

# Natural & Cultural Resources Update



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**BROOKHAVEN**  
NATIONAL LABORATORY  
*a passion for discovery*



# Agenda

- **2015 SER Chapter 6**
- **Natural Resource Update**
- **Cultural Resource Update**

# Chapter 6 - Natural and Cultural Resources

## ■ Natural Resource Management

- Deer Management – removal of 300 deer, end of year population of ~500
- Northern long-eared bat federally listed as threatened
- Continued opportunities for interns looking at a variety of ecological topics

## ■ Surveillance Monitoring

- Cs-137 in deer had similar results as past years - highest value 1.92 pCi/g, wet weight, on-site central lab.
- Ten year trend shows decline; 2015 on-site average in meat was 0.29 pCi/g, wet weight, with ten year on-site average being 1.0 pCi/g, wet weight.
- Composite samples (5 deer/sample) from deer cull resulted in 60 samples. Highest value 0.89 pCi/g, wet weight, with average of 0.26 pCi/g, wet weight.

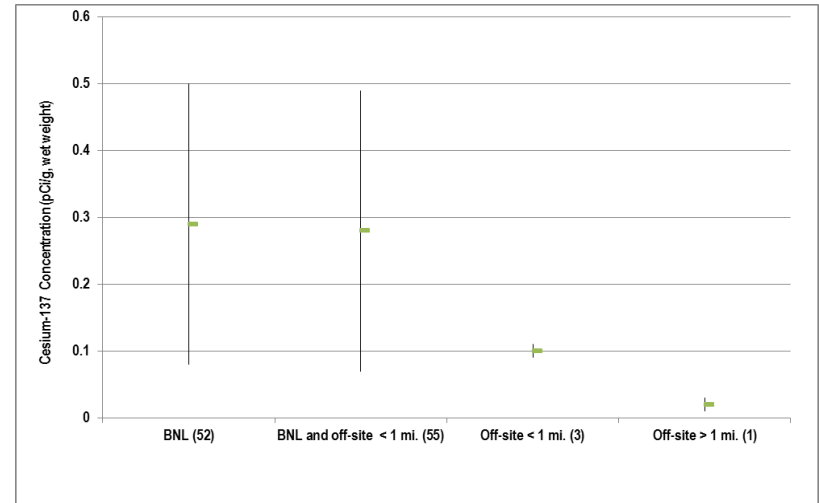


Figure 6-2. Comparison of Cs-137 Average Concentrations in Deer Meat (2015)

