

# Natural Resource Update

Kathy Schwager  
Natural Resource Manager

May 9, 2024

# Deer Management 2023 & 2024

## Population reductions March 2023 and February/March 2024

- 7<sup>th</sup> and 8<sup>th</sup> reductions since 2015
- Target max was 250 deer
- 106 taken in 2023
- 123 taken in 2024



# Deer Management 2024

Initial estimate was approximately 350.

Current population estimated at 225 - 250 deer

- Acceptable population is 80 – 250 deer on BNL
- Birth rate of ~50%
- We have to overcome this every year.



# Deer Management

Meat samples tested for Cs-137 prior to release for consumption.

- Every 10<sup>th</sup> deer sampled
  - 2023 – 10 samples taken.
  - 2024 – 12 samples taken.
- Administrative level of  $\leq 1$  pCi/g, wet weight. (NYSDOH limit is 6.9 pCi/g, wet weight)
- No sample above 0.42 pCi/g, wet weight
- 1,788 lbs. of meat was donated to Island Harvest & STAR Foundation in 2023.
- 2,623 lbs. donated in 2024.
- 29,535 lbs. meat donated in total

Sampling of ticks and blood for Suffolk County Vector Control as part of NYSDOH tick-borne disease studies.

# Fire Management

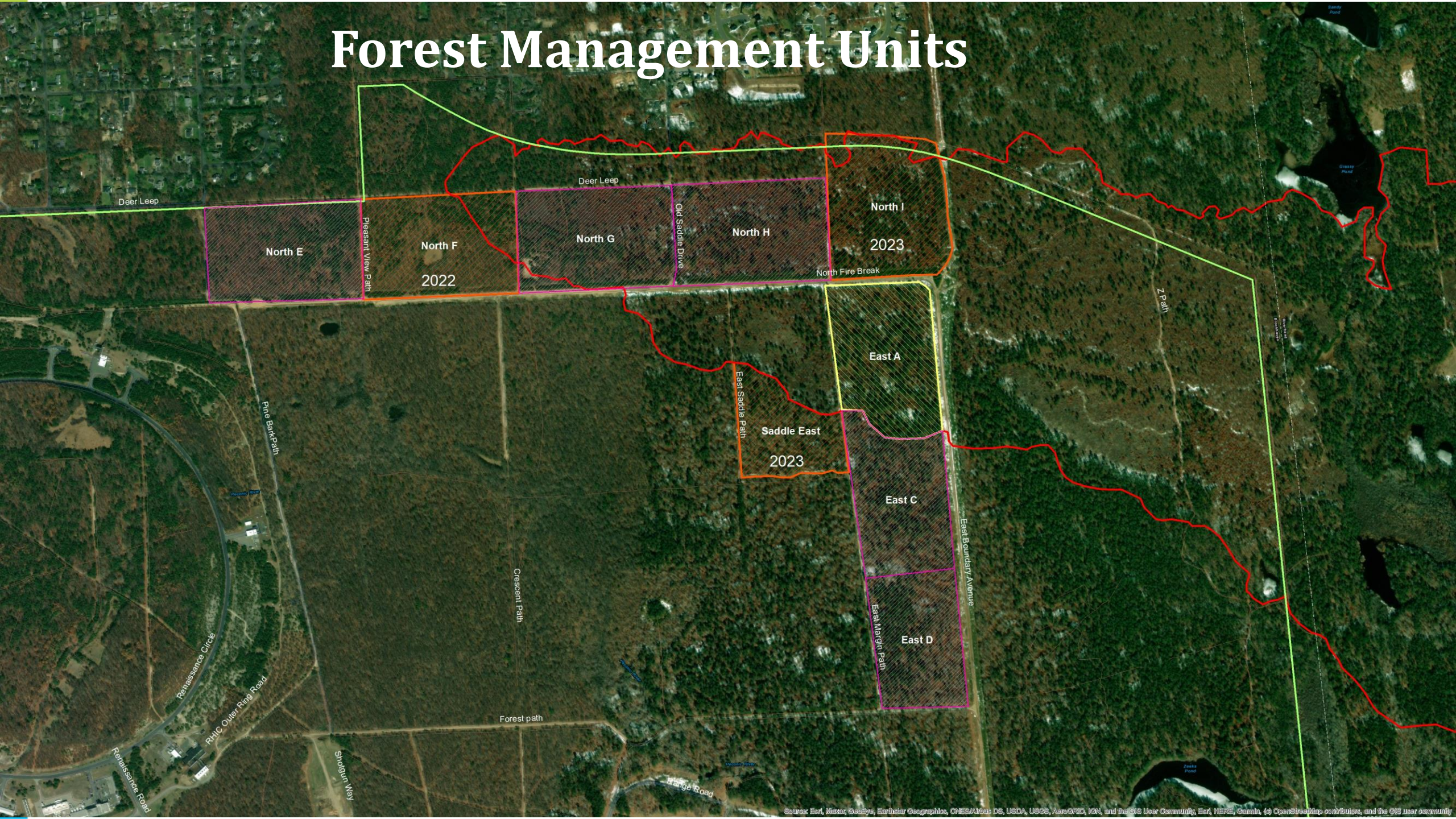


**CENTRAL PINE BARRENS**  
JOINT PLANNING & POLICY COMMISSION



**Brookhaven**  
National Laboratory

# Forest Management Units



# Mechanical Treatments & Fire

Result of 2012  
Crescent Bow Fire



# After Mechanical Treatment



# Prescribed Fire

May 9, 2023



# 4 Months Post-fire

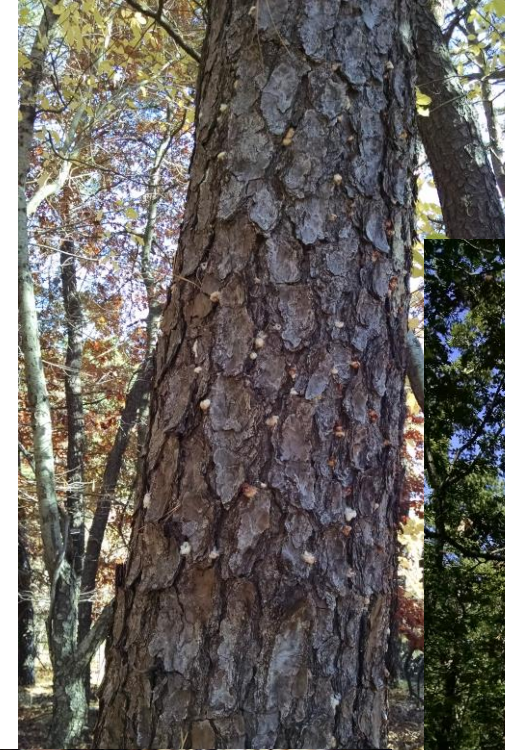
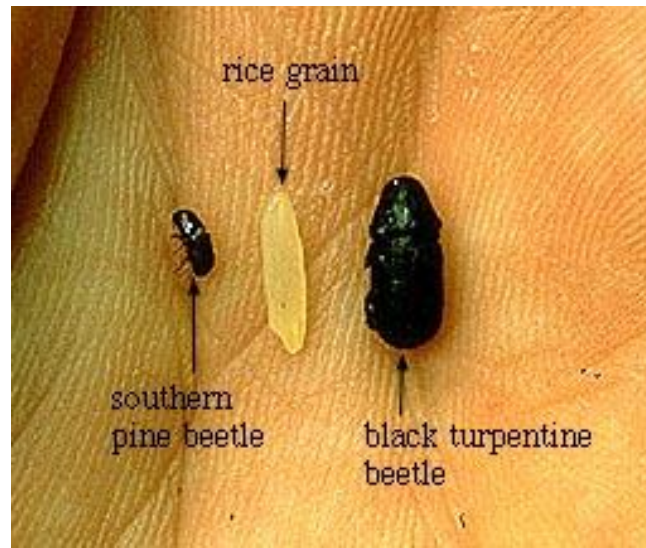


