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Bee bio-diveristy in Greece and almond pollination

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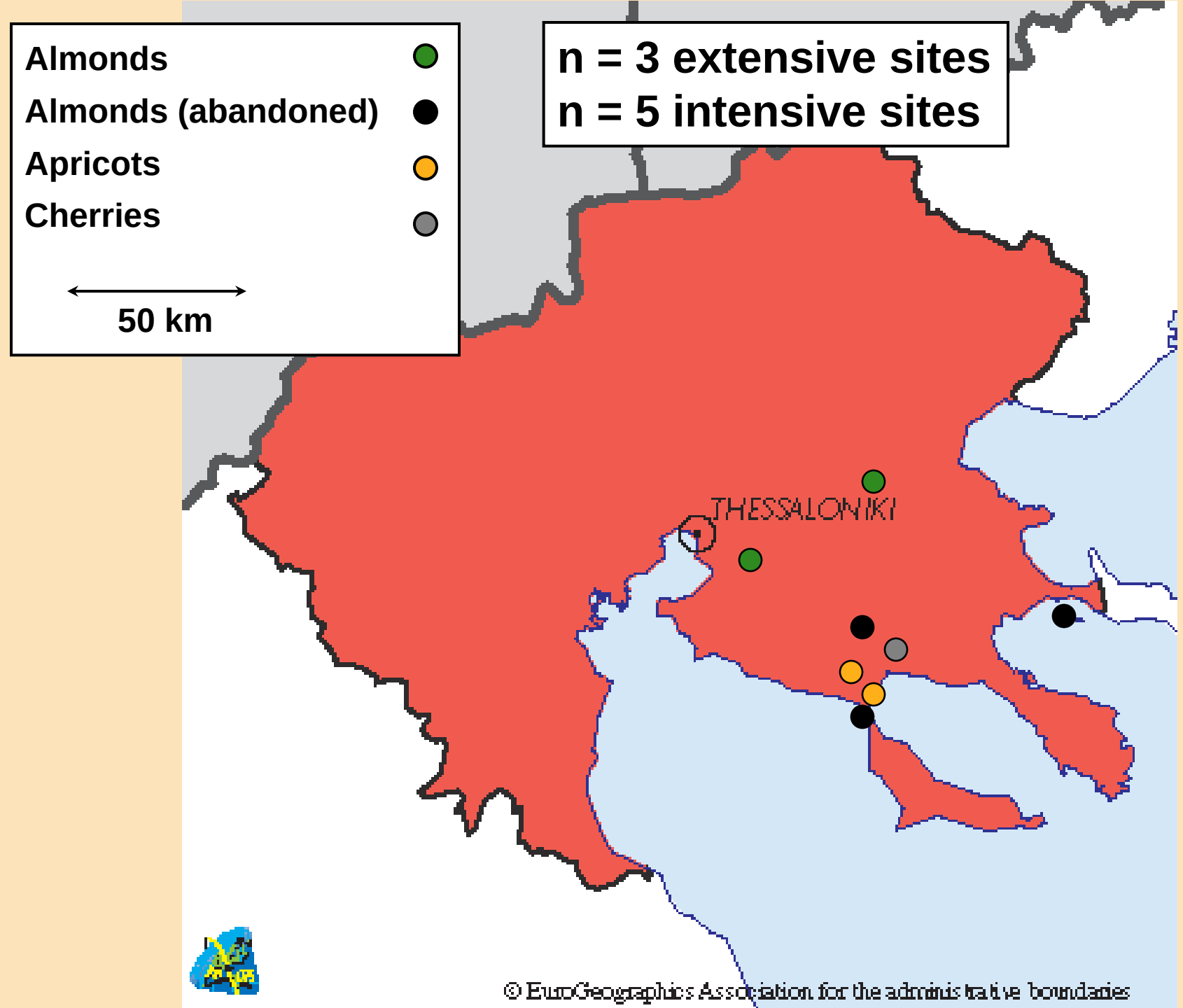
Aims

1. **Find the relationship between bee abundance and habitat use**

2. **Quantify pollination services in relation to bee abundance**

intensive apricots
(Nea Olynthos)

extensive almonds
(Ammouliani)


