CHCA General Meeting Summary – May 20, 2026

Dr. John Rasweiler - Deer Overabundance, Tick-Borne Disease

I. Ecological and Public Health Issues:

- Dr. Rasweiler detailed the intertwined ecological and public health crises driven by deer overabundance on eastern Long Island, particularly Suffolk County. Since around 2000, forest understory has been severely degraded and tree regeneration has essentially ceased across much of the East End, threatening aquifer recharge and increasing stormwater runoff and nutrient loading that can degrade bays and coastal waters. Comparisons between heavily browsed Southold sites (e.g., Ruth Olivia Preserve) and deer-free Plum Island in 2013–2014 underscore the transformative role of deer in suppressing understory and native biodiversity, including the loss of lady's slipper orchids and ground-nesting birds like the eastern towhee. Expanding invasive plants, notably garlic mustard, further displace native flora; deer likely facilitate its (garlic mustard) spread via seeds transported on hooves.

II. Expansion of Tick Species and Related Diseases:

- Dr. Rasweiler linked high deer densities to a dramatic expansion of tick species and tick-borne diseases: from one problematic tick specie and a few diseases in the early 1990s to five problematic species and over ten diseases today, plus non-infectious conditions such as alpha-gal syndrome.
- Suffolk County is described as among the hardest-hit regions globally for tick-related illness, with severe cases including Lyme carditis, Powassan virus fatalities, and hundreds of Alpha-gal diagnoses. The invasive Asian longhorned tick, now widespread in Suffolk County and introduced multiple times to the U.S., poses serious livestock risks (including exsanguination events) and the potential for future human disease transmission.
- Deer are identified as the critical reproductive hosts for blacklegged and lone star ticks; adult ticks rarely mature (needed for egg production) on small mammals, and the inability of deer to groom away engorged ticks (due to hooves) sustains high adult tick survival and egg production. Lone star ticks are now common locally and are not reliably deterred by popular skin repellents.

III. Effects on Water Quality, Public Safety:

- Hydrologically, the loss of healthy forest understory reduces filtration and recharge functions, exacerbating aquifer salinization risks on the North Fork and increasing coastal nutrient loads that contribute to harmful algal blooms.
- Community urgency is reflected in local meetings on water resources (e.g., Cutchogue Civic Association) and observations of coastal degradation (e.g., red tides in Great South Bay).
- Public safety impacts from deer overpopulation include ~70,000 deer-vehicle collisions annually in New York State, high local carcass pickups (e.g., nearly 3,000 in East Hampton, 2008–2017), vehicle damage costs around $5,000 per collision, and occasional human fatalities—making "culling by SUVs" both dangerous and inhumane.

IV. Evaluation of management strategies:

- Deer density targets of ~10–15 per square mile are cited as environmentally sustainable (e.g., Quabbin Reservoir achieved ~13–15 per square mile with subsequent ecological recovery). Case studies show that reducing deer can markedly reduce tick abundance and human Lyme disease cases (Mumford Cove: deer from ~141 to 13.2 per square mile, with 76% fewer ticks and 80% fewer Lyme disease cases).

- Sharpshooter culling with suppressed rifles and night vision is presented as the most effective and humane method; however, New York State law currently prohibits such tools, limiting communities to less effective options.
- Recreational hunting and bowhunting are insufficient for large herds and leave population levels high.
- Sterilization strategies (PZP, GonaCon) are deemed impractical due to high costs, labor-intensive capture, booster requirements, and the need to treat ~85–90% of does—lessons reinforced by Fire Island's shift to sharpshooting on federal land.
- Four-poster tick feeding stations are critiqued as operationally and economically prohibitive, with collateral risks (wildlife congregation, food safety concerns for agriculture), and require concurrent lethal reduction to be meaningful.
- At the household level, widespread property acaricide applications (including synthetic pyrethroids and essential oil products) are criticized as costly, environmentally harmful to pollinators and aquatic life, and ineffective at reducing household tick exposure or disease incidence, per well-controlled studies and county vector control experiments. Community-wide implementation is impractical due to costs, access constraints, and tick behavior (sheltering in untreated zones, moving on hosts).
- For personal protection, the speaker recommends permethrin-treated clothing as a primary defense—treating shoes, socks, pants, and shirts inside and out, drying away from sunlight, and re-treating after several gentle washings.
- DEET and other skin repellents may fail, especially against lone star ticks;
- **Permethrin acts as a tickicide rather than a repellent. Safety cautions include permethrin toxicity to cats.** Permethrin-treated clothing is a practical, effective defense. Tick checks and prompt removal remain critical.
- Additional homeowner measures (short lawns, reduced irrigation) may reduce blacklegged tick habitat but do little against drought-tolerant lone star ticks, which readily survive on dry, short turf and even hardscape, homing to CO2. Tick checks remain essential but are challenged by tiny nymphs.
- Legislative efforts in 2022–2023 to modernize New York's deer management tools stalled, yielding only a limited, ineffective pilot in Southold. Opposition from animal rights groups and hunting interests complicates reform; the speaker warns that more severe disease outcomes may be required to spur action. Nonetheless, he urges evidence-based deer population reduction, integration of forest conservation into water resource planning, targeted public education (e.g., garlic mustard removal), and monitoring programs linking forest condition to nutrient runoff and coastal water quality. Upcoming community meetings and continued advocacy aim to align policy with ecological and public health realities.

Considerations:

- Compile current data on tick species prevalence and disease incidence
- Develop resident guidance on personal tick prevention (permethrin protocols, limitations of repellents), tick checks, and recognition of co-infection symptoms.
- Establish data sharing with highway departments to map carcass pickups and collision hotspots; propose mitigation (signage, speed controls, barriers).
- Engage policymakers with evidence-based briefs on effective deer management, limitations of sterilization and four-posters, and the public health stakes.