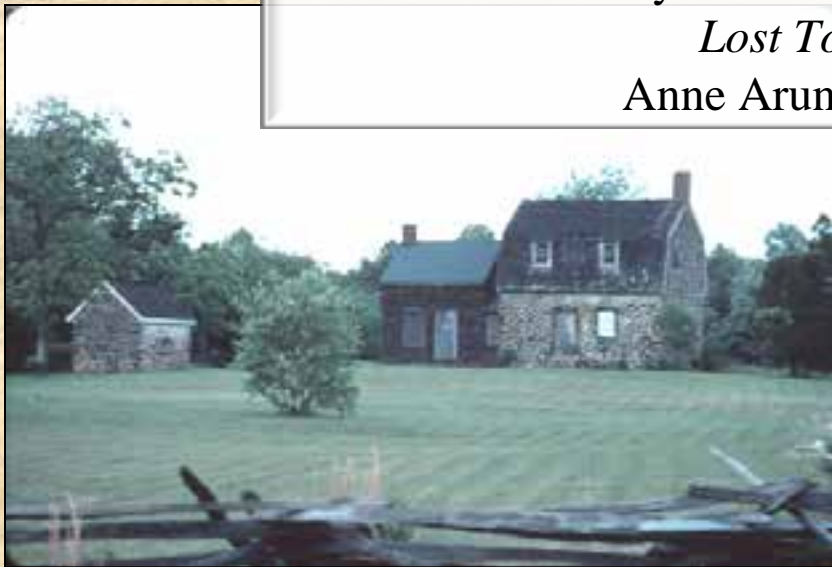


## “Case Studies in Local Government GIS Applications for Cultural Resources”

By: Anastasia Poulos, MPS

*Lost Towns Project*

Anne Arundel County, MD





**Our Cultural Resources:**

- 588 Historic Buildings and Sites
- 128 Demolished Historic Structures
- 1515 Archaeological Sites
- 462 Cemeteries
- 169 Scenic and Historic Roads

**Main Duties** (*Article 17 of the County Code*):

- Compliance Review and Mitigation of Development
- Survey and Research the Cultural Resources of the County

**GIS Functionality in the CRD:**

- To ensure the preservation of significant sites and structures
- To assess potential impacts
- To use spatial analysis to approach archaeological and historical research questions

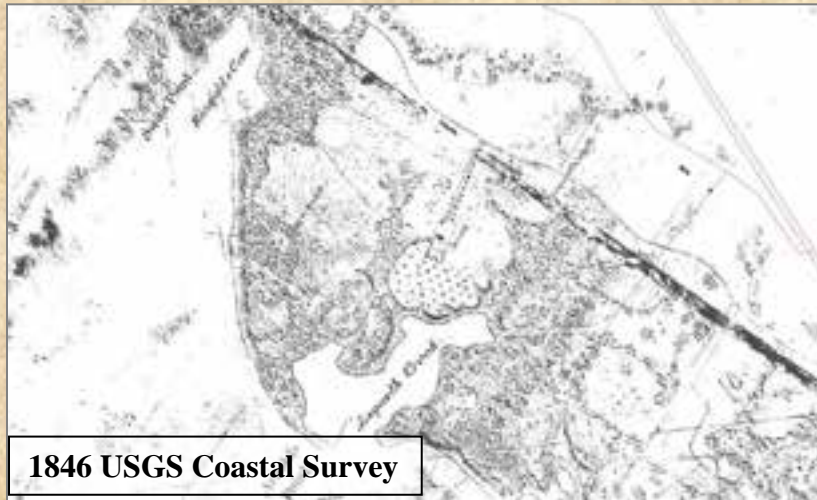
## Building the Spatial Database

### The First Step: *Inventory Assessment and Management*



***Demolished: AA-1004 J. Parker Farm, mid-19<sup>th</sup> century***

***A Growing Inventory.....***



**A Searchable Database.....**



**G. M. Hopkins Atlas of 1878**

*Comparing Past and Present Footprints*



**Bay Ridge  
Historic District**

*Assessing Archaeological Potential*

**1957 USGS Quad**



**2011**





*Why we need development review...*



AA 135  
Howard's Entrance

0 0.015 0.03 Miles

What happens when there is no development review?



*The Public Interface and future plans...*

The screenshot displays a GIS web application interface. At the top, there are navigation tabs: "Getting Around", "Maps & Data Sources", "Tasks", and "Analysis". Below these are various tool icons like "Show Layers", "Bing", "Google", "Enter Coords", "Plot Coords", and "Clear Coords". A coordinate input field shows "Lat: 38.9219" and "Lon: -76.6328" with a "Coordinate System" dropdown set to "Lat/Lon (DD)".

The main map area shows an aerial view of Davidsonville, MD, with orange outlines indicating parcel boundaries. A search bar at the top of the map area contains the text "I want to...".

