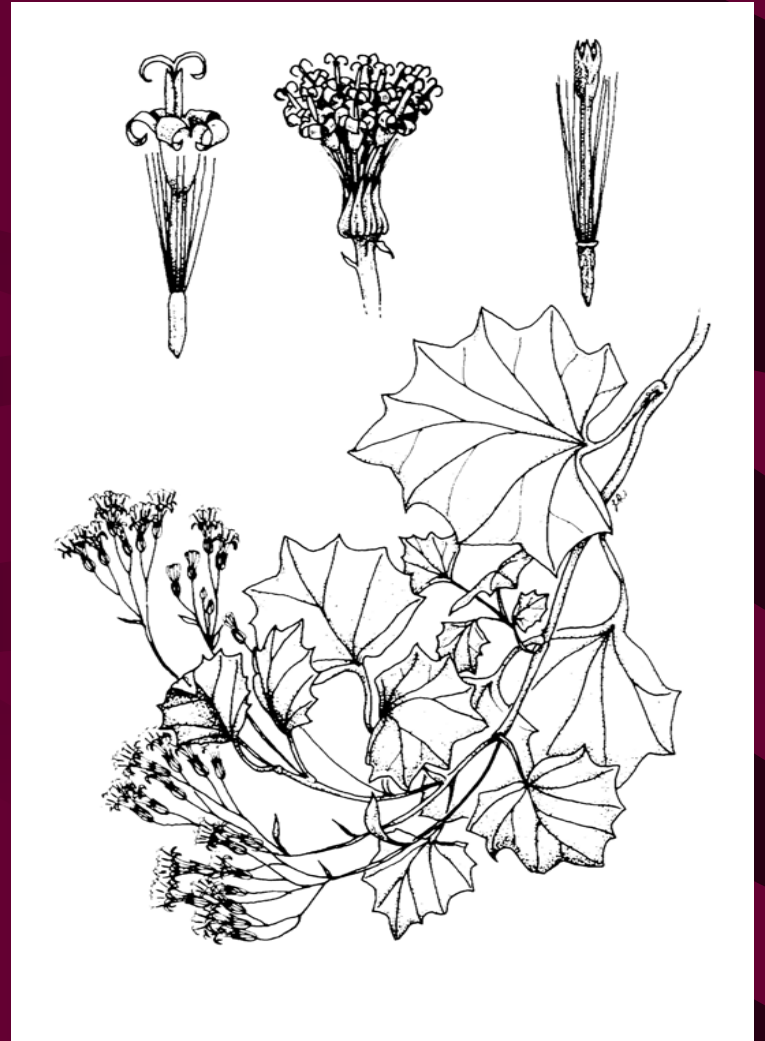


Reproductive Biology of Cape Ivy (*Delairea odorata*) in California

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Research Questions

- **Is viable Cape ivy seed being produced in California?**
- **If so, what are its germination requirements?**
- **Is Cape ivy self-incompatible and does it need to cross with another biotype?**
- **Are there different biotypes in California?**
- **How can this information be used for management?**

Cape Ivy Reproductive Biology

- **Viable (filled) seed locations**
- **Field and greenhouse self-compatibility experiments**
- **Seed biology experiments**

