Update Natural and Cultural Resources

Brookhaven National Laboratory
Community Advisory Council
November 14, 2019

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Agenda

• 2018 SER Chapter 6
• Natural Resources Update
• Cultural Resources Update
Chapter 6 - Natural and Cultural Resources

- **Natural Resource Management**
  - Deer Management
    - End of year population ~ 400
  - One successful prescribed fire
  - Continued opportunities for interns looking at a variety of ecological topics
    - Long-time collaborator honored for outstanding mentorship

- **Surveillance Monitoring**
  - Cs-137 in deer had similar results as past years - highest value 2.29 pCi/g, wet weight, off-site on Route 25. Highest onsite value was 2.19 pCi/g, wet weight.
  - Ten-year trend shows decline; 2018 on-site average in meat was 0.97 pCi/g, wet weight, with ten year on-site average being 0.79 pCi/g, wet weight

Ten-Year Trend of Cs-137 Concentrations in Deer Meat, dashed line is pre-cleanup avg. (2.57 pCi/g, wet weight), solid line is 10-year average (0.79 pCi/g, wet weight).
Chapter 6 - Flora and Fauna Monitoring (continued)

- **Fish surveillance monitoring**
  - Peconic River dry most of year – no fish monitoring

- **Peconic River Clean-up**
  - Final 2600 sq. ft. area naturally restoring, mostly open water habitat.

- **Terrestrial vegetation and soils**
  - Grassy vegetation and soils similar to past years, highest veg. value was 0.22 pCi/g wet weight, highest soil was 0.22 pCi/g dry weight.

- **Precipitation monitoring**
  - Low level mercury – highest value 8.59 ng/L
  - Mercury in precipitation is higher than what is seen Sewage Treatment Plant effluents
Chapter 6 – Wildlife Programs

- **Internships**
  - 10 Undergraduate Interns
  - 2 Faculty Members (Hofstra and SUNO)

- **Projects**
  - Eastern box turtles – final summer
  - Small mammals and ticks – pre-coyote data collection
  - Forest health – deer exclosure surveys
  - 4-Poster altered feeding schedule experiment
  - Pollinator studies – established protocols for the LISF.

- **MOU w/SUNY College of Environmental Science and Forestry (SUNY - ESF)**
  - Selection of first project – Forest Health Monitoring
Chapter 6 - Cultural Resource Management

- **1960s-era efficiency apartments**
  - Apartments eligible for listing on National Register
  - Formal recordation completed submitted to New York State Historic Preservation Officer (NYSHPO)
  - NYSHPO requested Memorandum of Agreement
    - Recommend saving portion of one apartment building
  - Cement roads from WW I Camp Upton evaluated for historic significance
    - Determined not eligible as they could not be confirmed from 1917-1918 period.
Natural Resource – 2019 Update

- **Deer Management**
  - April 2019
  - Initial population estimated ~350 (this was likely low; probably between 400-500)
  - 250 deer taken, 5,467 lbs. of meat donated
  - 50 batch samples tested for Cs-137, nothing above 0.20 pCi/g, wet weight; avg. 0.06 pCi/g, wet weight
  - Current estimate (fall 2019) before surveys ~ 250
  - Working on Interagency Agreement between DOE and USDA

- **Fire Management**
  - Wildland Fire Management Plan in place
  - Prescriptions in place
  - Continued work to establish Memorandum of Understanding with NYSDEC or Central Pine Barrens Commission
Natural Resource – 2019 Update

- **MOU between BNL and SUNY - ESF**
  - First Summer of Forest Health Monitoring
  - 53 of 90+ plots monitored
  - 8 Interns, 1 Professor, 1 Grad student

- **Eastern Box Turtles**
  - Data analysis of 2011-2018 data collection started
  - Intern analyzing movement of turtles and use of solar farm (publication almost ready for submission)

- **Pollinator studies**
  - Interns from Southern University New Orleans established three-year study of LISF
  - Continued in 2019
  - Important as New York is establishing requirements for solar farms

- **4-Poster experiment**
  - New cameras purchased for consistency
  - Second year of modified treatment
Natural Resource – 2019 Update

- **4 – Poster**
  - Continued deployment – under experimental conditions
    - 3-year experiment
    - 7 devices serviced weekly, 7 devices every 3 weeks
    - 49,050 lbs. of corn over 30 weeks
    - Last year 64,500 lbs. of corn over 31 weeks
  - By year 3, 4-Posters were better than 90% effective at reducing ticks in areas of deployment
  - Current effectiveness is 84% compared to first year of deployment
Cultural Resource – 2019 Update

- HFBR Stack D&D
  - Added Stack to 1999 MOU with NY State Historic Preservation Officer covering the BGRR
  - Compiling information for MOU

- 1960s era efficiency apartments
  - Recordation submitted to NYSHPO in 2018
  - NYSHPO would like to see at least part of one apartment building saved
  - Negotiating an MOU

- NYSHPO visit – September 2019
  - First visit since 2003
  - Representative gained insight about Laboratory

- Long Island Museum – History of BNL
  - Identifying artifacts for exhibit

- Contract established to evaluate science buildings 50+ years of age, plus a couple Camp Upton buildings
  - More buildings are being determined eligible for listing on National Register
Building evaluations for buildings 50+ years of age
  - Evaluation is against four criteria

National Register Criteria

Typically, a building or structure must retain three or more aspects of integrity in order to be considered eligible for listing on the National Register. Seven aspects of integrity include: integrity of design, location, setting, materials, workmanship, feeling, and association. In addition, a building or structure must meet one or more of the following National Register criteria:

A) be associated with events that have made a significant contribution to the broad patterns of our history; or
B) be associated with the lives of persons significant in our past; or
C) embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
D) have yielded, or may be likely to yield, information important in prehistory or history.
QUESTIONS?