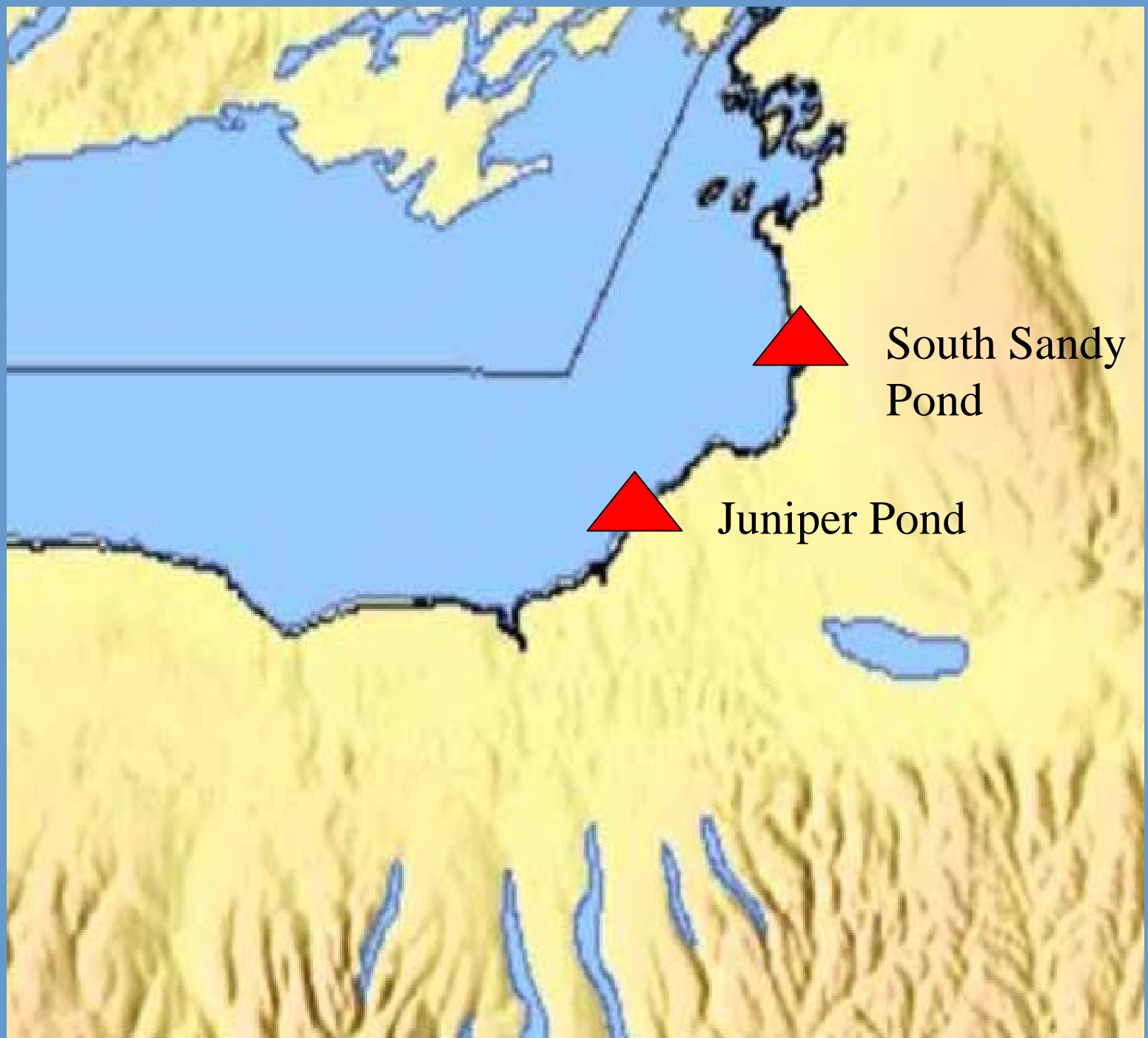


# S. Sandy Fen Pollen and Spore Results & comparisons with Short Pond Cores

D. Peteet,  