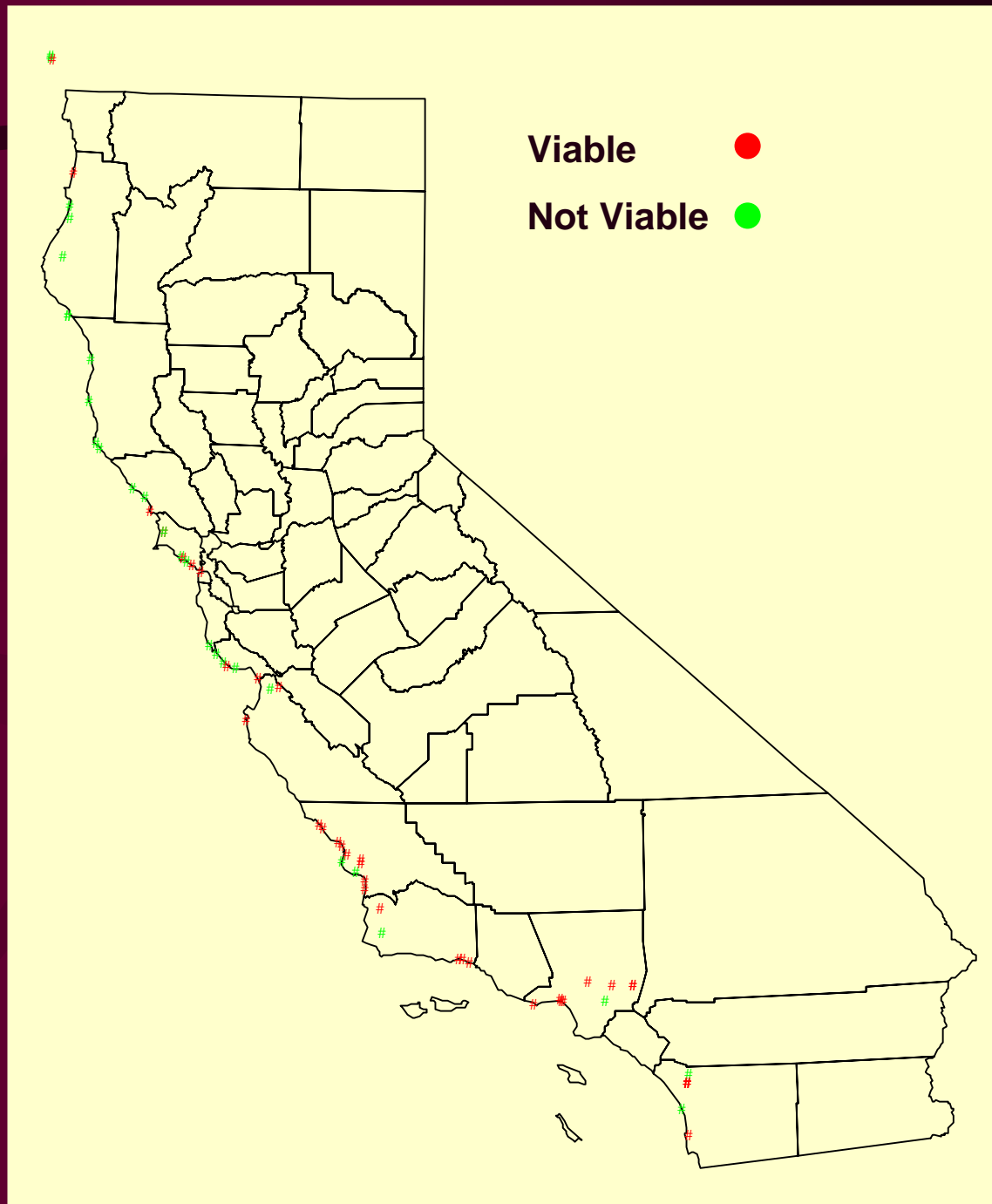




Photograph by Jack Clark



Cape Ivy Viable Seed Locations 2001-2004





**Stipulate Type
(ST)**

**Two types in California,
but the stipulate type is in
all but one location in
South Africa**



**Non-Stipulate Type
(NS)**

Distribution of Stipulate, Non-Stipulate, and Both Types



Locations of Field Self-Compatibility Trials 2002-2003



Field Self-compatibility Test Results (02/03)