On the left side, a "Results (3)" panel is visible. It includes a "View History" link and a "View Selected" link. Below this, there are three search results:

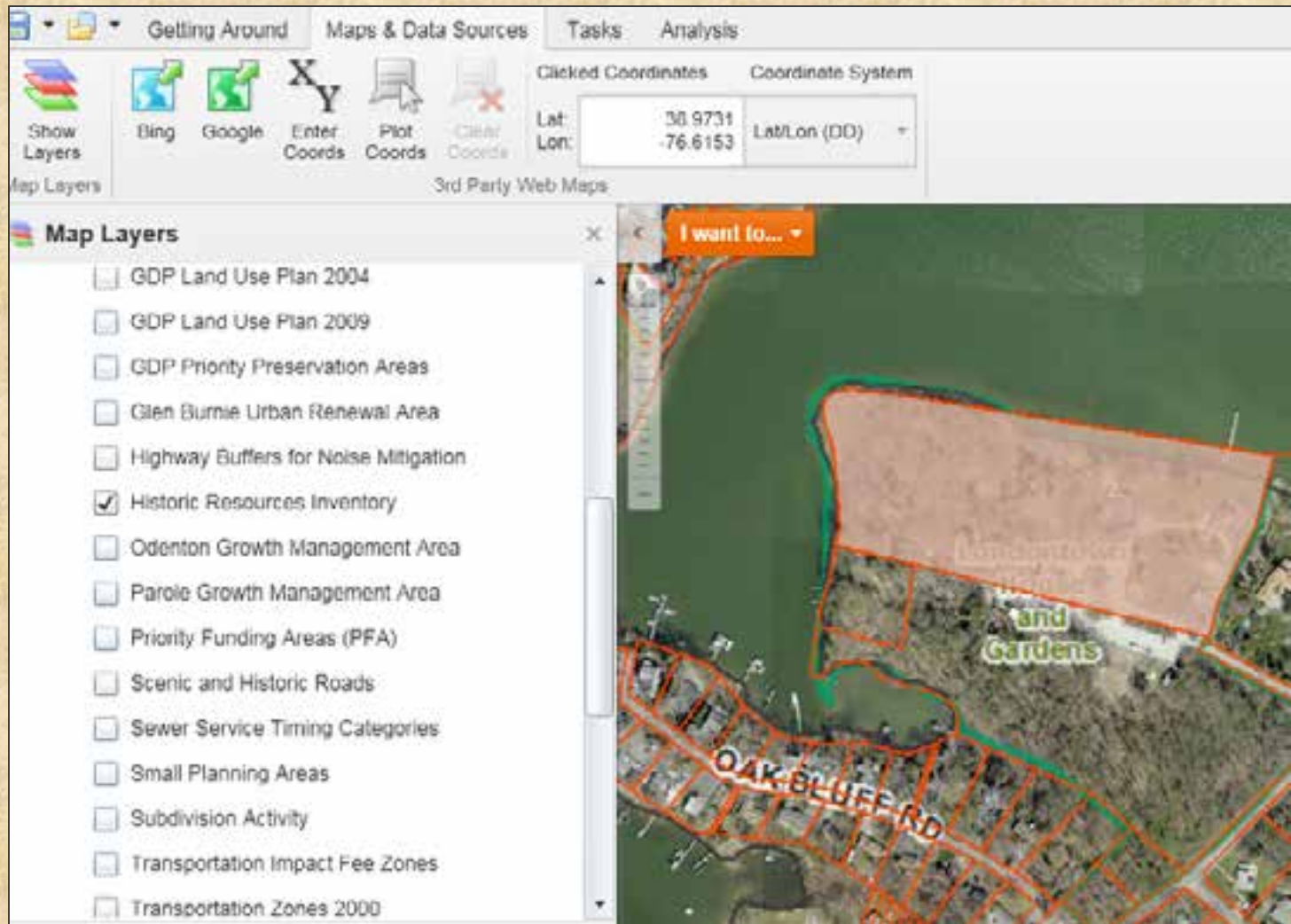
- Historic Resources Inventory: Holy Family Catholic Church**
- Historic Resources Inventory: 830 CENTRAL AVE W is in the Davidsonville Historic District.**
- Tax Account Number: 117301394685**  
Owner: CH- HOLY FAMILY DAVIDSONVILLE  
Address: 626 CENTRAL AVE, DAVIDSONVILLE

On the right side, a pop-up window titled "Historic Resources Inventory: Holy Family" is open. It contains several action links: "Zoom to Feature", "Pan to Feature", "Create a Report", "Copy to Drawing", "Add to Selected", and "Export Feature Attachments". Below these links are two tabs: "Details" and "Attributes". The "Attributes" tab is active, showing a table of field names and values:

Field Name	Field Value
UNIQUE_ID	225128
ACCOUNT_NO	117301394685
Lot	00010
Parcel	P.0245
OID_	74
CLASS	AA-0850
NAMEHIST	Holy Family Catholic Church
TAXMAP_NUM	54
BLOCK	23

At the bottom of the map area, there is a scale bar showing "500ft" and "100m", and a coordinate display showing "X:" and "Y:".