D. Pederson

April 23, 2007



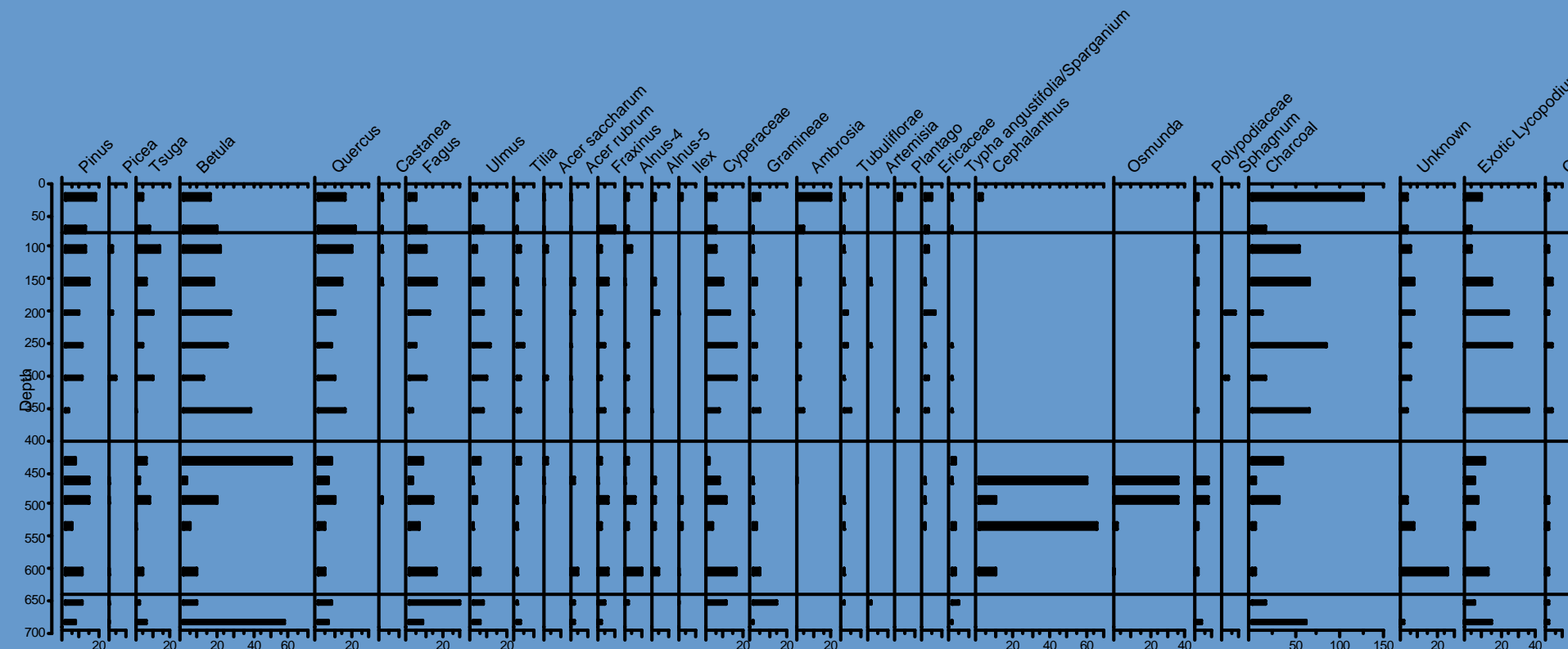
South Sandy  
Pond

Juniper Pond



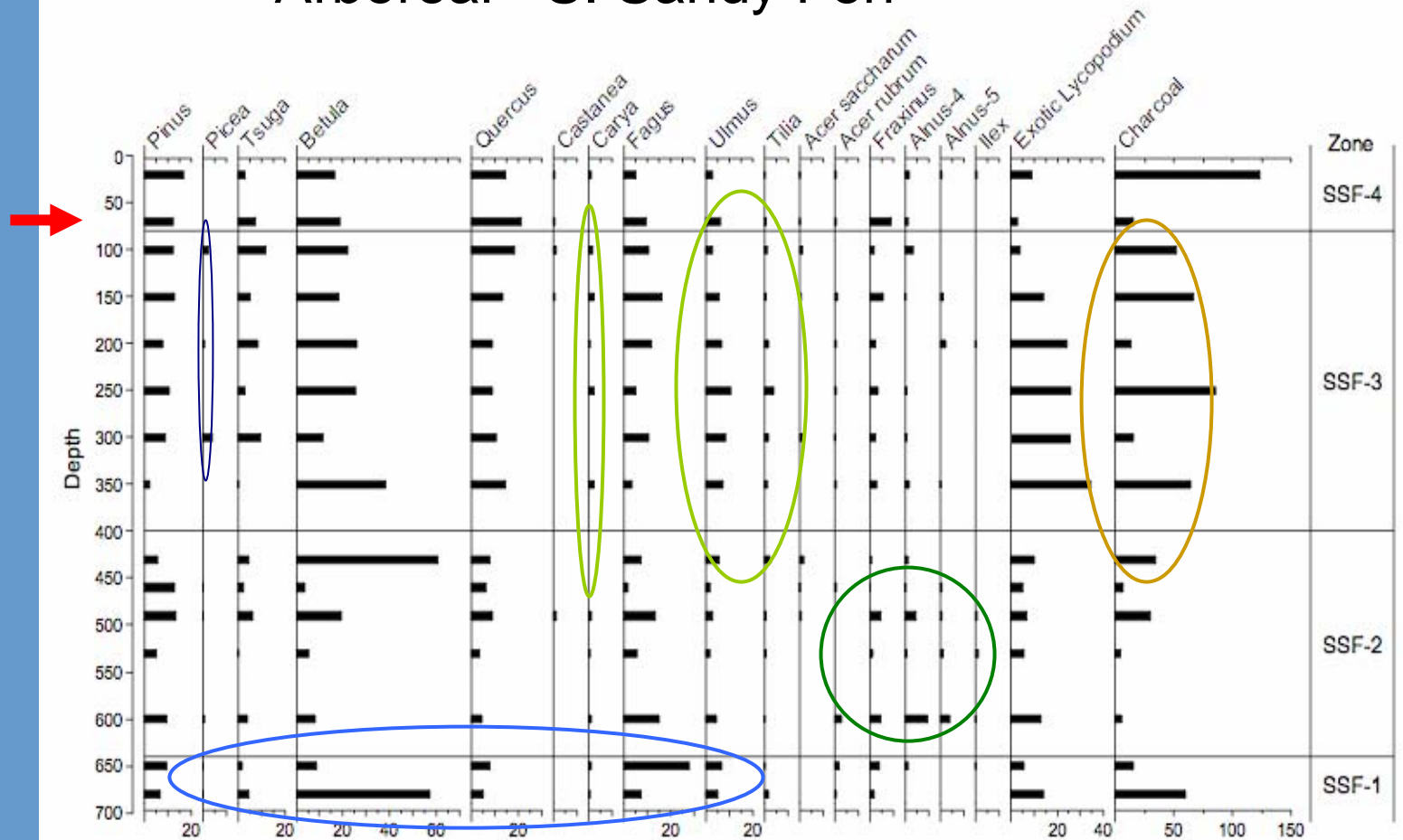