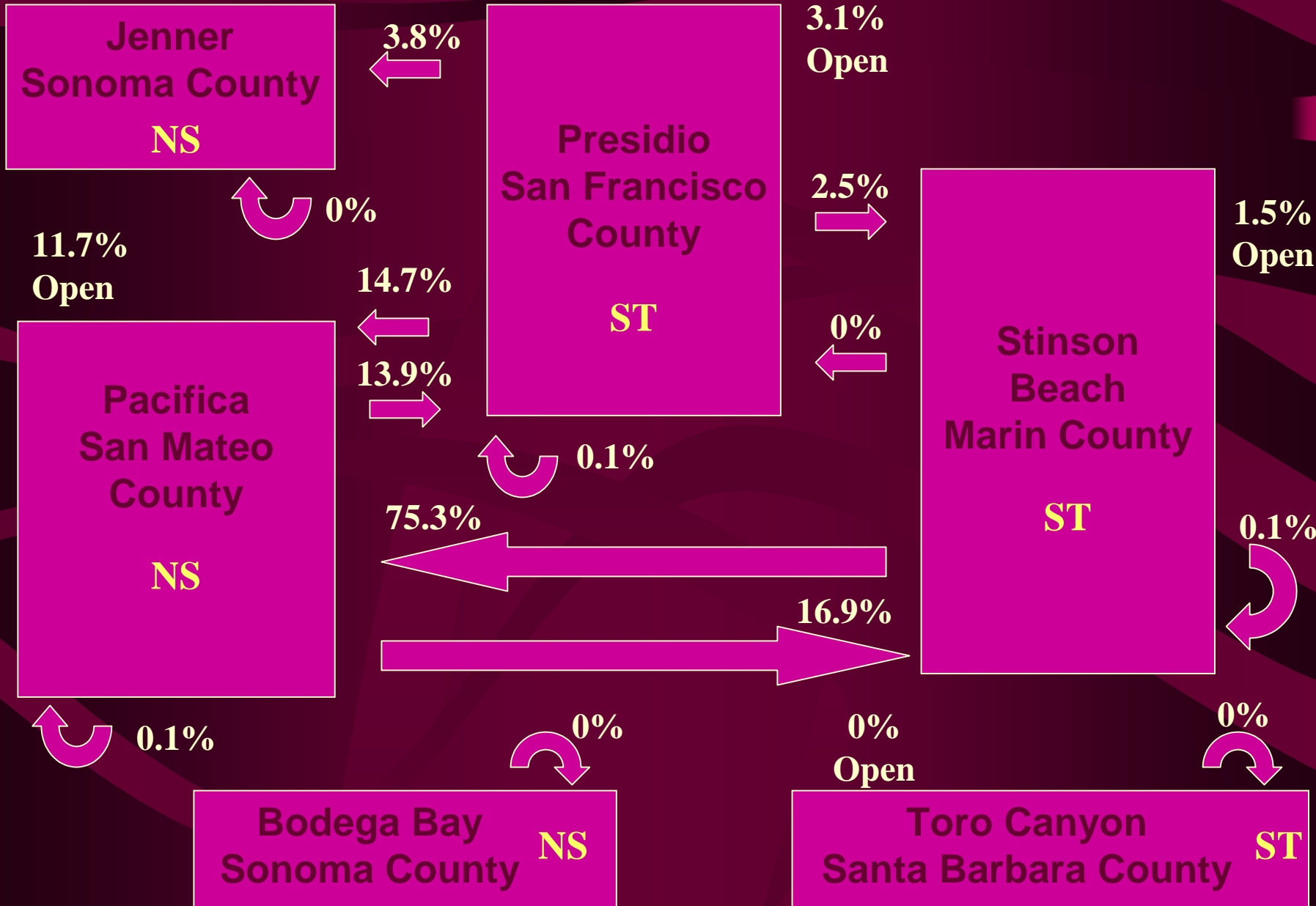
Location	ST/NS	Closed %	Open %
Bodega Bay	NS	0	0.33
Marshall	ST	0	0
North of Bolinas HWY1	ST	0	0
Volunteer Canyon	ST/NS	0.04	20
Stinson Beach	ST	0	0
Muir Beach	NS	0	0.56
Rodeo Valley GGNRA	ST	0	0
San Francisco Presidio	ST	0	0

Greenhouse Crossing Experiment (02/03)

- Performed at Bodega Marine Lab Greenhouse
- Used a variety of stipulate and non-stipulate locations



