

HSPDP: Update on Diatom Paleoecology

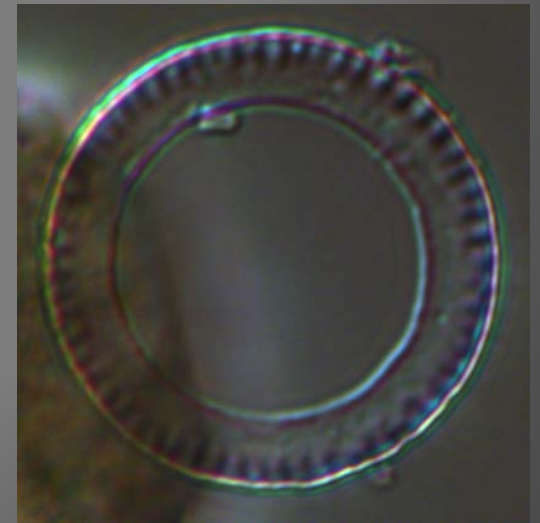
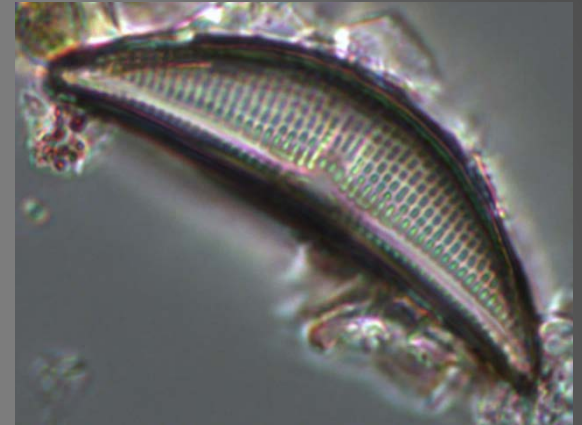
Jeffery Stone & Bernie Owen

Progress on Diatoms

West Turkana

- 594 samples collected (32-cm intervals)
- 100% processed
- 65% analyzed – 30% preparing for analysis
 - 60% of samples - diatoms determined too sparse / dissolved to count
 - 5% of samples – counts completed
- 5% currently being counted

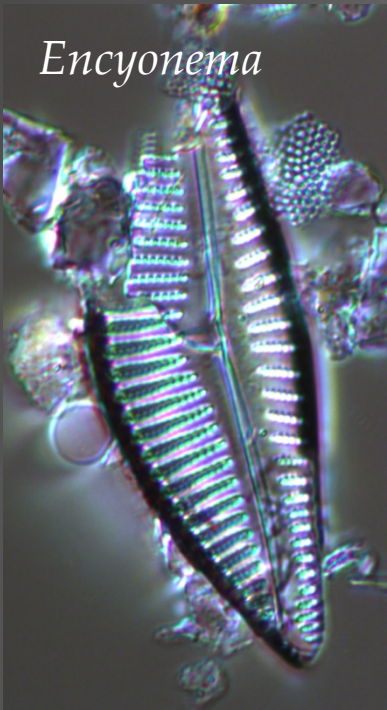
- 1,148 samples collected for high-res analysis (2-cm intervals)
 - Collected in diatom-rich sections of the core (from smear slide analysis and obvious diatomites)
 - 0% processed (awaiting initial analyses)



