

Guide to Identifying Bite Marks on Wax Tags

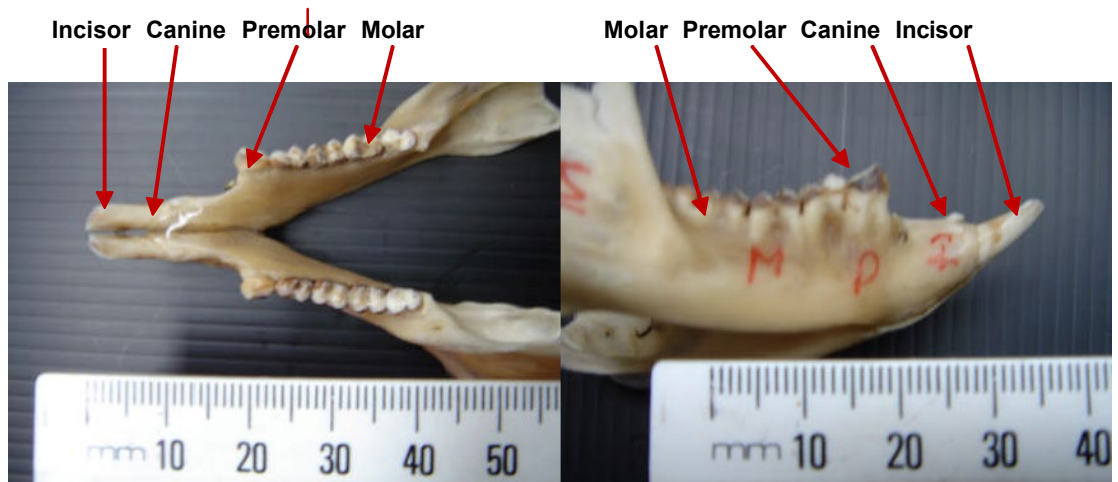
Possum Dentition

The possum has four tooth types that can leave bite-marks on Wax Tags:

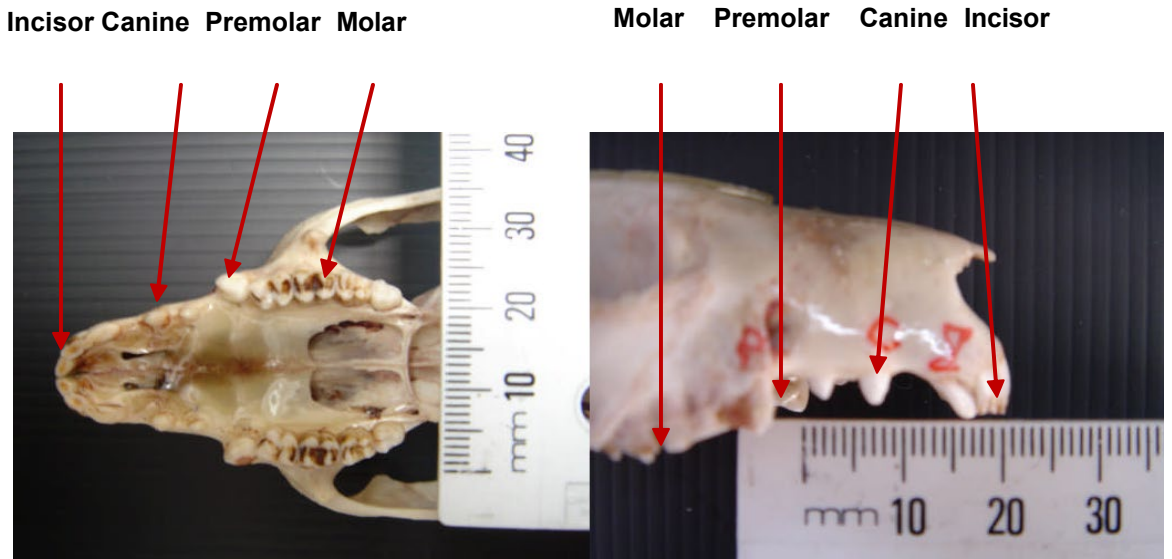
1. Incisors
2. Canines
3. Premolars
4. Molars

Bite-marks left by possums are most commonly from the incisors and to a lesser extent canines and premolars. Marks left by molars are rare but can occur. The following figures show possum dentition.

Lower Jaw



Upper Jaw/Skull



Dentition of Other Animals

Several other animals can bite Wax Tags these are listed in order of the likelihood that they will bite Wax Tags.

1. Rats (both Ship rat and Norway rat).
2. Mice (marks left by mice are often very hard to observe unless many marks are left).
3. Hedgehogs (these may not occur if tags are not within their reach i.e. > 25 cm above the ground).
4. Birds
5. Rabbits and hares (unlikely to occur).

The following photos show the dentition of some of these animals.

