A case of mistaken identity

Using FISC results to examine Type 1 errors in field recording

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FISCs?

- Field Identification Skills Certificates administered by BSBI
- Two lab tests and a field test
- Field test of two parts – candidates are taken to a botanically rich site and asked to record as many species as possible
- A list where 'reasonable' species receive a mark each
- All 'unreasonable' species recorded receive a mark against

FISCs (Field Identification Skills Certificate)

- Data from 199 participants was sorted into correct records (reasonables), false positives (unreasonables), tentative taxa (reasonables) and jabberwockies (highly unreasonable…)

This is not a FISC

Unreasonable species = Type 1 errors or False Positives

- Type 1 errors – a false positive – recording something that isn't there
- Type 2 errors – a false negative, ie, missing something that is there.
- Type 1 errors are considered far more 'dangerous' in experimental and scientific terms, than Type 2 errors

FISC field recorders…

- Can record tentative species such as *Carex* sp.
- This gives them half a mark – but they can only use it once even if there are several sedges present.
- *Carex acuta* rather than *Carex acutiformis* would give an 'unreasonable' mark = a false positive.

FISC field recorders also make odd errors... or Jabberwockies

- *Geranium palustre*
- *Silene jacobaea*
- *Plantago ovalifolium*
- Burweed

False negatives are easy

- Survey a site more than once
- Have more than one person survey a site
- Send off anything difficult to the experts

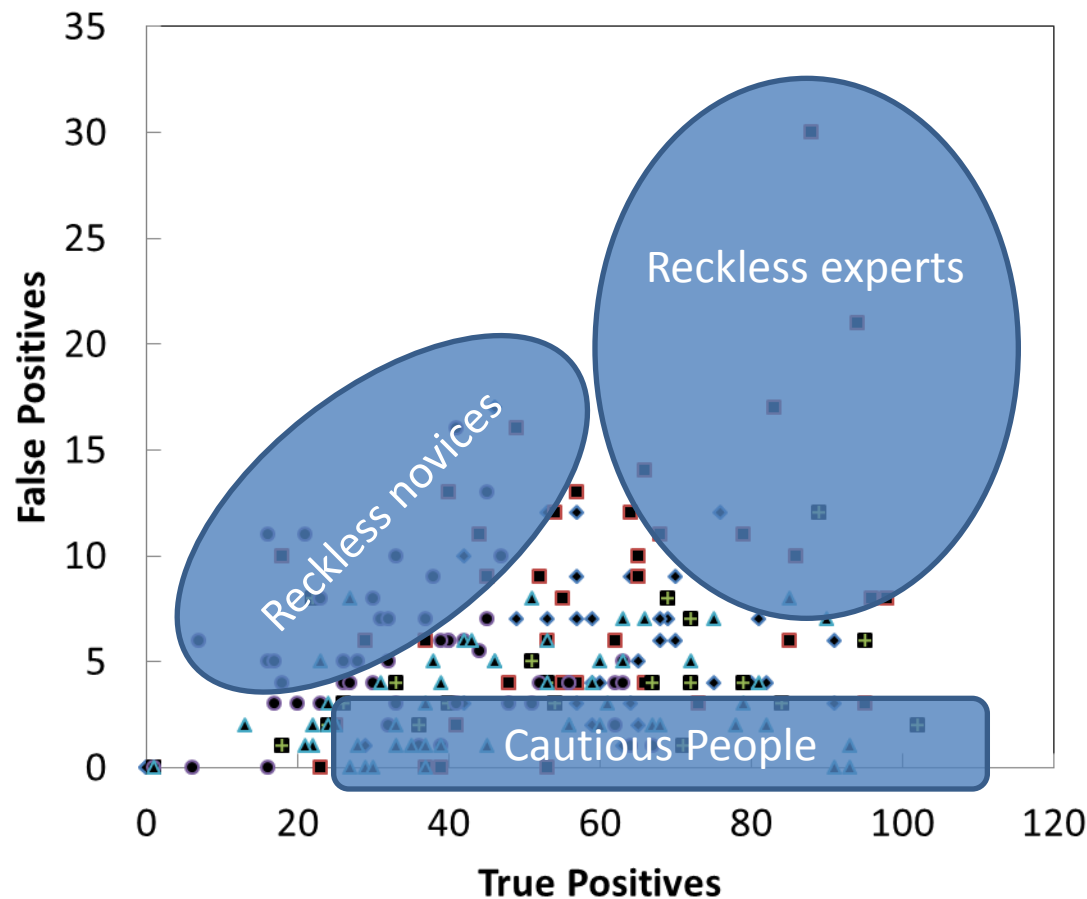# The cost to the recorder of a false +ve & -ve are about the same

