

Georgetown Climate Change Adaptation Report: 2018 Update to the Report



The purpose of this 2018 update to the *2015 Climate Change Adaptation Report* is:

- ◆ to continue the conversation about adapting to a changing climate in our town;
- ◆ to recognize the progress made since 2015 through citizen action; and,
- ◆ to assure that Georgetown will continue to prepare for, and be resilient to, our changing environment.

The original report offered 48 specific recommendations in ten key areas likely to be affected by climate change: Infrastructure and Roads; Water Supply; Fisheries; Private Property; Public Property; Ecology; Recreation; Emergency Preparedness; Cultural/Historical Assets; and Human Health. (See the attached *2015 Climate Change Adaptation Report*.) This is a summary of actions taken and progress made toward those recommendations.

Infrastructure and Roads:

University of New Hampshire students, under the direction of Georgetown resident and UNH faculty member, Dr. Nancy Kinner have worked to assess Georgetown's flood vulnerability by inventorying and evaluating conditions of the culverts along Georgetown roads for Georgetown Road Commissioner Charlie Collins. The project, begun in 2015, adds to a growing database of critical information that will, over time, lead to improvements to our culvert infrastructure, especially on roads vulnerable to flooding. As of spring 2019, 150 culverts will have been evaluated. In addition, Georgetown residents have been recruited as citizen-scientists to monitor and record flooding of low-lying roads, or "choke points," during storms and high tides.

Water Supply:

To help protect our precious fresh water aquifers, UNH students have prepared information sheets for residents on water conservation. Georgetown's Conservation Commission - working collaboratively with the neighboring towns of Arrowsic, Phippsburg, and Westport Island, and with the Kennebec Estuary Land Trust (KELT) - prepared a stewardship guide for our coastal community, *Georgetown: Caring for Our Land and Waters*, which includes a section on protecting groundwater, and proper maintenance of private septic systems. The booklet was mailed to all Georgetown residents in 2016. The Georgetown Conservation Commission continues to work with the conservation commissions of these towns on issues of common interest.

Fisheries Economy:

Volunteers from Georgetown, under the direction of KELT, continue to participate in a multi-year water quality monitoring project, regularly gathering water samples from in-shore and off-shore collection sites around the island to test for characteristics like salinity, dissolved oxygen, pH, temperature, water clarity, and phytoplankton—all indicators of the health of the tidal waters so vital for fishing, clamming, swimming, boating, and supporting wildlife.

Several projects are underway to study the effects of warming coastal waters on shellfish, and to develop new adaptive fisheries, such as oyster aquaculture, farming soft shell clams, and looking at invasive green crabs - typically a pest - as a potential harvestable food source. Two of these projects engage students from Georgetown Central School. Kids in third to sixth grades help with the Heal Eddy clam farm project, and collect data on the growth rates and other habits of green crabs. In 2016 the Georgetown Historical Society and the Conservation Commission hosted a community program on the Heal Eddy Shellfish Bed Restoration Project. Since 2017, Georgetown's Shellfish Committee has met regularly with members of the local fishing community and with a town marine resources group to discuss changes, resilience, and sustainability in Gulf of Maine fisheries. They receive technical and research assistance from the University of Maine – Orono, School of Marine Sciences, and from the Maine Center for Coastal Fisheries.

Overboard discharge systems for wastewater are slowly being converted to other systems in Georgetown. The number of overboard discharge systems in Georgetown has dropped from 60 reported in 2015 to 56 in 2018. More work remains to resolve this issue.

Private Property:

In an effort to address how citizens can adapt to climate change on privately-owned properties, *Georgetown: Caring for Our Land and Waters*, the stewardship guide mentioned above, offers information and useful tips for protecting groundwater, managing residential landscapes, limiting household hazardous waste, maintaining healthy septic systems, preparing for weather emergencies, conserving energy and reducing use of fossil fuels, and dealing with ticks, other insect pests, and invasive plant species. The Conservation Commission has sponsored a community program on converting home energy sources to solar energy.