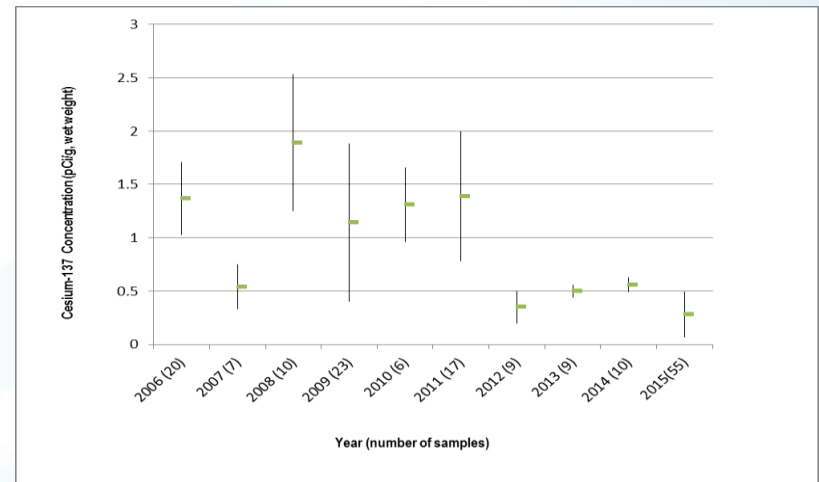
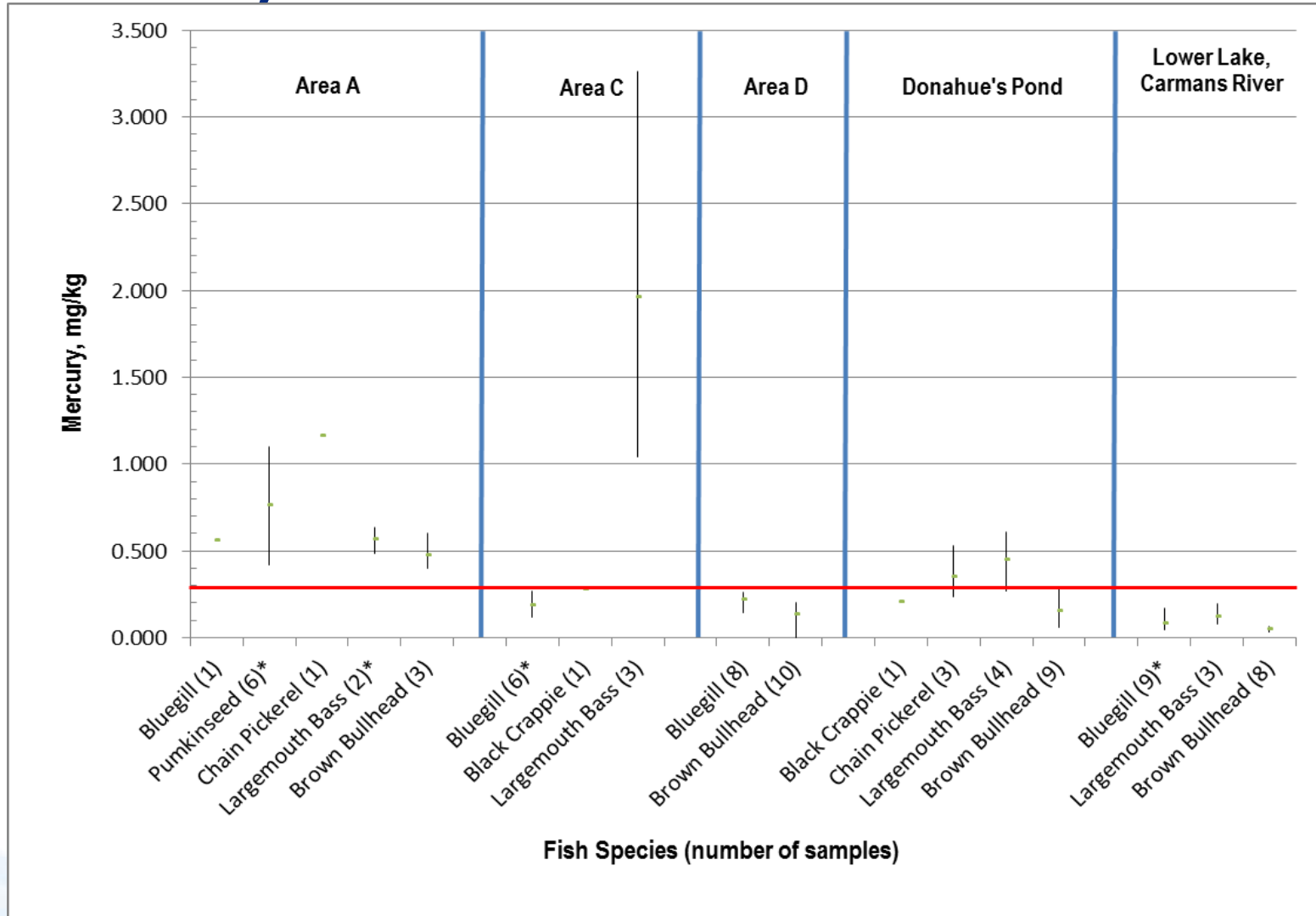


Figure 6-3. Ten-Year Trend of Cs-137 Concentrations in Deer Meat

# Chapter 6 - Flora and Fauna Monitoring (continued)

- **Fish Monitoring – Post Cleanup**
  - Radiological monitoring
    - on- and off-site fish sampling indicated low levels of Cs-137 (<0.25 pCi/g, wet weight)
    - Non-detect values for Carmans River location
    - consistent with previous years;
  - Mercury monitoring
    - max value 3.26 mg/kg in a largemouth bass from on site Area C
    - max value 0.61 mg/kg in a largemouth bass from Donahue's pond
    - max value 0.19 mg/kg in a largemouth bass from Carmans River location