Greenhouse Crossing Experiment Results

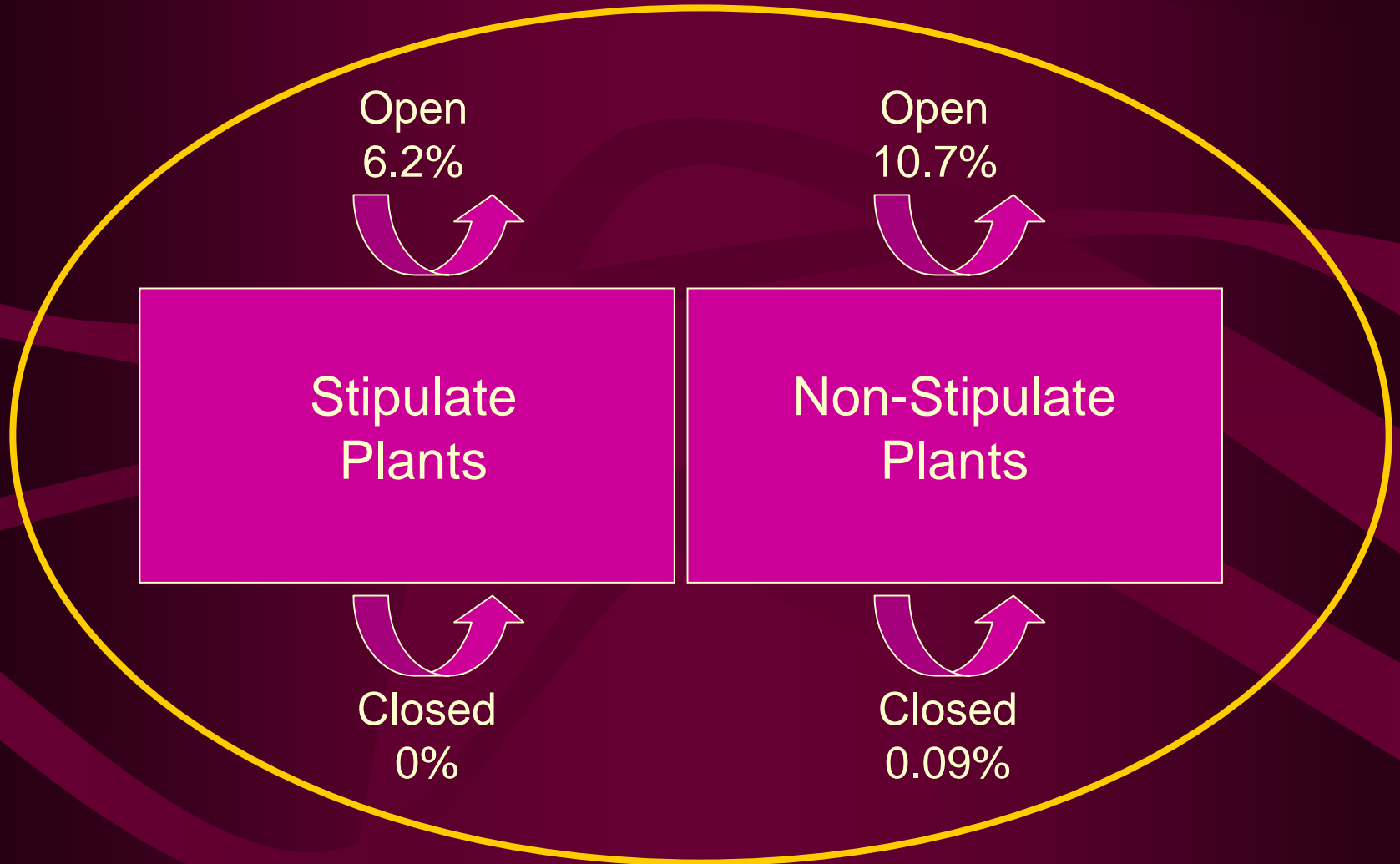


Field Crossing Experiment (2004)

- Performed at Volunteer Canyon Site, along Highway 1 in Marin County
- This site had 20% open pollinated seed set in 02/03 experiment and stipulate and non-stipulate plants for crossing



Field Crossing Experiment Results (2004)

