

National Park Service  
U.S. Department of the Interior  
Chesapeake & Ohio Canal NHP

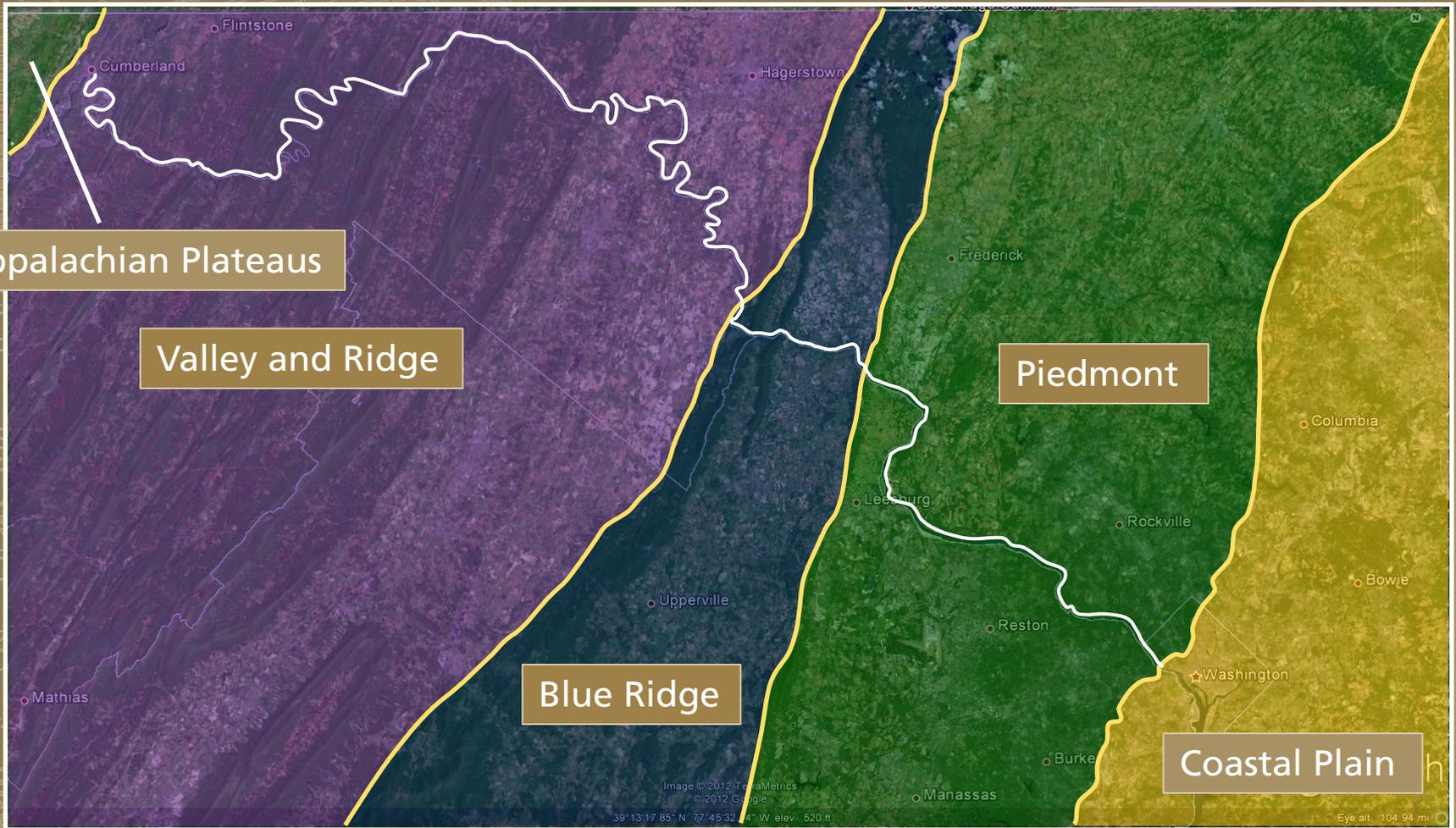


# Wetland Monitoring, Paleontologic Resource Surveys and Outreach for the Chesapeake & Ohio Canal NHP

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Mosaics in Science Program

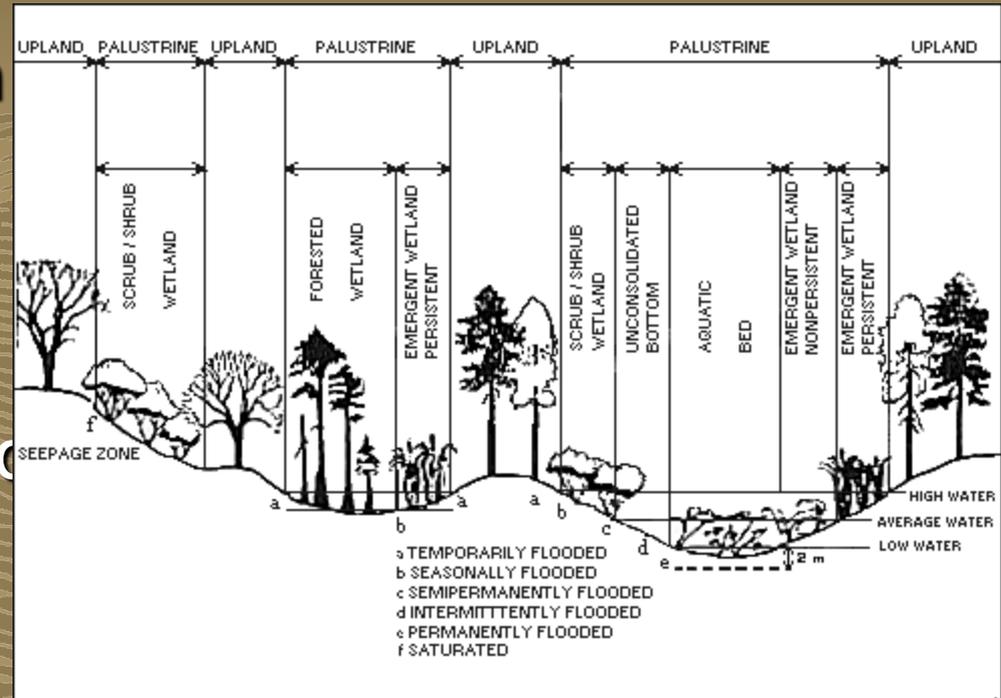


# Chesapeake and Ohio Canal (CHOH)



# Wetland Monitoring Cont.

- Wetland Delineation
  - Hydrology
  - Soils
  - Vegetation
- Standard for Wetland Delineation
  - USACE Manuals
  - Cowardin et al. (1979)



**Fig. 1. Distinguishing features and examples of habitats in the Palustrine wetland system. From Cowardin, L. M., V. Carter, F.**

C. Golet, E. T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. Jamestown, ND: Northern Prairie Wildlife Research Center Online.  
<http://www.npwrc.usgs.gov/resource/wetlands/classwet/index.htm>

# Wetland Monitoring:

# The Canal Farm



# Wetland Monitoring Cont.

- The Canal (Chick) Farm Site
  - Wetland drained in 1800's by local farmer
  - NPS wishes to restore this wetland
    - Must complete hydrogeology survey
- Hydrogeology Survey
  - Measure depth of water table at each well site
  - Input data into hydrology model
  - See if wetland be restored to 2:1 ratio

