

Natural Resources Assessment

ANDROSCOGGIN AND SAGADAHOC COUNTIES

2016



Prepared by:

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Preface:

The Androscoggin and Sagadahoc County Natural Resources Assessment is a cooperative project of the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS), the Maine Association of Conservation Districts (MACD), and the Androscoggin Valley Soil and Water Conservation District (AVSWCD). This document is not intended to be an exhaustive survey of all natural resource conditions in the District. However, it is a snapshot of current issues and conditions which are significant to the Androscoggin Valley Soil and Water Conservation District in its work with NRCS and other conservation partners.

AVSWCD encompasses the counties of Androscoggin and Sagadahoc in central and southeastern Maine.

Androscoggin County:

Androscoggin County has a total area of 497 square miles, of which 5.5% is water. The county has twelve towns and two cities, Lewiston and the county seat Auburn. Androscoggin Riverlands State Park, located along the river in Turner and Leeds, protects twelve miles of river frontage and is part of the Androscoggin Greenway and the Androscoggin River Water Trail. Range Ponds State park is located in Poland Spring on Lower Range Pond.

Sagadahoc County:

Sagadahoc County is the smallest county in Maine, with a total area of 370 square miles, of which 31.1% is water. The coastal county is comprised of eight towns and one city, Bath, the county seat. Pond Island National Wildlife Refuge is located in Phippsburg as part of the Maine Coastal Islands National Wildlife Refuge. Popham Beach State Park is also located in Phippsburg and Reid State Park is located in Georgetown.



Androscoggin County



Sagadahoc County

Resources Assessment Summary:

Concerns of High Importance

Landscape	Natural Resource Concerns	Specific Issues
Non-irrigated Cropland	Soil Erosion - Sheet, rill, and wind erosion; Concentrated flow erosion	Soil erosion occurs on cropland across the entire area; more significant on steep and long slopes and land with little vegetative cover
	Soil Quality Degradation - Organic matter depletion	Insufficient/Ineffective use of cover cropping, winter cover crops, and crop rotations
Irrigated Cropland	Insufficient use of irrigation water; Inefficient moisture management.	Need for more cost-effective irrigation systems to reduce water and energy consumption
	Water Quantity – Changes in seasonal hydrologic cycle due to climate change	Drought conditions have affected many small farms that rely on dug wells throughout the District. Financial and technical assistance is needed for smaller farm operations.
Hay and Pasture	Soil Quality Degradation - Organic matter depletion; Water Quality Degradation - Excess nutrients	Insufficient/Ineffective use of manure on farms to increase soil fertility and crop yields. Many nutrient management plans need to be updated
	Degraded Plant-Condition – Undesirable plant productivity and health	Many haylands are not well-managed and are becoming over-run with invasive plants and weeds

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Forest	Invasive plant spread; Inadequate structure and composition; Inadequate Habitat for Fish and Wildlife	Need more forest management planning, especially inclusion of wildlife habitat planning, invasive plant control measures, and best management practices
	Invasive forest pest spread; inadequate structure and composition; Inadequate Habitat for Fish and Wildlife	Need more forest management planning, especially inclusion of wildlife habitat planning, invasive forest pest control measures, and best management practices
Headquarters, Farmsteads, Concentrated Livestock Areas	Water Quality Degradation - Excess nutrients and sediment	No specific issues noted in public meetings, but the District has ongoing concerns about best nutrient management practices being used and updated for livestock operations
	Soil Quality Degradation – Organic matter depletion	Insufficient/Ineffective use of manure on farms to increase soil fertility and crop yields
Urban	Water Quality Degradation; Excess Water; Soil Erosion - Concentrated flow erosion;	Untreated storm water runoff entering water bodies in Lewiston and Auburn and other municipalities
Water	Water Quality Degradation - Excessive nutrients in surface waters	Sediment and phosphorus loading from runoff is affecting water quality in lakes; Sabattus Pond experiences seasonal algal blooms

