

Survey of *Antennaria dioica*, A Teesdale Flora.

***Antennaria dioica* (L.) Gaertn.**
Mountain Everlasting in Teesdale between
CO. Durham and North Yorkshire.



Identification: *Antennaria dioica* is a dioecious plant. Basal leaves rosettes, spatulate, green above and white-woolly beneath. Female flower head short-stalked, erect, rose-pink with tubular flowers clustered to form a terminal flower head. Outer involucral bracts woolly below and glabrous above. Shoot leaves appressed, erect, narrow, pointed, alternate, green above and white-woolly beneath. This plant produces leafy above-ground stolons at the nodes. Achenes of the female plants has white pappus.

Monitoring *Antennaria dioica* (L.) Gaertn.
Mountain Everlasting.

Date of survey 22-08-2009 to 2019.
 Survey section 3a, 3b, 3c, 3d, represents a number attached to the fence on the left hand boundary. This was the south side of the River Tees.

Habitat: plants growing in the rock near the river.



Aim of the survey

- 1) To monitor the number of shoots growing.
- 2) To monitor the number of shoots flowering.
- 3) Evaluate the change in their population size over the years.
- 4) Human influence, management of land.
- 5) A repeat should be possible by any surveyor in future

Methodology: plant once found, GPS, maps, hand drawings recorded, identifiable feature was a long wall with a gate west of Wynch Bridge on the Pennine way near the 1st cataract of the River Tees. Each shoot vegetative and/or with an inflorescence spike was counted as one shoot unit. Coloured cocktail stick was used for each shoot, starting at one corner, gradually counting all the plants in the whole area.

Antennaria dioica, only female shoots recorded here. Shoots recorded only in the section 3a, no plant unit found in section 3b, 3c, 3d.

***Antennaria dioica* female inflorescence**



***Antennaria dioica* male inflorescence**



Monitoring *Antennaria dioica*
 It was hypothesized that the spread of the taxon is associated with the stoloniferous nature of its roots.

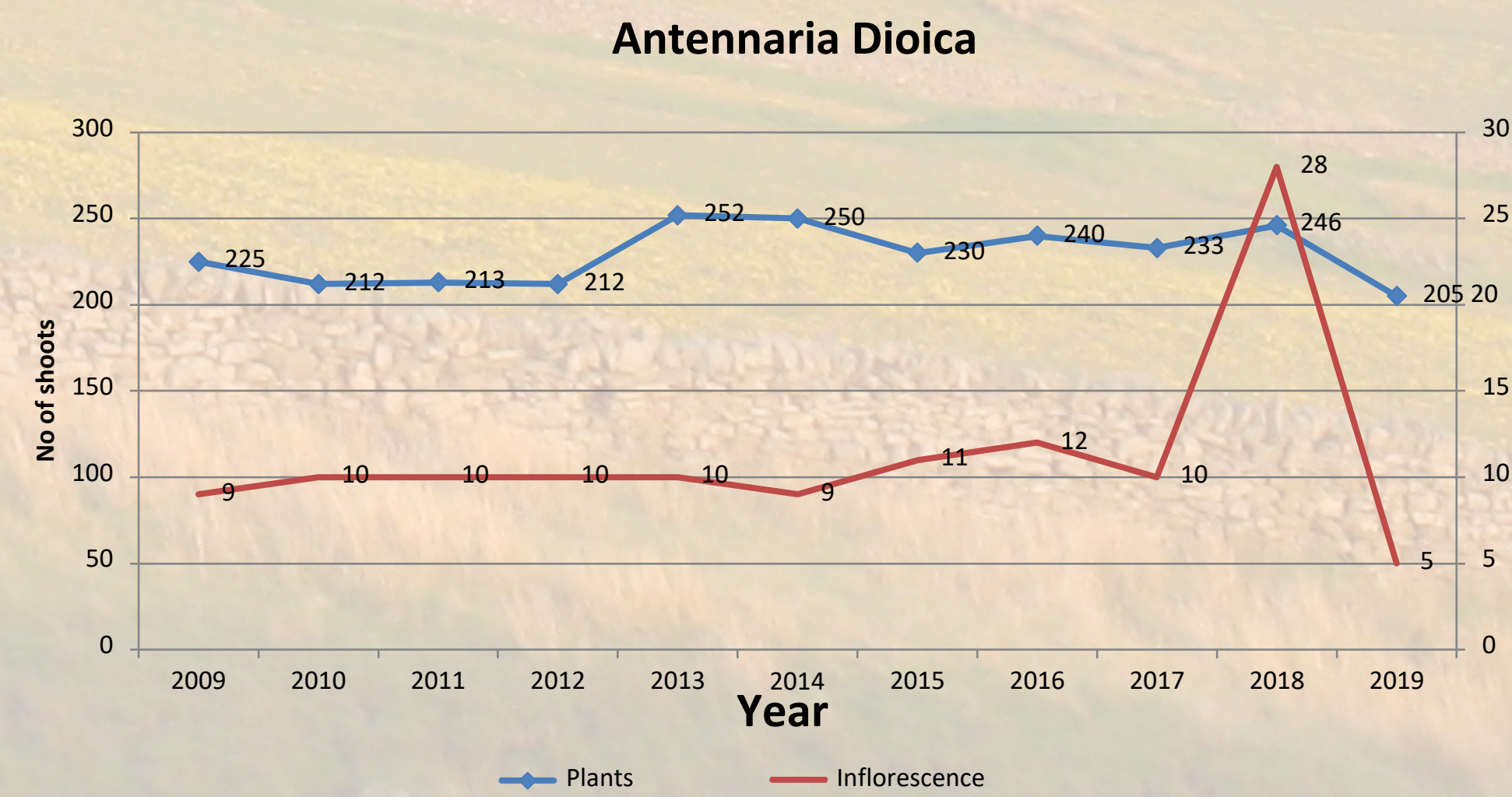
GPS NY90272803. Section 3a. Flowering time: June, July.

