



SARG Specification for Reptile Survey Refugia



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The SARG Specification for Large-Area Reptile Survey and Monitoring Refugia

1. Introduction

- 1.1. Refugia, or tins, have for many years provided a key tool for reptile survey. They provide a solar-heated refuge for reptiles, whilst offering protection from avian predators. Refugia not only increase the detectability of (predominantly legless) reptile species, they also provide useful waypoints for visual survey transects.
- 1.2. Refugia can be created from many materials, and can come in various shapes and sizes. The purpose of this guide is not to compare the pros and cons of these refugia variables, but rather to specify the material, dimensions and machining requirements for the refugia standard adopted by SARG.
- 1.3. Using a consistent standard for refugia reduces some of the statistical biases associated with herpetological research. Variability in the detection of a species, could be argued to be a factor of refugia size and material. As SARG wishes to provide consistent advice to land managers, and to compare reptile activity across numerous sites, then a refugia standard is a logical means for generating comparable results.

2. Material

- 2.1. Although comparatively heavy and expensive, galvanised corrugated iron is the SARG material of choice, due to its effectiveness and durability when deployed.
- 2.2. The following corrugated iron specification has been adopted as the SARG standard for refugia:
 - Thickness: 0.5mm
 - Profile: 13½/3-inch sinusoidal – 76.2mm pitch
 - Height: 17mm

3. Size

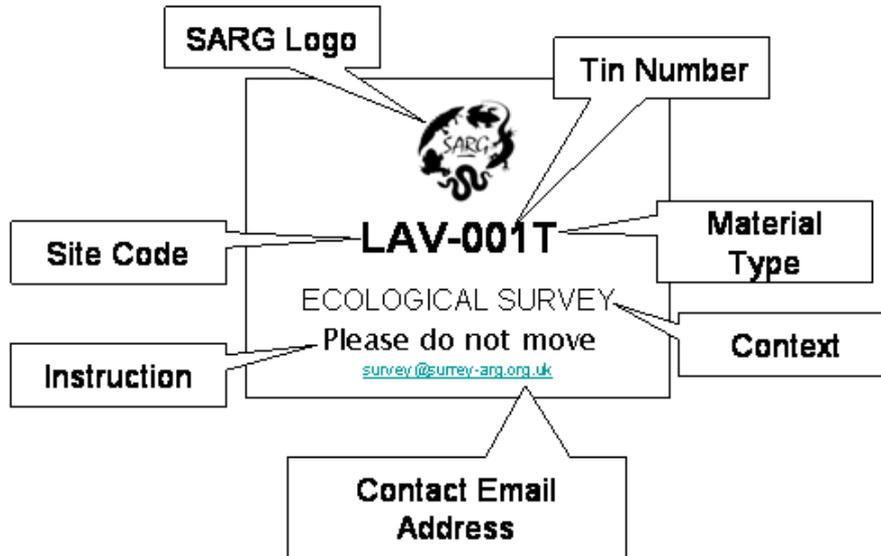
- 3.1. In general, large refugia perform better than small refugia, however large refugia come with an added logistical burden. The SARG standard refugia sizes are given below:
 - Width (across the profile): 1000mm (39 inches). This is the industry standard sheet width.
 - Length (along the profile): 610mm (24 inches) – Such that one industry standard sheet length (3050mm) produces 5 tins.

4. Finishing

- 4.1. Industry standard corrugated iron sheets are generally cut by SARG using a 9-inch angle-grinder using metal-cutting disks. Although using a grinder appears the most cost-effective means of producing individual sheets, the cut edges can have sharp burrs, so filing of these edges using a semi-round file is recommended.
- 4.2. Sometimes, refugia can disappear from the survey site. This is often due to well-meaning members of the public removing what they believe to be unsightly refuse. An effective means of preventing this activity is to mark each tin with a label, describing that the tin is being used for an ecological survey (do not mention snakes) and should not be removed.
- 4.3. Such labels also assist surveyors by showing the tin number, allowing the surveyor to assure themselves that they have indeed found the tin they were searching for. Tins should not be painted with a simple number (as on the cover illustration), as in the case of illegal persecution, the numeral suggest the presence of at least that number of tins laid, and potential persecutors may not rest until all tins are found, and their reptiles despatched. (A case history from Brookwood Heath around 2004).
- 4.4. As the management of some sites is complex (for instance, one site is owned by a golf club, leased to the military, but managed by the wildlife trust), refugia labels can reassure land manager agents that the tin has been placed with appropriate permissions. SARG always provides a contact email address on refugia labels to facilitate feedback.
- 4.5. Refugia labels must endure harsh weather conditions from rain and snow to scorching sunlight. In order to prolong the life of these labels, SARG uses laminated labels, affixed loosely to the tin by the use of a cable-tie, which provides a useful lifting handle, reducing the risk of an adder bite to the surveyor.
- 4.6. The cable-tie is attached to the label through a hole, produced by the use of a domestic paper-hole punch. The cable tie is attached to the tin through an 8mm hole drilled half way along the tin width, approximately 25mm (1 inch) from the edge. This provides a natural balance point, which enables the tin to be lifted using the cable-tie as a safe handle.