# No-Mow Areas

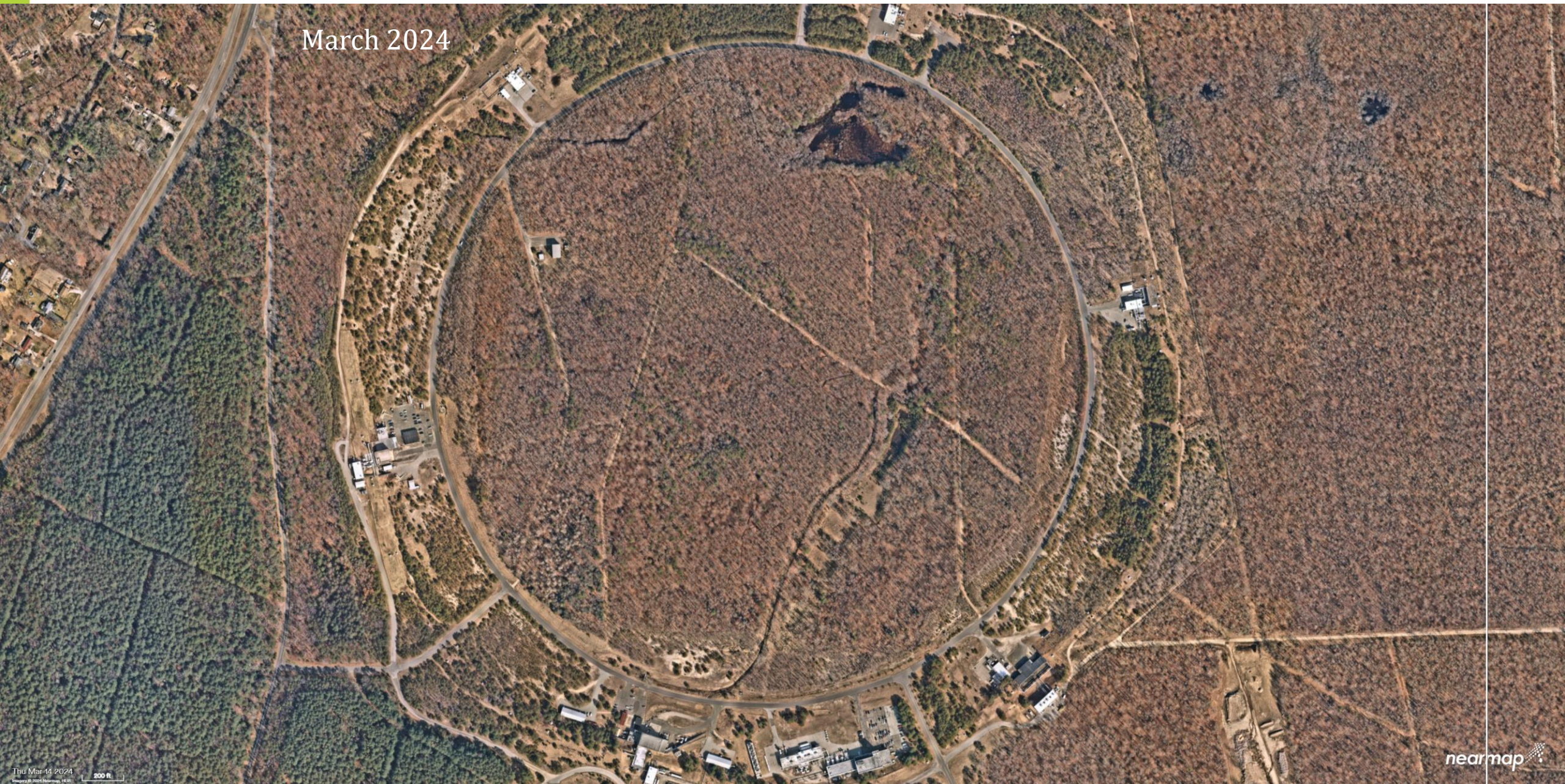


# Southern Pine Beetle

- Significant impacts to BNL forests site-wide
  - Beetle hitting small diameter trees
  - Some impacts to white pines
- Focused on managing hazard trees
- Need funding for large-scale forest management
  - Thinning
  - Rx fire



March 2024



# Bats

- Federally endangered – northern long-eared bat (*Myotis septentrionalis*)
- Four projects required formal consultation with USFWS
- Several more projects upcoming
- Continued interim guidance until November 30
- Additional bats expected to be listed
  - Tri-colored bat (*Perimyotis subflavus*)
  - Little brown bat (*Myotis lucifugus*)



Tri-colored bat

Northern long-eared bat



Little brown bat



# Cultural Resource Update

Tim Green  
Cultural Resource Manager

May 9, 2024



@BrookhavenLab

# 2023 Cultural Resource Activities

## Outreach

- Provide talks to local libraries
  - History of Camp Upton
    - Sayville Library – May 28, 2024
    - Middle Country Library – June 26, 2024
  - History of Brookhaven National Lab
    - Smithtown Library – April 30, 2024
- Material loans
  - Loan of historic items to Bellport-Brookhaven Historical Society – Summer 2024
  - The Innovators – Inventors & Scientists of the Bellport Area
  - August 3 – “How Brookhaven Lab has been inventing and innovating in research that drives advancements in medical technology” – Ann Emrick and Sean McSweeney

## Regulatory Activities

- Reminder – 32 Buildings or structures eligible for National Register of Historic Places, plus Gamma Forest and previously determined eligible WW- I trenches & foundations, and two archeological sites.



### Legend

-  Eligible
-  Not Historic
-  Demolished

0 500 1,000  
Feet



Environmental Protection Division

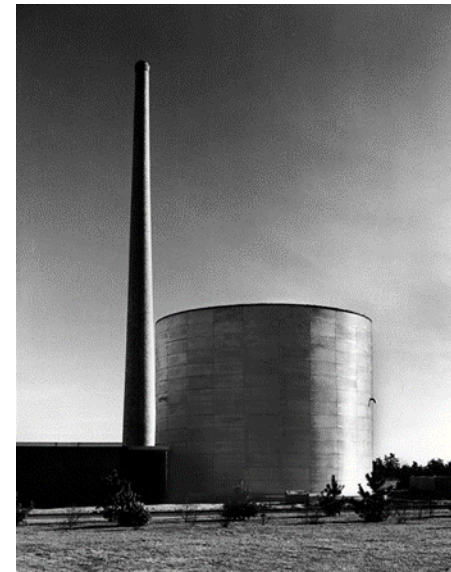
## National Register Eligible, Ineligible, and Demolished Buildings

