Hamilton Field Naturalists Club's Presentation to Southern Grampians Planning Scheme Amendment C36 Panel hearing 7 March 2018

Hamilton Field Naturalists Club – List of tabled documents

Item:

1. Recent history of Harman Valley flow (from 1999 to July 2016)
2. Panorama of Harman Valley from look-out, showing rock-crushed and spread areas as of 13th August 2004
3. Map of Harman Valley volcanic features prepared by Ken Grimes, 2000-2004
4. "Harman Valley volcanic features" text by Ken Grimes, September 2004
5. "Harman Valley Geological Sites": extracts from the Register of the National Estate and Geological Society of Australia's Geological Heritage database entries.
6. Harmans Valley Amendment Background, prepared by DSE, October 2004
7. Draft text for proposed ESO for Harman Valley prepared by DSE, January 2005
8. Eastern part of Planning Scheme Map 42ESO, pdf prepared by DSE, January 2005
9. Western part of Planning Scheme Map 42ESO, pdf prepared by DSE, January 2005
10. Eastern Section of Item 3 above, showing boundary of SLO proposed in October 2017
11. Mid-East Section of Item 3 above, showing boundary of SLO proposed in October 2017
12. Mid-West Section of Item 3 above, showing boundary of SLO proposed in October 2017

Item 1

RECENT HISTORY OF THE HARMAN VALLEY FLOW
Adapted from an account written by geologist Ken Grimes in July 2016

1999
The Harman Valley Lookout was built on Port Fairy Road, and interpretation signs erected next year.

2004
The initial damage was done in **August 2004**. A large dozer was pulling an equally large roller to crush the surface rock. I suspect they were also ripping and raking the loose rocks. There was a lot of outcry-items in the *Hamilton Spectator* etc.

In **September** Wayne Beauglehole, Land Information Officer, DSE, was involved in preparing maps of a proposed ESO (Environmental Significance Overlay), using maps & information I sent to him.

On **20 October 2004** Geoff Forbes, Senior Regional Planner, DSE, sent me a summary of events and activity up to that date. See attached "*Harmans Valley Amendment Background*."

In this he said: "*...Southern Grampians Shire has approached DSE with a proposal that the area should be protected through the planning scheme. The specific proposal is to place an ESO over the area identified as appropriate of the Harmans Valley Lava Flow*."
and
"*... To date maps have been prepared by DSE Mapping to identify the area proposed to be covered by an ESO within Southern Grampians Shire (refer attached). "*
"... A text for the Schedule to an ESO has not been prepared."
"... The cost of the preparation of the Schedule may be in the order of $5,000."

2005
On **14 January 2005**, Geoff Forbes sent me (and the others mentioned below) two maps showing the proposed ESO area, and a draft text for the ESO (see attached).

On **19 January 2005**, there was a meeting concerning this at the SGSC office involving Geoff Forbes, Tony Augunas (SGSC), Jim Nolan (SGSC), Yvonne Ingeme (DSE, Hamilton) & myself.

On **23 January 2005**, I sent Geoff Forbes a draft text ("*Harman Valley Volcanic Features*"), with appendixes, describing the geological significance of the ESO area, with copies to Tony Augunas, Jim Nolan, & Yvonne Ingeme. This was in response to the draft & maps Geoff had sent me, and matters discussed at the meeting.

I indicated that they would also need input from the archeologists, the Aboriginal groups, and information on the vegetation, etc. I also made some comments on items in the draft "Permit requirements" that Geoff had sent me.

By **June** of that year attention had shifted to the issue of vegetation "Offsets", and that seems to have diverted the activity away from the ESO, as I have no later emails concerning the ESO proposal. I probably assumed it was going ahead, and no further input was needed from me.