## S. Sandy Fen Pollen and Spore Percentages

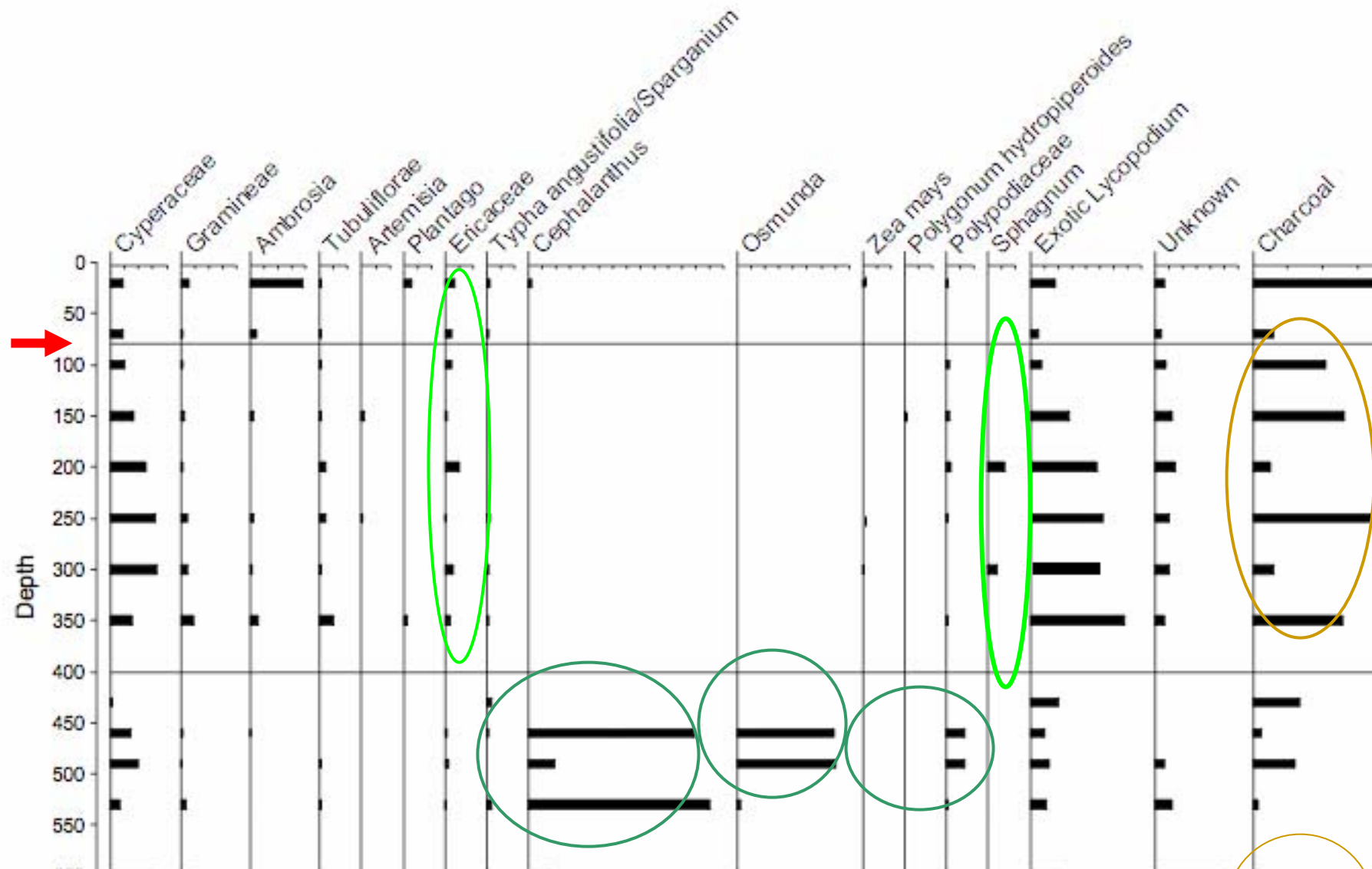




## Arboreal - S. Sandy Fen



# Herbaceous pollen




# Pollen & spore assemblage zones

SSF-4 Ambrosia & Plantago rise, some trees decline. Airborne charcoal at top.

