea* shrub growing on eroding papa slope. Kay Griffiths, The Conservation Company



*Notoreas peromata* 'Cape Turnagain' habitat. Kay Griffiths, The Conservation Company

This webpage represents the views of the Endangered Species Foundation of New Zealand and not necessarily those of other individuals or organisations involved in the conservation of this species.

Have a comment on this page? Send it to us [info@endangeredspecies.org.nz](mailto:info@endangeredspecies.org.nz)