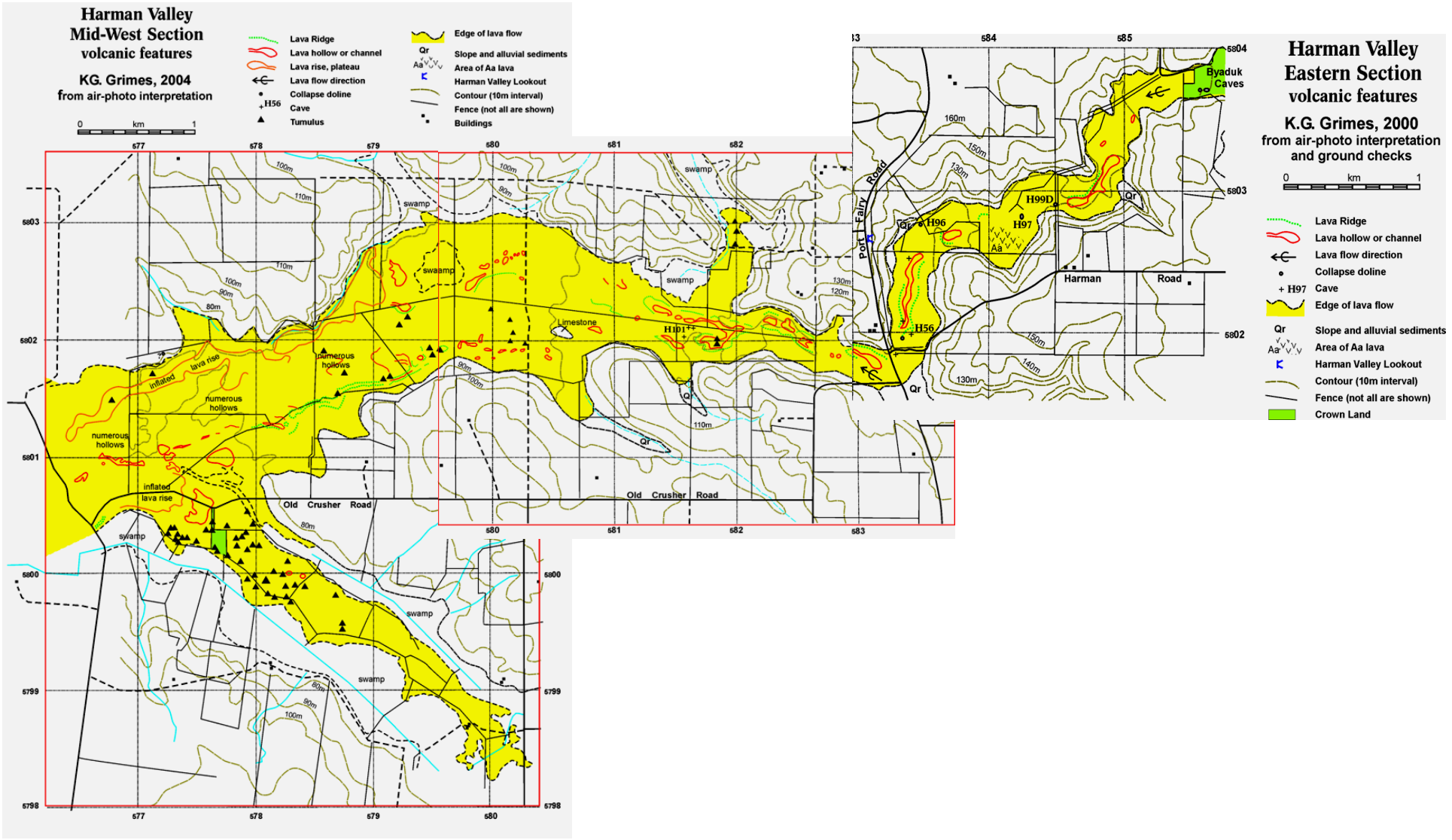
July 2016
I was initially surprised, and then disappointed to hear that there was *no* ESO for the area. It is beginning to appear that although the present activity has had a strong visual effect, this has been mainly in the area already damaged in 2004, and there may not have been much damage outside that area. However, comments by the landowner (*Hamilton Spectator* 21-7-2016, p.3) about putting "*a roller over it to push the rocks back into the ground*" causes doubts. Only a ground inspection would clear up those doubts. I never managed to get onto the ground to check the detailed damage in 2004.

Is there any hope of getting this ESO established at long last?

