

Tiromoana Bush Vegetation Plot Photo Points

Summary of changes visible between April 2006 and April 2009

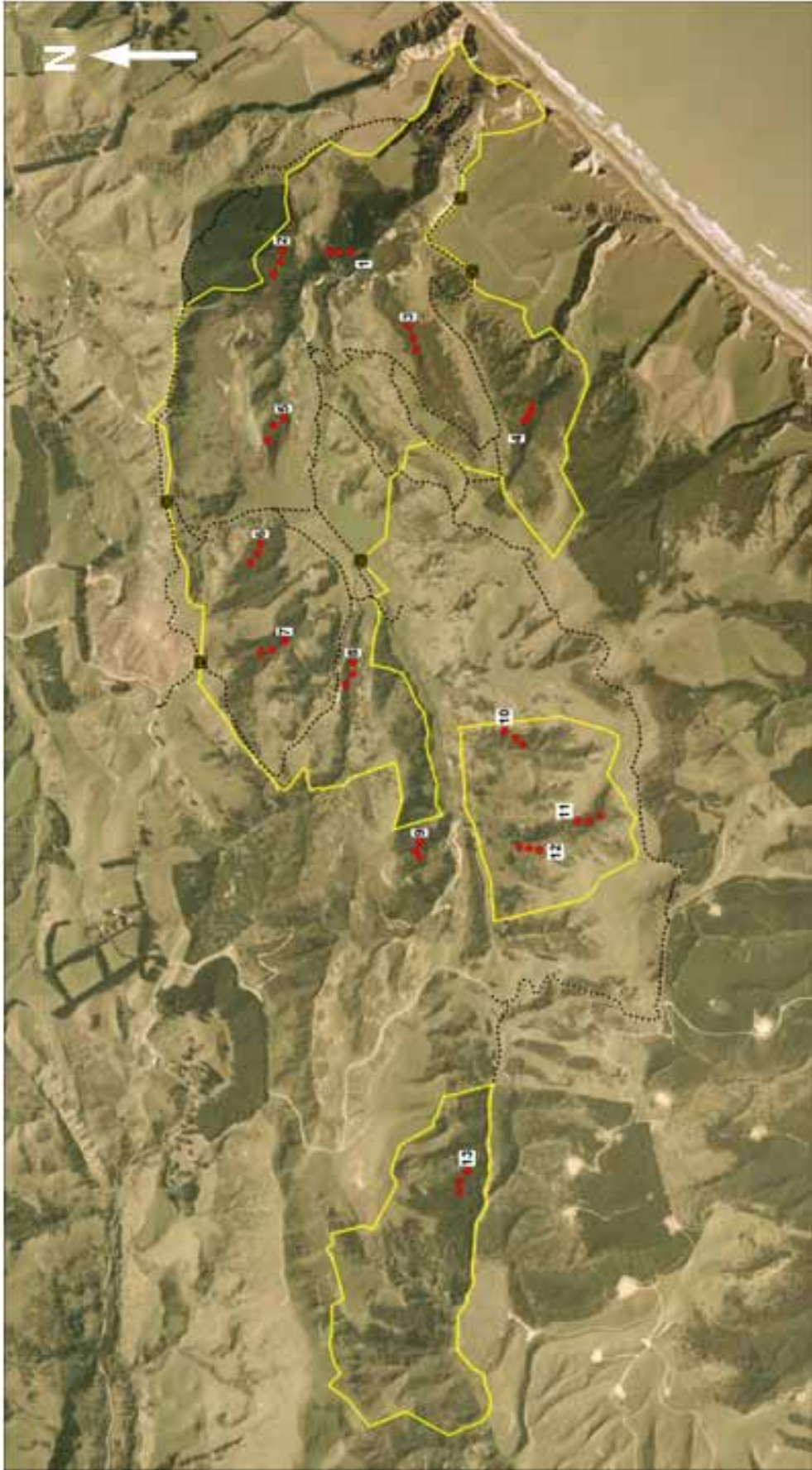
Twenty-six permanent vegetation monitoring plots were established in Tiromoana Bush in March 2006 based on the bird monitoring lines used by Rhys Buckingham. Two vegetation plots were established along each bird monitoring line centred on 2/3 bird monitoring sites. Each plot comprised a 10 x 10 square marked by metal stakes driven into the ground. Where possible, photographs were taken from each corner of the plot diagonally across photo.

The initial photos were taken in April 2006, and the photo points have been rephotographed in May 2007, March 2008 and April 2009. Obtaining good photos has not been easy, as sunny weather results in marked sunlight-shadow contrasts under the forest canopy. This report, the first on the vegetation plot photo points (referred to as VPP), summarises the main changes evident in April 2009. Paired photos for those photo points referred to in the text are appended.

The most obvious change apparent in the April 2009 photos is a marked increase in the condition of the understorey vegetation, most notably through the establishment and rapid height growth of mahoe (*Melicytus ramiflorus*) seedlings, but also through a general thickening of the existing small-leaved shrubs and through some increase in the abundance of ferns. However, in some plots (e.g., VPP11a1) there has been no apparent change in understorey vegetation, presumably because light levels are too low for seedling establishment.

- In some places, especially where mahoe regeneration already occurred (VPP7a1, VPP8a2), dense swards of sapling mahoe are now present.
- Even in stands where there were no mahoe seedlings previously, there has still been a response by mahoe (VPP4b1, VPP6a1).
- In parts of Tiromoana Bush, especially in the oldest kanuka stands, an understorey of the shrub *Helichrysum lanceolatum* was present prior to stock removal and this has also responded by thickening up and increasing in height (VPP2a1).
- Other understorey species have also increased in vigour with the removal of grazing such as ongaonga/tree nettle (*Urtica ferox*) (VPP13b2).
- There has also been a response in forest floor ferns such as *Polystichum richardii* and *Asplenium flabellifolium* at some sites (VP9a3).