The cost to the data users are much higher for a false +ve

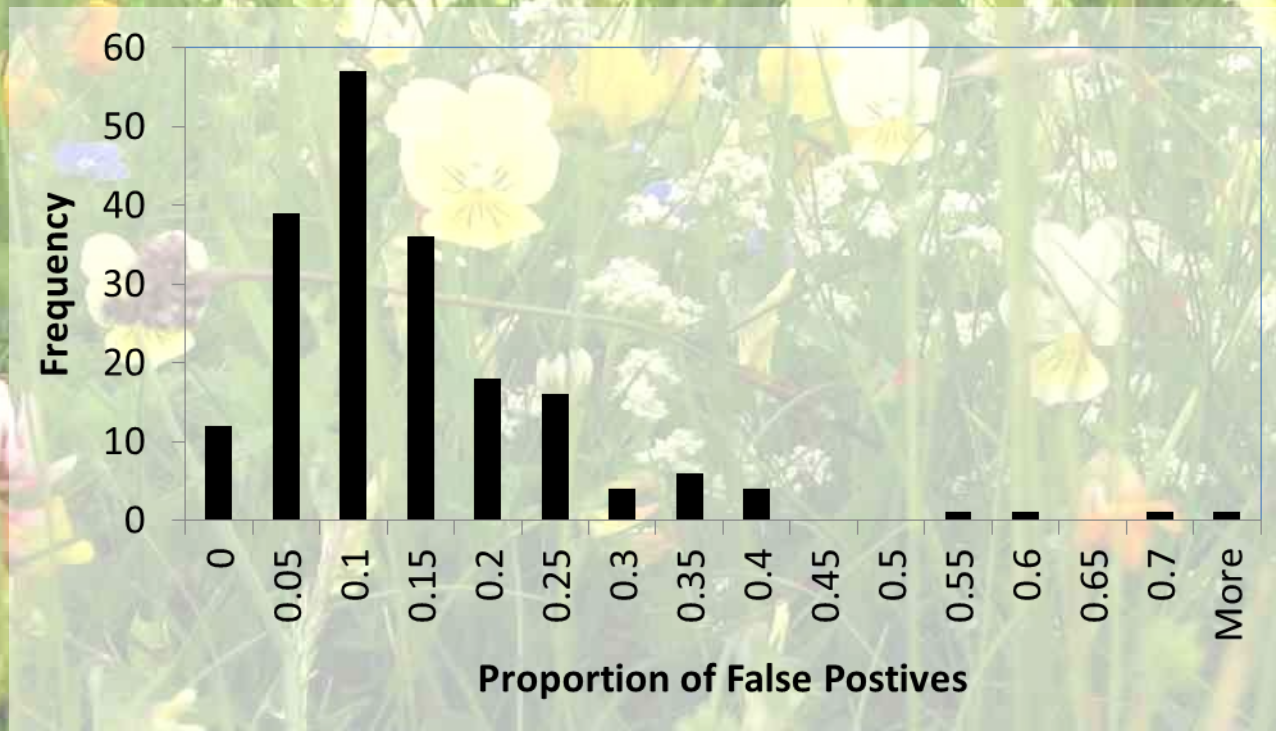# False +ves arise from several different behaviours.