Item 2


D041573p: Harman Valley, Vic.au. Panorama of valley from lookout, showing rock-crushed & spread areas as of 13 Aug 2004 K.G. Grimes, 13-8-2004
Lava cave H-96 hereabouts
crushed & smoothed
stone raked
Lava cave H-97 hereabouts
"Lava lake"
crushed & smoothed
Start of Lava Channel

Item 3


Harman Valley
Mid-West Section
volcanic features
KG. Grimes, 2004
from air-photo interpretation
Lava Ridge
Lava hollow or channel
Lava rise, plateau
Lava flow direction
Collapse doline
H56 Cave
Tumulus
Edge of lava flow
Qr Slope and alluvial sediments
Aa Area of Aa lava
Harman Valley Lookout
Contour (10m interval)
Fence (not all are shown)
Buildings
Harman Valley
Eastern Section
volcanic features
K.G. Grimes, 2000
from air-photo interpretation
and ground checks
Crown Land
Byaduk Caves
Port Fairy Road
Harman Road
Old Crusher Road
Limestone
swamp
numerous hollows
inflated lava rise
lava rise
H96
H97
H99D
H101
H56

Item 4

Harman Valley volcanic features

Ken G. Grimes, September 2004.
Regolith Mapping, PO Box 362, Hamilton 3300.
Phone 5573 4503

Geological significance

The Harman Valley, 20 km south of Hamilton, contains a long lava flow that ran west from Mt. Napier about 32,000 years ago - which is relatively recent in geological terms as the volcanic province has been active for at least 5 million years. The exposed part of the flow can be followed along the valley for about 15 km to where it disappears beneath the flat sediments of the Condah Swamp at Wallacedale. It continues beneath the swamp towards Lake Condah.

This lava flow is significant as a whole as it is the best example in Australia of a lava flow constrained by a valley. Another local example is the Tyrrendarra flow from Mt Eccles out to the coast, but though that has many good flow features, it is not so obviously constrained, nor is it as easy to see as there are no nearby high viewpoints.

The Victorian Division of the Geological Society of Australia maintains a register of significant Geological heritage sites. The Mt Napier volcano as a whole (site HM-002) has been assigned National significance as a Geological Heritage feature (Rosengren, 1994). This listing includes the Harman valley flow. Three sites within the valley have also been assigned individual listings: The Wallacedale Tumuli (site HM-004) have been assigned international significance as particularly well-formed examples of lava mounds or "blisters". There are few known examples of any sort of tumuli in Australia. The Byaduk Caves (HM-001) and the Great Barrier (HM-036) have been assigned National significance.

However, as well as those specific sites, the valley contains many other volcanic features which can be observed on the ground or from viewpoints on the valley sides. These include the following. Lava channels (left by past lava rivers) with lava levee banks. Stony rises - a local term for hummocky ground resulting from uneven inflation and/or subsidence of the crusted lava surface. Scattered tumuli, in addition to the main cluster listed at site HM-004. Lava inflation ridges and plateau that formed where a crusted flow was pumped up by the pressure of lava below. Pressure ridges along the sides of the flow, or transverse to the flow. Lava lakes, with mounded sides where the lava spilled over at times. At a smaller scale we see various surface structures still preserved such as wrinkled or "ropy" lava surfaces, deep fissures where the crust has been bent and broken, and areas of sharp rubbly "aa" lava.

Lava caves are of two main types: large deep "feeder tubes" that fed liquid lava down the length of the valley, and are now partly drained, and smaller shallow chambers that have drained from beneath the solidified crust. The big tubes (as seen at Byaduk caves) have large, obvious, collapsed "sinkhole" entrances. The smaller caves have small cryptic entrances and are harder to spot - only a few of these are shown on the map. Many caves of both types may not be open to the surface at present - but could open up in the future (especially if disturbed by heavy agricultural machinery!).

Current Status

Except for the easternmost part, and a few small reserves and laneways, the bulk of the valley is private land. Of the three specific sites in the Geological Heritage register, the Wallacedale Tumuli are almost all in private land (the exception is a group of four in a small public reserve and laneway within the main cluster). The Byaduk Caves and Great Barrier are within the Mt Napier State Park at the easternmost end of the valley.

Criteria for identification of the boundary

The accompanying maps shows the extent of the lava flow within the valley. This is based primarily on air-photo interpretation with local field checking. In many places the edge of the flow is sharply defined and quite obvious on both the ground and on the photos. However, in some places soil from the valley sides has washed across the edge to form a transitional boundary. Some side valleys have been dammed up by the lava flow and swamp deposits bury that part of the flow which backed up the valley. High points on the buried flow may just show through the swamp, but are not always obvious on the air-photos.