Public Property:

To steward our public lands, Georgetown volunteers participate annually in the International Coastal Cleanup campaign. Over the past few years, several tons of trash have been removed from our town's beaches, marshes, and shorelines. The Conservation Commission continues to monitor and maintain town-owned conservation lands, including the Ipcar Natural Preserve in Five Islands and the Round the Cove Walking Trail in Georgetown Center. Projects include a survey of the boundary lines of the eastern parcel of the Ipcar Natural Preserve, and re-blazing, clearing trails, and posting signs. A trail bridge was replaced in the Round the Cove Walking Trail town forest in 2017. Regularly, the Conservation Commission updates and reprints the popular guide to Georgetown's walking and hiking trails.

Stemming from the *2015 Climate Change Adaptation Report* recommendations regarding public property, a Comprehensive Planning Committee, appointed by the Select Board, is updating Georgetown's *1993 Comprehensive Plan*, in a process that engages all residents in shaping our town's future. With an updated comprehensive plan, Georgetown will qualify for more state funding for local projects. During 2018, the Conservation Commission began to investigate the possibility of bringing solar power to our municipality, as nearby towns, like Woolwich, have done successfully and with cost-effectiveness. The Conservation Commission held a general information meeting for the public in summer 2018, featuring three experts who spoke about municipal solar power.

Ecology:

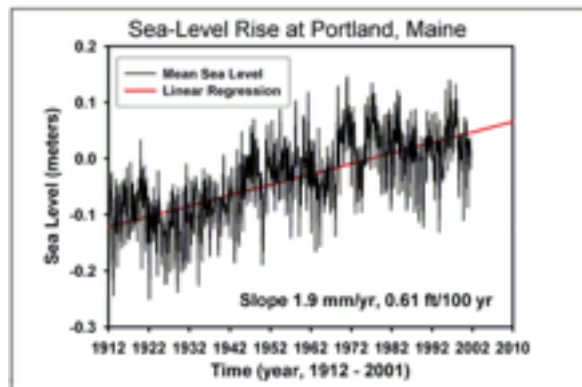
The Conservation Commission continues to work with regional land trusts to monitor marshes and surrounding uplands, maintain trails, and identify and remove invasive plant species. Regional land trusts have conserved significant salt water marsh and adjacent upland in Georgetown since 2015. During the 2017/18 winter, the Kennebec Estuary Land Trust removed remnants of an abandoned wood road across the upper reaches of a salt water marsh to allow unrestricted tidal flushing, improving the health of the marsh. The Conservation Commission continues to engage with teachers and students at the Georgetown Central School on projects to monitor ecological processes in our forests, flats, and waters. Each spring, the Conservation Commission posts "Turtle Crossing" signs, created by Georgetown's children, along island roads near where turtles seek nesting areas, and students at the Georgetown Central School have helped to monitor for active vernal pools on properties managed by the Kennebec Estuary Land Trust and The Nature Conservancy.

Since 2015, we have seen some significantly violent storms, with high winds and micro-bursts. While the brown-tail moth infestation, which has become increasingly serious over the past few years, appears to be cyclical rather than the result of climate change, per se, the larval damage – which weakens and kills trees – is of concern. A community-led group has begun to investigate the effects of the growing brown-tail moth infestation in Georgetown, and is considering ways that Georgetown can respond both in the areas of human health and ecological impact. As the warming climate make our area hospitable to the emerald ash-borer and other wood-threatening insects, we need to monitor and respond.

Recreation:

Georgetown is blessed with rich natural resources for recreational enjoyment, and the Conservation Commission continues to seek ways to protect and improve these resources. As mentioned earlier in this update, the Conservation Commission regularly updates Georgetown trail map and guides, and maintains hiking trails at the Ipcar Natural Preserve and at Round the Cove Walking Trail. A community group is currently researching

possible additional access points to public waters; another group is investigating handicap accessibility to Georgetown's public recreation sites and open-access conservation lands. Each autumn, the Conservation Commission hosts a community harvest potluck, open to everyone in Georgetown, to celebrate locally grown or harvested foods.



Emergency Preparedness:

The need for our community to adapt to climate change may be most compelling in regard to emergency preparedness. Between the release of the *2015 Climate Change Adaptation Report* and 2018, three of the five costliest U.S. tropical cyclones have occurred - Harvey, Irma, and Maria - all in the same year, 2017. These three hurricanes combined caused damages totaling over one-quarter trillion dollars nationally.