Almonds
Almonds (abandoned)
Apricots
Cherries
50 km
n = 3 extensive sites
n = 5 intensive sites
THESSALONIKI
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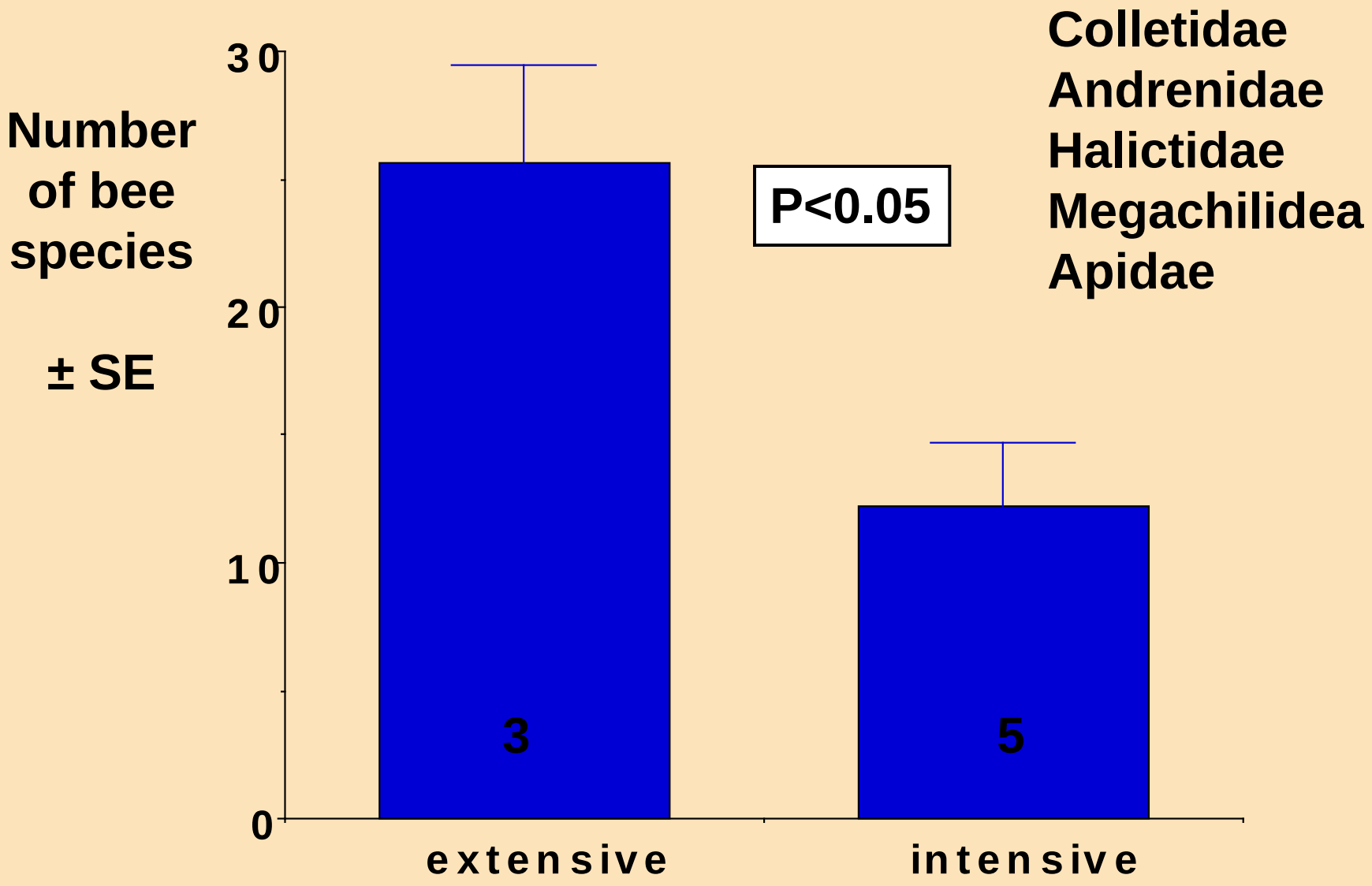
METHODS