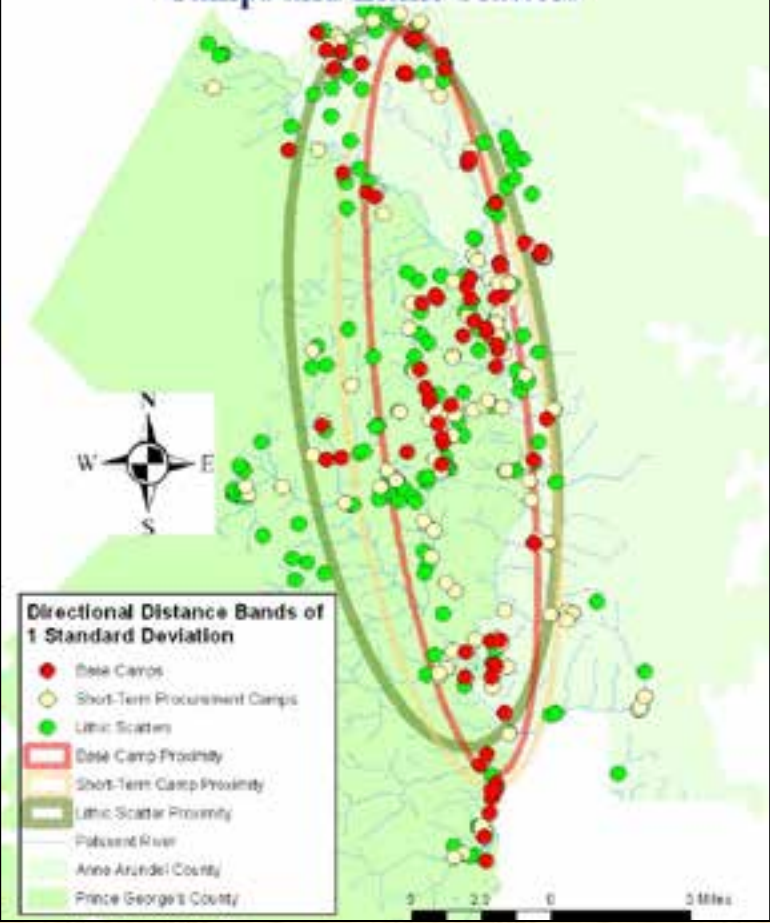
*Don't Forget to Click the Layer!*



The screenshot shows the ArcGIS interface with the following elements:

- Menu Bar:** Getting Around, Maps & Data Sources, Tasks, Analysis.
- Toolbar:** Show Layers, Bing, Google, Enter Coords, Plot Coords, Clear Coords.
- Coordinates:** Clicked Coordinates: Lat: 38.9731, Lon: -76.6153. Coordinate System: Lat/Lon (DD).
- Map Layers Panel:**
  - GDP Land Use Plan 2004
  - GDP Land Use Plan 2009
  - GDP Priority Preservation Areas
  - Glen Burnie Urban Renewal Area
  - Highway Buffers for Noise Mitigation
  - Historic Resources Inventory
  - Odenton Growth Management Area
  - Parole Growth Management Area
  - Priority Funding Areas (PFA)
  - Scenic and Historic Roads
  - Sewer Service Timing Categories
  - Small Planning Areas
  - Subdivision Activity
  - Transportation Impact Fee Zones
  - Transportation Zones 2000
- Map View:** Aerial map showing a large brown-shaded area labeled "Historic Resources Inventory" and "and Gardens". A street labeled "OAK BLUFF RD" is visible at the bottom.

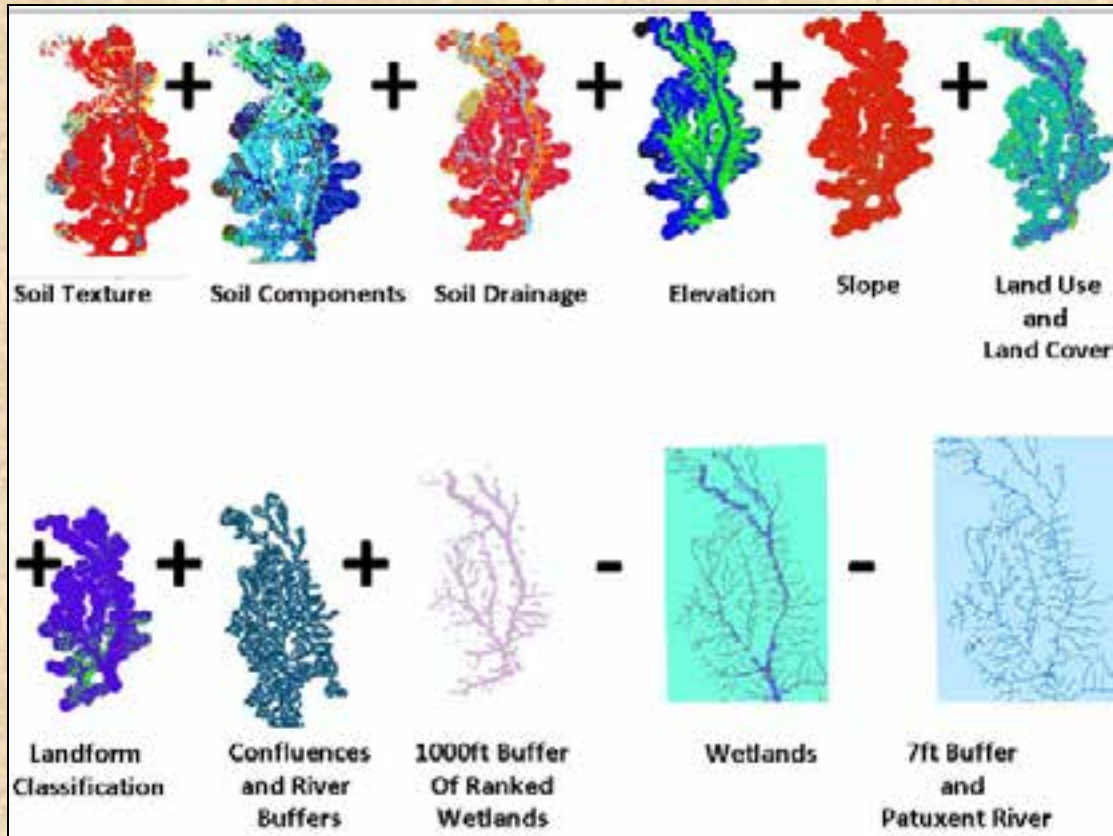
### Directional Distribution of Camps and Lithic Scatters