JLH - 3/6/2023  
r:/arcmapping/projects/natural\_  
resources/bldg\_statud.mxd

# Recent Actions

Negative actions result in Memoranda of Agreement between Department of Energy and New York State Historic Preservation Office

- 1960s apartments (Discovery Park/Upton Square development)
- 1940 water tower (replacement with new water tank)
- BMRR stack demolition



# Progress on MOAs

- Recordation (documentation of construction)
  - All recordation reports are complete and submitted to NY SHPO
- Kiosks
  - Preparing kiosks for installation later this year
  - 1960s Apartments – Upton Square – SUSC building area
    - Roads to Camp Upton, Camp Upton, WW I Hospital, WW II Hospital, 1960s efficiency apartments, Discovery Park
  - 1940s water tower – kiosk and display using light off top of tower
  - BMRR stack
    - Medical Reactor, Medical Complex



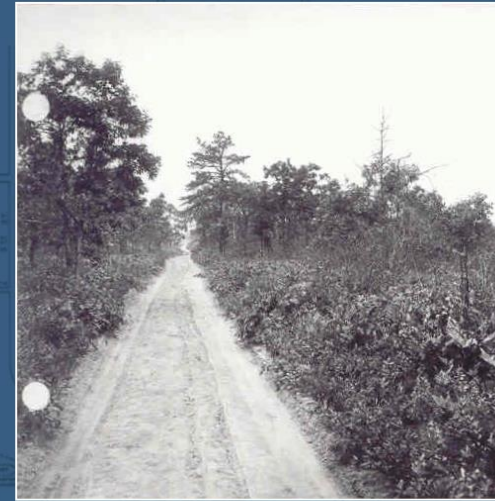
# The Roads to Camp Upton

After the United States entered World War I in 1917, the nation had to quickly build up its army and train soldiers. Sixteen cantonments would soon be established across the country.

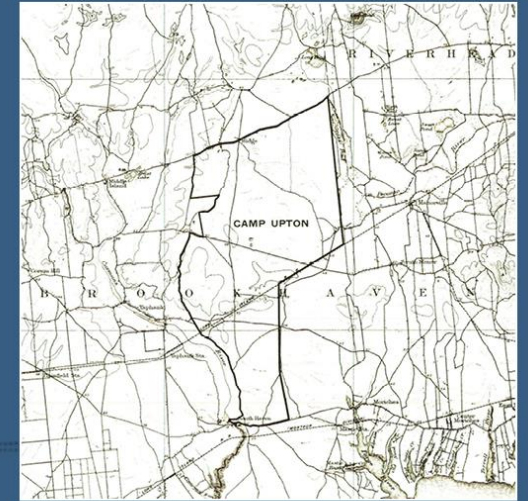
On June 20, 1917, Major O'K Myers of the U.S. Army's Quartermaster Corp received orders to inspect this property in Yaphank, New York, that would become the future Camp Upton. Within days, the Army contracted the Thompson-Starrett Company to build a cantonment that could support 40,000 people. Construction soon began.

This area was heavily forested. The Long Island Rail Road's nearest station, Yaphank, was approximately four miles southwest of Camp Upton. Two roads, consisting of two dirt "two-tracks," led to Camp Upton: Longwood Road, which today becomes Princeton Avenue at the entrance to Brookhaven National Laboratory, and the Road to Ridge, which is now Upton Road.

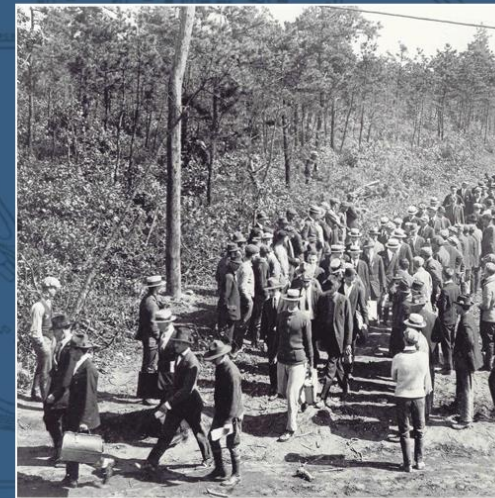
To report for duty, the first recruits at Camp Upton had to walk from the Yaphank train station. Most, likely, traveled along Longwood Road. Whether entering from Longwood Road or the Road to Ridge, the walk to Camp Upton was often a dusty or muddy trek.



Upton Road in circa 1918



Camp Upton demarcated on a lease map in 1917



Army inductees on the hike to Camp Upton from Yaphank Station



Longwood Road circa 1916

# Today, Brookhaven National Laboratory Previously, an Army Camp and National Forest

Early in 1917, this area was a forest. By year's end, Camp Upton was the United States' 59th largest city, based on population.

More than 500,000 soldiers passed through Camp Upton, while it was active September 1917 to August 1921. When World War I, the 'war to end all wars' concluded, Camp Upton was deemed surplus. All but the land was auctioned off. Only trenches, foundations, and a few brick structures remain.

