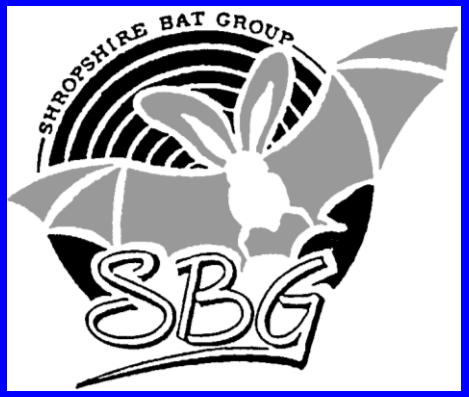
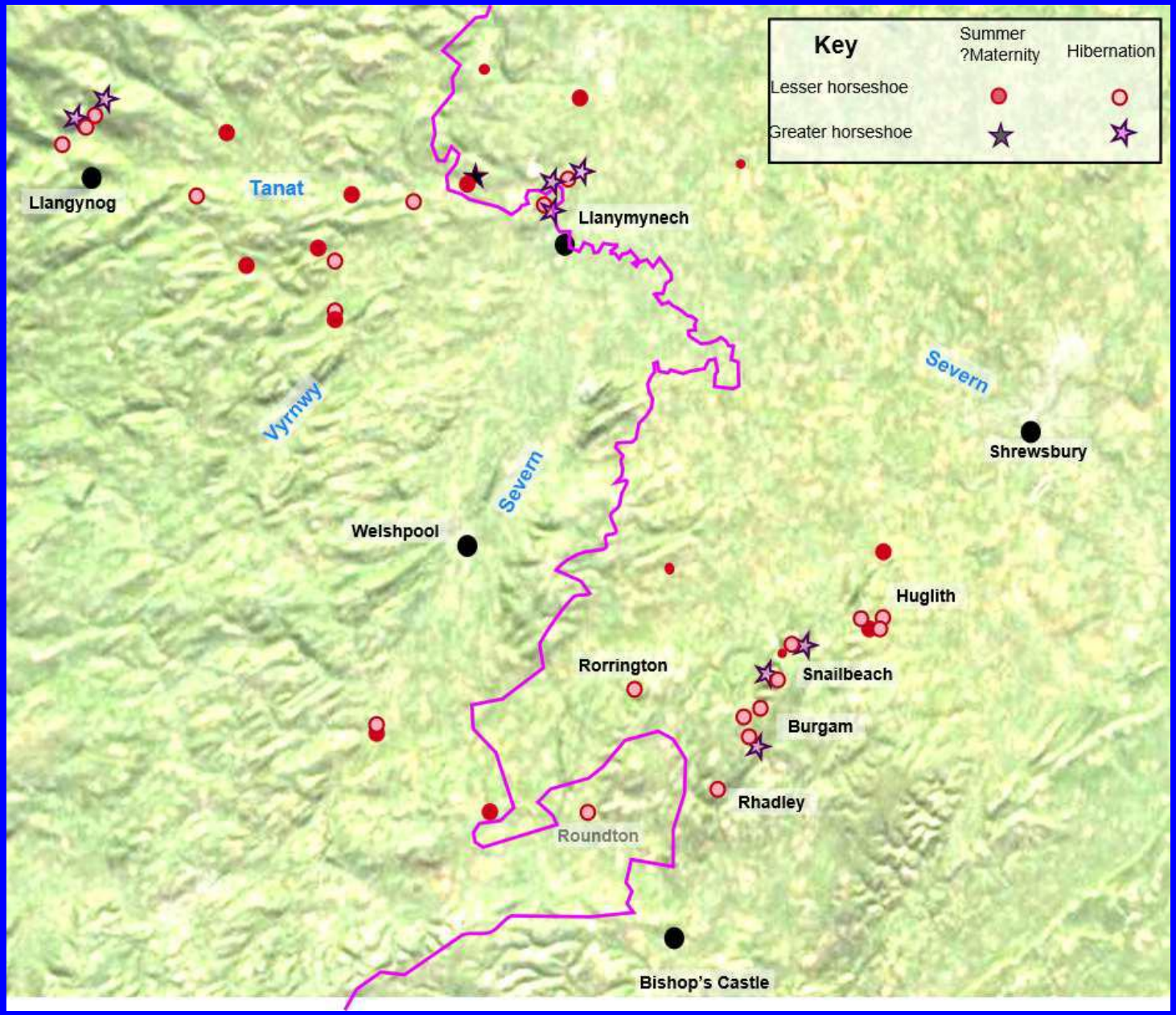
Horseshoe Bats in Shropshire: Hibernation, swarming & dispersal



- Shropshire Bat Group, principally Mike Worsfold, John Morgan & Eileen Bowen.
- Shropshire Caving & Mining Club.
- with help from members of neighbouring bat groups

