

An assessment of the lizard fauna on the Fôret a Nothofagus.

**Cygnet Surveys & Consultancy
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1. INTRODUCTION

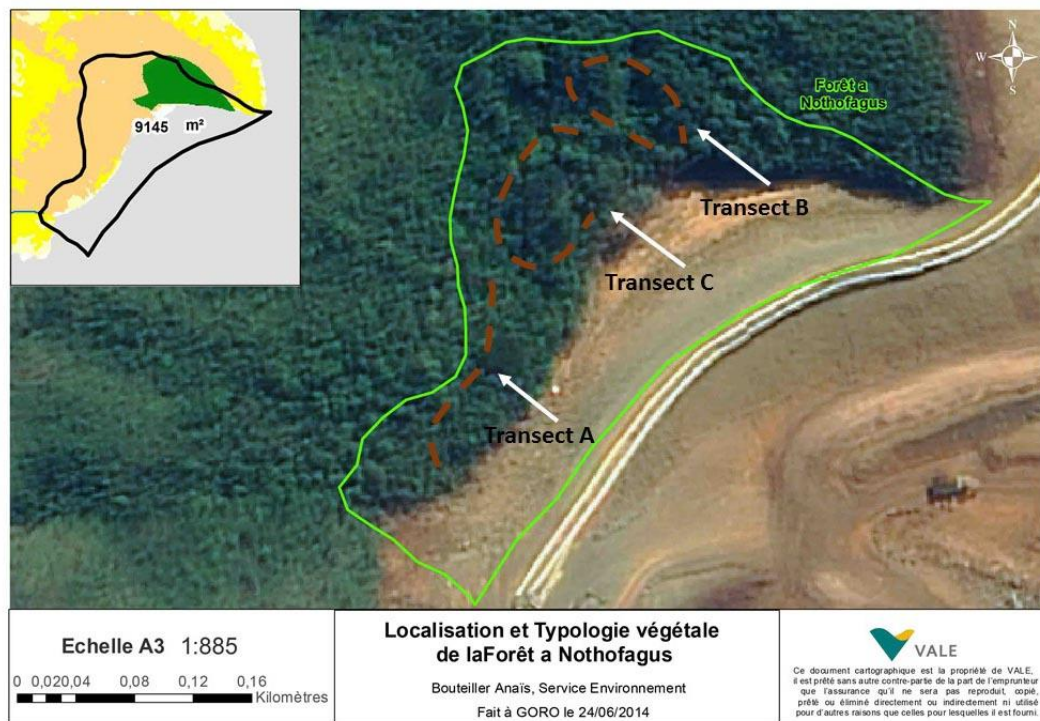
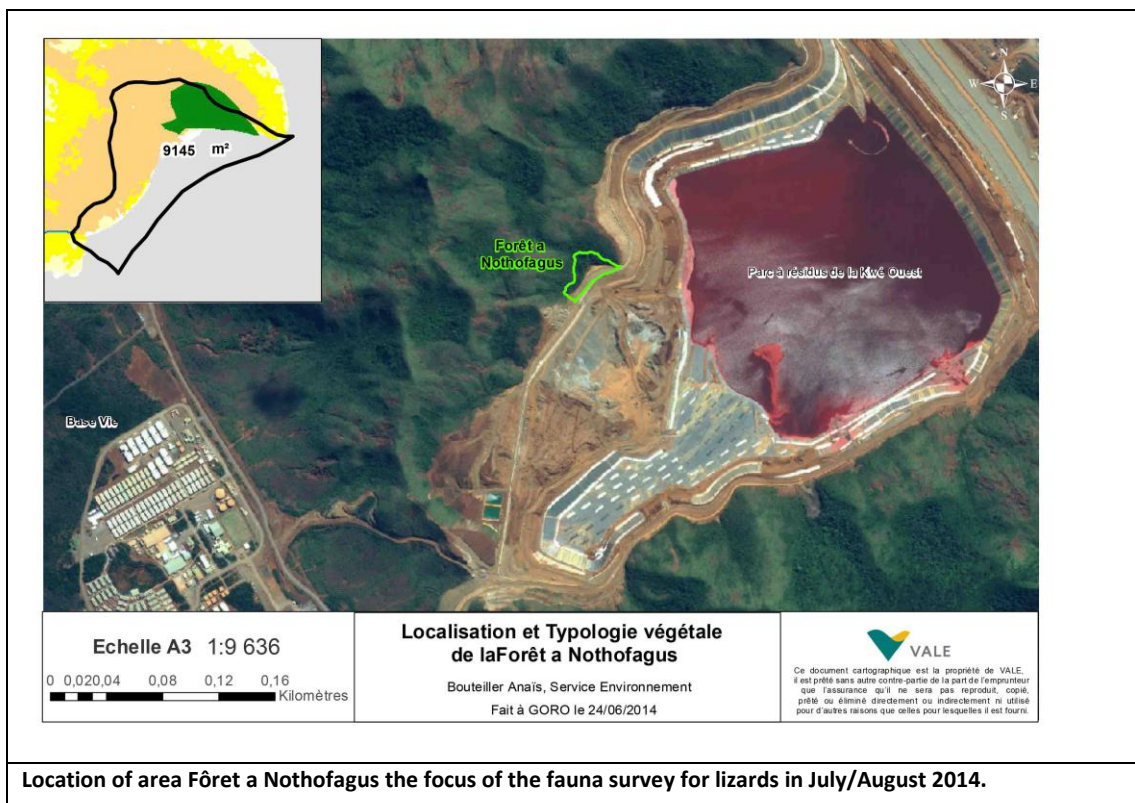
Cygnnet Surveys and Consultancy (CSC) were contracted by Vale Nouvelle-Calédonie to provide an expert assessment of the lizard fauna likely to occur on the area associated with the development of the Fôret a Nothofagus in the area KWRSF of Zone 1, and identify the potential occurrence of sensitive species or habitat of conservation significance for lizards on the area.