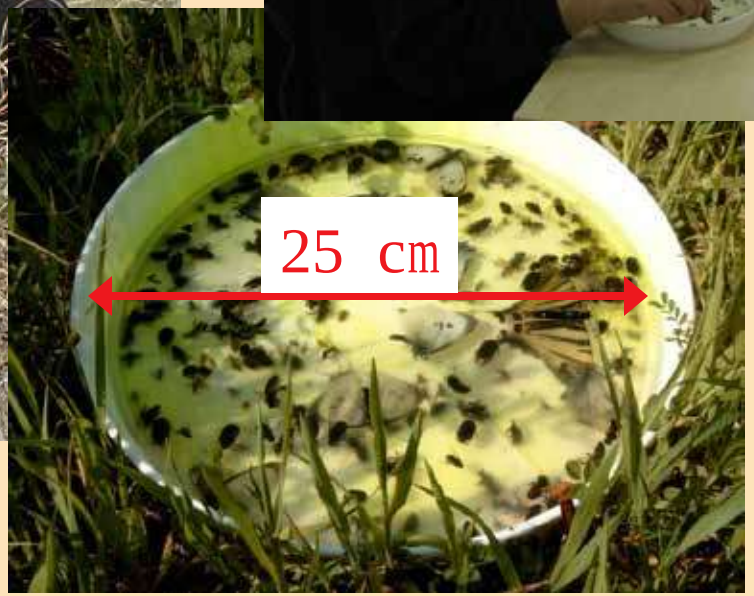
- **Sweep netting**
- **Pan traps**
- **Counts of insects on flowers**
- **Experimental pollination of flowers**