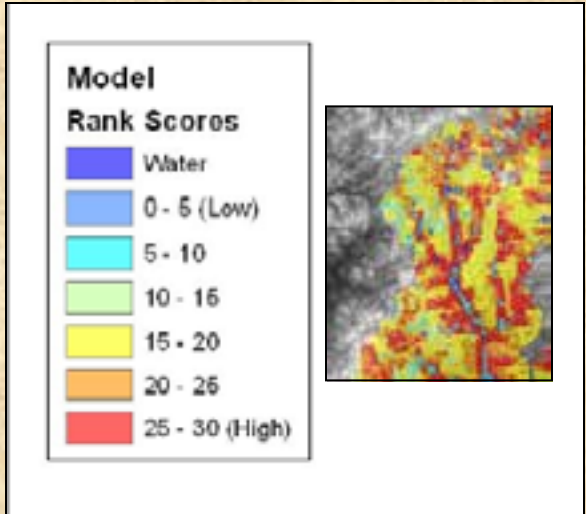
## Past and Present Research

- Spatial Analysis of Prehistoric Settlement Distribution on the Patuxent River & Creation of an Archaeological Sensitivity Model
- 
- Lidar Analysis of an 18<sup>th</sup>-century Iron Furnace Site
- 
- Sea Level Rise Impact on Archaeological Sites
- 
- 3D-Mapping and Analysis of the Pig Point Site
- 
- Reconstructing the Cultural Landscape of a War of 1812 Skirmish in Deale, MD

### Prehistoric Site Distribution on the Patuxent River



**An Archaeological Sensitivity Model of Prehistoric Sites on the Patuxent River**



**Landform Classification Model:**

Morgan, John M. and Ashley M. Lesh.

2005 Developing Landform Maps Using ESRI's ModelBuilder. In *ESRI User Conference Proceedings 2005*.

<http://proceedings.esri.com/library/userconf/proc05/papers/pap2206.pdf>

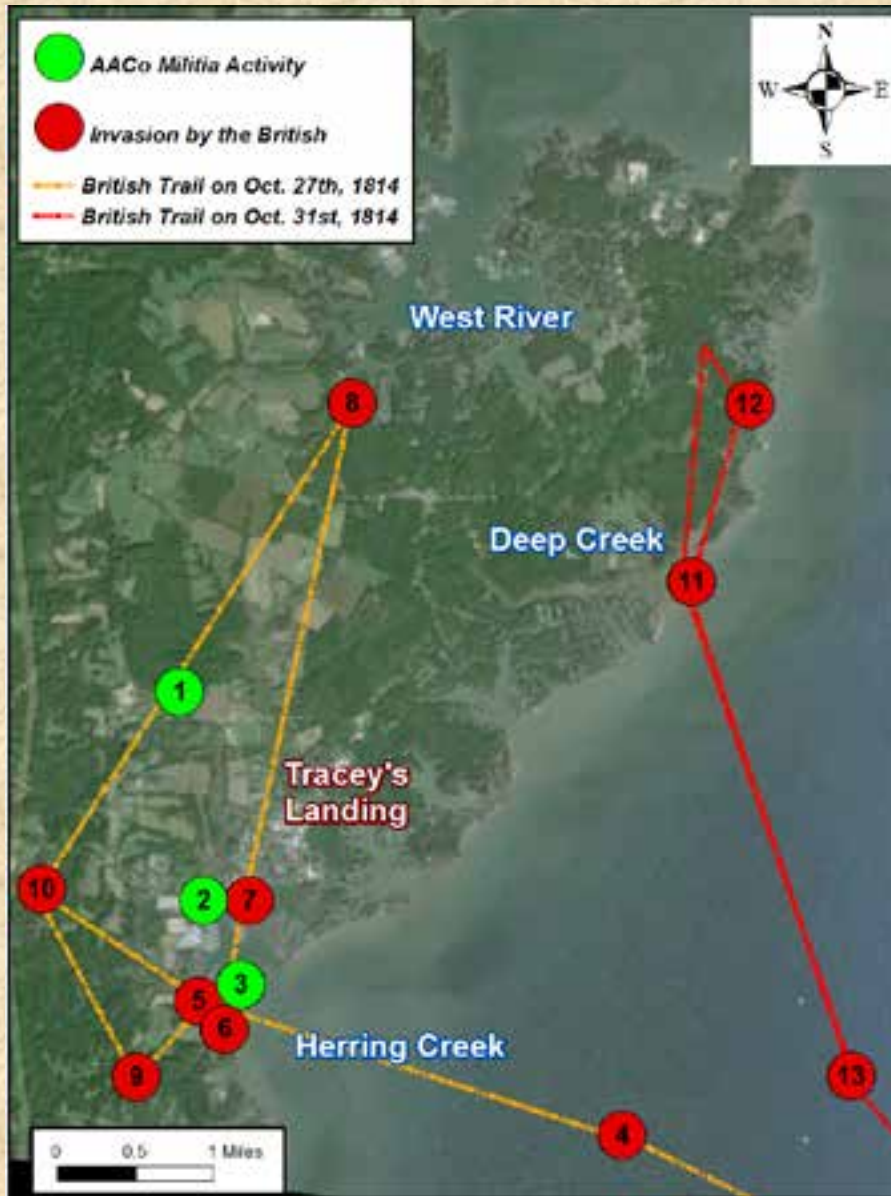
## The War of 1812: Invasion of Tracey's Landing and Shady Side