A number of studies have been commissioned by VN-C to investigate the lizard fauna of the Goro Plateau. The nature of these studies has been to establish monitoring sites for lizards (Sadlier & Swan, 2008), to inventory the lizard fauna in the areas of mine development (Sadlier & Swan, 2009a; Sadlier & Swan, 2010a; Sadlier *et al.*, 2011a), and to inventory the lizard fauna of proposed areas for preservation (Sadlier & Swan, 2009b and Sadlier *et al.*, 2011d). More recently a number of baseline inventory studies have been commissioned to assess the lizard fauna of concessions held by VN-C (Sadlier & Swan, 2010b & 2010c; Sadlier *et al.*, 2011b, 2011c, 2012, 2013a, 2013b, 2013c, 2014a, 2014b & 2014c).

These studies in combination have identified a rich and diverse lizard fauna of ~25 species in the area of the Goro Plateau and adjacent areas of the Grand Sud. Included are a number of **significant species** which have been identified as of particular conservation concern by virtue having one or more aspects of their biology (habitat preferences, diet, home range, etc.) specialized, and which in combination with their extent of occurrence influences the ability of these species to persist into the future. The richest habitat is humid forest from which 20 species have been recorded. Tall maquis preforest also has a rich lizard fauna, with up to 14 species recorded from this habitat type, whereas open maquis arbustif or herbaceous maquis typically have a low diversity of species and low abundance. As a result of these studies humid forest and maquis forest have been identified as **significant habitats** for lizards in the region.

2. STUDY SITE

This study focuses on the Fôret a Nothofagus in Zone 1 to be affected by works associated with final stages of construction of the containment area KWRSF. The forest investigated is a small and isolated patch located in a shallow gully adjacent to roads and infrastructure.



3. METHODS

The methodology for the survey of the Fôret a Nothofagus followed that used in previous surveys to assess the diversity and abundance of lizard species in forest and maquis habitats in the Grand Sud. These surveys utilized transects of strategically placed glue traps to detect the presence of the majority of day active skink species, and are particularly effective in detecting the presence of secretive species which comprise a significant proportion of the lizard fauna of forest habitats. It is also the only effective method for detecting the presence of skink species in areas with a dense understory and groundcover, or areas of exposed rock. For these reasons it is the primary method used to detect diurnal and secretive skinks in all habitats of the area surveyed.

Three transects were established, each representing a site replicate. At each transect one glue-trap was laid at each of 10 stations (each station 5-8 m. apart) along the transect line. Glue traps were strategically placed under or next to sheltering sites (crevices and cracks created where outcropping peridotite boulders contact the ground, under and next to logs), in areas of litter or amongst surface debris, and under vegetation.

Geckos are usually the less diverse of the two lizard groups present in forest habitat. Geckos are active at night foraging in low shrubs, small trees, or the forest canopy. Timed nocturnal searches of the Fôret a Nothofagus had been previously been conducted as a separate consultancy, and for this reason were not undertaken as part of the present survey.



Typical placement of glue traps in the open (above left) and under a log (above right) in forest habitat.

4. RESULTS

FÔRET A NOTHOFAGUS

The site is bordered on its downslope by the roads and retaining walls that are part of the Zone 1 sediment storage area. The site is extremely degraded by dust on the vegetation and run-off sediment in the base of the gully.



Area Fôret a Nothofagus. Dense maquis ligno-herbaceous habitat (left) of transect line A, and canopied forest (right) of transect lines B and C.

Habitat type for each replica investigated on the AREA Nothofagus.				
Area	Site	Transect	Habitat (type_n1)	(type_n2)
Nothofagus	Site 1	Transect A	Dense lingo-herbaceous	F
		Transect B	Forest	O
		Transect C	Forest	O

Search effort: one site was surveyed on the area Fôret a Nothofagus in the period 6th – 8th August 2014. A total of 30 trap stations were operational throughout the survey period which comprised two full days and nights.

Species Recorded: no species of lizard were recorded from the three transect lines established on this site. An earlier consultancy recorded the skink *Caledoniscincus austrocaledonicus* during day searches and the gecko *Bavayia septuiclavis* during night searches of the forest area.

Significant species: no significant species of lizard are expected to inhabit the Fôret a Nothofagus.

Significant sites: the Fôret a Nothofagus because of its small size, proximity to development and the extent of degradation to the forest floor and forest interior, is not regarded as a significant site for lizards.

5. SUMMARY

In southern New Caledonia, the greatest diversity of lizards is found in humid forest habitat (Sadlier & Shea, 2006; Sadlier & Swan, 2009a). The forest habitat investigated during the survey of Fôret a Nothofagus would have been expected to have the small primarily ‘forest’ inhabiting skinks, *Marmorosphax tricolor*, *Sigaloseps deplanchei* and *Caledoniscincus notialis*. The absence of these species from the site could be due to a combination of factors, but indicate the forest is unlikely to have a diversity of species, and for the species that might still present that the level of abundance is likely to be low.

6. ACKNOWLEDGEMENTS

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