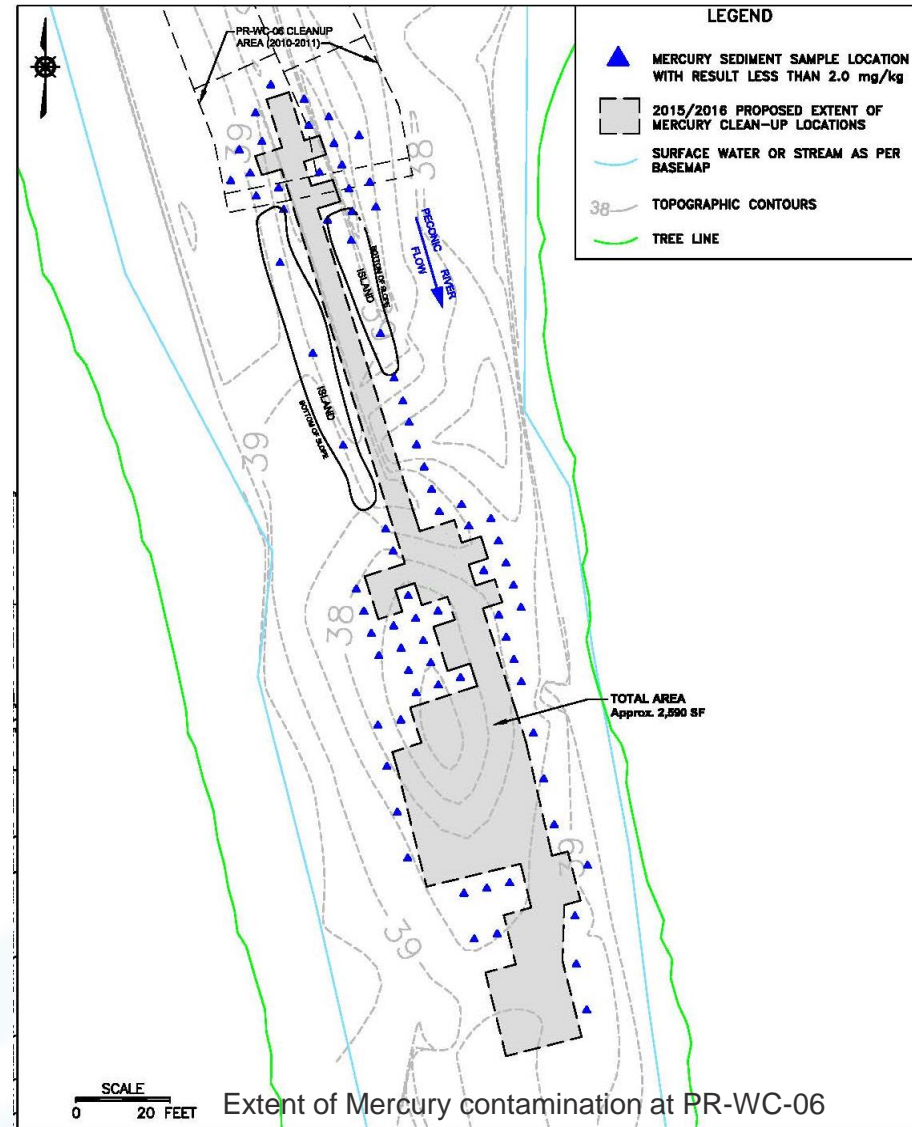
# Chapter 6 - Flora and Fauna Monitoring (continued)



Peconic River and Lower Lake, Carmans River Mercury Distribution in Fish Species (Minimum, Maximum, and Average Values). Red line is 0.3 mg/kg water criterion.

# Chapter 6 - Flora and Fauna Monitoring (continued)

- **Peconic River – Post Cleanup Monitoring**
  - Mercury in sediment - highest value of 23.0 mg/kg from PR-WC-06.
  - Area of elevated mercury delineated (146 samples).
  - Plan developed to cleanup area containing elevated mercury
  - River mostly dry due to removal of STP discharge.



# Chapter 6 - Flora and Fauna Monitoring (continued)

- Peconic River – Post Cleanup Monitoring
  - River mostly dry due to removal of STP discharge.