By reconstructing the historic landscape using archival research and GIS software, we can follow in British footsteps and assess high potential areas for archaeological survey



Many thanks to the **Maryland War of 1812 Bicentennial Commission** and **Star-Spangled 200, Inc.**, for providing financial support through the **Star-Spangled 200 (SS200) Grant Program**, which enables us to carry out this project. Executive Director William Pencek and Kathi Ash, Events and Locations Coordinator, were instrumental in launching this important project.





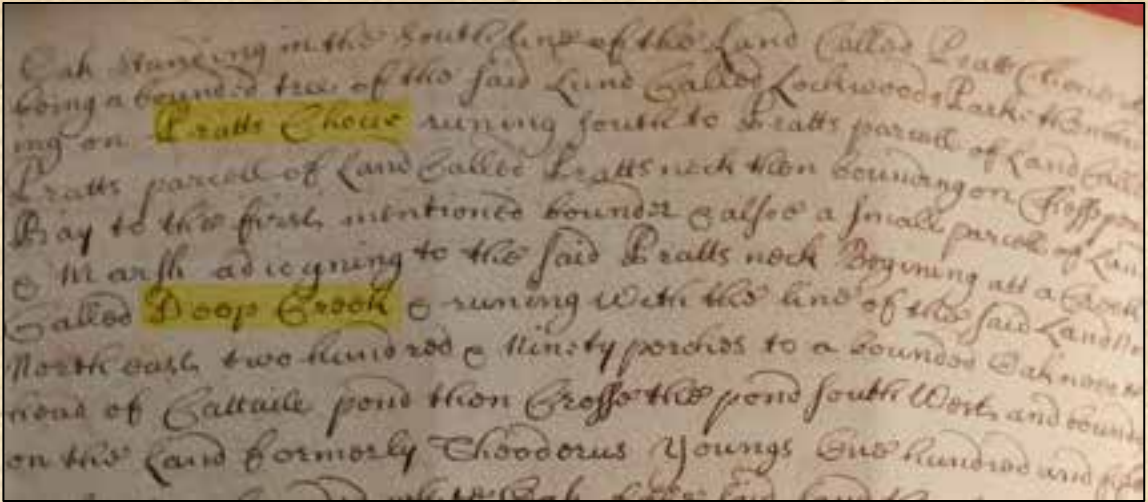
2	May 1814	Munitions deposited at Tracey's Landing Warehouse, owned by James Tongue
3	July 1814	Battery is Constructed at Town Point
4, 5, 6	Oct. 27, 1814	British sail into Herring Creek and burn down <b>Hobson's home, store, and windmill</b> , and then <b>Scrivener's home</b>
7		The British then sail further up Herring Creek and burn the <b>Warehouse</b>
8		They move 5 miles inland to <b>West River Methodist Church</b> , where they throw a party
9		The British destroy the home of <b>Sabrett Trott</b>
10		The British are seen "lurking" in the vicinity of <b>Thomas Tongue's</b> property
11, 12	Oct. 31, 1814	After a short respite, the British return and sail up Deep Creek to <b>Kirby's Windmill</b> , where Captain Burd of the US Dragoons and the local militia exchange gunfire with the British
13		The British return to Tilghman's Island in the Chesapeake

BALTIMORE, NOV. 2.  
**Action at Kirby's Windmill.**  
 When Capt. Burd with his dragoons charged on the enemy on Monday last they were on the retreat towards their barges; the charge was made with so much spirit, that a number of the enemy had actually laid down their arms preparing to surrender and it is probable that the whole of the party would have been captured if the troop had continued to press on them with the same spirit and energy with which the charge was commenced. Unfortunately, some miscreant called loudly to the troop to retreat, which they mistook for an order from their officer and obeyed. Captain Burd succeeded in rallying a part of his troop as soon as he discovered the mistake and was returning to the charge—but the enemy in the mean time recovering from their consternation had rallied behind a fence which served them as a protecting breast work, enabled them to pour a very galling fire on the part of the troop which were pursuing and finally to effect their retreat without much loss.  
*Fed. Gaz.*