Sweep netting of bees

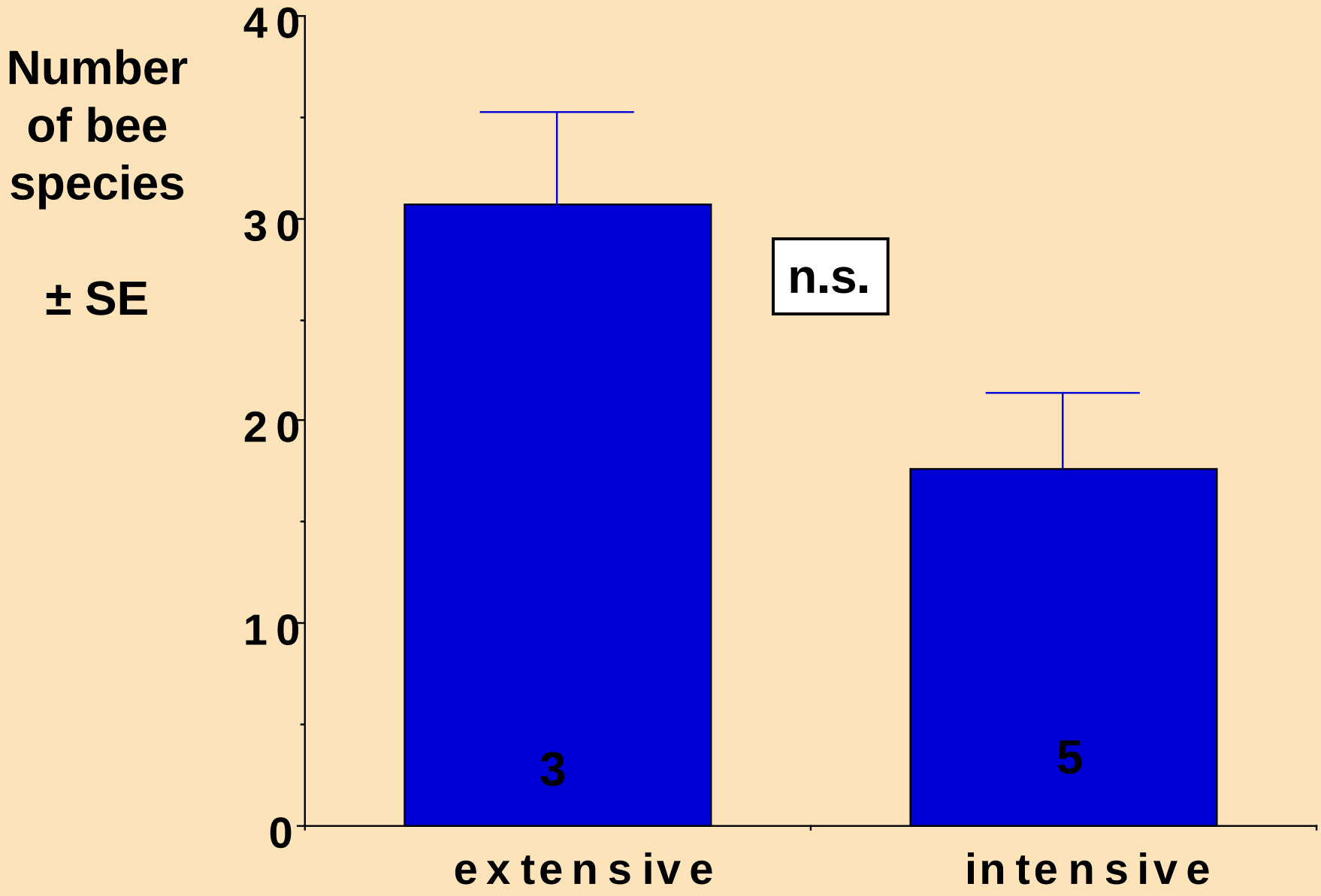
Sweep netting of bees



Pan traps

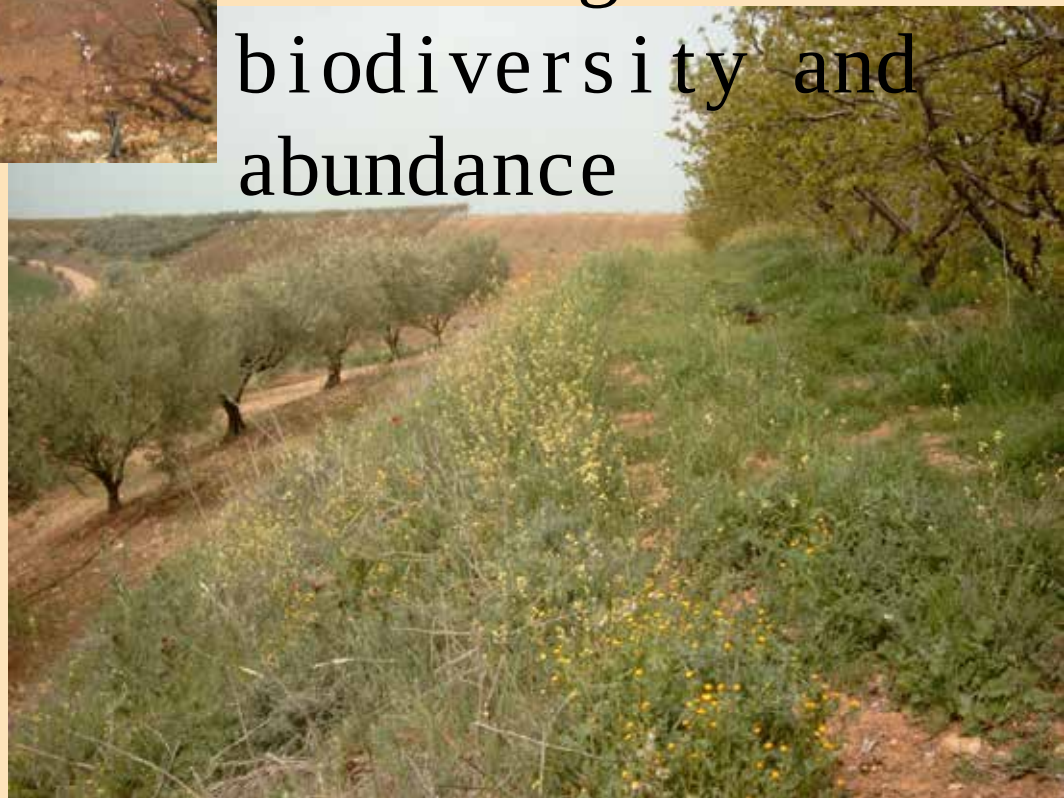


Pan traps


Number of bee species
± SE
40
30
20
10
0
n.s.
3
5
extensive
intensive

Spraying during bloom reduces bee abaundance

Parameters affecting bee biodiversity and abundance



Road or field sides are helping bee abundance