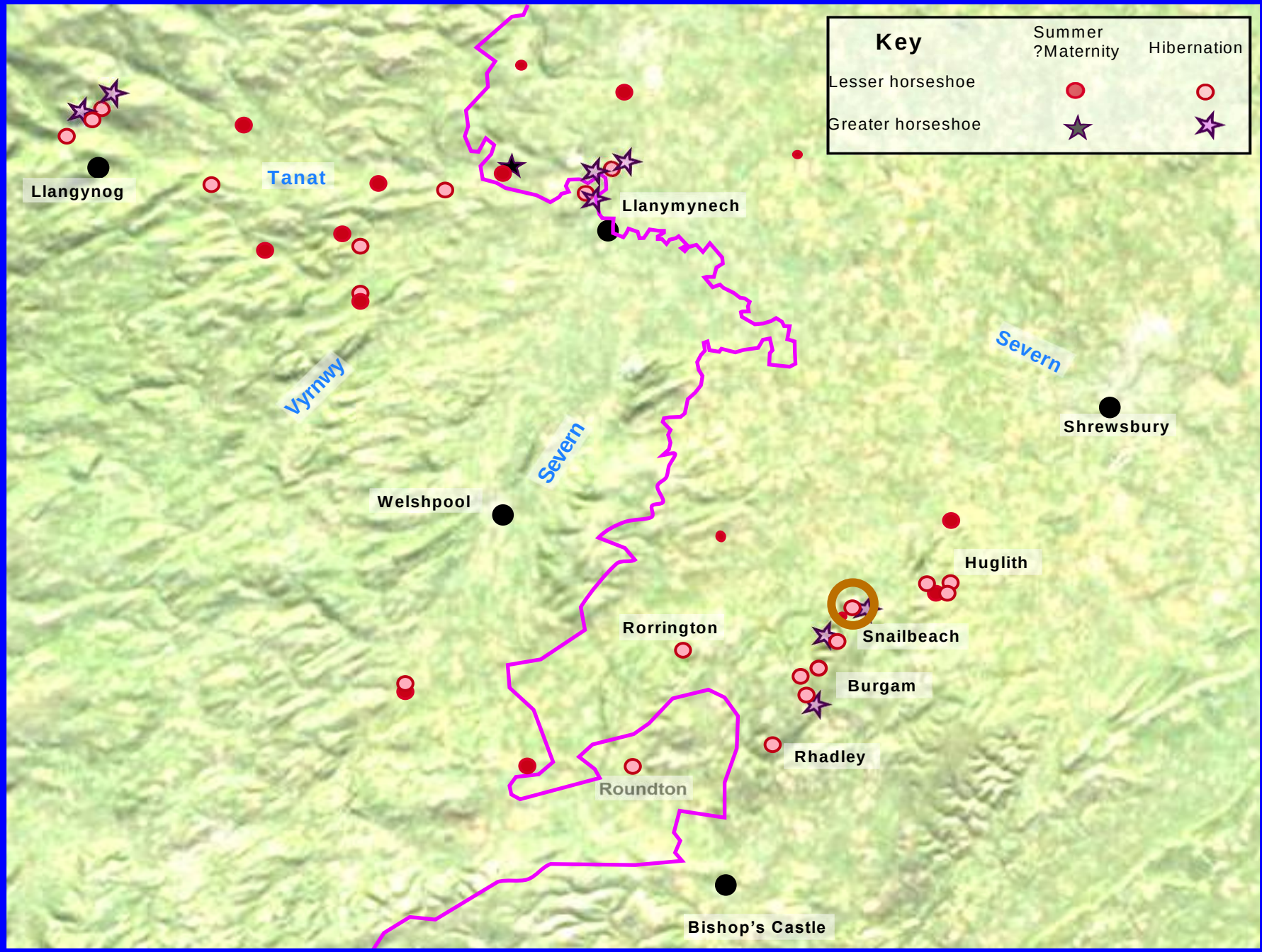
Mine sites and known horseshoe roosts



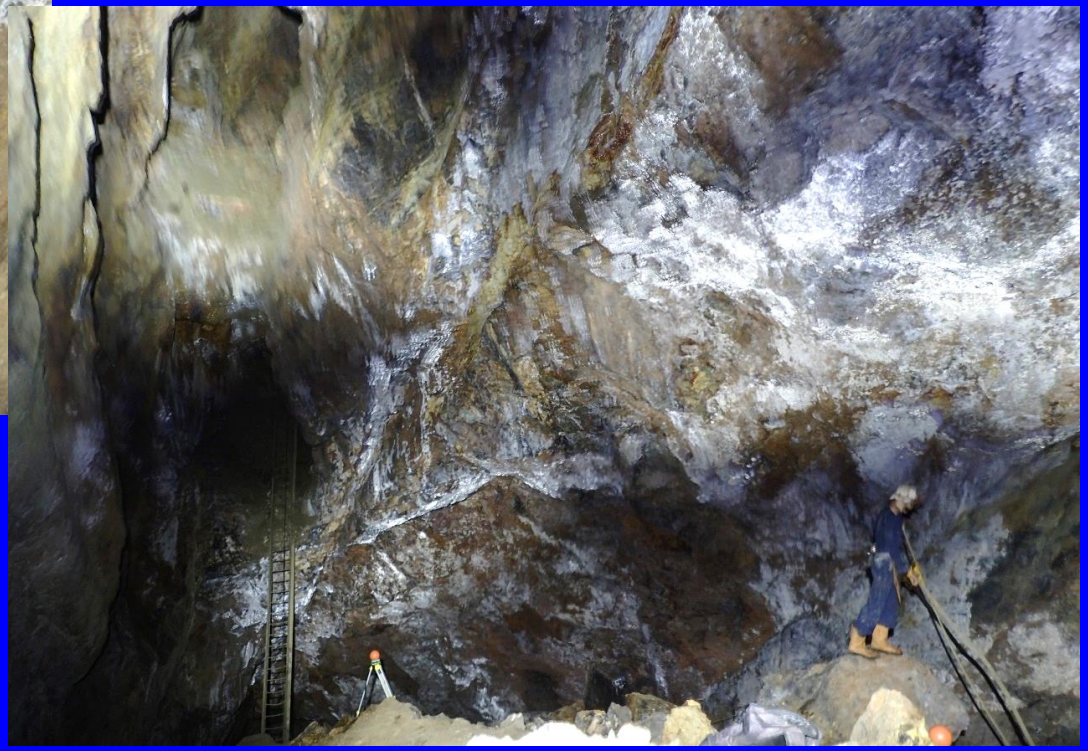
Background

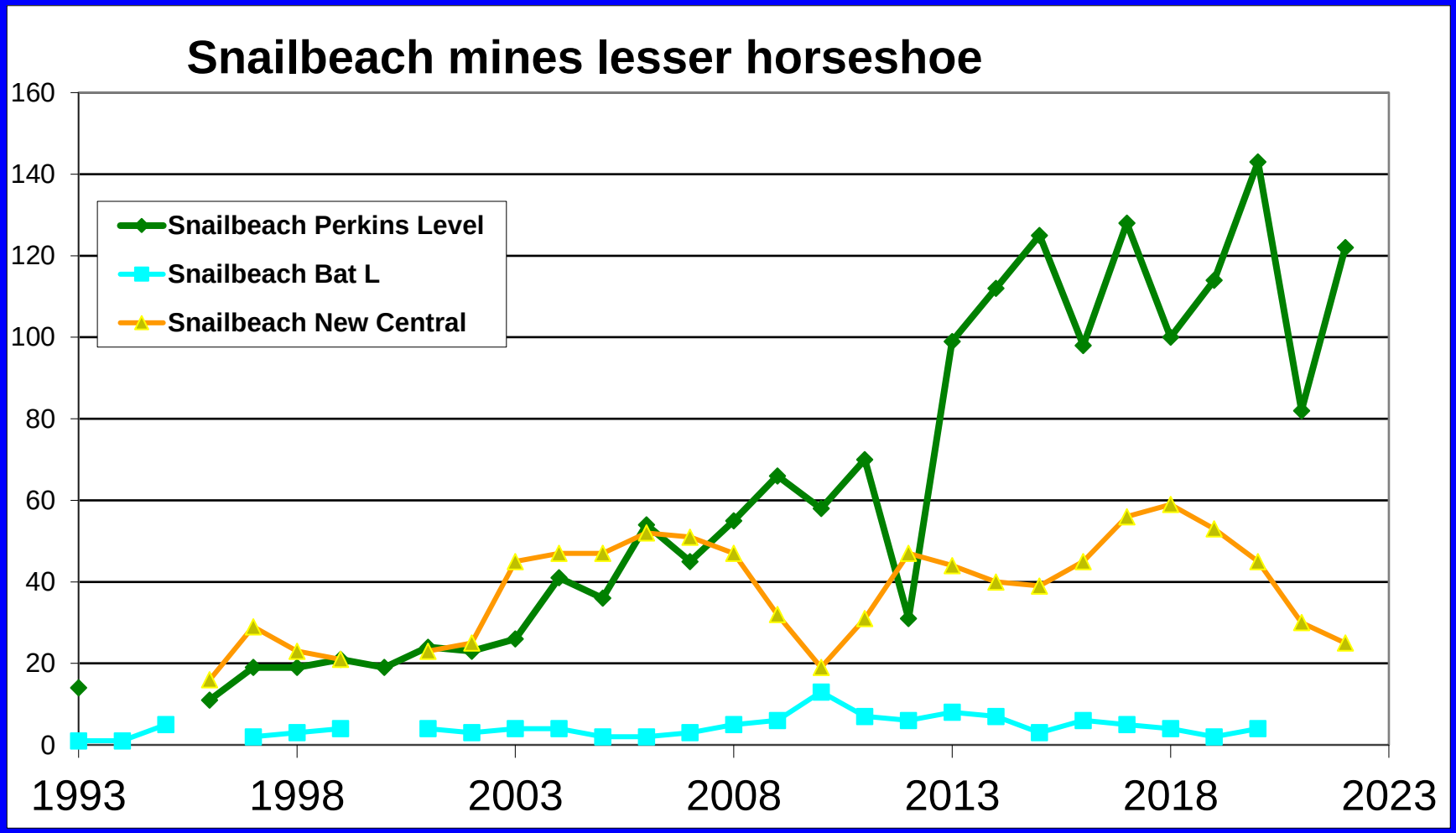
- We have counted bats in hibernation sites in Shropshire mines every year since1993. (SBG had recorded bats in some mines before this).
- Trapped at Snailbeach and Llanymynech since 2011.
- Ringing and radio-tagging horseshoe bats in north Shropshire and nearby Wales since 2015, with Montgomeryshire Bat Group.
- In 2019 began a project as part of the NE/ NT “Stepping Stones Project” to study bat movements and use of the landscape by bats in a large area of southern Shropshire.