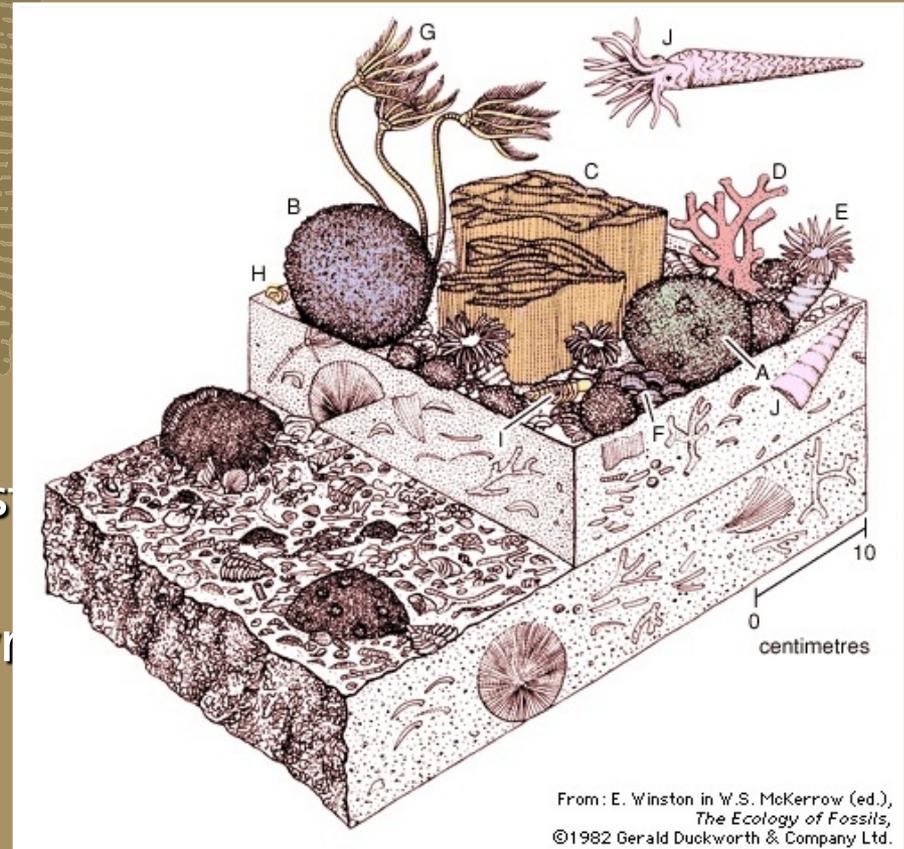
# Wetland Monitoring Cont.



Image depicting a typical groundwater monitoring well installation at the Canal/Chick farm using a hand held bucket auger. July 2012.

# Fossils at C&O Canal

- 28 *in situ* localities
  - Upper Cambrian to Upper Devonian
    - Brachiopods
    - Bivalves
    - Gastropods
    - Arthropods
    - Cephalopods
    - *Archaeopteris* - "Oldest modern tree"
  - Whites Ferry to Oldtown
- 10 isolated occurrences
  - DC to Cumberland



# Fossils at C&O Canal cont.



Compressed *Archaeopteris* fragments (left); straight-shelled nautiloid (above). Photo courtesy of Katharine Loughney.