Landscape Overview

Cropland

According to the National Agriculture Statistics Service's 2012 Census of Agriculture, 59,446 acres, 18.7% of Androscoggin County, was agricultural with 463 farms reported. The average farm size in Androscoggin County was 128 acres. There was a total of 22,041 acres of cropland in Androscoggin, of which 18,919 was harvested. Of the harvested cropland, 80.3% was forage (15,190 acres) which is defined as land used for all hay and haylage, grass silage, and green chop. In 2012, Androscoggin County had 754 acres of vegetables harvested, 4,501 acres of permanent pasture and rangeland, and 974 acres of pastured woodland.

Sagadahoc County had 229 farms averaging 88 acres. In 2012, the total land in farms for Sagadahoc County was 20,090 acres. Cropland made up 25.7% (5,169 acres) of the total land in farms, with 4,462 acres harvested. On this harvested land, 121 acres of vegetables were grown and 3,928 acres of forage. The forage made up 88.0% of harvested cropland in Sagadahoc County. There was also 1,903 acres of permanent pasture and rangeland and 412 acres of pastured woodland.

Non-Irrigated Crop Landscape:

In Androscoggin County, the 2012 Census of Agriculture reported 236 farms with non-irrigated harvested cropland totaling 17,377 acres. This makes up 78.8% of the total cropland for the County and 91.6% of the harvested cropland. Androscoggin County saw an increase of 932 acres in non-irrigated harvested cropland from the 2007 Agricultural Census. In 2012, Androscoggin County farmers harvested 31,646 tons of corn for silage or green chop from 1,932 acres of non-irrigated land. Public meeting comments indicated that corn production is down.

Sagadahoc County was reported as having 104 farms with non-irrigated harvested cropland totaling 3,998 acres, making up 77.3% of the total cropland for the County and 89.6% of the harvested cropland. The 2007 data for non-irrigated cropland in Sagadahoc County was withheld to avoid disclosing information for an individual farm. Sagadahoc County harvested a total of 2,164 tons of corn for silage or green chop from 148 acres of non-irrigated land.

Cropland Issues:

- Beginning farmers' lack of conservation knowledge was the most significant issue noted in the 2016 public meeting. While there seems to be growing interest in farming, many new and beginning farmers are focused on building their agricultural business without recognizing the importance of good soil conservation practices and the potential long-term impacts on their land and their bottom line.
- Restoration of reverting and lost farm fields was a significant issue. Farmers are having difficulty finding nearby fields for increasing their crop production. NRCS and the District should assist with finding areas of prime farmland soils and provide technical and financial assistance for reclaiming fields.
- Invasive plants, such as Canadian thistle, autumn olive, honeysuckle, bittersweet, and rugose, were mentioned in public meetings as serious threats to agricultural fields. The 2011 Natural Resource Assessment noted insect pest as a serious concern, but this year's process emphasized the growing awareness about the spread of invasive plants. Androscoggin Valley seems to be an area where invasives are taking hold, and the Androscoggin Valley SWCD and NRCS need to take more action to prevent introduction of invasive species and control those that are now present.

Hay and Pasture Issues:

- Beginning farmer dropout is a problem, leading to lack of pasture management. Public meeting participants emphasized the need for new farmers to be strategic and choose their battles carefully. “Let the land lead you” was one telling comment from the public meeting.
- Weather variability contributes to a lack of pasture management; conditions seem to be either too wet or too dry; spring is too wet for fertilizing and autumn fertilizing can result in excessive nutrient runoff in storms. Many fields need more nutrients, but landowners need technical and financial assistance to do this effectively.
- Equipment costs to maintain fields can be significant. Financial assistance or a system of equipment sharing could be helpful.
- Invasives such as bedstraw and Canadian thistle are problems in many pastures.