Mine sites and known horseshoe roosts

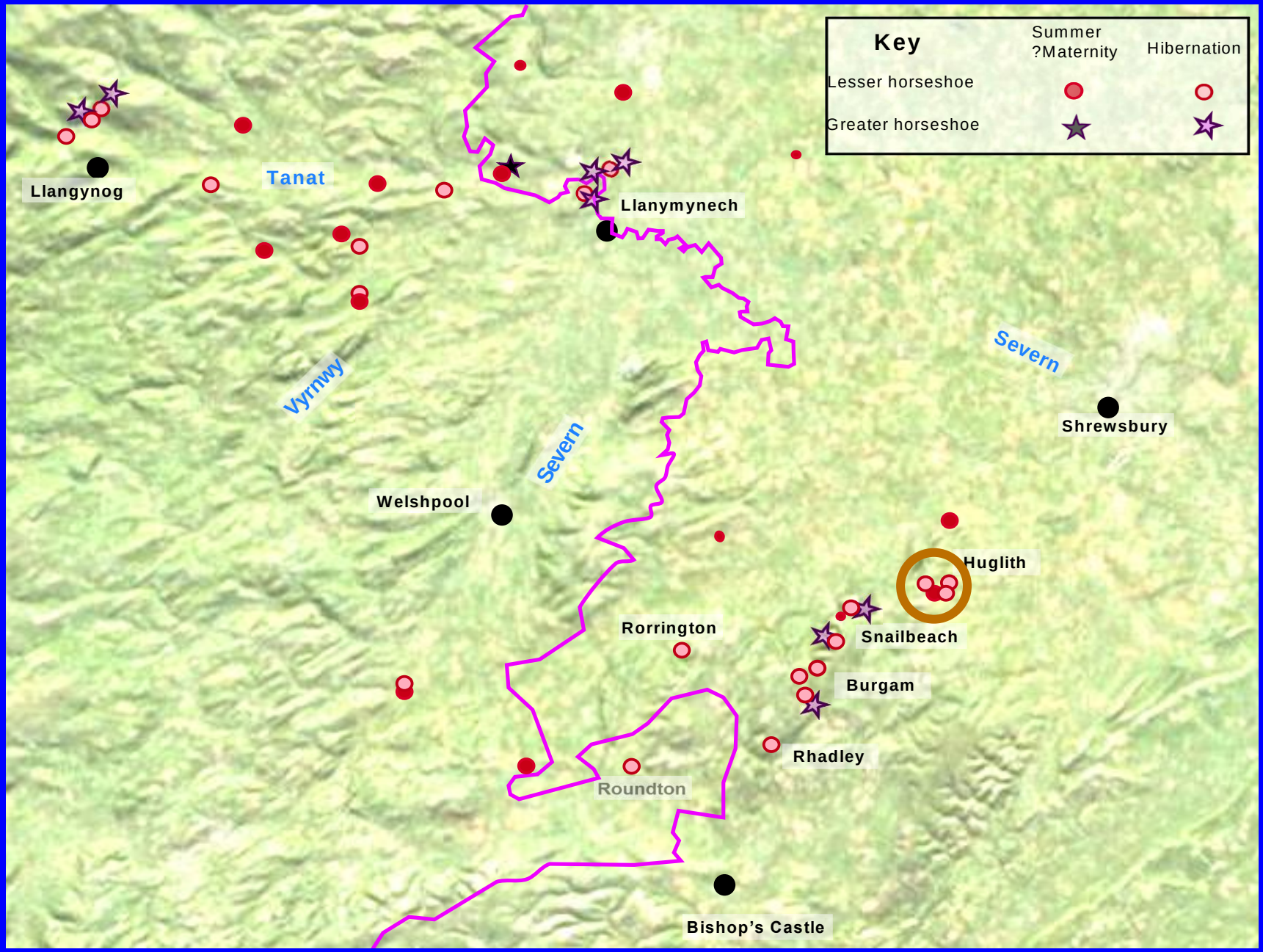


Snailbeach Perkins Level Back Stope

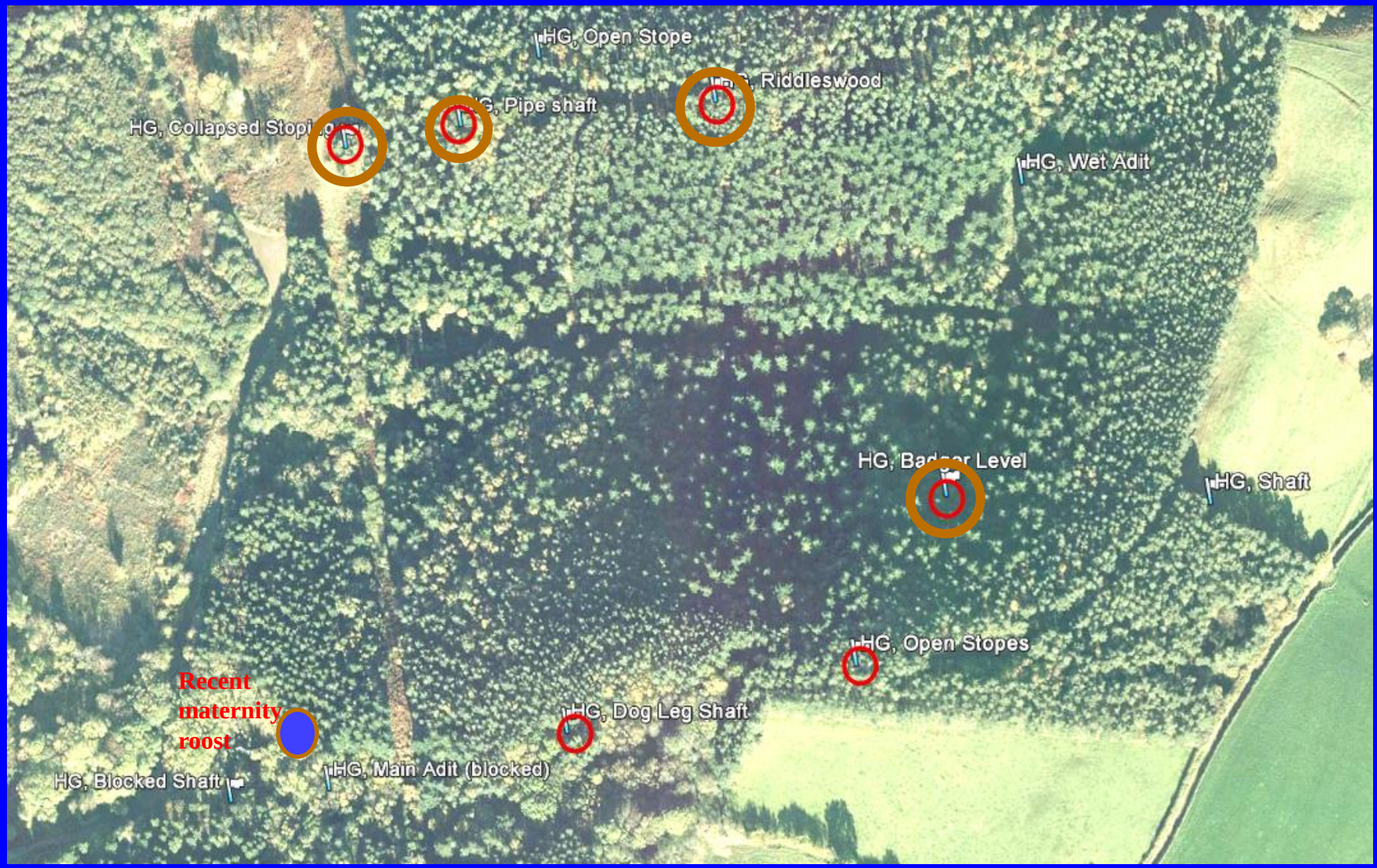



Snailbeach mines lesser horseshoe
160
140
120
100
80
60
40
20
0
1993
1998
2003
2008
2013
2018
2023
Snailbeach Perkins Level
Snailbeach Bat L
Snailbeach New Central