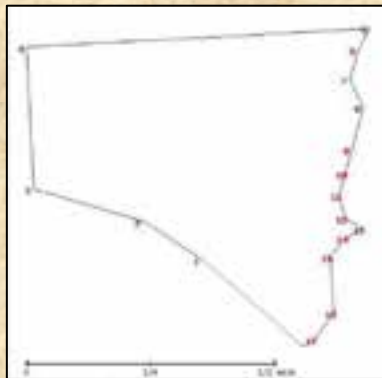
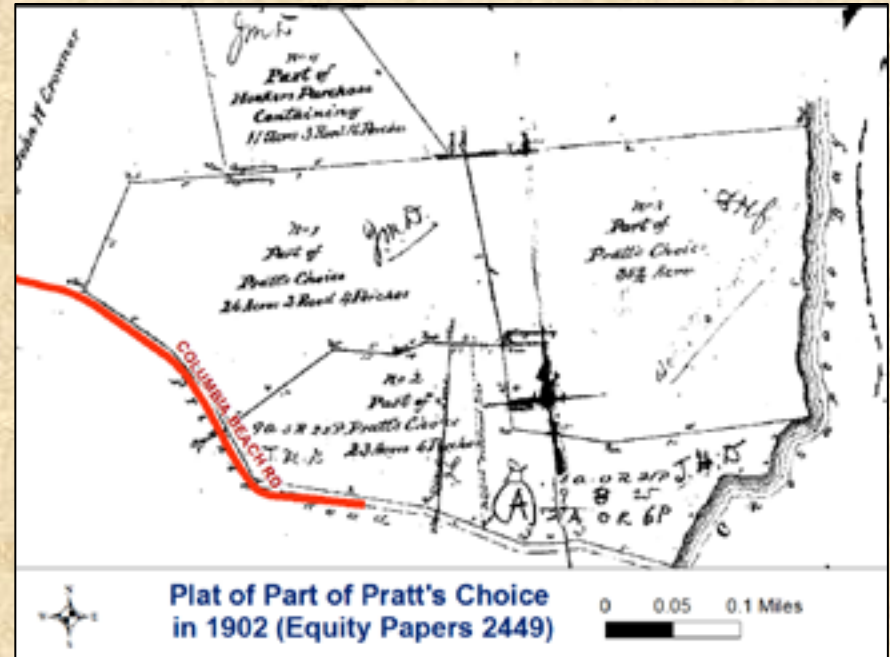
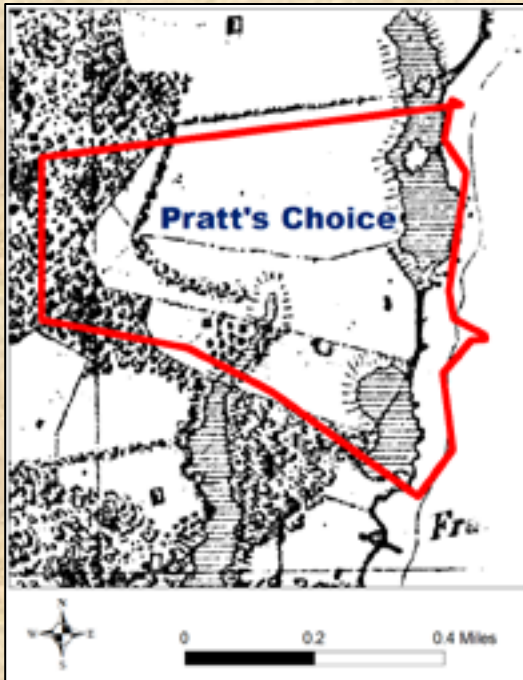
1783 Tax Assessment



1801 William Kirby's Deed



Daily National Intelligencer, Nov 4, 1814, v II, Issue 572, p 3, Washington D.C.



“Beginning at a stake in the ground and running N 56.25 deg W 45 perches, N 73.5 deg W to a stone, N 3 deg W 24.5 perches, S 74 deg E 195 perches to **Bay** then S 38 deg W 7 perches, S 3.5 deg E 36 perches, S 37 deg W 21 perches, N 56.5 deg W 9 perches, and straight line to beginning.”

-Transcribed from an 1803 deed, see liber NH folio 716.