Irrigated Crop Landscape:

In 2012, Androscoggin County had 117 farms with irrigated land and 1,542 acres of harvested irrigated cropland. Using the data available, there were two farms that used this land for forage which is land used for all hay and haylage, grass silage, and green chop, and two farms that used their irrigated crop landscape for growing tobacco. Androscoggin County has 454 acres of irrigated land, 29.4% of the total irrigated land in the County, that is used for growing vegetables. The primary crops harvested for sale, using the 2012 Agricultural Census data, are pumpkins, tomatoes, cucumbers and pickles, head cabbage, and lettuce.

Sagadahoc County had 464 acres of harvested irrigated cropland split amongst 41 farms in the area. The irrigated land used for vegetables makes up a much smaller percentage than Androscoggin County with 19 acres total, or 4.1% of Sagadahoc County. The primary crops grown for sale in Sagadahoc County are pumpkins (20 acres), potatoes and radishes (9 acres each), and beets, carrots, spinach, and tomatoes (4 acres each). The total irrigated cropland used for forage in Sagadahoc County is 96 acres, which is 20.7% of the total irrigated cropland.

Irrigation Issues:

- Irrigation systems are often not affordable for small farms. Landowners are interested in lower-cost alternatives for providing irrigation or increased availability of cost-sharing programs.
- Public meeting comments suggest that Sagadahoc County seems to have sandier soils and greater needs for irrigation.
- Variability in weather patterns (from very wet to very dry) makes it difficult to plan and make cost-effective investments in conservation practices.
- Current drought conditions have increased public awareness of water resource needs. Small farms with a few animals often rely on dug wells, which may go dry in droughts. Additional financial and technical assistance is essential for small farm owners.

Headquarters, Farmsteads, and Concentrated Livestock:

In 2012, Androscoggin County reported 5,769 head of cattle and calves. This was a 36.2% decrease from 2007. There were 45 farms categorized as “beef cattle ranching and farming” . In addition, there were 6 farms categorized as “cattle

feedlots” and 18 categorized as “dairy cattle and milk production”. Androscoggin County had 1,999 milk cows. Androscoggin County had 9 poultry farms, 5 hog and pig farms, 16 sheep and goat farms, and 92 farms categorized in the aquaculture or other livestock category. In 2012, there was 5,673 acres of land in farmsteads, homes, buildings, livestock facilities, ponds, roads, and wastelands in Androscoggin County.

Sagadahoc County had 1,812 acres of the land in farmsteads, homes, buildings, livestock facilities, etc. There were 1,202 reported head of cattle and calves, a 10.8% decrease from 2007. Of these, 417 were beef cows and 308 were milk cows. There were 37 farms for beef cattle ranching and farming and 5 farms for dairy cattle. In 2012, Sagadahoc County had 19 hog and pig farms, 24 sheep and goat farms, and 34 farms categorized as aquaculture or other livestock.

The 2016 public meeting for the Natural Resources Assessment did not result in any public comments on issues relating to farm headquarters and livestock. Past efforts by NRCS and the District to focus on animal waste handling seem to have addressed many livestock issues.

Small, Organic, and Specialty Farms

Androscoggin County had a total of 463 farms reported in the 2012 Census of Agriculture. Of these farms, 51.5% of them were under 50 acres and 30.5 % were under 10 acres. For the National Resources Conservation Service, the Environmental Quality Incentives Program defines a small farm as a farm with less than twenty acres or less than twenty animal units. This means that as far as acreage goes, over 30% of the farms in Androscoggin County are considered small farms. In 2012, there were 19 farms producing organic products in Androscoggin. These farms had total organic product sales over 1.4 million dollars. Androscoggin County also had a variety of specialty farms that include rabbits, alpacas, enclosed deer and elk, and llamas.

Sagadahoc County also had some specialty farms including alpacas and llamas. The percentage of farms in Sagadahoc under 50 acres is greater than that in Androscoggin with 53.7% of the farms being classified as such. Out of the total farms in Sagadahoc County, 229, 17.9% or 41 of these were under 10 acres. In 2012, there were 16 farms that were classified as USDA National Organic Program certified organic production and together they sold nearly 2.6 million dollars in organic products.