Suggested procedure for preservation of significant parts of the valley

There is no need to prevent agricultural activity over the whole valley! On the other hand we do not want to lose significant features which are not present elsewhere. Ideally, any activity that is likely to permanently damage the features should be preceded by an inspection by a geologist, in company with the farmer, to evaluate the amount of damage that will occur and what will be lost. In many cases it might suffice to mark off a few special areas for preservation and let the rest of the paddock be crushed, ploughed or whatever.

The accompanying maps show features which could be identified on the air photos, or which have been observed on the ground. This is just a preliminary assessment−e.g. many small cave entrances would not be visible on the photos, I cannot even see one quite large entrance which I did see on a ground traverse.

Reference

Rosengren, N., 1994: *Eruption Points of the Newer Volcanics Province of Victoria - an Inventory and evaluation of scientific significance*. Report prepared for the National trust of Australia (Victoria) and the Geological Society of Australia (Victorian division).

Item 6

Harmans Valley Amendment Background October 2004

Prepared by Geoff Forbes, Senior Regional Planner, DSE, October 2004

Harmans Valley volcanic Features and Lava Flow

Harmans Valley, 20 km south of Hamilton, contains a long lava flow feature. The feature was created when lava flowed west from Mt Napier about 32,000 years ago. The exposed part of the flow runs along the valley for about 15 km to where it disappears beneath the flat sediments of the Condah Swamp at Wallacedale. A locality map and a map showing the extent of the lava flow within Southern Grampians Shire are attached.

Harmans Valley is arguably the best example of in Australia of a lava flow constrained by a valley. The lava flow feature contains many other volcanic features including lava caves, lava channels with lava levee banks, stony rises and scattered tumuli. The feature covers land within Southern Grampians Shire, Moyne Shire and Glenelg Shire.

Recognition of the value of the lava flow feature

The importance of the lava flow on a national and international level has been recognised as follows:

- The Mt Napier site (which includes the Harmans Valley flow) has been assigned National significance in the register of significant Geological sites of the Victorian Division of the Geological Society of Australia.
- The Mt Napier volcanic area is recognised in the establishment of the Mt Napier State Park and Mt Eccles National Park.
- Mt Napier and its lava flows, the lava caves at Byaduk and the Wallacedale lava tumuli are listed as a *Listed Place* on the Register of the National Estate.

Current planning control

The Southern Grampians, Glenelg and Moyne Planning Schemes have no specific recognition of this feature.

The trigger action in Southern Grampians Shire

The owner of a parcel of land in Harman Valley commenced rock crushing, rolling and stone raking of the surface of the lava flow on his land, which resulted in a number of complaints being made to Council. Because there is no specific control within the planning scheme to manage works Council applied for an Enforcement Order through VCAT to stop the works on the basis that the works will remove native vegetation. This action is still pending and the owner has agreed to stop work under the Enforcement Order Application is determined by VAT. In the meantime the Southern Grampians Shire has approached DSE with a proposal that the area should be protected through the planning scheme. The specific proposal is to place an ESO over the area identified as appropriate of the Harmans Valley Lava Flow.

Planning Control

Of the available tools in the Victoria Planning Provisions, the most appropriate planning control to protect the Harmans Valley landscape appears to be the Environment Significance Overlay. This provision enables significant environmental features to be identified, and generates a permit for all buildings, works and vegetation removal.

Work done so far

To date maps have been prepared by DSE Mapping to identify the area proposed to be covered by an ESO within Southern Grampians Shire (refer attached). The maps were prepared using information supplied by a local geologist, Ken Grimes.

Officers at Moyne Shire and Glenelg Shire have been advised of the project to date. Moyne Shire has indicated that it would be supportive of some sort of Overlay control over the lava flow area

Further works required
The area within Southern Grampians Shire has been identified. Details on the extent of the lava flow in Moyne Shire and Glenelg have not been mapped yet. A text for the Schedule to an ESO has not been prepared.

Budget implications
If the details of the extent of the lava flow in Moyne and Glenelg Shires are known then this can be mapped by DSE Mapping at no cost. The cost of the preparation of the Schedule may be in the order of $5,000.

It is possible that some funds can be made available from PEC budget to cover the costs of a planning consultant to draft the ordinance provisions of the ESO and to contribute to the costs of the supply of the mapping information.