This site was named the Upton National Forest. During the Great Depression, in 1933, members of the Civilian Conservation Corps arrived. They planted thousands of trees — mostly white pine — to reforest the area. Many of the white pines remain to this day.

With World War II looming, Camp Upton was recommissioned in 1940. Initially, new recruits were inducted, processed, and sent off for basic training. In 1944, the Army transitioned the camp to a hospital for wounded soldiers. Tennis courts, gyms, bowling alleys, a swimming pool, and theater were established for troops as they recovered. The tennis courts, gym, and pool remain in use.

After WWII, in 1946, the Army transferred Camp Upton to the Manhattan Engineer District. The district's successor — the Atomic Energy Commission — established Brookhaven National Laboratory here in 1947.



Camp Upton in 1919



Camp Upton during World War II



Company of soldiers at Camp Upton, WW I



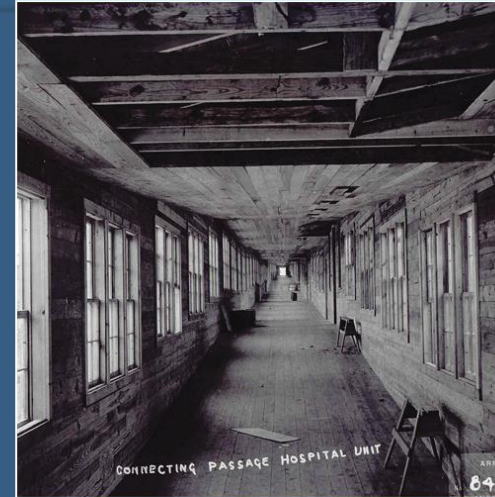
Inductees undergoing bayonet training

# WW I Hospital

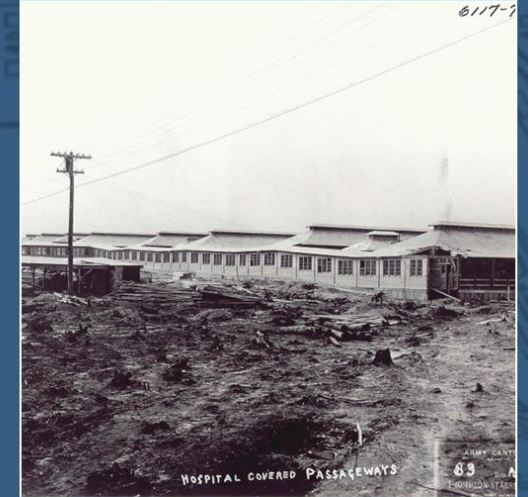
Camp Upton in World War I grew to be the 59th largest city in the United States by the end of 1917 with over 40,000 troops of the 77th Division, the Liberty Division. To handle all of the medical needs of such a large force, there would need to be a significant hospital. The hospital in the southwest corner of the camp was composed of more than fifty buildings directly related to the hospital and around another fifty buildings for offices and support including a sizeable heating plant. The hospital was unique in that all of the buildings were connected with enclosed walkways lined with windows for light. The walkways allowed movement between buildings while avoiding the elements which varied with the season and included mud, snow, ice, dust, and mosquitoes.

The hospital became extremely important in the fall of 1918 when a pandemic flu hit the American Expeditionary Forces. The local epidemic started on September 13, 1918, and peaked on October 4th when 483 cases were admitted to the hospital. By October 22 it was mostly over as only eleven cases were admitted. During the height, 6,131 cases were admitted, and overall 1,295 cases resulted in pneumonia which caused 404 deaths.

Less is known about the day-to-day operations of the hospital but photos from the period, some shown here suggest that the hospital was well staffed and worked to inoculated soldiers against various diseases before they headed to Europe, handled the day-to-day illnesses of the camp, and the hospital was used for the care of soldiers returning with injuries.



Connecting passage hospital unit



Hospital covered passageways



Masked soldiers during 1918 pandemic flu



Soldier receiving inoculation

# WW II Hospital

When Camp Upton was rebuilt in 1940 and the Hospital was built in the same location used for that purpose in WW I. Again, the hospital was composed of more than fifty buildings and around twenty support buildings. At least some of the hospital buildings seem to have been connected by covered walkways, at the very least because the construction was not as hurried, sidewalks extended between buildings allowing easy access. For the first few years of operation Camp Upton was used as an Induction Center where new recruits were mustered into the military and the hospital served to conduct physicals and administer vaccines before recruits were sent to other locations for basic training.

In 1944, Camp Upton became a Convalescent and Rehabilitation Hospital and the medical staffing was significantly increased. Much of the hospital area was used for housing nurses stationed at the Camp as well as the Infirmary. Wounded soldiers returning to the U.S., mostly from Europe were treated at the hospital for their injuries and provided care, time to recover, and job training. They would be able to utilize camp facilities that included gym, swimming pool, bowling alley, tennis courts, and ball fields.