Mine sites and known horseshoe roosts



Huglith mine entrances



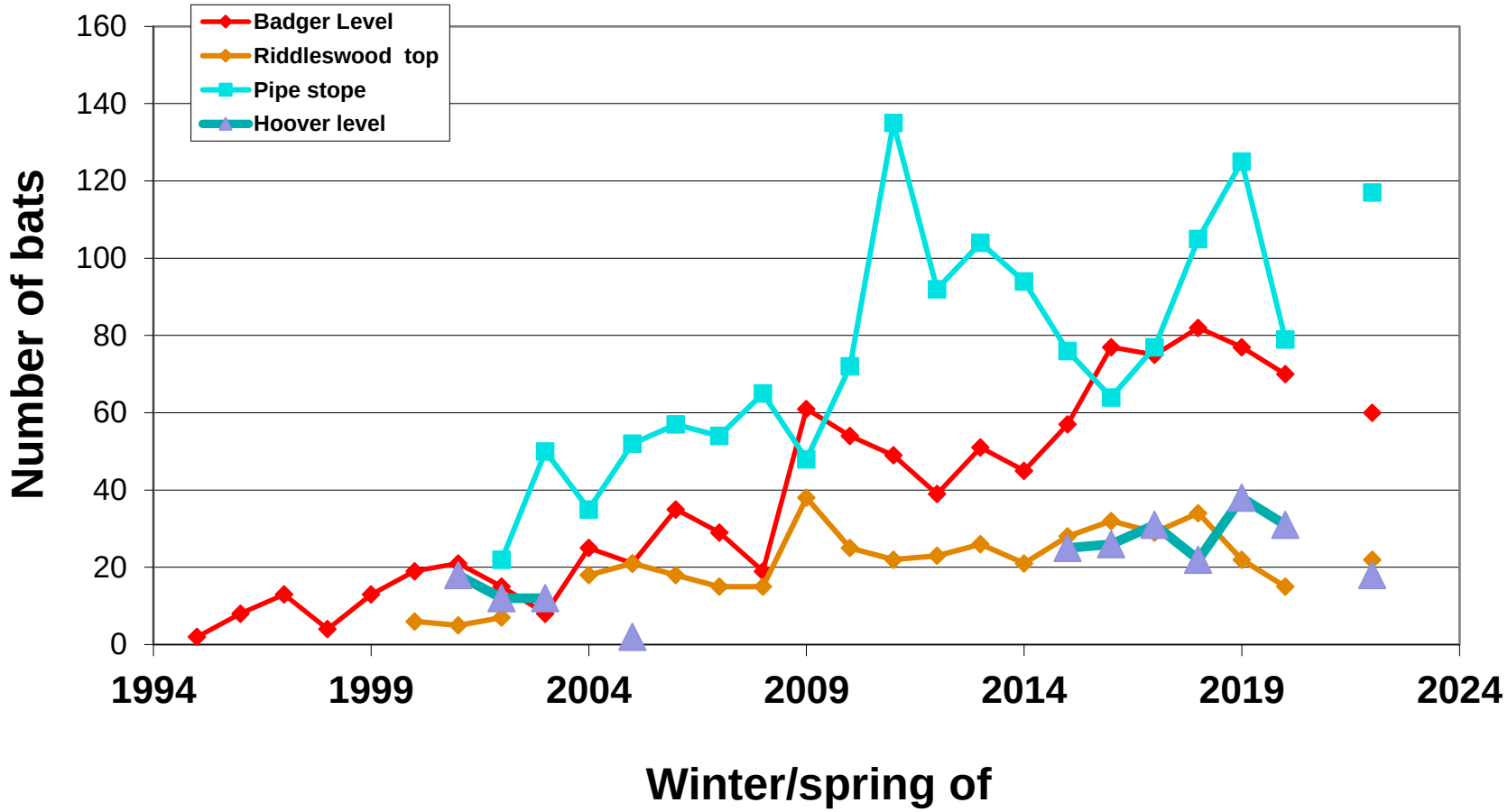
GPS mapping by Ian Cooper

Huglith Badger Level

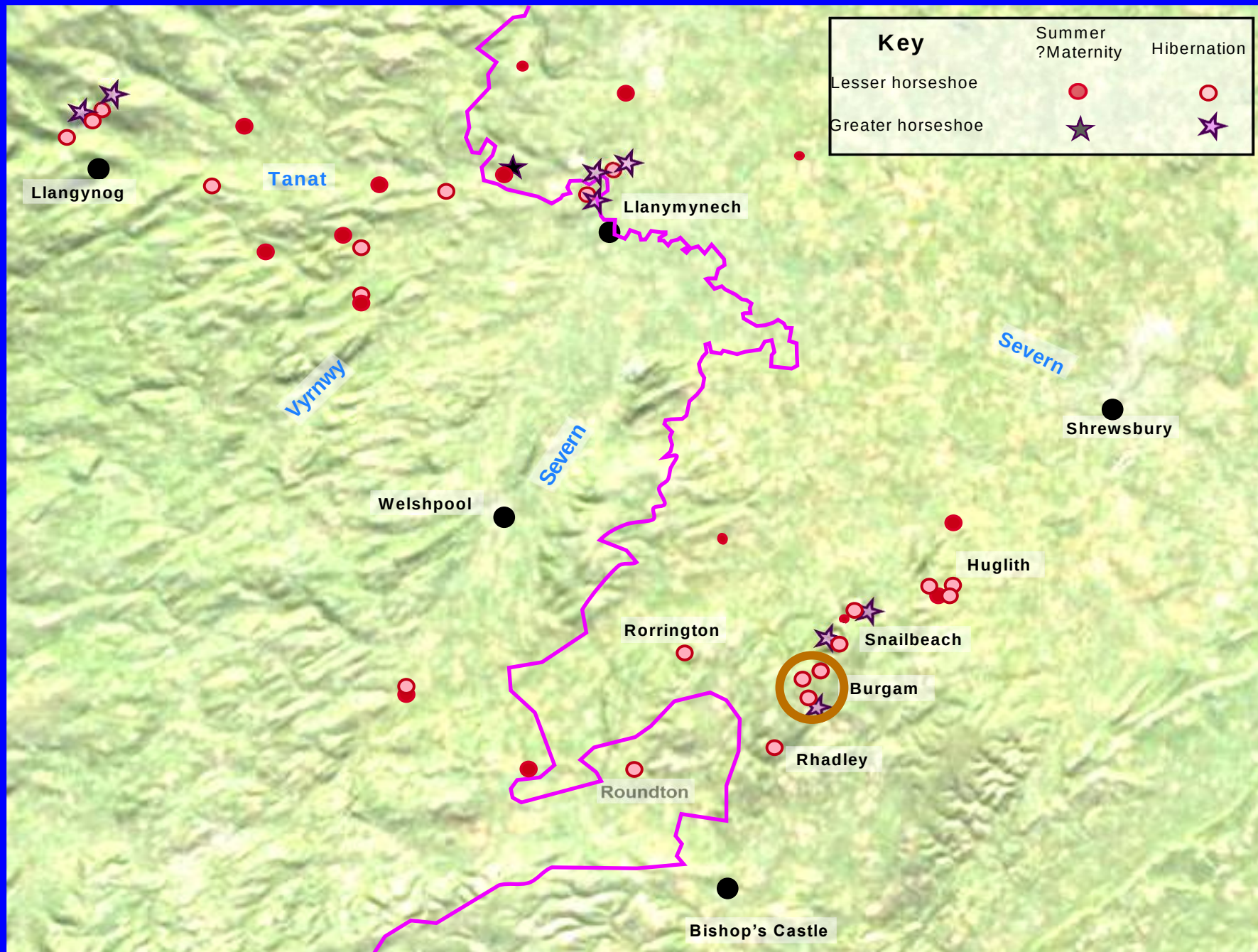
Huglith Pipe Stope

Huglith Pipe Stope inside

Huglith lesser horseshoe bats



Mine sites and known horseshoe roosts

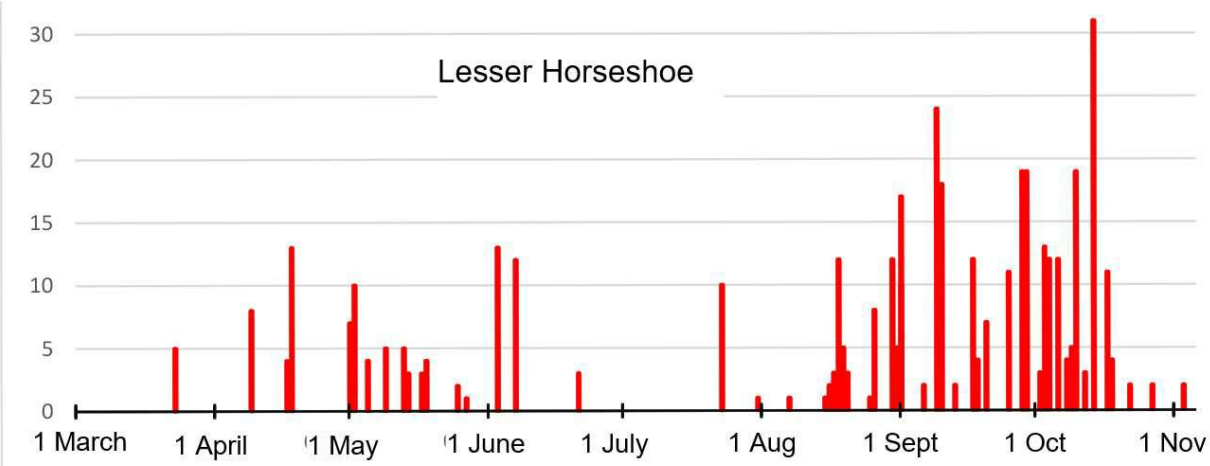


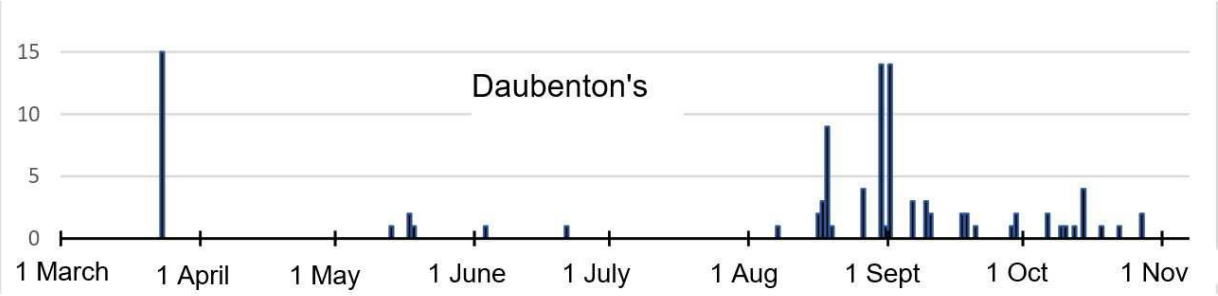