# Fossils at C&O Canal cont.

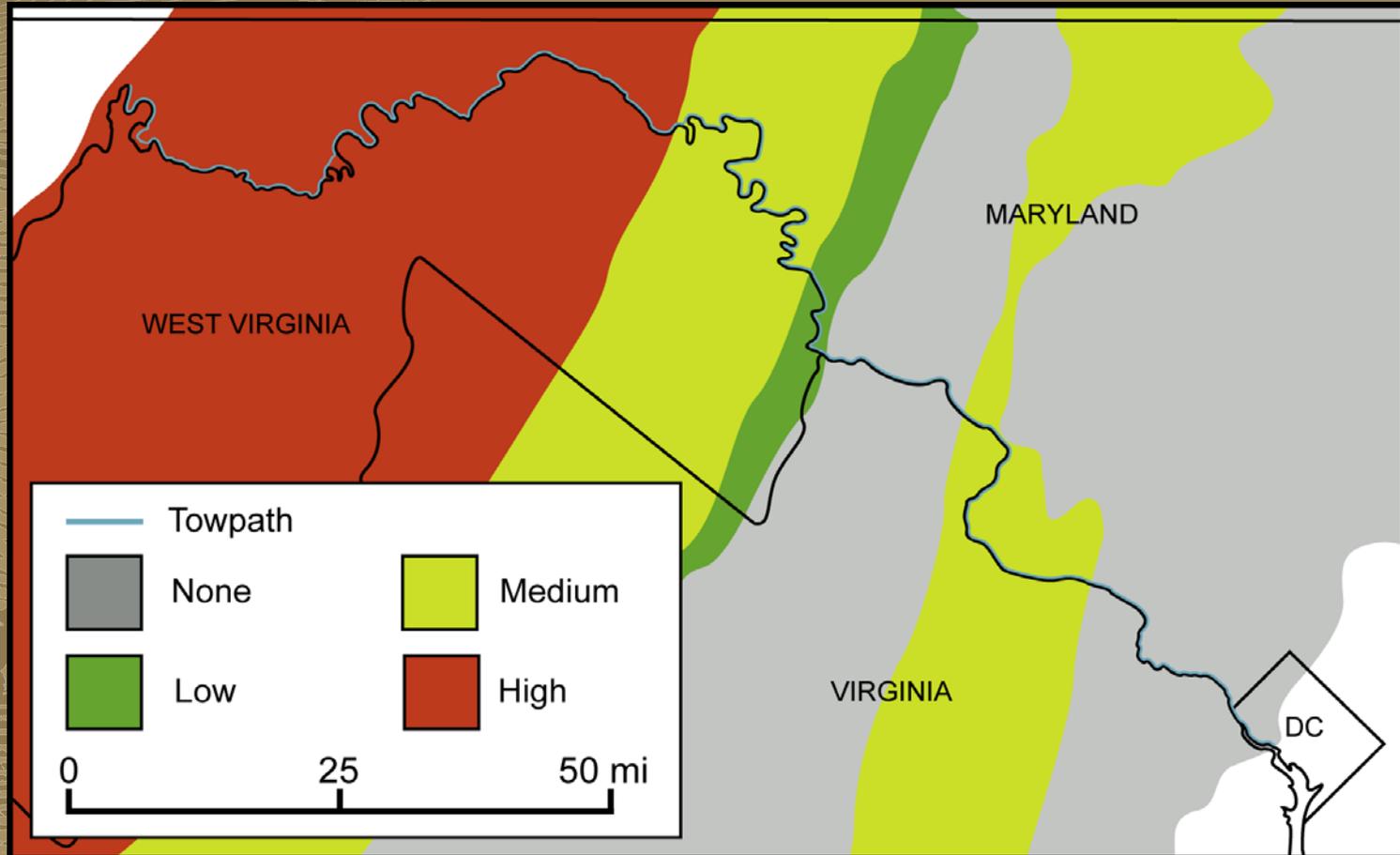


Gastropod internal cast



Brachiopod cast and mold

# Paleontologic Potential at CHOH



# Paleontologic Resource Surveys

- Protecting fossil resources at CHOH
- Be compliant with CHOH Fossil Resources Management Plan
  - Collect fossils seasonally/yearly
- Catalog new fossil outcrops
- Document evidence of fossil poaching/alert authorities

# Paleontologic Resource Surveys cont.

- 0-170 grade scale
  - Higher score = better condition
    - > 90 score = Good
    - 50-90 = Marginal
    - <50 = Poor
- Graded on:
  - Disturbance
  - Fragility
  - Fossil Abundance
  - Access to Site

CHESAPEAKE AND OHIO CANAL NATIONAL HISTORICAL PARK PALEONTOLOGICAL LOCALITY CONDITION EVALUATION FORM			
CHOH #	P 011 Tunnel Hill #2		
Total Score	30		
Last visited by:	K. Loughney	Date:	12/05/11
Recorded by:	I. Cavabajal	Date:	07/21/13

Each paleontological locality will have a maximum score of 170 points. The higher the score, the better.

Mock Paleo. Condition Survey

# Paleontologic Outreach

- Work in progress
- Creating CHOH Specific Fossil document for kids
  - Paired with Junior Paleontology Workbook
- Increase interest in CHOH among youth

# Acknowledgments

- Chesapeake & Ohio Canal NHP
- Mosaics in Science & Geological Society of America
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