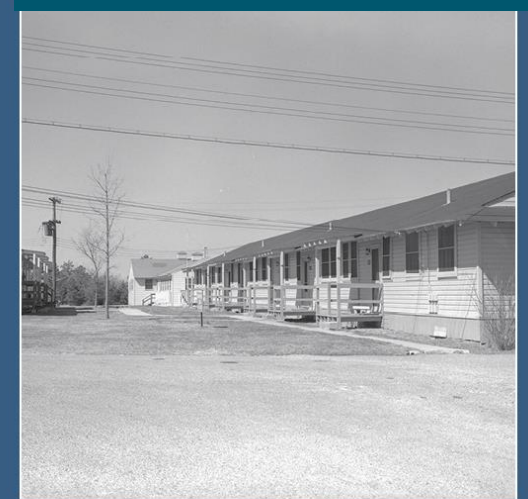
Hospital building



Aerial of Camp Upton, hospital at lower left



Hospital buildings with wheelchair access

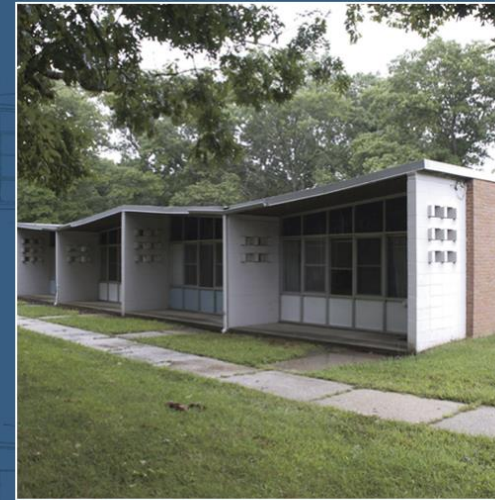


Nurses housing

# 1960s Efficiency Apartments

Camp Upton was transferred, as surplus, to the Manhattan District in 1946 and then to the newly established Atomic Energy Commission in January 1947, becoming Brookhaven National Laboratory. The hospital area was evaluated and many of the buildings were determined to be surplus. Over the next several years buildings were sold, and those that had housed nurses were converted to apartments for use by new employees and visiting scientists. Some of the buildings were used for the new Medical Department where research into the use of radiation for medical purposes was carried out. The Medical Department would continue to use parts of the Camp Upton hospital through most of the 1950s until at least 1958 when the new Medical Research Center was dedicated. The 'old' Medical Department buildings can still be seen in the 1962 aerial photo showing the new 'efficiency' apartments that had been built nearby. The hospital buildings that were converted to apartments are still in use today.

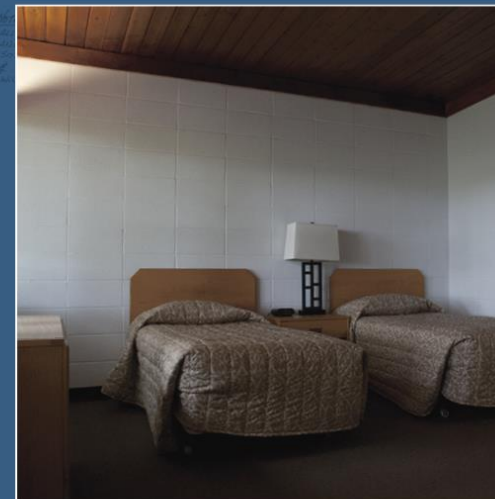
To attract scientists to the Lab that might just be staying for a few days to a few weeks, a new set of 'efficiency apartments' were designed and built in the early 1960s. Designed by Carl B. Stoye, the apartments are an example of mid-century modern architecture. Stoye, a locally recognized architect, was known for his design of civic, educational, and government buildings including Islip High School. The design incorporated bright colors, expanses of glass, and butterfly-style roofs. Construction used concrete block walls to separate apartments alternating high and low to facilitate the butterfly roof. The block walls extended out to create covered porches and openings were incorporated as a stylistic feature. Interiors consisted of a mix



1960s Efficiency Apartments



Livingroom area of efficiencies



Bedroom area of efficiencies



New Efficiency Apartments (circa 1962)

# Discovery Park

To facilitate continued growth of Brookhaven National Laboratory and building stronger ties to scientific and industrial partnerships the concept of an area dedicated to this effort began taking shape in the fall of 2013. The area proposed was the current 'Apartment Complex' encompassing approximately 40 acres of previously disturbed land. The area would be easily accessible and could be outside of the Lab's Security. The concept has been modified over the ensuing years to be subdivided into an initial development called 'Upton Square' that includes the first federally funded building known as the Science User's Support Center (SUSC) and both future housing and educational centers. The remaining area is envisioned to be developed parcel by parcel through agreements with various commercial or industrial entities that are closely aligned with the scientific mission of the Laboratory.

