

Climate Change Adaption and Wetlands Info Session (2) Notes

Held on July 24th, 2014

Martha's Vineyard Commission

Stone Building, New York Ave.

Oak Bluffs, MA 02557

Attended:

Jo-Ann Taylor, Dani Cleary, Olga Church, Julie Pringle, Sammi Chaves, Emma Green Beach, Kristen Fauxteux, Bill Venno, Chris Seidel, Greg Palermo, Richard Toole.

Introduction:

Increase of greenhouse gasses, CO₂ specifically in both the atmosphere and the oceans, is causing a decrease in pH and temperature change. With the rise in temperature the ice sheets on the high North and South latitudes are melting, causing an influx of fresh water to come into our oceans which in turn accelerate sea level rise and bring about a change in oceanic circulation. The rise in sea level will have a large impact on coastal habitats, specifically wetlands which can get covered and drown if they do not migrate or grow in elevation with the rising water.

Another outcome of climate change is the prevalence of short-term drought punctuated by more aggressive rainstorms. This will affect the wetlands, since they are vulnerable to the impacts of pulses of fresh, turbid water.

Wetlands provide habitat and security for many different critters. A whole food web can be found in this environment, starting with primary producers and continues all the way up to major predators. Many juvenile fish and other sea creatures live in the wetlands, as well as birds stopping in to get food. Animals not only use wetlands for food, but also for protection. Smaller animals live in wetlands during their younger years to stay protected from bigger predators. Since tides, wave energy and sediment deposit are all partly absorbed by the wetlands, they prevent possible erosion and also protect inland areas from floods. Wetlands process nutrients that might otherwise enter surface waters in excess and detract from pond water quality.

Even though a lot of negatives are presented, it is important to focus on the steps that can be taken in order to help protect the wetlands. Monitoring growth of wetlands, vertically and laterally, should start ASAP because it will take multiple years for enough useful information to be collected. Rod SET is a tool that measures the vertical growth of wetlands from season to season/yearly. Aerial photography can keep track of where marshes are growing inland and at what speed they are migrating. Rod SET could also be put in adjacent non-marsh area for anticipated landward migration.

This project would be easy to make educational for schools and other groups. At Felix Neck, the RSET could easily be placed close enough to walking path where it can be

seen and form an informative display. All of the upper elementary science classes have been contacted about this project and many have responded with interest in helping if possible, and incorporating it into their lesson plans.

Update on Soils:

- Soil Survey of Dukes County, Massachusetts was used to determine if soil was Good, Fair, Poor or Very poor, for wetlands.
 - The way it looked is where there was good soil for wetlands, wetlands were there, and the rest was poor or very poor soil for wetlands.
 - How can we determine what the soil will look like in the future when factoring in the rising waters?
 - The rising waters must have an effect on how the soil quality is for wetlands.
 - This should be looked into further. See if there is research being done in this area.

Map Presentation:

Each major wetland was shown with several different layers on it. The first layer was a wetlands layer with different types of wetlands being represented by different colors. The second layer was sea level rise with a level at 1.5 ft and another level at 5.0 ft above Mean High High Water. The third layer was conserved land. Fourth layer showed an upper land buffer for the marshes to potentially move.

Sengekontacket Pond

- There are lots of wetlands around Senge. Pay special attention to Felix Neck. There is lots of marsh land, and lots of land where it can move. MVC and Felix Neck are in conversation regarding setting up a monitoring program there. The wetlands on/next to the barrier beach across the pond is not a marsh to look at for planning because the barrier beach system will migrate landward and keep its form and function without intervention.
- 1.5 feet of sea rise by 2050. Some wetlands will be covered, others will remain uncovered. Some of the wetlands at Felix Neck will be covered, but there is higher ground for them to move to and some of the wetlands will remain above the water level.
- 5.0 ft sea level rise and the wetlands on Felix Neck are completely covered. There is room for them to move to higher ground. Most other wetlands around the pond are covered with little area left to move.

Menemsha Pond

- This area shows wetlands mainly north and south of Menemsha Pond. North area has the most protected land and the south does have some protected lands and upland buffer surrounding most of the wetlands.

- 1.5 ft sea level rise by 2050 shows not too much coverage. Wetlands are still looking good.
- 5.0 ft sea level increase shows that most of the wetlands will be covered (blue around the wetland represents that water will be over the entire marsh area). Most of the conserved land in the north is also covered, but there is still some open area where wetlands can migrate. On the south side, there is also some land for migration.