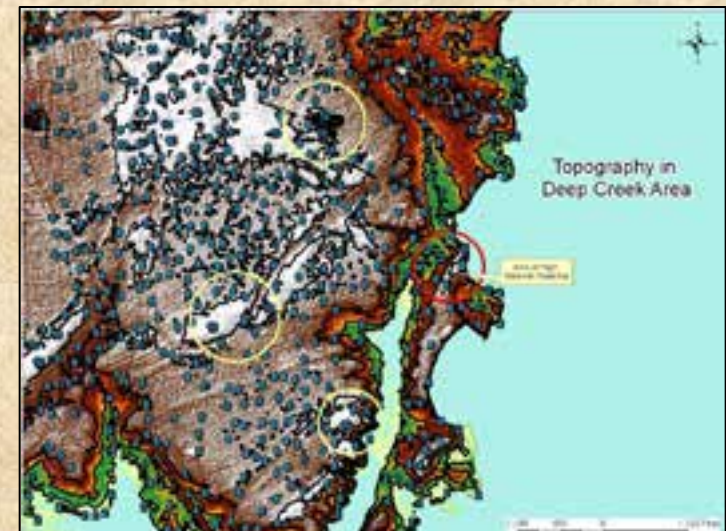
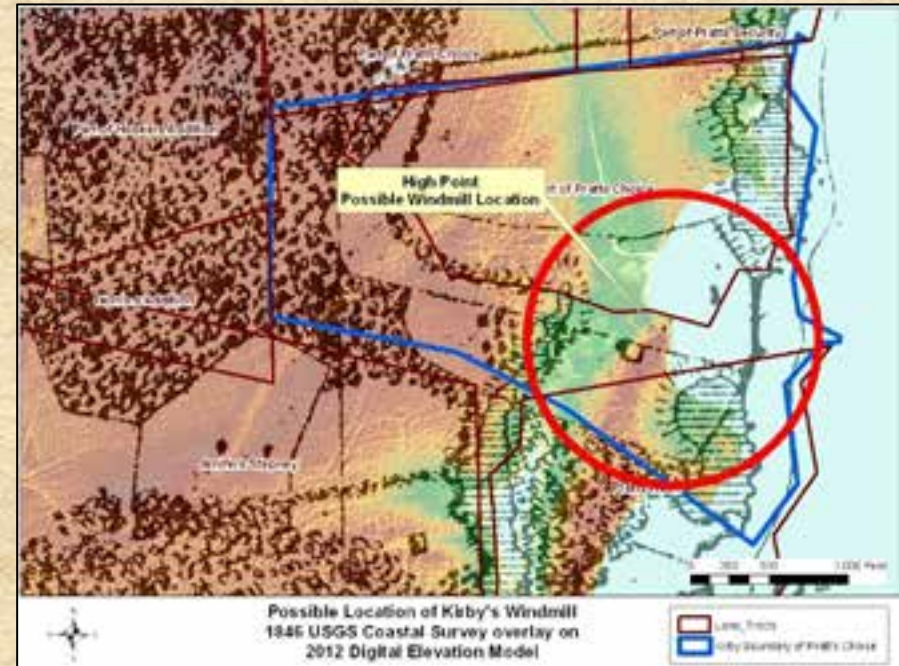
<http://www.genealogytools.net/deeds/>