## Changing Use

The Discovery Park area has had multiple uses over the past 100+ years. Prior to World War I in 1917 the area was representative of the pine barrens with mixed oak-pine forest with understory of blueberry and huckleberry. The area was home to the first hospital for WW I Camp Upton with dozens of buildings constructed and thousands of patients seen.. After everything building was sold in 1921 the area sat vacant as part of the Upton National Forest until the hospital was re-established on the eve of WW II. Following WW II, Camp Upton was declared surplus and transferred to the Atomic Energy Commission and the area had a two-fold purpose as both housing (apartments) and medical research. Eventually a new Medical Research Center was built, and the area then served only as housing for visiting scientists. In 1962 the first purpose-built housing was constructed when four sets of efficiency apartments were built as part of a building boom resulting from the effects of the USSR launching of Sputnik. The area is currently going through another change as it is being redeveloped for Upton Square and Discovery Park.



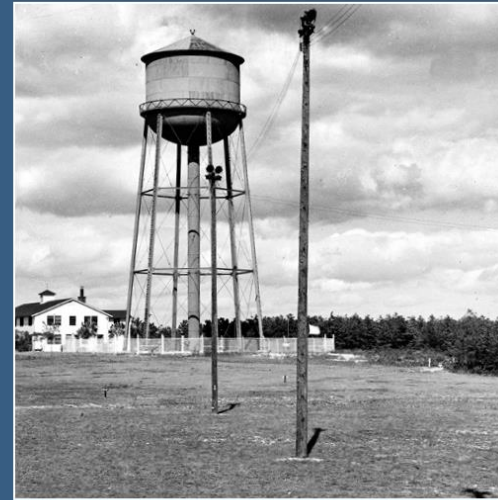
Discovery Park transformation



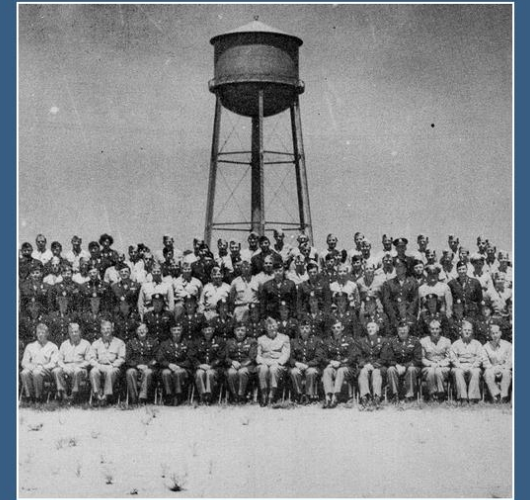
Science User and Support Center (SUSC) building

# 1940s Water Tower

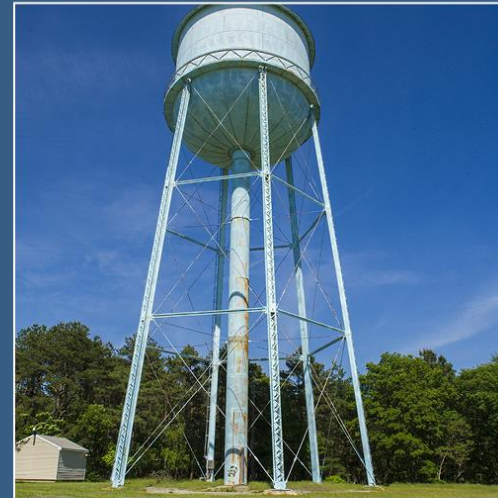
On the advent of World War II the War Department began to remobilize Camp Upton as an Induction Center utilizing buildings that had been built for the Civilian Conservation Corps and construction of the camp began in earnest. An entirely new water distribution system was developed, including a modern water tower designed and built by the Pittsburgh-Des Moines Steel Company. The water tower would become one of the most visible structures associated with Camp Upton and eventually with Brookhaven National Laboratory. When Camp Upton was converted to a Convalescent and Rehabilitation Hospital, the water tower was a prominent feature of the cover photo on the hospital book and staff photos were taken in front of the water tower. A similar photo was used as the first photo of the new Laboratory in 1947 and the water tower was one of the first sights employees and visitors would see when entering the Lab. During the 60th Anniversary Celebration the photo of the '60' composed of Lab employees was taken from the photo. The water tower was determined eligible for listing on the National Register of Historic Places but was in such poor condition that it could not be restored or maintained in a safe condition. So, after more than 75 years of service the 1940s water tower was replaced with a modern water tower in 2022 and the original water tower was demolished. The double light you see here is from the top of the water tower and is all that remains.



1940s Water Tower



WW II Convalescent Hospital Staff



1940s Water Tower in 2020



1940s and New Water Towers

# Brookhaven Medical Research Reactor

The Brookhaven Medical Research Reactor (BMRR) at Brookhaven National Laboratory was the first nuclear reactor constructed specifically for medical and biological research.