NRCS programs need to give emphasis to small, organic, and specialty farms, which may not compete well against larger, conventional farms for EQIP funds and other assistance.

Forested Land and Woodland

Androscoggin County had 27,231 acres of total woodland in 2012, an increase from 2007 of 8,746 acres. Total woodland is defined by the USDA National Agricultural Statistics Service as “natural or planted woodlots or timber tracts, cutover and deforested land with young growth which has or will have value for wood products and woodland pastured.” Christmas tree production is reported as cropland harvested and is not included in the total woodland acreage.

Out of the total woodland, Androscoggin County had 974 acres of pastured woodland, which does not include woodland or forest land pastured under a per-head grazing permit. Trees that are tapped for maple syrup are included in the

“woodland not pastured” category. Androscoggin County had 8,295 maple syrup taps in 2012 that produced 937 gallons of syrup.

Sagadahoc County had an increase in total woodland from the 2007 Census of Agriculture from 9,275 acres to 11,206 acres in 2012. The pastured woodland for Sagadahoc County in 2012 was 412 acres, 3.7% of the total woodland. With the 1,860 taps in maple trees, Sagadahoc County produced 134 gallons of syrup in 2012. This was a 56.7% increase in maple syrup production from the 2007 Census of Agriculture.

Forestry Issues:

- Better logging roads and skidder trails are needed to access quality woodlots in an environmentally sound manner. This issue was also noted in the District’s 2011 Natural Resources Assessment.
- NRCS needs better defined ranking criteria and standards for working on forest roads.
- Large skidders are causing erosion and rutting of trails in woodlots. There seems to be a lack of concern among loggers, who need to cut quickly to be cost-effective.
- The public meeting noted a lack of enforcement by the State of Maine on clearcutting regulations.
- There is also an unmet need for forest management plans; there is a need for additional financial assistance to develop plans for landowners, and specifically to target management practices that will benefit wildlife.
- Hemlock wooly adelgid is an issue in Sagadahoc County.
- Bittersweet is causing damage in woodlots.
- There is no market for low-grade wood, which is reducing property owners’ willingness to invest in better woodlot management.
- Maple syrup production seems to be affected by variable spring weather.

Urban Landscape

The 2010 Census reported that 56.63% of the population of Androscoggin County resided in an urban area, which covers only 7.76% of the total land area of Androscoggin County. Lewiston-Auburn is the only reported urbanized area for the county, which is defined as an area of 50,000 people or more.

Sagadahoc County is less densely populated with 38.32% of its population residing in urban areas and only 3.81% of the total land area being defined as urban area. This leaves a remaining 61.68% of the population and 96.19% of the area in Sagadahoc County as rural. The closest urban cluster to Sagadahoc County is the Town of Brunswick, which has a population of 20,278, but is located in Cumberland County.

Several public meeting comments mentioned the problem of urban/suburban sprawl, and the apparent disregard for wildlife and storm water runoff issues in community planning. Another interesting issue relates to the solar energy potential of farmland; public meeting attendees expressed concern about “solar farms” covering prime agricultural soils.

Fish and Wildlife Habitat

Public meeting attendees expressed strong support for forest management for wildlife benefits, but acknowledged that there is not much economic return to the landowner for such practices. Lack of landowner incentives is a major deterrent to wildlife conservation programs

Improving water quality in the Androscoggin River has created more fisheries opportunities. However, barriers still exist for aquatic organisms. Municipal and private culverts need redesign and replacement to allow for better passage, but costs can be significant. Additional cost-sharing is needed to promote aquatic organism passage. The Androscoggin Valley Soil & Water Conservation District has participated in several projects to identify and encourage removal of barriers to fish passage.

Suburban sprawl has resulted in a lack of protection for open space in general and wildlife habitat and travel corridors in particular. NRCS easement programs should be used to develop more protection for wildlife habitat.