David Norton
19 April 2009



Location of Tiromoana Bush permanent vegetation plot lines.



VPP7a1 (top – April 2006, bottom – April 2009) – dense mahoe regeneration from sparse seedlings present initially. This site is located close to the bottom of a gully.



VPP8a2 (top – April 2006, bottom – April 2009) – dense mahoe regeneration from sparse seedlings present initially. This site is located close to the bottom of a gully.



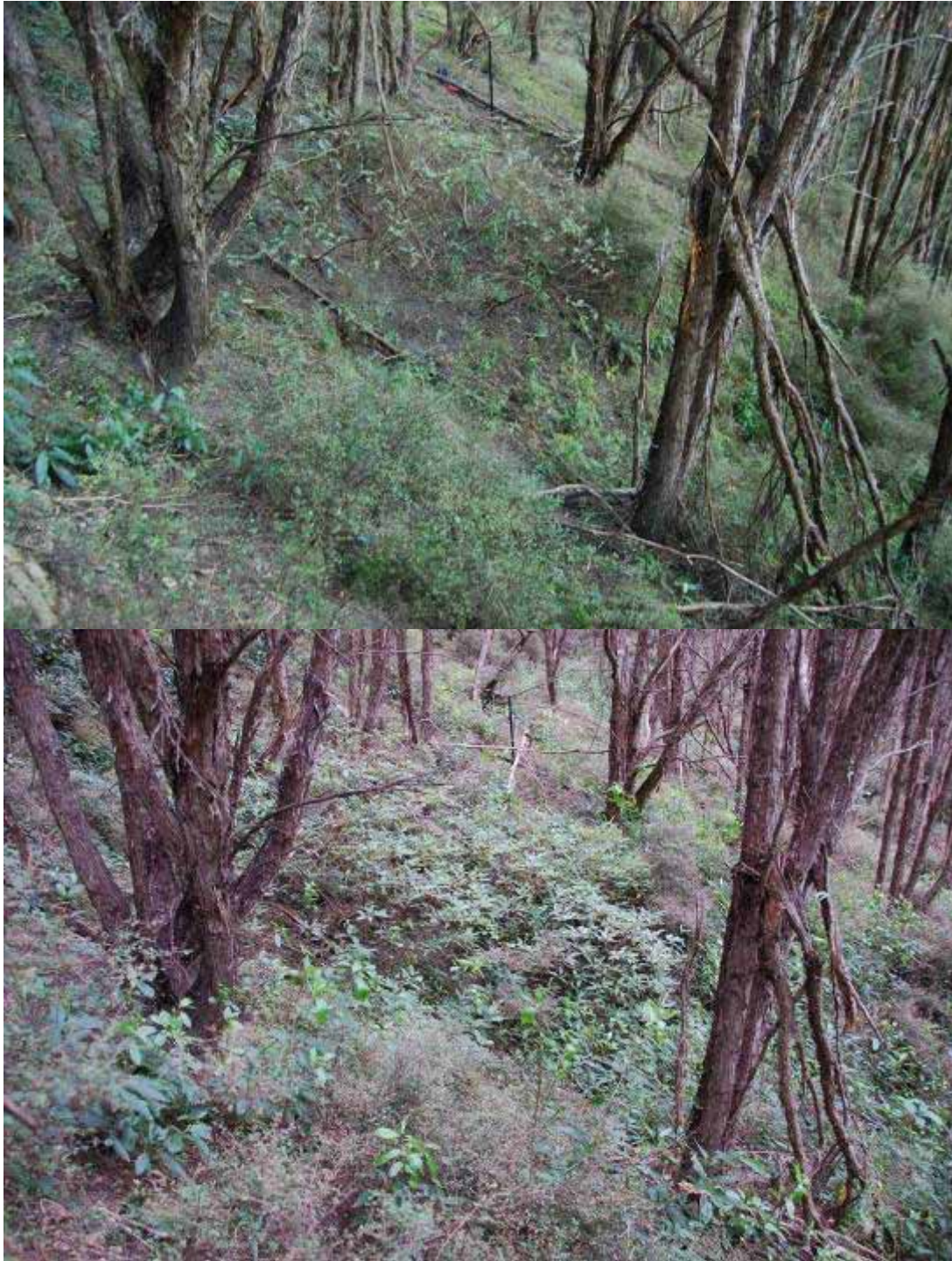
VPP4b1 (top – April 2006, bottom – April 2009) – scattered mahoe seedlings establishing amongst shrubs of *Helichrysum lanceolatum* (mid-slope).



VPP6a1 (top – April 2006, bottom – April 2009) – scattered mahoe seedlings in a site totally devoid of this species three years previously (mid-slope).



VPP2a1 (top – April 2006, bottom – April 2009) – strong response of *Helichrysum lanceolatum* both in spread and height, as well as mahoe.



VPP13b2 (top – April 2006, bottom – April 2009) – ongaonga recovery (centre of photo) and mahoe regeneration.



VPP9a2 (top – April 2006, bottom – April 2009) – increase in fern (*Polystichum richardii*) abundance in the foreground and middle distance.



VPP11a1 (top – April 2006, bottom – April 2009) – no obvious change in understorey vegetation but note the very high stem density of kanuka.