Periphyton

Benthic
Diatoms

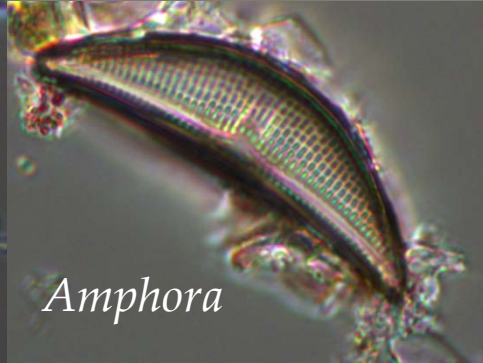
Diadesmis



Encyonema

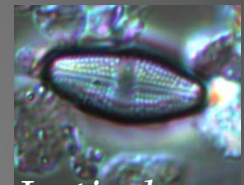


Caloneis



Amphora

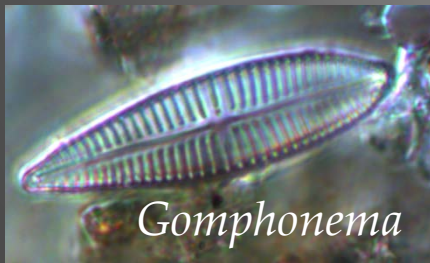
Aerophilic
periphyton



Luticola



Halamphora



Gomphonema



Rhopalodia

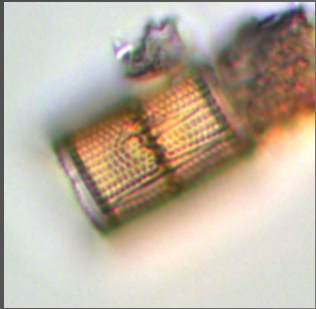
Surirella (unnamed species)



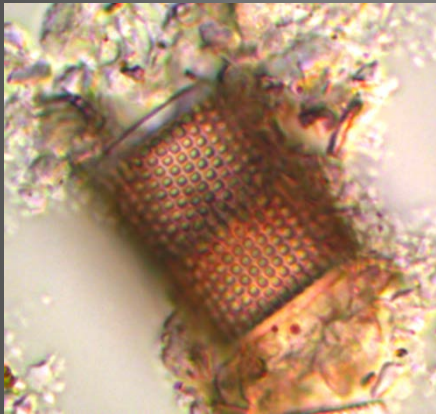
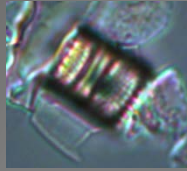
Meroplankton

Planktic Diatoms

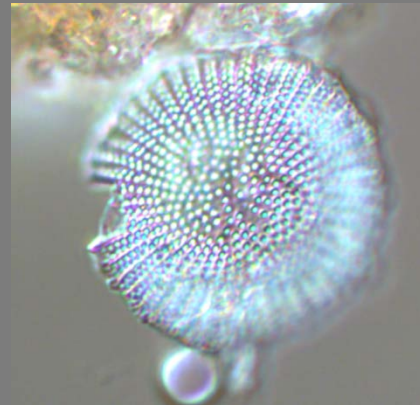
Obligate Plankton



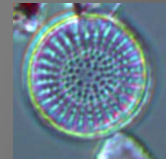
Aulacoseira



Stephanodiscus



Cyclostephanos (?)



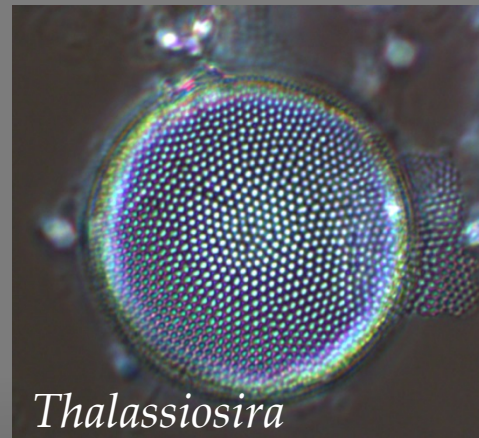
Tychoplankton



Colonial Fragularioids



Nitzschia



Thalassiosira



Cyclotella ●

West Turkana – Preliminary Conclusions

- Upper part of core (7-11 m) dominated by *Aulacoseira* in diatom-rich sections
 - Deeper water, well-mixed
- Middle part of core (30-50 m) dominated by alternating obligate plankton indicating more saline conditions (*Cyclotella quillensis*, *Thalassiosira* sp.), and tychoplankton (mostly *Fragilaria heidenii*)
- Discrete intervals with higher percentages of aerophilic periphyton (*Luticola* and *Diadesmis* both increasing together), suggesting a potential riverine influence or influx from reworked soil horizons

Progress on Diatoms



October 1, 2014

Progress on Diatoms



December 15, 2014

Progress on Diatoms

Afar

- **0% processed** (was awaiting funding)
- **1,044** samples collected for high-res analysis (2-cm intervals)
 - Collected in diatom-rich sections of the core (from smear slide analysis and diatomites)
 - **0% processed** (awaiting initial analyses)
- **Baringo Basin**
 - **0% processed** (was awaiting funding)
 - **754** samples collected for high-res analysis (2-cm intervals)
 - **0% processed** (awaiting initial analyses)
- Initial processing for both regions begins next week
 - BTB should be completely processed by April
 - Afar should be complete processed by July
- Analysis of Baringo begins February