Katama Bay

- There are patches of wetlands around the bay.
- 1.5 ft by 2050 does not seem to affect the wetlands very much. Gives the wetlands time to grow and slowly adapt to the increase in water level.
- 5.0 ft will completely cover all of the wetlands if they remain in the same lateral configuration. Along the east side there is some room for the wetlands to migrate, but that is just a slight border.

Poucha Pond

- A lot of wetlands surround all of Poucha Pond.
- Not greatly affected by the 1.5 ft rise.
- 5.0 ft increase covers the wetlands, and most of the open upland area that surrounds the wetlands. There is still some area for migration.

Edgartown Great Pond

- Some small wetland areas.
- There is not a great effect on the wetlands with just 1.5 ft rise in sea level.
- Wetlands covered, not much area to migrate because it is also covered with the 5.0 ft increase and there is not too great of a buffer surrounding the present day wetlands.

Oyster Pond

- Wetland area present in many of these smaller ponds, specifically in the tips of the “arms”. Minimal room for landward migration.
- Not much affect with the 1.5 sea level rise.
- 5.0 feet of sea level rise. All of the wetlands will get covered, but the small amount of open land behind the wetlands may not. Potential for migration.

Tisbury Great Pond

- Small area of wetland throughout the map. Lots of development around the pond.
- 1.5 ft increase does not show a great effect on the wetlands.
- After 5 feet of sea level rise, completely covered, no place to migrate in most areas.

Chilmark Ponds

- There are wetlands surrounding most of the pond with area for them to migrate.
- Some wetlands covered with the 1.5 ft increase in sea level.
- After 5 feet of sea level rise, completely covered. Some areas still have land that marsh could migrate to.

Lake Tashmoo

- Wetlands around the whole north section of Lake Tashmoo. Very populated area with minimal migration room.
- Minimal coverage by 1.5 ft increase.
- Complete coverage by 5.0 ft increase of sea level. No area to migrate.

Farm Pond

- Wetlands are abundant surrounding Farm Pond, with good area for migration.
- No major coverage by 1.5 ft increase.
- Coverage of wetlands, and undeveloped upland. Still some area to migrate in the west section.

Things to consider while deciding which wetlands for focus:

- Is there space for wetland migration?
- Does it have good soil?
- Is the land conserved?
- How healthy is the pond?

List of ponds that we could be interested in (updated during the course of the session):

- Menemsha Pond
- Sengekontacket
- Farm Pond
- Black Point Pond
- Poucha Pond

Questions/Discussion:

- How is the health of a pond determined? And is the health of a pond different than the health of the wetland? Which is more important?
 - Having phragmites may not be so bad for the wetland (growth and survival), even though they are a non-native plant. They do filter well and they grow well in the current environment. Chilmark Ponds should be in the top list, even though there is lots of Phragmites there.

- There are data layers on GIS that shows land use in areas, would probably be more useful than the information being used right now. This will give a much better understanding of what land is open for wetland migration.
 - Some areas that are developed right now and have land that technically is not for wetland migration could turn into wetland migration area once the water has risen. We can't control what the water does to present day properties.

Updated list of priority ponds (updated during the session)

- Black Point Pond
- Chilmark Ponds
- Menemsha Pond
- Farm Pond
- Sengekontacket Pond
- Poucha Pond

Next Steps

- Install Rod SETs to monitor elevation.
- Field work should be done.
 - What do these wetlands actually look like for real and not a map layer?
 - Chilmark Ponds may look much different from the maps, e.g., with some "wetland islands" in the ponds.
- Is there a way to document importance of these ponds? Which qualifications should we use? Are there groups already with this information?
- Look at the TNC Veg Layer to see where migration is more likely to happen due to plants that are in the area behind the wetlands now Update: There is really no layer for wetlands buffer. This is a site-specific determination. Is there enough confidence in the Coastal Adaptation Layer to continue using that?
- Once the upland layer is determined, quantify acreage available for migration after 1.5 ft of sea level rise and after 5.0 ft of sea level rise.
- Present the prioritization of which land should be used for wetland migration and what land can be used for moving a road from rising sea levels, or other structures.
- One more session in August (tba).

Notes prepared by Dani Cleary