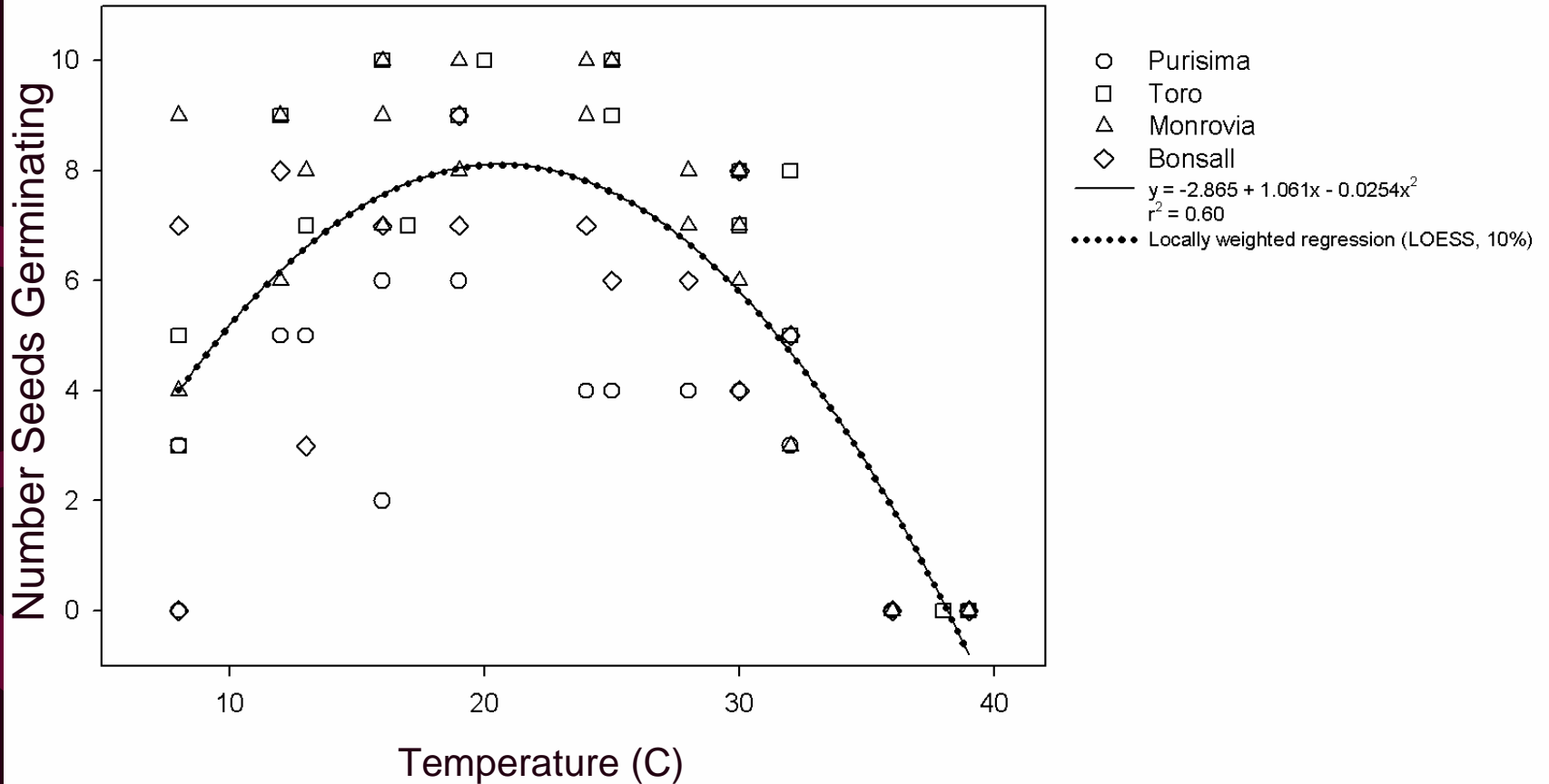


Seed Biology

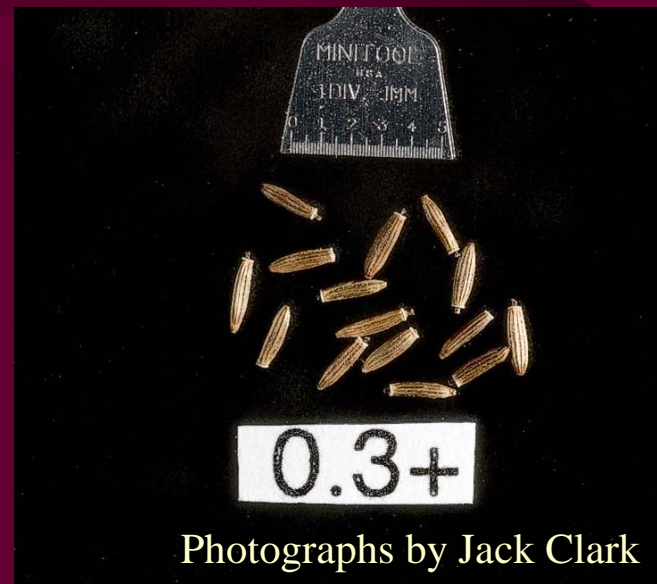
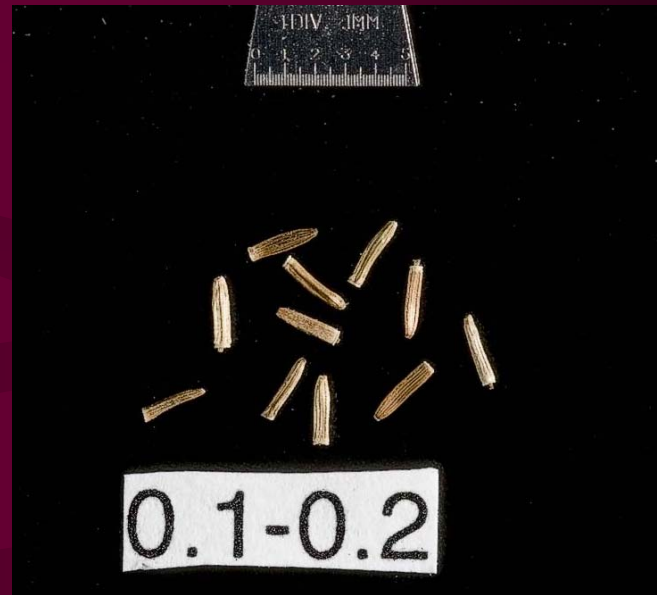