- Survey found that rosettes of shoots produces clonal growth by surface creeping roots. Each shoot produces one flowering head.



Antennaria dioica records

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Shoots	225	212	213	212	252	250	230	240	233	246	205
Inflorescence	9	10	10	10	10	9	11	12	10	28	5



Monitoring *Antennaria dioica*(L.) between Wynch Bridge to Holwick Head Bridge.

“*A. dioica* forms complex of species in which apomictic forms occur.” Here plants were female and Clapham et al.,1962.stated that *A. dioica* is apomictic. Flowers were monitored over a period of 11 years. After 2020, no work was done due to Corona virus pandemic. Unfortunately some shoots and/or inflorescences were lost due to human activities during the monitoring periods. Observation made that there was no correlation between vegetative shoots and shoots with inflorescence. Research by S.Verga showed,“the plants that did produce flowers tended to have higher mycorrhizal frequency than plants that did not produce flower regardless of sex.” Although this research work has not been tested in this study but this could explain the difference of flowering and non flowering shoots of *Antennaria dioica* in the graph.

Antennaria dioica and other Teesdale flora has been damaged by the visitors when they are on the riverside before and after they enter the water.



Monitoring comments:

The study of *Antennaria dioica* was confined to one area. This site has been damaged by pleasure seekers, jumping, swimming, boating, canoeing, BBC Country file programmer and other film makers. However, preventative measure could be taken by display board telling importance of Teesdale.

Antennaria dioica (L.) Gaertn.

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- In England, Wales and Europe, *A.dioica* has suffered serious decline. Here, the plant exists as a small, single sex population confined in one area makes it vulnerable. But there are *A.dioica* present on the Whin sill rocks near the Tees and at lower level down the river where kayakers climb out on the right-side facing down river, not far from the site near the Pennine way. There are *A. dioica* present on both Widdybank and Cronkley Fells.
- This work was done by Falgune Sarker under the supervision of Dr. Margaret Bradshaw as a part of monitoring Teesdale flora. I would like to thank Dr. Bradshaw for her guidance.

References:

1. Flora of the British Isle by Clapham, Tutin and Moore.1987.
2. Varga,S and Kytoviita, 2008. Sex specific responses to mycorrhiza in a dioecious species. American Journal of Botany.
3. Walker,K.J. 2004. *Antennaria dioica* (L.)Gaertn Mountain Everlasting. Species Account. BSBI.