After successful experiments at the Brookhaven Graphite Research Reactor, researchers recognized the benefits of a smaller reactor they could access more easily. The BMRR was constructed as part of a state-of-the-art medical complex at Brookhaven that opened in 1958. The BMRR reached criticality on March 15, 1959.

The BMRR provided experimental facilities and neutrons for treating patients, studying the biological effects of radiation, irradiating materials, and producing radioisotopes — atoms with unstable nuclei that emit energy that can be used for medical applications and industrial processes.

One of the treatments advanced at the BMRR was boron neutron capture therapy (BNCT) for use against glioblastoma multiforme, an otherwise untreatable and deadly form of brain cancer.

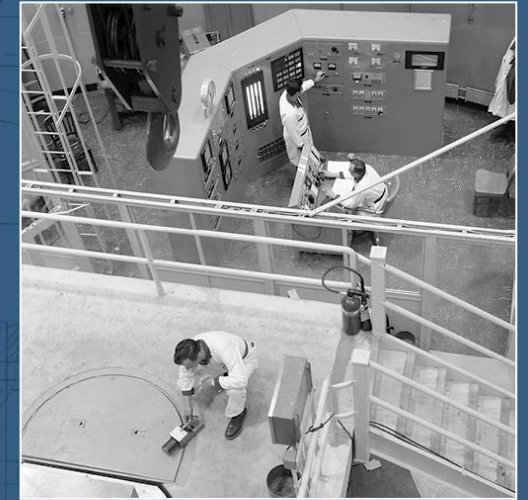
Fuel for the BMRR was stored at the High Flux Beam Reactor, also located at Brookhaven. Following that facility's closure in 1999 and a loss of funding, operations at the BMRR concluded on Dec. 28, 2000.

The BMRR stack was demolished in 2022. The facility awaits full decommissioning.

The production of radioisotopes continues at different facilities at Brookhaven Lab today.



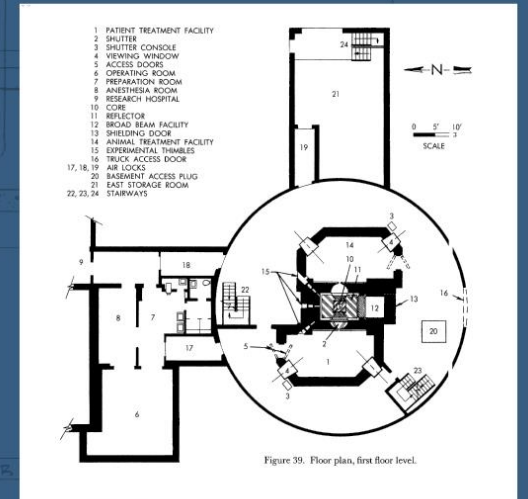
The Brookhaven Medical Research Reactor



Top face of the research reactor and nearby control center



The control center



Floor plan

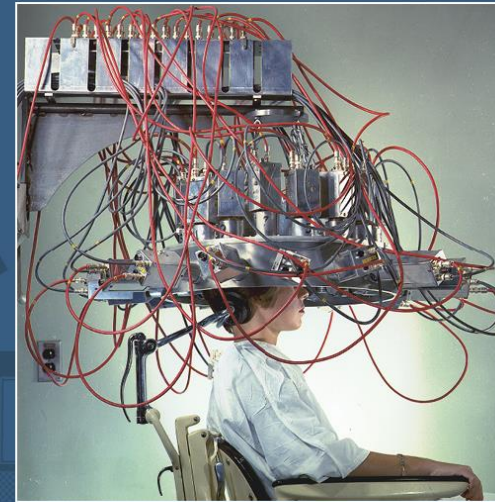
# Brookhaven Medical Research Department

Medical advances have long benefited from research and development at Brookhaven National Laboratory. In 1949—two years after the founding of Brookhaven Lab—a medical research center was established, using portions of the U.S. Army's former Camp Upton Hospital.

As Brookhaven grew, so did its medical research programs. The state-of-the-art Medical Research Center (Bldg. 490) opened in 1958. It included a 48-bed hospital, the first nuclear reactor specifically dedicated to medical research, and laboratories. Additional expansions followed, including a wing where patients were processed.

Brookhaven Lab scientists developed:

- **Technetium-99m**, which is used to diagnose heart disease and other ailments.
- **Tritiated thymidine** to study DNA, and cell migration and growth throughout the body. It is also used in immunological tests.
- **Thallium-201**, which allows doctors to measure damage to the heart and is used in hundreds of thousands of heart stress tests annually.
- **Levodopa (L-dopa)** for treatment of Parkinson's disease.
- **Synthetic insulin**, paving the way for human insulin to replace animal insulin in the treatment of diabetes.
- **$^{18}\text{F}$ FDG** for positron emission tomography (PET) imaging, which is now widely used in neuroscience and cancer imaging.



Early "halo" for PET imaging



The Medical Research Center complex



Nursing station at the research hospital



Medallion for Brookhaven Lab's Medical Research Center



# Questions?



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