**Table 6-9. Post Cleanup Peconic River Water Column Monitoring (2015).**

Locatoin	Station Description	Dist from STP (miles)	June 2015			July 2015		
			Mercury	Methyl Mercury	TSS	Mercury	Methyl Mercury	TSS
			----- ng/L -----		mg/L	----- ng/L -----		mg/L
PR-WC-15	Upstream of Forest Path	-0.17	SW	SW	SW	SW	SW	SW
PR-WC-14	Upstream of STP	-0.13	SW	SW	SW	SW	SW	SW
PR-WC-13	Upstream of STP	-0.07	SW	SW	SW	SW	SW	SW
PR-WC-12-D7	Downstream of Sump	-0.04	10	2.7	< MDL	3.4	1.4	< MDL
STP-EFF-UVG	Grab Sample	0	No Discharge in 2015					
PR-WC-11DS	"50'" downstream of outfall"	0.01	SW	SW	SW	SW	SW	SW
PR-WC-10	West of HMN	0.3	SW	SW	SW	SW	SW	SW
PR-WC-09	Downstream of HMN	0.56	SW	SW	SW	SW	SW	SW
PR-WC-08	South of Area B	0.78	21	1.6	< MDL	SW	SW	SW
PR-WC-07	South of Area C	0.96	SW	SW	SW	SW	SW	SW
PR-WC-06	South of Area D	1.1	SW	SW	SW	4.7	0.48	8
PR-WC-05	Downstream of HQ	1.46	SW	SW	SW	SW	SW	SW
PR-WC-04	2nd downstream of HQ	1.7	SW	SW	SW	SW	SW	SW
PR-WC-03	3rd west of Schultz Rd.	2.1	20	1.3	4	26	1.2	7
PR-WC-02	2nd west of Schultz Rd.	2.52	SW	SW	SW	SW	SW	SW

Notes:

See Figure 6-5 for Peconic River water sampling locations.

MDL= Method Detection Level

SW = water too shallow to sample or location was dry

# Chapter 6 - Flora and Fauna Monitoring (continued)

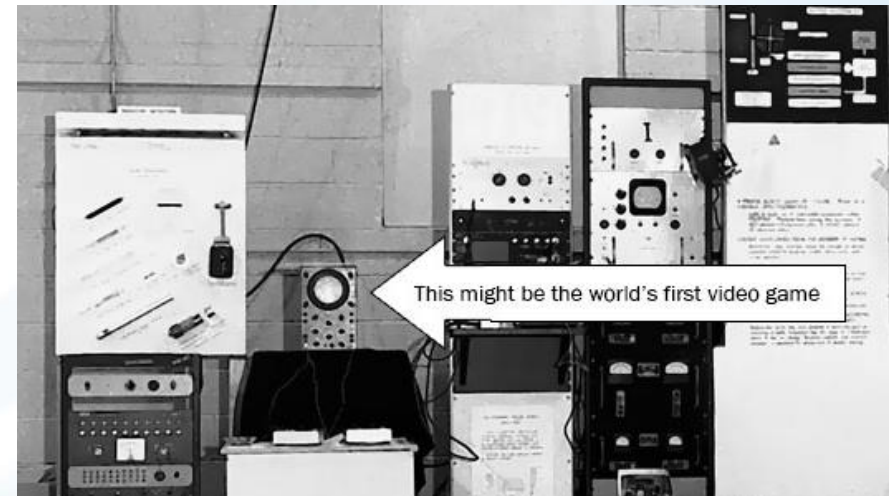
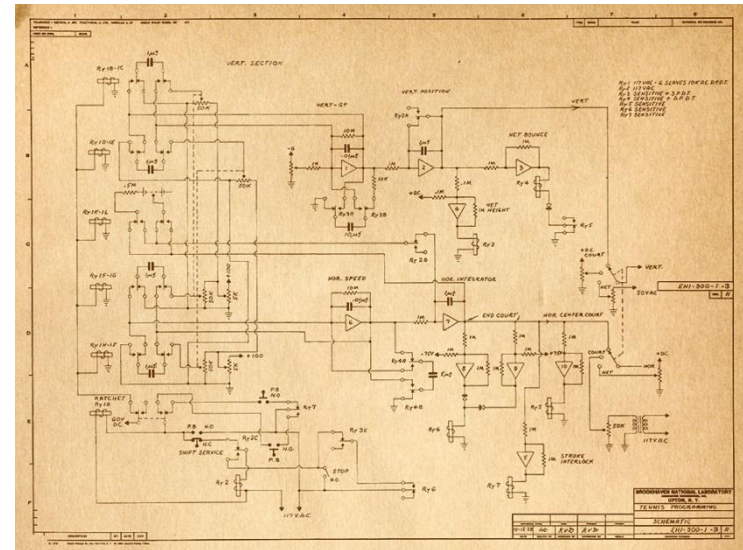
- **Other surveillance monitoring**
  - Terrestrial grassy vegetation and soils;
    - similar to past years.
    - non-detect to 0.43 pCi/g, Cs-137 in vegetation
    - 0.05 to 2.84 pCi/g, Cs-137 in soil
    - High values for both vegetation and soils from same location
  - Precipitation monitoring –
    - radiological data similar to past years;
    - mercury - highest 2015 value 18.2 ng/L.
    - Compared to highest historic value of 24.6 ng/L recorded in 2013



# Chapter 6 - Cultural Resource Management

## ■ Cultural Resource Activities 2015

- Cultural resource tagging project implemented
- NY SHPO concurrence on Section 106 reviews for demolition of four early BNL support buildings
- History of BNL Site presented to Summer Sunday visitors and other organizations
- Tennis for Two (first video game) materials loaned to museums for displays on the history of video games



Questions?