Lake Condah Sustainability Project
(This project is running parallel and may provide some support)

This project may have some synergies for the Harmans Valley project

Andrew Morrow has advised that

- The Glenelg Hopkins CMA has advised that NHT funding has been received for digital photography of the Mt Napier and Mt Eccles lava flows to enable high resolution terrain modelling for GIS analysis and interpretation. This work aims to allow identification of cultural sites & predict archaeological values on both public and private land, and will also make comparisons to 1947 aerial photography.
- The project identified the need for a Environmental Overlay (which includes the cultural importance of the feature) across the Mt Napier & Mt Eccles lava flows, involving Glenelg, Southern Grampians and Moyne Shires to prevent further land clearance within the lava flow (estimated cost $50000 - potential for a joint project with 50:50 State/ Local Govt funding).

Course of Action
It is recommended that:

- Glenelg Shire be encouraged to support an ESO amendment covering the whole of the Harmans Valley Lava Flow.
- Funds (say $5000) be made available to pay for the balance of the survey for the mapping and for the preparation of the ordinance component of the amendment
- Other sources of funding be explored particularly GHCMA.
- The Southern Grampians Shire, Moyne Shire and Glenelg Shire be prompted to request a Ministerial amendment to place an interim control over the Harmans Valley Lava Flow.

Item 7

SCHEDULE *NUMBER* TO THE ENVIRONMENTAL SIGNIFICANCE OVERLAY

Shown on the planning scheme map as **ESO*2*.**

HARMANS VALLEY GEOLOGICAL FORMATION

1.0 Statement of environmental significance

The Harmans Valley Geological Formation (HVGF) is one of the best examples in Australia of a lava flow constrained by a valley. The lava flow formation contains other volcanic features including lava caves, lava channels with lava levee banks, stony rises and scattered tumuli. The HVGF is listed on the National Estate Register for geological values. The HVGF has been assigned National significance as Geological Heritage feature by the Geological Society of Australia

Within the area of the lava flow a vegetation community has evolved. The area contains the Ecological Vegetation Class (EVC) *Stony Rises Woodland/Stony Knoll Shrubland Complex* which has a bioregional conservation status of endangered and is listed as a priority EVC for protection under the Glenelg Hopkins Regional Vegetation Plan (GHCMA 2000)

Description

Harmans Valley, 20 kilometres south of Hamilton, contains a long lava flow feature created when lava flowed west from Mt Napier about 32,000 years ago. The exposed portion of the flow runs along the valley for about 15 kilometres to where it disappears beneath the flat sediments of the Condah Swamp at Wallacedale.

2.0 Environmental objective to be achieved

To conserve, maintain and enhance the Harmans Valley Geological Formation.

To protect the Harmans Valley Geological Formation from development that will compromise the significance of the geological formation including development that modifies the geological integrity of this feature.

To protect natural environmental processes, maintain bio-diversity and protect natural resources of soil, water, flora and fauna that are particular to the Harmans Valley Geological Formation.

3.0 Permit requirement

A permit is not required to construct a building and fences.

A permit is not required to works being the ploughing of land that has been established for use for agriculture.

Application of the kind listed below must be referred in accordance with Section 55 of the Act to the referral authority specified in Clause 66.04 or a schedule to that clause:

- Subdivision.
- Works.
- Remove, destroy or lop vegetation.

A permit is not required for routine maintenance works on land managed by Department of Sustainability and Environment.

4.0 Decision guidelines

Prior to the responsible authority deciding on an application, an applicant must demonstrate that the proposed subdivision, works or vegetation removal has addressed the following considerations:

- The protection of the significant geological and other natural features of the HVGF.
- The preservation of the amenity of the area and the need to prevent unnecessary intrusive development from occurring in visually exposed areas.
- The need to include conditions on a permit requiring replanting, sowing down or other treatment of any area to be cleared, including fencing, protection and management of remnant vegetation and exclusion of stock and domestic animals.

Reference documents?

Glenelg Hopkins Vegetation Management Plan

Item 8

Eastern part of Planning Scheme map 42ESO – prepared by DSE Jan. 2005 - see pdf HFNC Tabled Document 8

Item 9

Western part of Planning Scheme map 42ESO – prepared by DSE Jan. 2005 **- see pdf HFNC Tabled Document 9**

Items 10-12

Eastern, mid-east and mid-west sections of Item 3, showing boundary of SLO proposed in Oct. 2017 (also included are aerial photos of the valley) – **see HFNC Tabled Documents 10-12**