- An over-reliance on jizz
- Inexperience of recorders
- Inadequate reference material
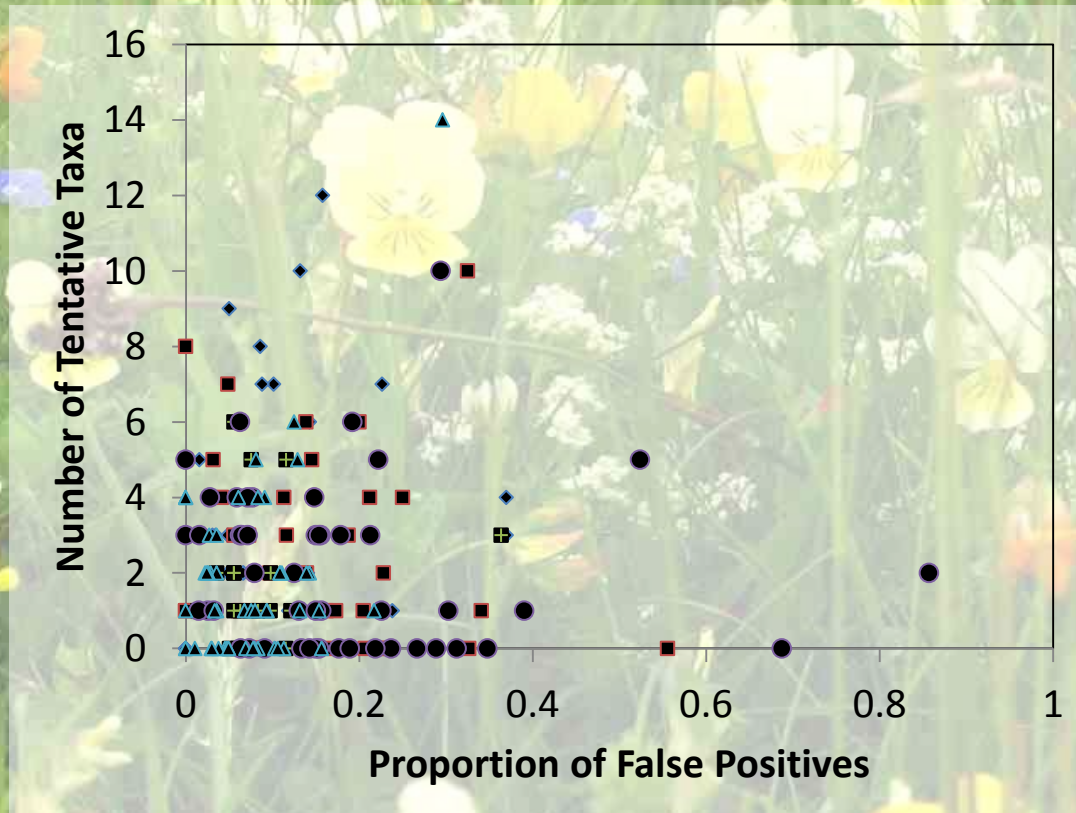- Poor navigation

This is not a pipe

Do you get more true +ves at the expense of false +ves?

Are we all as bad as each other?

Do safer recorders record more tentative taxa?

The most common species recorded as false +ves?

Agrostis stolonifera	*Epilobium montanum*	*Holcus mollis*	*Polypodium vulgare*
Bryonia dioica	*Equisetum arvense*	*Hypericum tetrapterum*	*Potentilla erecta*
Carex riparia	*Euphrasia nemorosa*	*Juncus articulatus*	*Rumex conglomeratus*
Conopodium majus	*Glyceria fluitans*	*Lotus corniculatus*	*Scabiosa columbaria*
Crepis vesicaria	*Glyceria maxima*	*Persicaria maculosa*	*Sonchus oleraceus*

10 steps to reducing the number of false +ves?

1. Insist on a specimen
2. Training in identification
3. Training in navigation
4. Training in the consequences of misidentification
5. Ranking observations by their source and level of evidence
6. Observe in groups
7. Don't celebrate a long list.
8. Foster a supportive, open, non-judgmental culture
9. Use computer software
10. Touch every plant

Photo Credits

1. Dan Wrench
2. Hernan Gonzalez
3. NASA
4. Alexander Gee
5. Talsarnau Times
6. Arz
7. Bill Ebbesen

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