PROTECTING CHATHAM'S CLIMATE RESILIENCE

KEY POINTS ABOUT CLIMATE BENEFITS AND THREATS:

- Trees play an important role in mitigating climate change by removing carbon dioxide from the atmosphere and storing (or "sequestering") it in their leaves, branches, trunks, roots and in the soil around the roots.
- Trees and leafy vegetation also help to moderate temperatures, help with water recharge and protect water quality. And they provide food and habitat for pollinators, birds and wildlife.
- Native trees and plants have adapted to local conditions and so do not need fertilizer, pesticides or irrigation (once they're established).
- When a tree or other vegetation is cut, not only is its storage capacity destroyed, but much of the CO2 it has stored is released back into the atmosphere. The loss of larger, older trees is most damaging – we cannot replace or replicate their role in the carbon cycle.
- Ponds store CO2 in their vegetation and sediments and protect groundwater quality by filtering stormwater runoff and removing pollutants before they can reach the groundwater. They also perform important ecosystem services, such as providing important habitat and supporting a diverse ecosystem.
- Ponds are threatened by a variety of forces, including excess nitrogen entering ponds from septic systems and fertilized lawns that feed algae growth, which blocks sunlight and reduces oxygen levels. All of these dangers are made much worse by our warming climate further warming the water in the ponds.
- Salt marshes are amazing "carbon sinks:" they store more than 15 times more carbon per acre than a typical woodland (which can store a lot!). They also protect against floods and storm damage by storing flood waters, dissipating wave energy, and reducing coastal flooding.
- When sea levels rise, salt marshes need to be able to migrate out of the way. If they cannot, they will "drown in place" and be destroyed.
- Tidal flats and seagrass beds are the "nurseries" for many fish and shellfish species, protecting young creatures while they are vulnerable. These areas also store large amounts of carbon and protect against storm damage: a mere 15 feet of submerged grasses can absorb 50% of incoming wave energy.
- Marshes and seagrasses are facing a "trifecta" of threats: warming waters leading to sea level rise, more powerful storm events and growing acidification from CO2 being absorbed into the water.
- Coastal banks and beaches are important defenses against storm damage by acting as horizontal and vertical buffers, protecting inland areas from floods, destructive waves and high winds. They also provide valuable habitat for a variety of species, including shellfish, sea turtles and seabirds.
- Coastal areas such as banks, dunes and beaches are disappearing, lost to sea level rise, erosion, and storm. In an effort to protect coastal banks, stone revetments are constructed which end up accelerating erosion and the loss of beach areas.

ACTIONS YOU CAN TAKE:

IN YOUR OWN YARD:

- Plant native drought hardy trees, shrubs and flowers in your gardens.
- Don't use nitrogen and other harmful fertilizers and avoid runoff that will eventually end up in marshes, embayments and ponds.
- Work to reduce or eliminate asphalt and other hard surfaces on driveways and walks and replace them with porous stones or shells.
- Protect the trees on your property and plant native trees to replace any lost to age or storms.
- If you have a lawn, make it a Cape Cod lawn that doesn't require fertilization or pesticides. Let it go into hibernation in the summer (it will be back in September!).

IN AND AROUND TOWN:

- Learn and talk about climate change. Build awareness and share what you've learned. Talk to your family, friends and neighbors about what changes and impacts they observe.
- Support local organizations and initiatives that are working to preserve natural resources and fight climate change. Volunteer to help – most organizations need helping hands!
- Volunteer to plant dune grasses, put up signs to keep off dunes and clean up beaches.
- Ask candidates for office about climate changes issues and only support those truly committed to climate solutions and protection of our natural resources and are willing to take real action.
- SHOW UP and SPEAK UP when proposals, projects or issues arise that could have a damaging impact on our natural resources and climate resilience. Ask the hard questions, and demand answers. Join with others to have a real impact.
- Go to Town Meeting and support the climate smart Articles!

RESOURCES

Here are a few resources to check out to learn more about the climate resilience and protection capabilities of our natural resources – and the need to protect them. Start here and keep learning!

Link to the video of the May 22 program: https://youtu.be/tj0A-RQYwOQ
Chatham Climate Action Network's *Climate Smart Landscaping* Resources list
APCC's Native Plant Initiative and the Cape Cod Native Plants "plant finder" tool
NOAA's *Protecting Coastal Blue Carbon Through Habitat Conservation*
Sierra Club's *We Can't Save the Climate Without Also Saving the Trees*
MIT's Climate Portal Explainer: *Forests and Climate Change*
Woodwell Climate Research Center's *Guiding principles for just, effective natural climate solutions*
Waquoit Bay National Estuarine Research Center's Biomonitoring of Salt Marshes and Submerged Aquatic Vegetation

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CHATHAM CLIMATE ACTION NETWORK
FRIENDS OF CHATHAM WATERWAYS
PLEASANT BAY COMMUNITY BOATING
CAPE COD COMMISSION CLIMATE AMBASSADORS PROGRAM
FRIENDS OF TREES CHATHAM
CHATHAM CONSERVATION FOUNDATION
PLEASANT BAY ALLIANCE
CHATHAM GARDEN CLUB