Burgam & Potters Pit Lesser Horseshoe

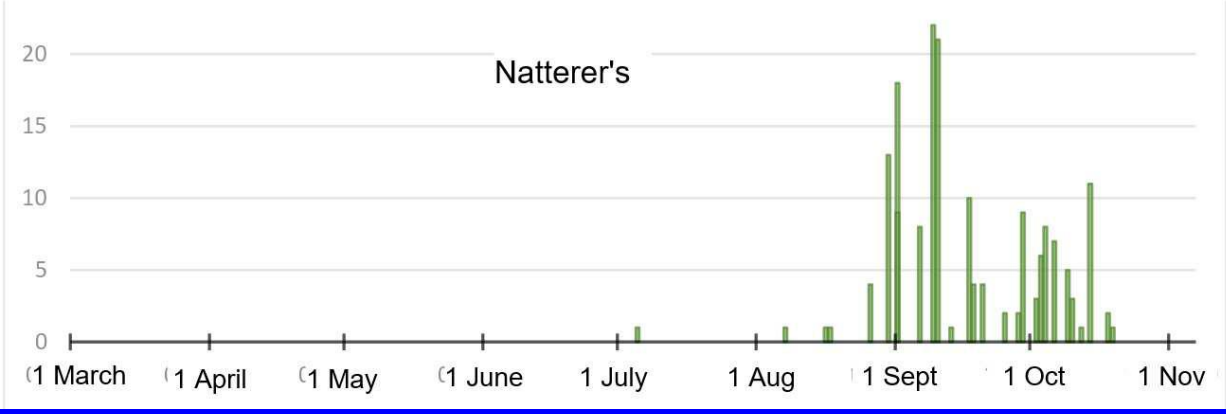
Conclusions from counting bats

- The numbers of LH in all the south Shropshire localities have been increasing at about the same rate for the last 15 years.
- Loss of roosts at a given site are likely to be compensated by increases at nearby sites.
- Access by cavers/mine explorers need not harm bats, with due care and cooperation.