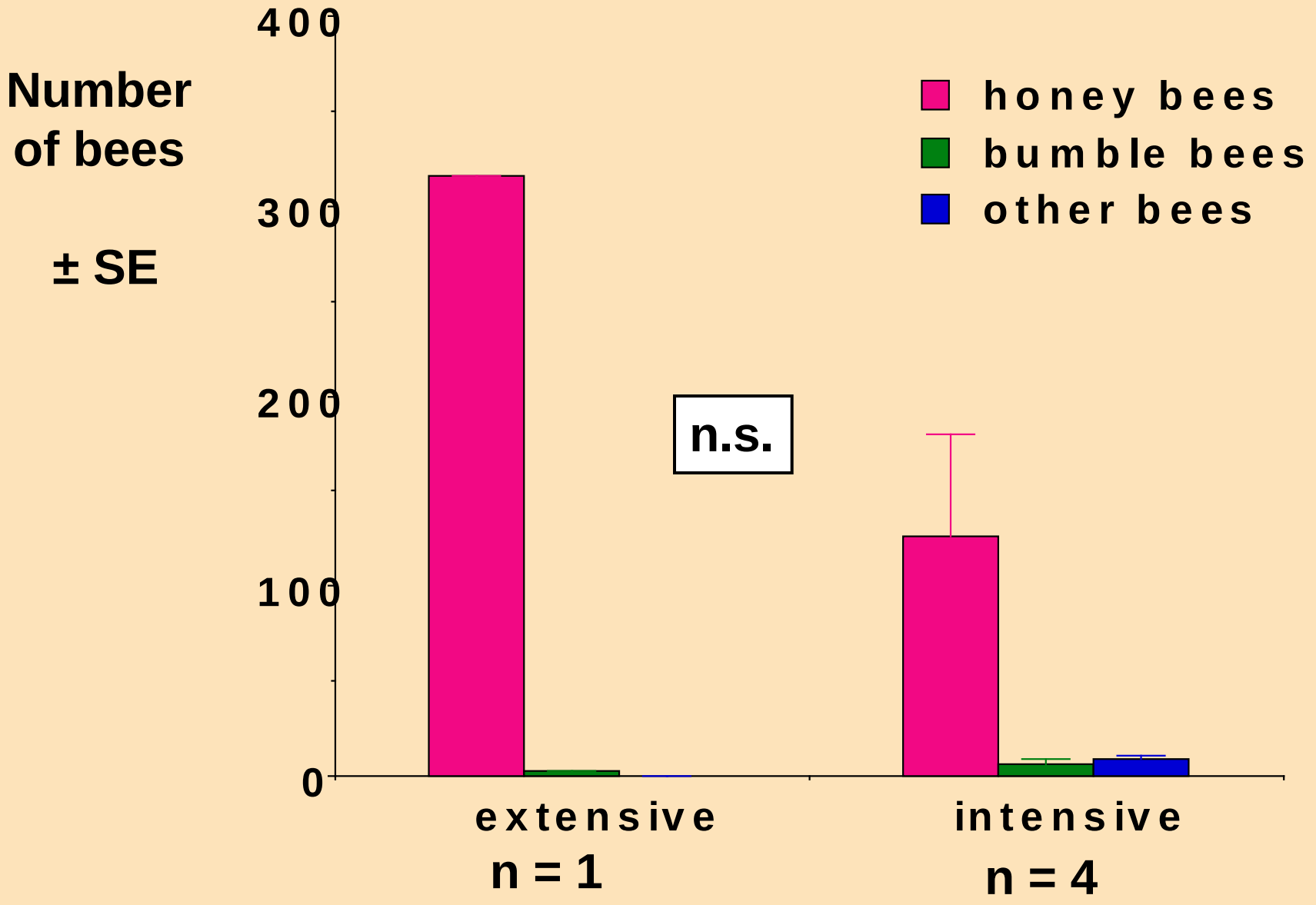
Bombus

Andrena

Artificial trap nests

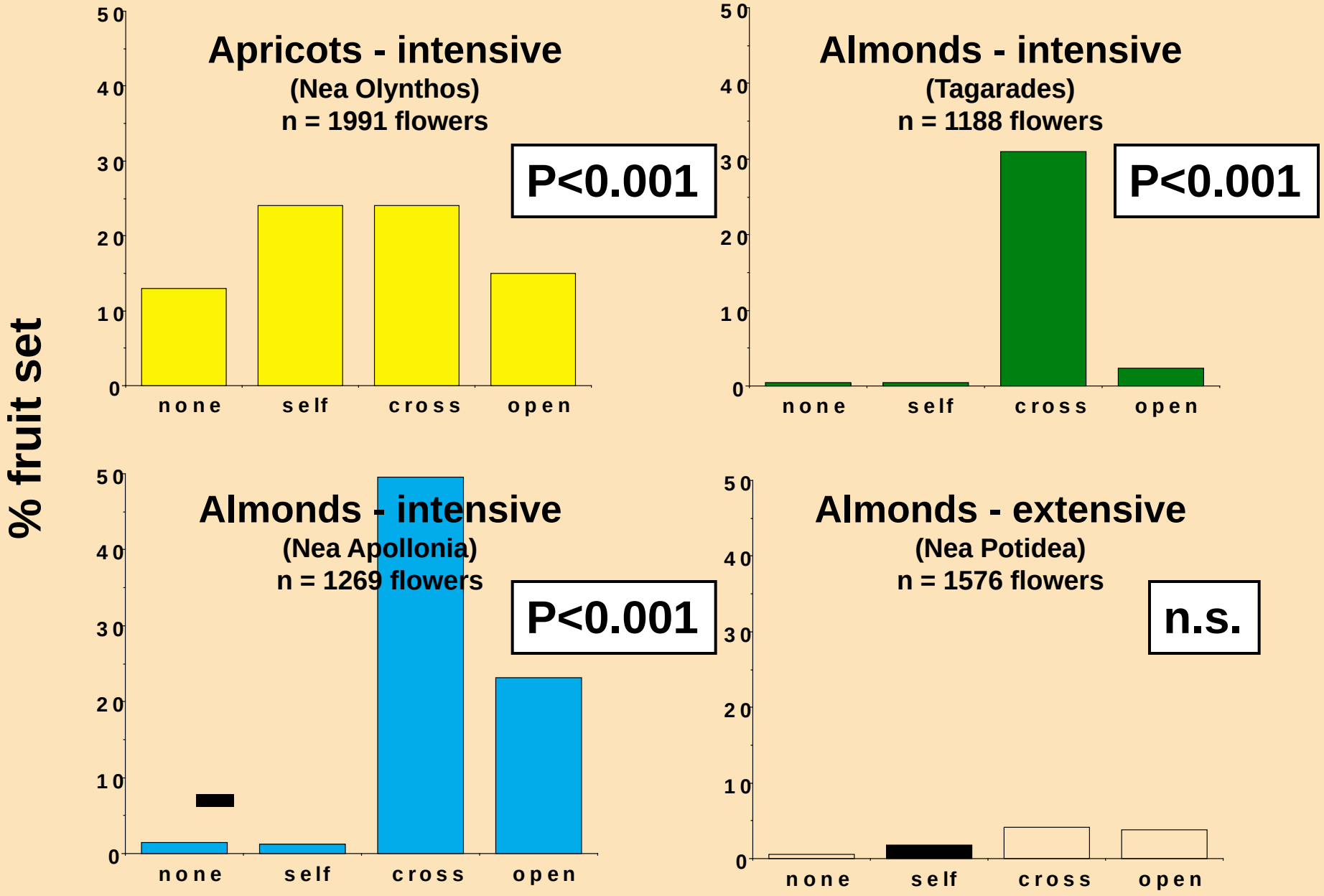
Counts of insects on flowers

Counts of insects on flowers



Experimental pollination of flowers

TREATMENTS
none = 50
self = 50
cross = 50
open = 50


% fruit set
Apricots - intensive
(Nea Olynthos)
n = 1991 flowers
P<0.001
Almonds - intensive
(Tagarades)
n = 1188 flowers
P<0.001
Almonds - intensive
(Nea Apollonia)
n = 1269 flowers
P<0.001
Almonds - extensive
(Nea Potidea)
n = 1576 flowers
n.s.
0
10
20
30
40
50
none
self
cross
open

CONCLUSIONS

- **bee diversity varies with land use**
- **yet even intensively used land can hold numerous bee species**
- **pollination short-fall**