Possum vs Rat Incisors



Possum vs Hedgehog Skulls



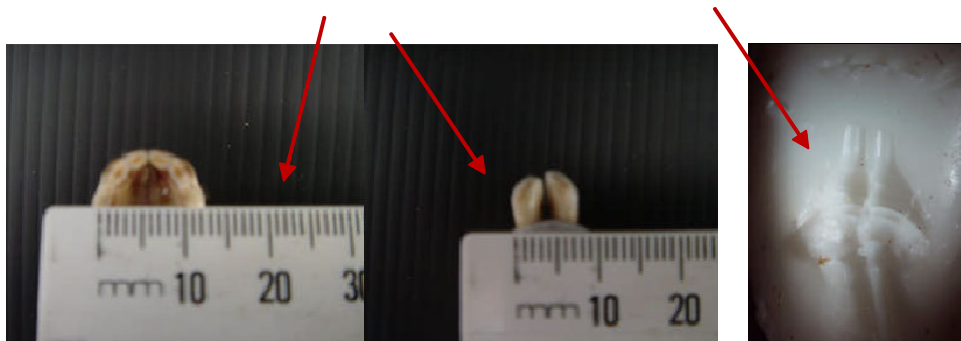
Rabbits & Hares

Rabbit and hare incisor bite-marks can be easily identified because they have an indentation down the centre of each incisor. This leaves a wavelike bite-mark consisting of 4 waves per bite. The photograph to the right illustrates the bite-mark left by a hare on a Wax Tag.



Possum Incisors

Incisor Marks



Canine bite-marks and premolar bite-marks

Canine and premolar bite-marks are left by possums when they bite Wax Tags with their heads side on rather than directly facing the Wax Tag. Because canines and premolars are pointed, they leave a single deep groove in the Wax Tag. An example of a premolar bite-mark left by a possum premolar is shown in the following photograph.

Possum premolar bite-mark



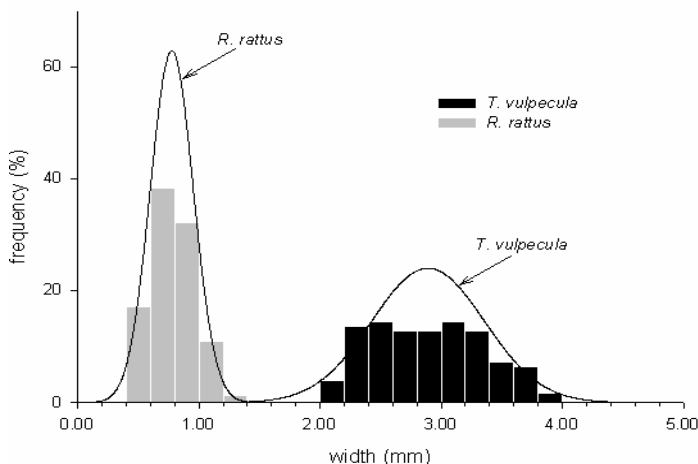
Differentiating between Possum & Rat bite-marks

Most bite-mark identification problems will involve differentiation between possum and rat bite marks. The two main differences are:

1. Bite-mark size.
2. Bite-mark shape.

Bite-mark size

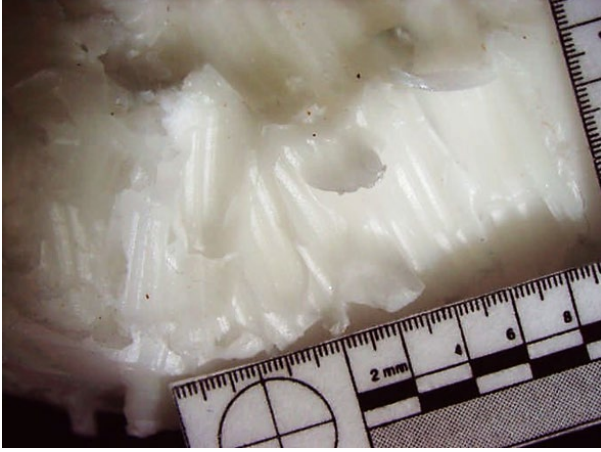
Because possums are larger animals they leave larger bite-marks. The following graph, created from preliminary data collected by Kay Sakatak (PhD student, Lincoln University), illustrates the size difference of bite-marks left by possums and rats. The graph indicates that a good separation exists between possum and ship rat incisor bite-mark widths (N.B. measurement of the bite-marks widths are of marks left by individual teeth).



Bite mark shape

Rats only leave upper and lower incisor bite-marks; they do not leave canine or molar bite-marks. Unlike possum upper incisor bite-marks, rat incisor bite-marks (both upper and lower) are straight, like a mark left by a chisel. The following photographs show examples of bite-marks left by possums and rats.

Rat incisor bite-marks



Possum incisor bite-marks