5. Illustrations

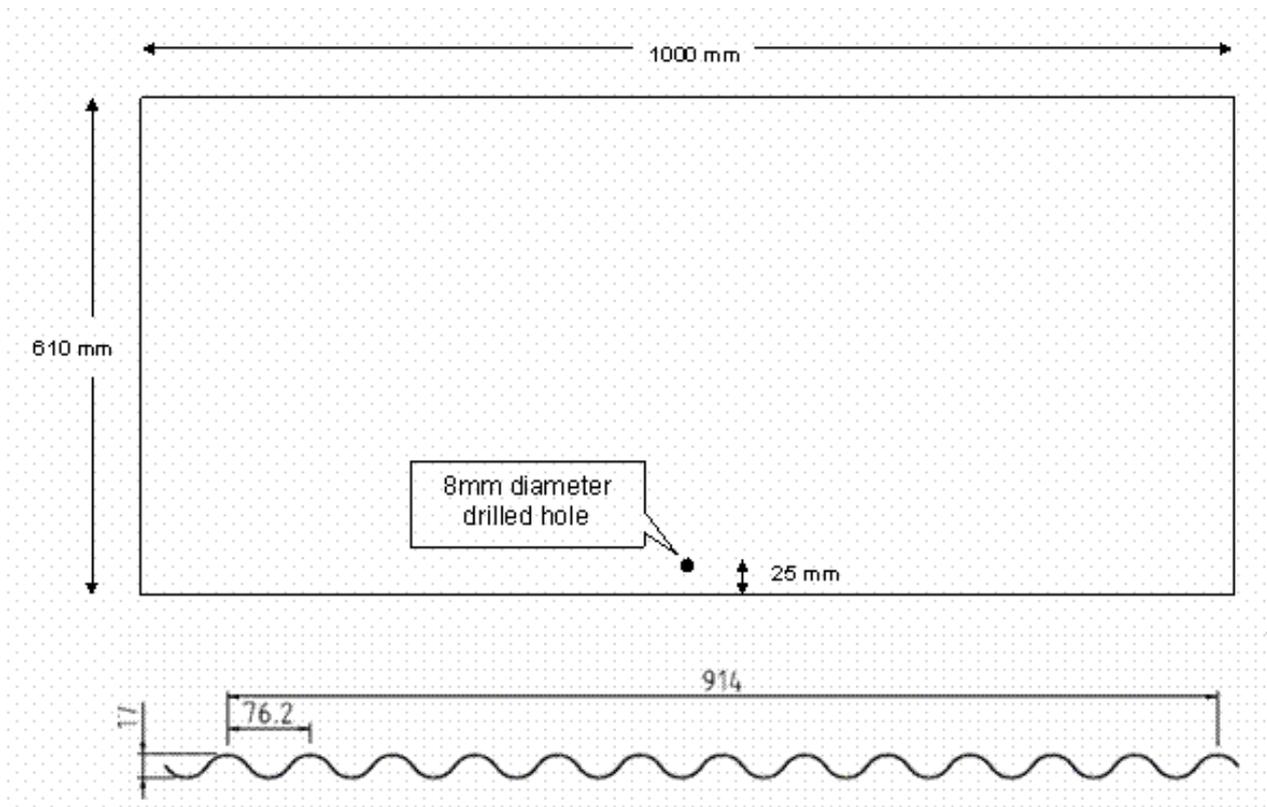
5.1. Detail of a SARG refugia label.



5.2. Photograph of a laminated and punched SARG refugia label.



5.3. Refugia dimensions



5.5. Completed and tagged refuge (tin).



SARG standard refugia specification

Raw Material:

- 13½/3-inch profile galvanised corrugated steel sheet
- Either 3050mm or 3000mm sheet length
- 1000mm sheet width

Refuge Dimensions

- Width: 1000mm (across profile)
- Length: 610mm (along profile)
- Thickness: 0.5mm

Refuge Finishing:

- De-burr using a rounded file
- Drill 1x8mm hole, 25mm from the middle of the length edge.
- Paint finish: Any

Refuge Tagging

- Size: Credit card size (95mm x 65mm) laminated
- Include: 'Do not remove' direction
- Include: Contact email address
- Include: 'Ecological Survey' context
- Include: Unique tin number, concatenation of site code, tin number (3 digits) and material type ('T' for corrugated iron or tin).
- Fix to tin using 6mm cable tie, loose fit to allow as a lifting handle

Alternate codes for other refuge materials (not recommended)

- T – Corrugated iron or 'tin'.
- F – Roofing felt tiles
- C – Corraline or Onduline (compressed natural fibres and bitumen)
- R – On site refuse, doubling as a refuge.