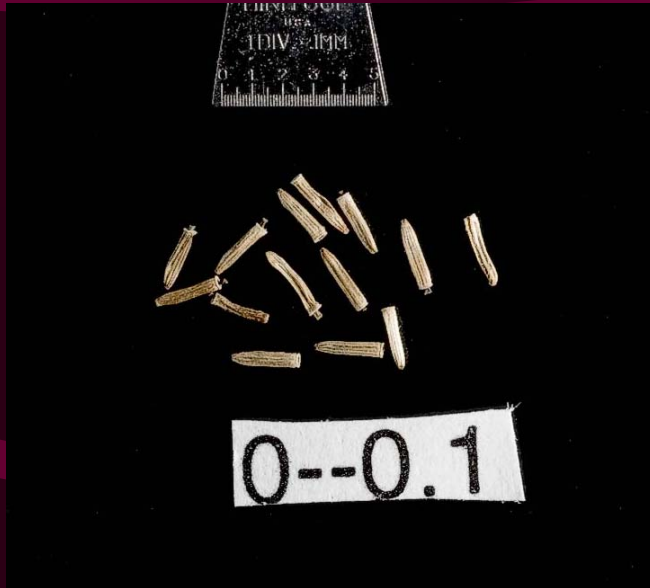
- Germination temperature
- Seed weight and germination
- Seed burial depth and germination