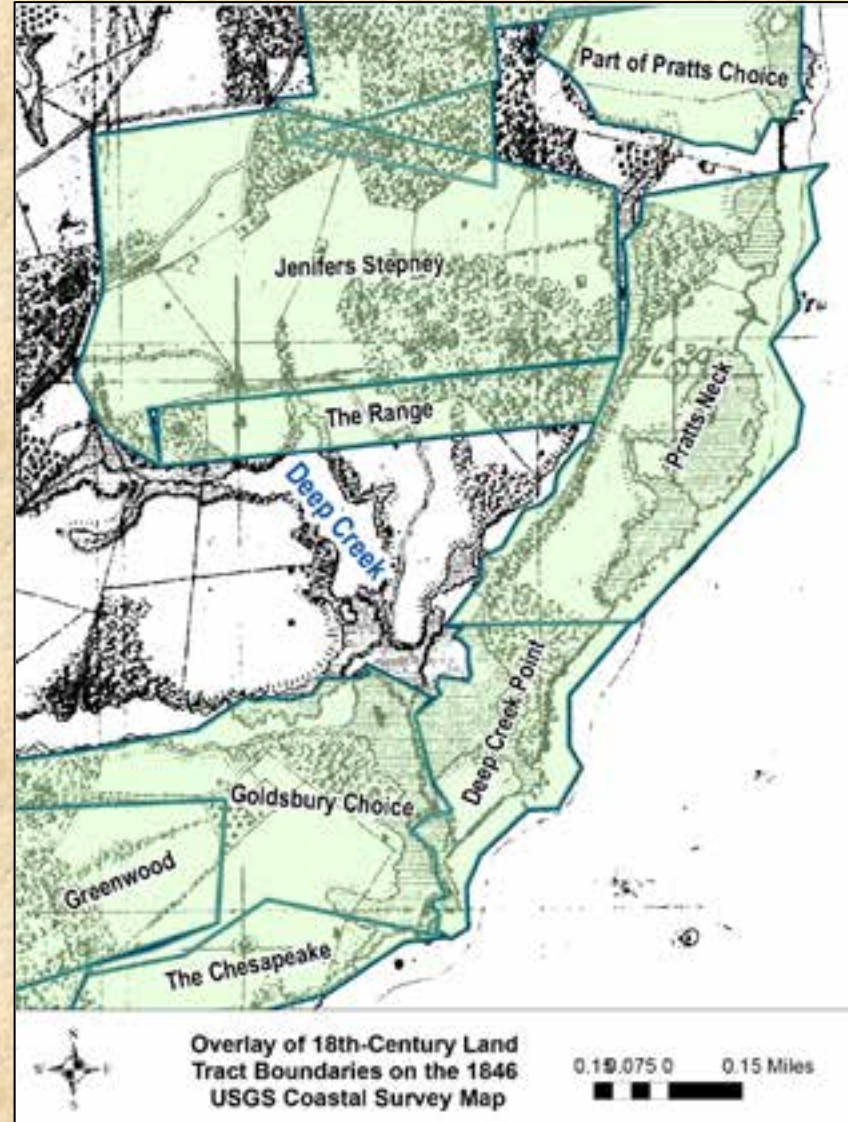
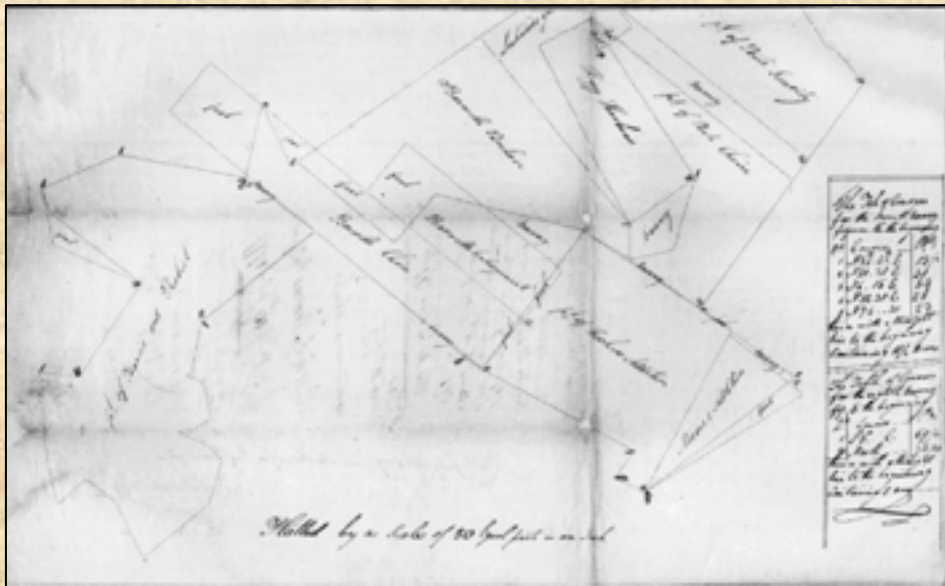
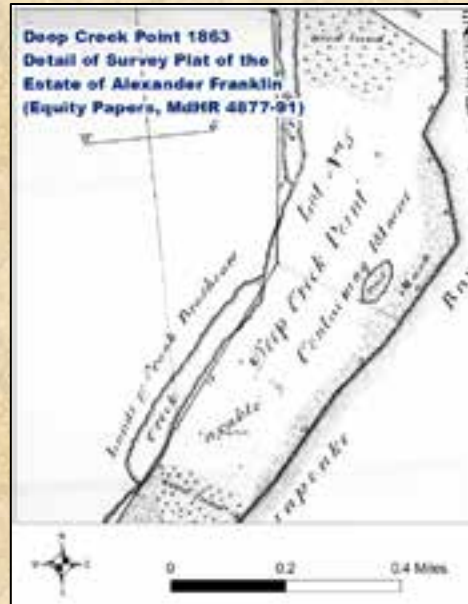
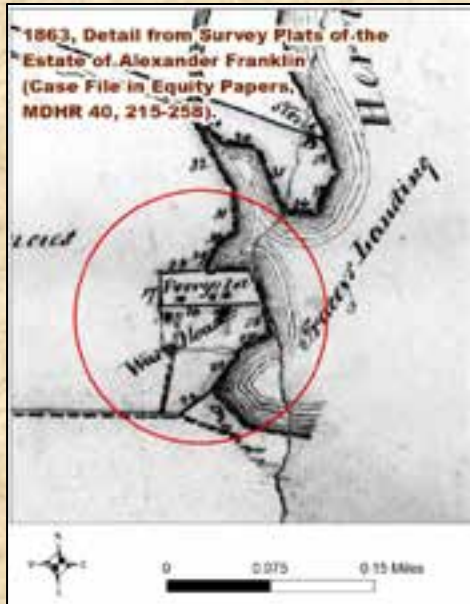


## Looking for Kirby's Windmill

### Windmill Factors:

- Small Footprint, would take up no more area than a small dwelling
- Needs to be in a windy location – top of exposed hill or along coastline
- Needs to be accessible to farmers carrying their grain to the Windmill





**Public Education  
&  
Heritage Tourism**

http://www.losttownsproject.org/TracysLndg/map.html

Map of Tracey's Landing

The War of 1812  
Invasion of Tracey's Landing and Shady Side

INTRODUCTION TIMELINE MAP CONTACT US ACKNOWLEDGMENTS

**Historical GIS - Preliminary Results:**

By looking into old deeds and plats, we are slowly reconstructing the land boundaries of 1812. Below, you can see some of our results as we narrow down the boundaries and ownership, we will be able to follow in the wake of the first settlers.

**Come Back Soon** to see further updates as we progress in our study of the boundaries of the Great Swamp!

**West River and the Herring Creek Swamp**

*Click on each polygon to get details about each land tract.*

**Pratts Neck**

FID	5
Name	Pratts Neck
Date	1797
Acres	215.533
Owner	John Gwinn
Notes	N part was part of Pratt's Choice

Note - Acreage was computed in ArcGIS from our polygon boundaries, which are based on deed descriptions of miles and bounds or transcribed from original plats. Therefore, there may be some discrepancy with that recorded in the original deeds, but overall, the outcome was incredibly close!

**West River and the Herring Creek Swamp**

*Click on each polygon to get details about each land tract.*

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Map data ©2013 Google Terms of Use Report a map error



***The Lost Towns Project:***

<http://www.losttownsproject.org>

***Note: Imagery and Data courtesy of Anne Arundel County Government***