# Natural Resource Update

## ■ Deer Management

- Effects of 2015 cull still evident (300 deer removed)
  - Few deer seen around buildings
  - Supports concept of limited deer movement
- Planning in process for FY2017 cull
  - Population currently estimated at 500+ (surveys in process)
  - Target population <250

## ■ 4-Poster

- Continue drop in tick numbers
  - Evaluating summer 2016 data
  - Drought – helping?
  - Fewer deer helping



# Natural Resource Update (cont.)

## ■ Pollinators

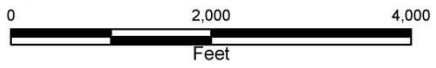
- 2014 Presidential Memorandum
- Pollinator Health Task Force
- Departmental Commitment
  - Identified BNL and other DOE facilities
  - Adopted Best Management Practices
  - Committed to developing metrics
- BNL Actions (to date)
  - Establish no-mow areas
  - Established research
    - Genetic finger printing
    - Acoustic monitoring
    - Bee tongue-flower relationships
  - Planted native grasses and flowering plants
    - 10 acres at STP - 2015
    - 12 acres within no-mow areas - 2016



# 2016 Seeding – pollinator plants



**Legend**  
Wildflower Seeding



# Cultural Resources - update

- **Tagging Project**
  - Over 170 Items
    - Additional items being added as identified and resources allow
    - NSLS Items
    - Cyclotron items
    - Met Tower Beacon

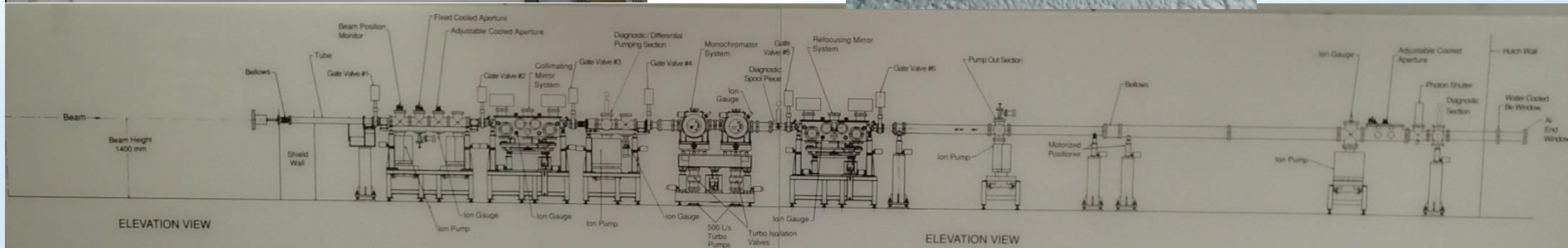
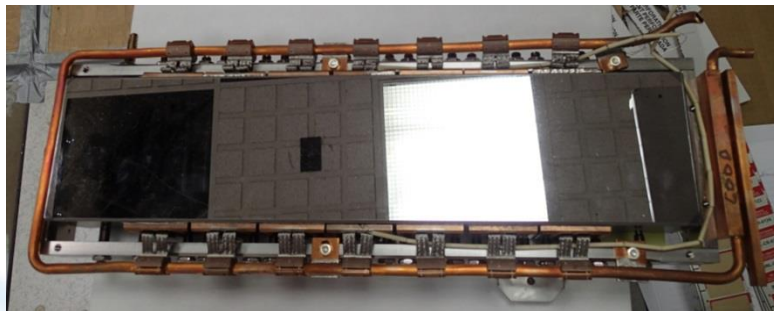


The Cyclotron Bell

The Adaptabel cyclotron bell  
Has in thousand stories to tell  
When you heard the bell sound  
Mean the beam could go 'round  
What was broken was now working well

To commemorate our pioneers  
For Charlie and Barkley and peers  
For your gear and skill  
Let its sound fill the hall  
To remember their blood, sweat and tears

BNL-CR-6172



Questions?