Cape Ivy Germination at a Range of Temperatures

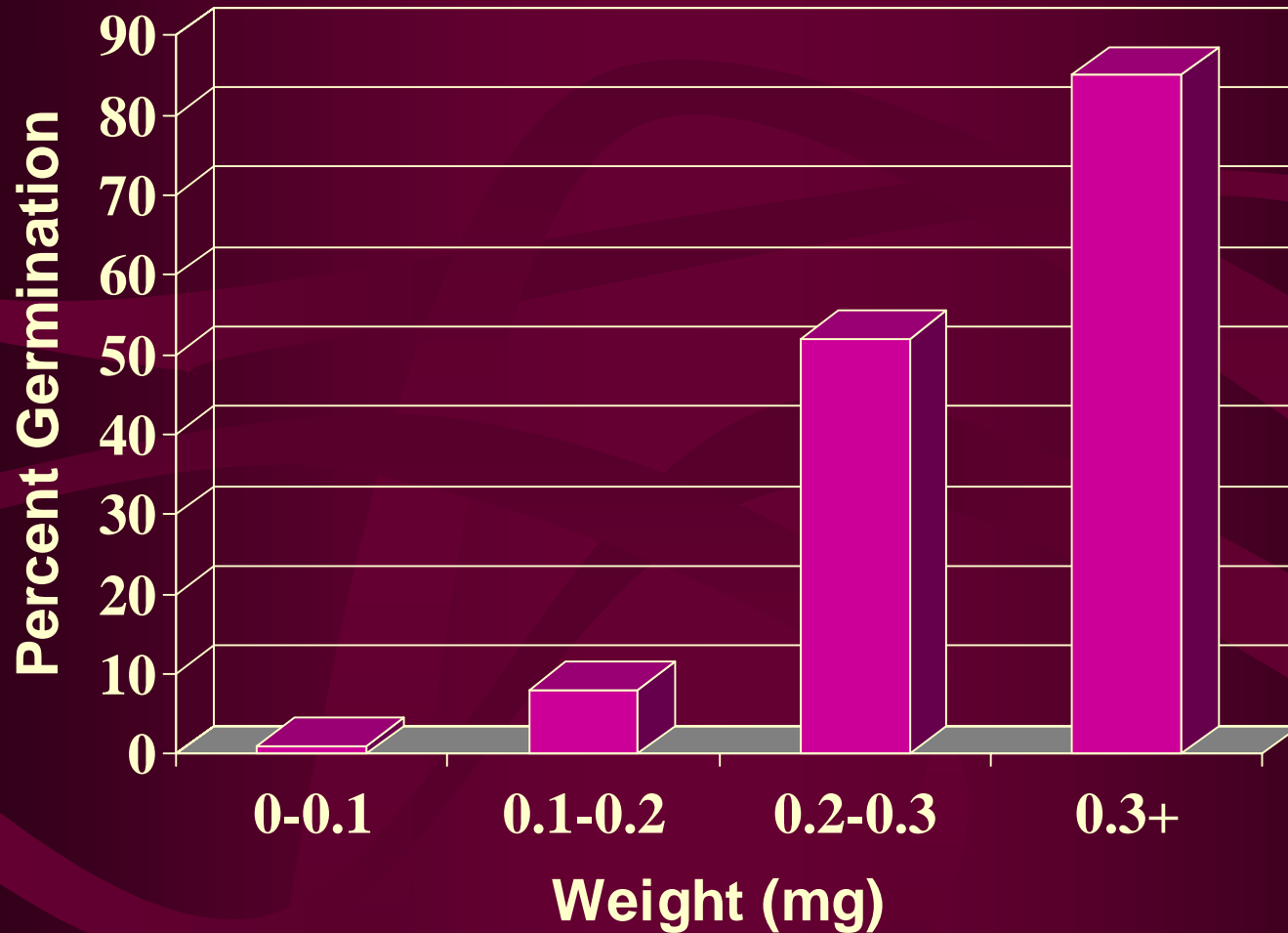


Cape Ivy Seed Weight Classes

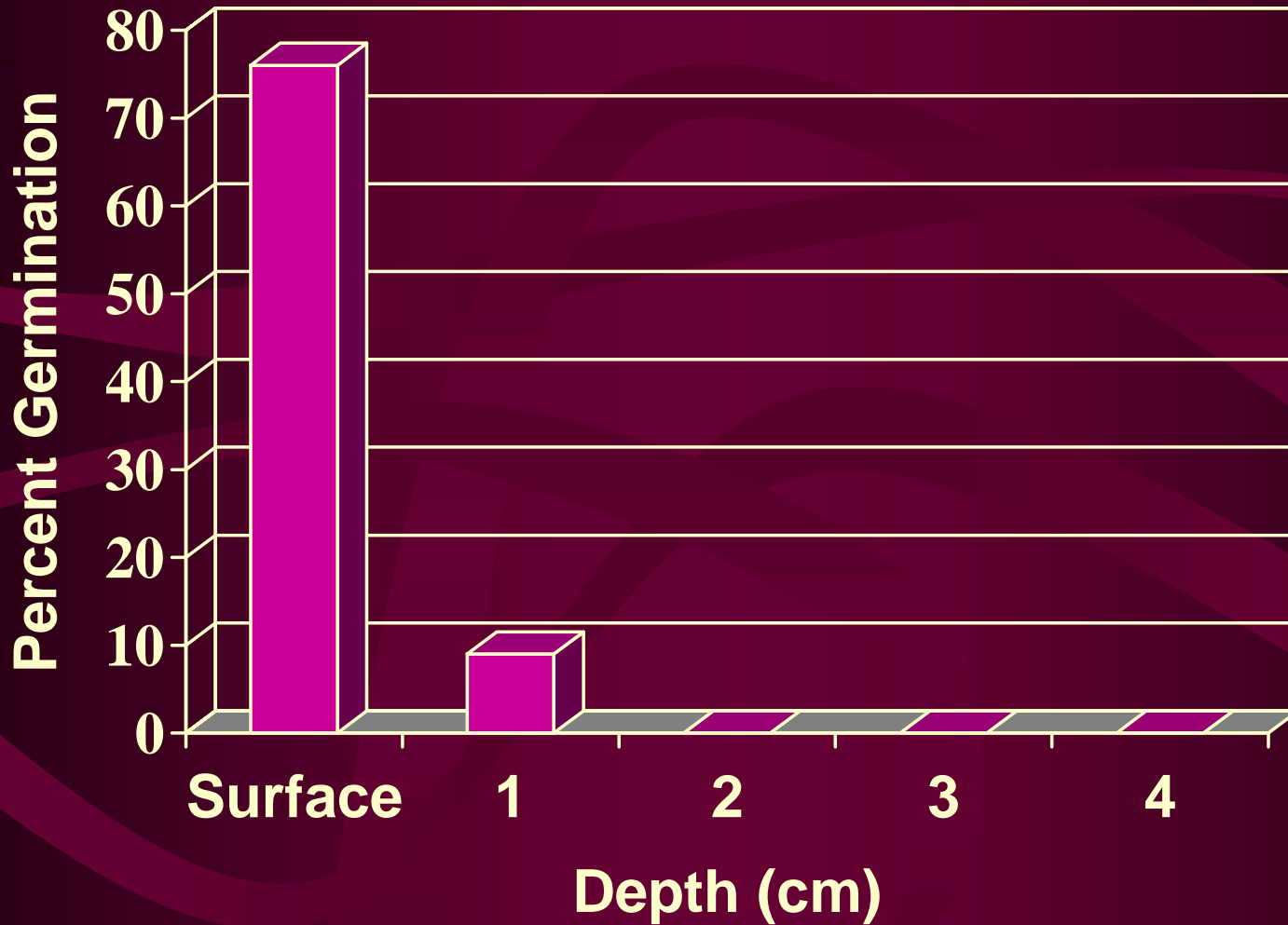


Photographs by Jack Clark

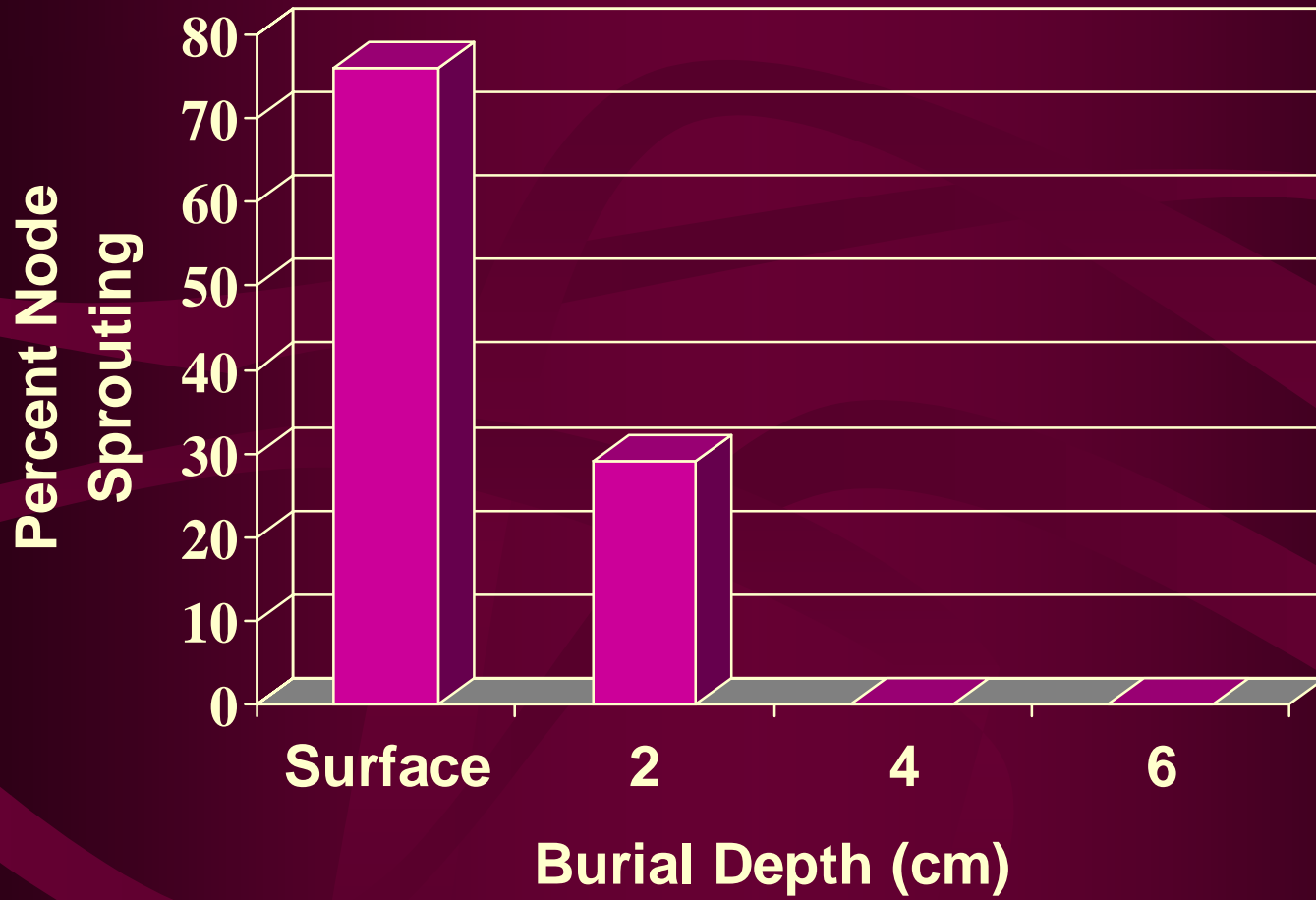
Germination of Cape Ivy Seeds in Four Weight Classes at 20°C



Cape Ivy Germination at Surface and Different Depths



Sprouting of Cape Ivy Stem Fragments at Different Soil Depths



Conclusions

- **Cape ivy produces viable wind-dispersed seed throughout California**
- **Most populations appear to be clonal and self-incompatible**
- **Populations with stipulate and non-stipulate types may produce more viable seed**
- **Seeds need to be on the soil surface to germinate and germinate at a wide range of temperatures**
- **One node fragments can produce a new plant, but they must be on or close to the soil surface**

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