Catches at Perkins Level 2014 - 2019



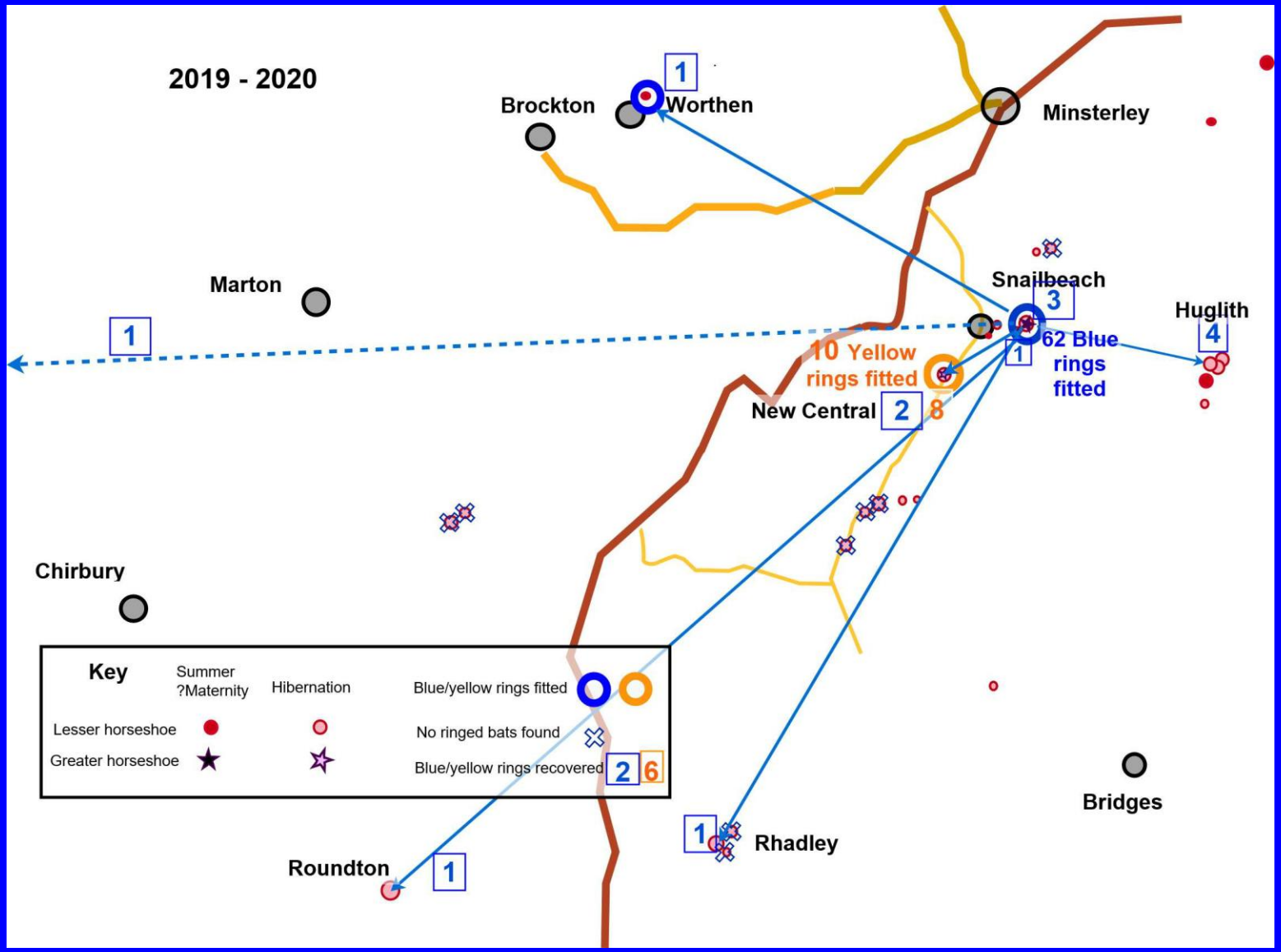




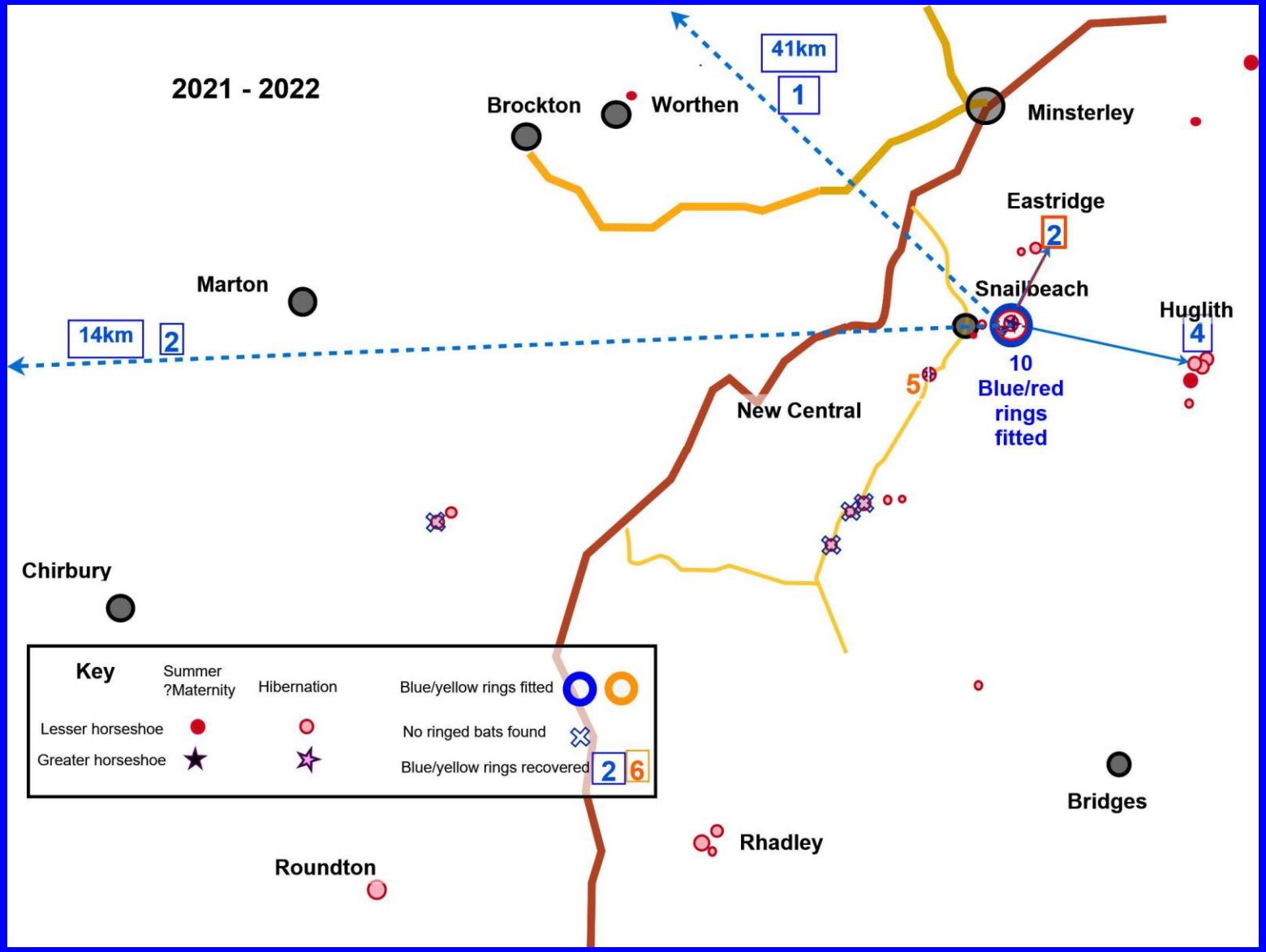
Trapping & ringing 2019

Species	Total No:
Rhip	62
Md	9
Mn	19
Mmys	1
Paur	6
Rfer	2
Grand Total	99

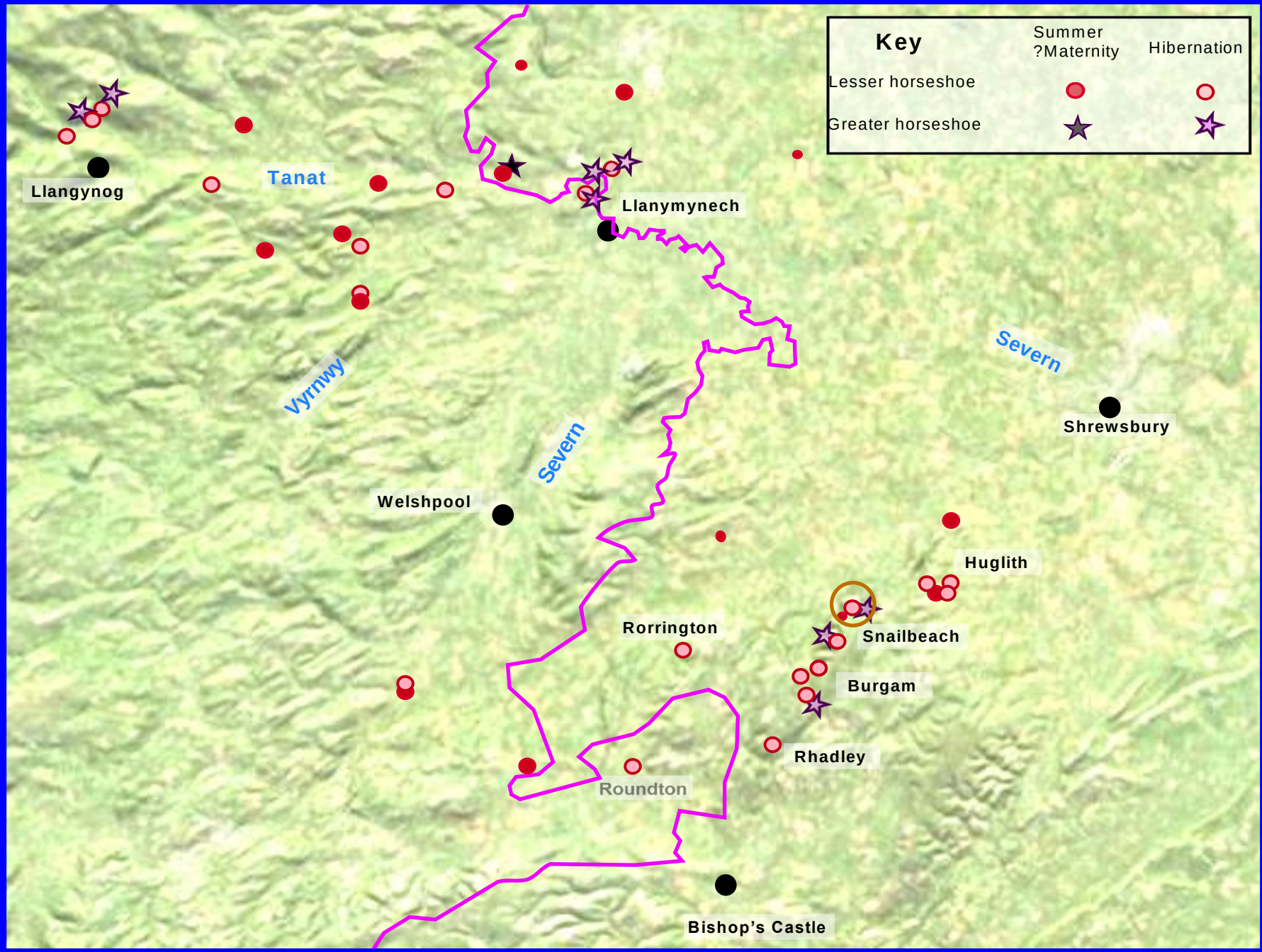
Ring recoveries 2019-20 (LH)



Ring recoveries 2021-2022 (LH)



Mine sites and known horseshoe roosts



Ring recoveries

Results of ringing (so far)

- Of the lesser horseshoe bats captured and ringed outside the portal of Perkin's Level in 2019, Snailbeach Mine, only a small proportion (21%) were recovered in the first winter (2020) or 2022. None have been recaptured by trapping.

- Most of those recovered were found hibernating at other sites at distances of up to 14km in 2020, and even 41km in 2022.

- Most of the bats which had been captured and ringed at New Central Adit were recovered there, and not elsewhere. Many of them also returned the next autumn/winter and the following winter.

Conclusions (so far)

- Perkins Level is a swarming site for lesser horseshoe bats as well as *Myotis* and long-eared bats. Some LH have dispersed over long distances.

- In contrast, New Central is probably not a swarming site for lesser horseshoes , but is a hibernation site.

Why do we get such small recoveries of bats ringed at Perkins Level?

- The good recoveries hibernating at New Central indicate that ringing the bats has not harmed them.
- The bats which we ringed at Perkins Level must be a sample of a large population.
- This larger population might hibernate:
  - In parts of the mines which we cannot easily inspect.
  - In other, distant sites.
- Recoveries at other mine sites suggest that the population is widely disperse.

Future work

- Ring bats at other sites.
- Try to locate other swarming sites. Compare swarming and non-swarming hibernation sites.
- Ring more bats in spring to discriminate between swarming and local bats
- Radio tag more bats in spring and late summer to try to locate summer roosts. Also autumn to assess dispersal.