

6 April 2023

### Isle au Haut Tick Control Project

The MaineHealth Institute for Research (formerly Maine Medical Center Research Institute) in cooperation with the State of Connecticut Agricultural Experiment Station (CAES), has been awarded a Centers for Disease Control and Prevention (CDC) grant (Award Number 6 U01CK000665-01-01) to look at controlling deer ticks, the vector of Lyme disease and other tick-borne diseases, by treating both white-tailed deer and deer mice on Isle au Haut. Both deer and mice will be treated with acaricidal (tick-killing) compounds that will target ticks as they feed on their two key wildlife hosts. In addition to the Isle au Haut study site, there will be two study sites located in Connecticut where the same trials will be conducted. The study is scheduled to begin in the summer of 2023 and run for a total of five years.

The Vector-borne Disease Laboratory (VBDL) at MaineHealth has conducted surveys and research on ticks on Isle au Haut since the early 1990's, when deer ticks were first being recognized in the State of Maine. While research was conducted on Monhegan Island in the 1990's and early 2000's to test interventions to control tick-borne disease, Isle au Haut played a role in the research as the control/comparison site for the experimental work.

As part of the earlier study, researchers from the VBDL have been coming out a couple of times a year to collect ticks from several sites across the island and test them for infection with various disease-causing pathogens. The most recent data, from the fall of 2022, show that deer ticks were infected with some tick-borne pathogens on Isle au Haut, but at much different rates:

<b><i>Borrelia burgdorferi</i></b>	<b><i>Anaplasma phagocytophilum</i></b>	<b><i>Babesia microti</i></b>
<b>(Lyme disease)</b>	<b>(Human/Canine anaplasmosis)</b>	<b>(Human babesiosis)</b>
<b>29%</b>	<b>6%</b>	<b>0%</b>

Infections rates seen on IAH are approximately the same as elsewhere in this region of Maine and were widespread across the island.

The current project will be following up on recent pilot studies in Connecticut by CAES that showed positive results controlling tick populations through the oral delivery of acaricidal compounds to deer and mice. The Isle au Haut study will follow the same treatment protocols. Deer will be fed corn treated with a very low dose of moxidectin (a type of cattle dewormer) in the late fall and early spring, when adult ticks feeding on deer can be killed by the acaricide before laying eggs. The mouse component will consist of bait boxes placed in the wooded portion of backyards to systemically treat mice with 0.005% fipronil around homes and lawns and will occur during the summer months when the ticks are susceptible to treatment in their juvenile life stage. Both mice and deer will be captured prior to, during, and post-treatment in order to assess the efficacy of treatment on the local tick and pathogen populations.

Both products are federally registered (EPA #72500-28, FDA NADA #141-099) for use in treating mammals for parasites and will be delivered in controlled and field-proven methods. Deer will consume

treated corn from automated feeders, and mice will consume treated bait from plastic boxes with entry holes that permit passage of rodent-sized mammals only.

Researchers hope to work closely with island residents in the upcoming season, as landowner participation and support will be crucial to the success of the project. If successful, this approach promises to become an important tool for control of disease-carrying ticks around residences in communities where disease risk is high.

A meeting about the project will be held at the Town Hall April 17<sup>th</sup> at 5pm.

For further information or questions about the project please contact --

Chuck Lubelczyk ([Charles.Lubelczyk@mainehealth.org](mailto:Charles.Lubelczyk@mainehealth.org)) or Dane Stevens ([Dane@whitebuffaloinc.org](mailto:Dane@whitebuffaloinc.org)).