Our island is especially vulnerable to sea level rise and intensification of weather events, both of which cause flooding and storm damage. Along with the culvert assessment project mentioned, UNH students have recently

prepared a *Georgetown Emergency Preparation Information Sheet*, a handy household guide with contact information for town, county and state officials in the event of an emergency, as well as tips for preparing first aid and disaster supply kits for households. The sheet - designed for easy use - is free and available at the Town Office and at community events.

Town officials designated in the Town's Emergency Plan met in 2018 to organize and coordinate Georgetown's emergency plans and resources. They have begun to update emergency plans for each of Georgetown's three designated emergency shelters (the Georgetown School, the Georgetown Community Center, and the Georgetown Historical Society building.) Currently, the Georgetown Historical Society has an emergency shelter plan in place. Georgetown's recently-formed "age-friendly community" group is developing strategies for addressing the needs of senior citizens and other vulnerable residents during emergencies.

Cultural and Historical Assets:

Since 2015, one additional historic structure in Georgetown has been accepted into the National Register of Historic Places, bringing the total to eight. In 2016, the Georgetown Central School and the Georgetown Historical Society joined a team of archaeologists from the Maine Historic Preservation Commission to study a prehistoric Native American shell midden in a collaboration that engaged Georgetown's elementary students and other community members in gaining a deeper understanding of the effects of climate change on island history. The Georgetown Historical Society continues to provide community programs on Georgetown's significant history; most recently in summer 2018 with a program by Maine Historic Preservation Commission archaeologist Dr. Arthur Spiess on sea level rise, coastal erosion, and Georgetown's shell middens.

Our cultural and historical sites continue to need protection from storm surge and intensifying weather as climate-change-related damage to Georgetown's cultural and historical sites continues. Winter storms brought significant erosion of known prehistoric Native American shell middens on Robinhood Cove and at Five Islands in 2017/18.

Human Health:

Maine had the highest incident of Lyme disease cases per capita in the country in 2018, and Georgetown ranks first in levels of Lyme disease in Sagadahoc County. The tick population in Georgetown continues to increase as a result of warmer weather and shorter winters (more deer and mice, vectors for ticks), and five tick-borne illnesses are on the rise. The Conservation Commission sponsored two widely-attended public meetings, in 2017 and 2018, to educate our community about the increasing problem of ticks and tick-borne diseases. The first meeting, aimed at understanding the disease, featured guest speaker Dr. Nananda Col, Georgetown resident and Adjunct Professor in the Center of Excellence in the Neurosciences at the University of New England. Mitigation of the tick population was the focus of the second public information meeting. From this meeting, a volunteer group, including the town's Health Officer, formed a "tick" group to investigate measures for reducing the tick population on Georgetown. A community group has begun to investigate the human health effects of the

growing brown-tail moth infestation in Georgetown. Another group is considering and implementing strategies to support Georgetown's senior citizens and other vulnerable residents.

Conclusions:

Since the release of Georgetown's *Climate Change Adaptation Report* in 2015, our community has been energized, resulting in greater citizen involvement. Volunteer groups have formed to address a number of issues and recommendations in the Climate Change Adaptation Report including: a committee updating the town's 1993 Comprehensive Plan, a "tick" group looking at the prevalence of Lyme and other tick-borne diseases in our town and what to do about it, a brown tail moth group looking into that infestation, a group looking at our fisheries economy and aquaculture in changing times, a group dedicated to finding ways to keep our town responsive to the needs of our aging population and other vulnerable residents, and a gleaning program, through which unharvested produce from regional community-supported-agriculture (CSA) farms is made available for free.

This citizen activism is exciting and important, and our community can be proud of the significant progress we've made on many of the recommendations in the *2015 Climate Change Adaptation Report*. Still, there are challenges ahead: some of the more complex and costly recommendations from the report's recommendations remain unaddressed. In 2017, the Conservation Commission sponsored a community information meeting to review progress on the recommendations of the report since its publication. The Conservation Commission will continue to update the science behind the report, review progress and accomplishments, as well as address the challenges ahead, and share our findings with the community. We are committed to engaging Georgetown's leaders and its citizens in initiatives to make our community resilient to climate change.

*Georgetown Conservation Commission: Robin Moore, Chair; Kathy Gravino; Jay Holt, Ph.D.; Ruth Indrick; Lee Johnson J.D.; Nancy Kinner, Ph.D.; Chuck Richard; and Maureen Stanton, Ph.D.
November, 2018*