SSF-3 - Increase ericads, less minerals, increase Sphagnum in fen

SSF-2- Alder-buttonbush, then ferns dominate swamp

SSF-1 High birch, beech, charcoal

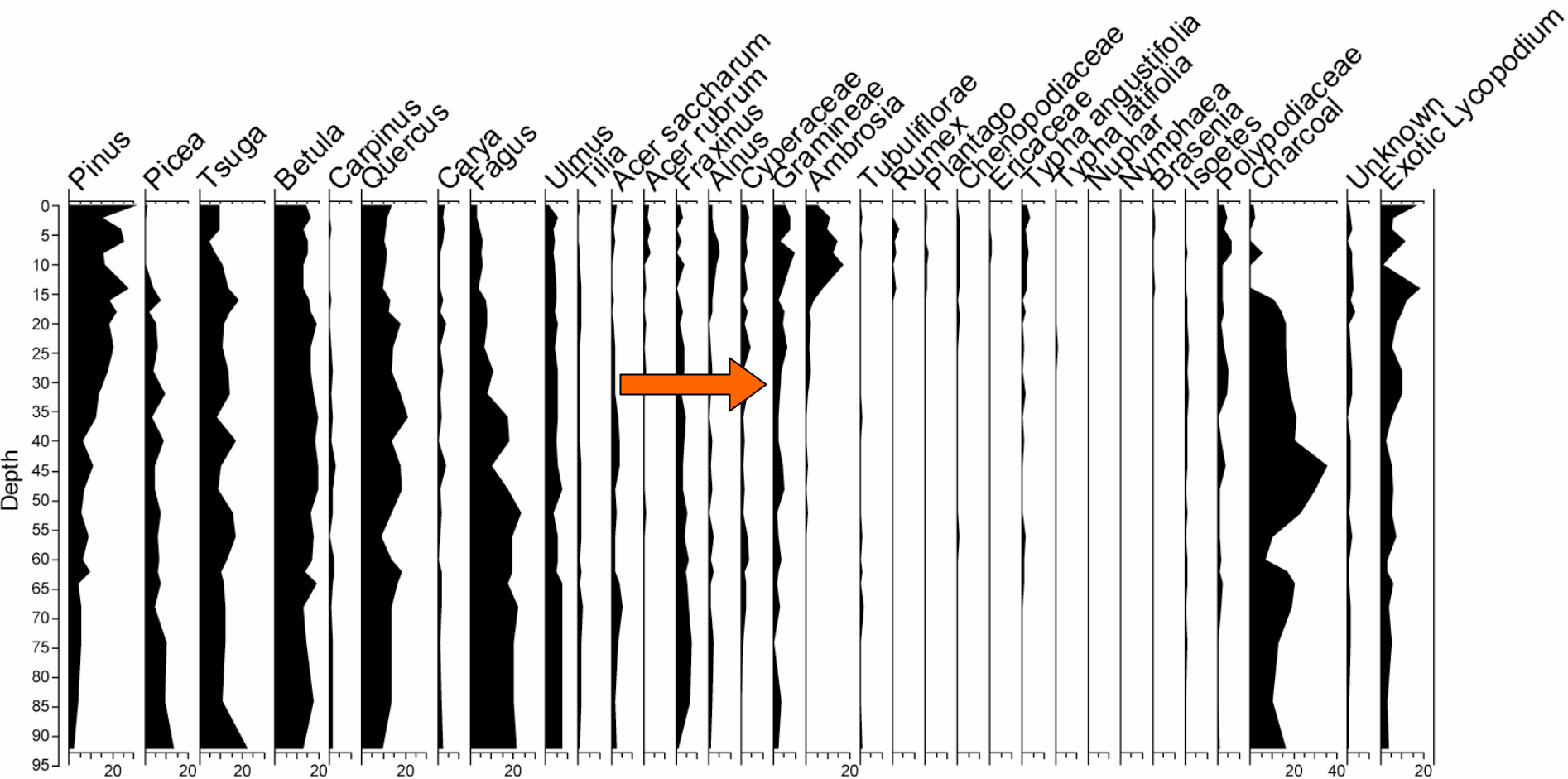
 = periodic fire



**Long-term development and disturbances of the coastal fen community at South Sandy Pond, NY, derived from peat macrofossil analysis. Fossil composition shows a transition from swamp forest to shrub swamp to modern graminoid and ericoid-dominated fen over several thousand years. Charcoal fragments suggest that fire may have been an important disturbance in the last few thousand years as the community became dominated by fen species. Similar cores from nearby Juniper Pond wetland (not shown), now a shrub swamp, reveal a similar progression, followed by a reversion from a fen system to shrub swamp following a hydrologic disturbance.**

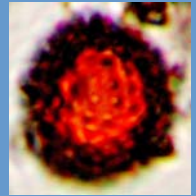


# South Sandy Pond, water depth 6 m



Pollen and spore percentage

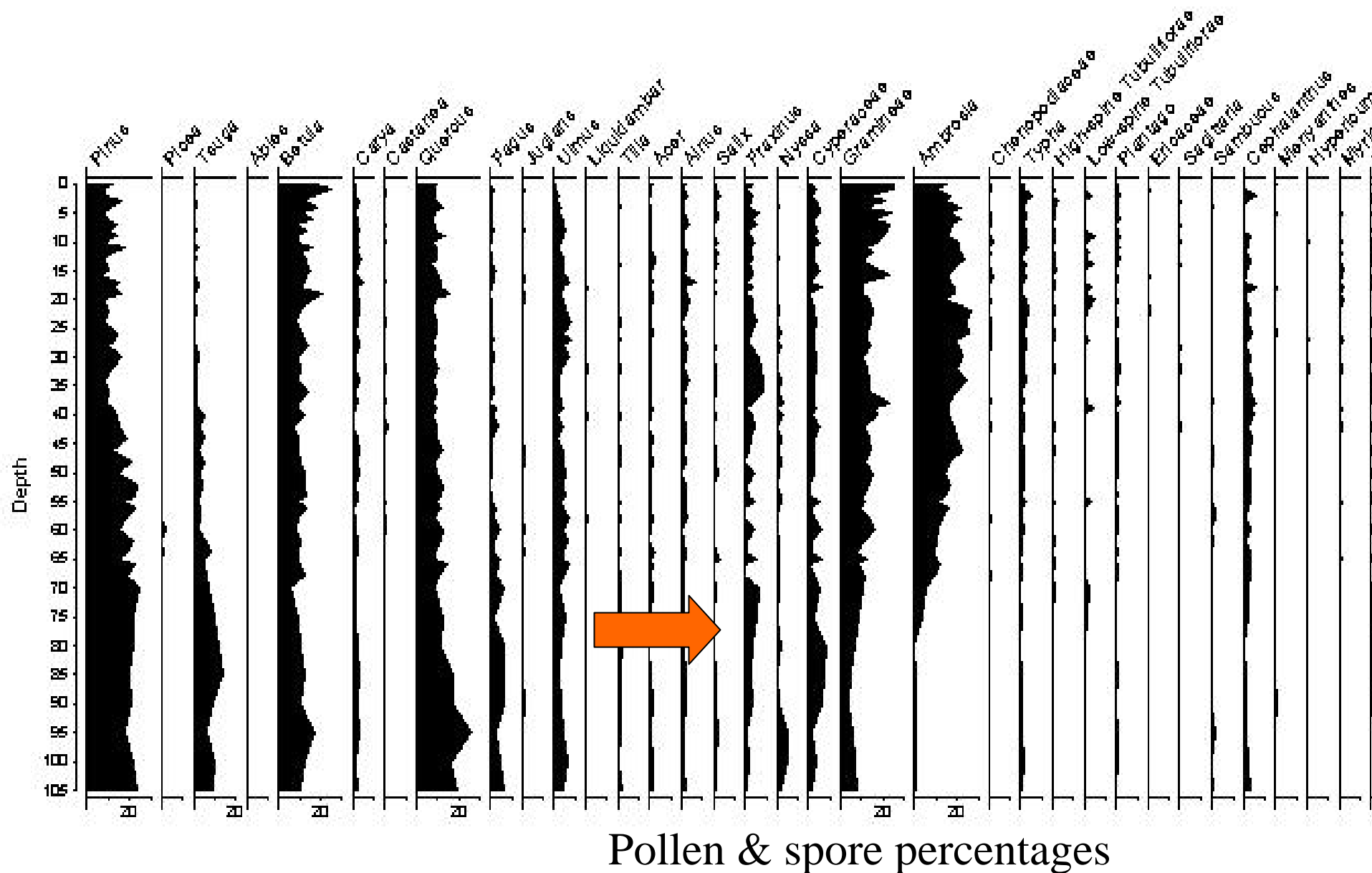
# S. Sandy Results



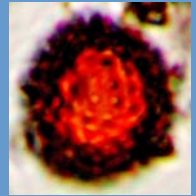
1. *Fagus*, *Tsuga*, *Quercus*, *Fraxinus*, *Acer saccharum* all more abundant prior to 1800 A.D. ( below 28 cm). Pb-210 (Engstrom) and magnetic composition (Warino) shifts. *Pinus* more abundant after human impact.
2. Major increase in *Ambrosia* and Gramineae beginning at 16 cm indicates European impact, along with continuous presence of *Plantago*, Rumex, and Chenopodiaceae.
3. *Typha angustifolia* gradually increases to 3% with more human impact.
4. Charcoal lowest after European impact at 16 cm, implying previous droughts or Native American burning.



# Juniper Pond, 1.4 m water depth



# Juniper Results



1. *Quercus*, *Pinus*, *Tsuga*, *Fagus* all more abundant prior to 1800 A.D. (106-70 cm). Pb-210 (Engstrom) shift.
2. Major increase in *Ambrosia* and Gramineae beginning at 70 cm indicates European impact, along with continuous presence of *Plantago*, Tubuliflorae, and Chenopodiaceae.
3. *Typha angustifolia* gradually increases to 5% with more human impact.
4. Charcoal highest between 70 and 55 cm, fluctuates, and drops to 0 in upper 10 cm.



# Similarities & Differences

- Pinus, Typha, weeds more abundant in cores after European impact (except Juniper Pond Pinus)
- Charcoal in top of S.Sandy fen high (airborne), but others relatively low prior to European impact

# Plans

- Complete S.Sandy Fen core & Juniper Pond Fen core
- AMS C-14 dating on macrofossils will enable us to understand stratigraphy in context of regional vegetation & climate shifts
- Nearby lake sediments over same interval?