

MAINE'S NATURAL RESOURCES, ECOLOGICAL FUNCTIONS AND ECOSYSTEM SERVICES

Revised 9/3/08

Natural Resource	Ecosystem Function	Ecosystem Service
Clean air resources (with reclassification for ozone in 2007, Maine is in Clean Air Act attainment for all regulated air pollutants)	Virtually all biota, vegetation and aquatic systems sustained by air resources; sink for anthropogenic pollutants	Human health superior in attainment areas e.g. lower rates of emergency room admissions; provides essential growing conditions for timber, agriculture, native vegetation; scenic/aesthetic; recreational benefits
Maine's Climate (moderate summers, cold winters compared to rest of U.S.)	Wildlife depend on specific climatic conditions (e.g. moose, snowshoe hare); specific eco-systems such as the St. John depend on unique spring hydrologic conditions)	Snowmobiling, skiing, ice-fishing, maple syrup industries dependent on winter conditions, both winter and summer tourism driven by Maine's specific climate; scenic/aesthetic; recreational; historic; educational; scientific services
5800 lakes and ponds with exceptional overall water quality	High quality lacustrine habitat for aquatic, riparian, vegetation, fish and wildlife (e.g. over 95% of national brook trout lake habitat is in Maine); nutrient cycling	Drinking water for 47 public community drinking water systems and numerous private water systems using lakes/ponds serving approx. 400,000; tourism and vacation-related real estate industries; part of Maine character; scenic/aesthetic; recreational availability for fishing, swimming, boating, ice fishing; geological; historic; educational; scientific services
32,000 miles of river, streams and brooks	High quality riverine habitat for aquatic and riparian vegetation, fish and wildlife (e.g., 75% of remaining intact cold water riverine fisheries on the east coast are in Maine); nutrient cycling and transport	Drinking water for 10 public community drinking water systems using rivers and numerous private systems; tourism and vacation-related real estate industries; scenic/aesthetic; recreational fishing, boating, swimming; geological; historic; educational; scientific services
5299.9 miles of coast including approximately 8000 islands and tidal ledges, Maine's beaches (rocky, sand, etc.)	Coastal and littoral areas provide valuable and unique coastal habitats for wide variety of marine, avian, plants species; moderation of temperature extremes and absorbs force of waves and storms	Tourism and vacation-related real estate industries; year-round island communities based on unique island/fishing based culture; scenic/aesthetic; recreational, geological; historic; educational; scientific services; moderation of temperature extremes and force of waves and storms

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Groundwater resources (clean in vast majority of the state)	Groundwater recharges all lakes, ponds, rivers, streams and brooks as well as wetlands; water for deep-rooted terrestrial vegetation; supports subsurface aerobic and anaerobic bacteria that breakdown septic and other wastes	Drinking water for 326 public community water systems serving approx. 200,000 residents and service for numerous private wells serving approximately 400,000 (a total of 600,000+ rely on groundwater wells); resource for bottled water industry; waste treatment for septic and other water contaminants prior to discharge to surface water
214,000 acres of crop land (approx. 1% of Maine land cover)	Farms can be viewed as human created eco-systems providing nutrient cycling; carbon sequestration and storage	Food supply; agricultural sector economic impact; local character (part of Maine character); scenic/aesthetic; recreational, (e.g. apple/blueberry picking) historic; educational; scientific services
One million acres of pasture land (approx. 5% of Maine land cover)	Farms can be viewed as human created eco-systems providing nutrient cycling; carbon sequestration and storage	Food supply; livestock economic impact; local character (part of Maine character); scenic/aesthetic; recreational, historic; educational; scientific services
17.2 million acres of available and productive forests (approx. 87% of Maine land cover)	Varied forest ecosystem functions including high wildlife and vegetation habitat value for forest species; carbon sequestration; nutrient cycling; sink for anthropogenic pollutants	Inventory stabilized at 275 million cords, 13.3 million cubic meters of saw timber/pulpwood per year support employment base for 19,614 timber-related manufacturing jobs, raw fiber to timber mills, 13 pulp and paper mills; scenic/aesthetic recreational, forest-based recreation and tourism payroll of \$.14 billion; geological; historic; educational; scientific services; part of Maine character
47 state parks and historic places (83,000 acres)	Preservation of unique natural areas	Recreational, educational, historic, tourism services
3,589,117 acres of Public and Land Trust conservation/recreation land	Preservation of ecologically important systems/high value plant and/or animal habitat; maintenance of biodiversity	Public access for many designated uses including backcountry, hunting, fishing, snowmobiling, ATVs and more; scientific, educational, historic, public access for hunting, fishing and low-intensity motorized and non-motorized recreation

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Commercial marine fisheries	Maintenance of biodiversity; high quality marine habitat for marine vegetation, fish, shell fishing, nutrient cycling and transport	Support multiple marine fisheries (e.g., lobster, shell fish, ground fish); recreational, historic, educational, scientific services; support tourism and vacation-related real estate industries; part of Maine character
Non-commercial marine fisheries	Maintenance of biodiversity; high quality marine habitat for marine vegetation, fish, shell fish, nutrient cycling and transport	Scientific, historical, educational, recreational services
Tidal and sub-tidal marine habitats	Maintenance of biodiversity; high quality marine habitats for native marine vegetation, fish, shellfish; nutrient cycling and transport	Support multiple marine fisheries; recreational, historic, educational, scientific services; support tourism and vacation-related real estate industries; part of Maine character
Inland game species	Maintenance of biodiversity and native species, predatory/prey relationship	Maintain base for recreational and tourist businesses and Maine guides business, control nuisance deer, bear populations; historical educational, scientific, services; part of Maine character
Inland game fisheries	Maintenance of biodiversity and native species	Maintain base for recreational, tourist fishing and related businesses and Maine guides business; educational, scientific, historic; part of Maine character
Inland non-game species	Maintenance of biodiversity and native species	Scientific, historic, aesthetic, recreational
Inland non-game fisheries	Maintenance of biodiversity and native species	Scientific, historic, aesthetic, recreational
Wetlands and related areas (e.g. vernal pools, significant wildlife habitat)	Natural water purification and treatment detoxification and decomposition of wastes; erosion control; important habitat for multiple amphibian, bird, insect and other species; flood control; habitat for migratory wildlife populations; maintenance of biodiversity; carbon sequestration and storage	Scenic/aesthetic; recreational, geological; historic; educational; scientific services; natural water treatment/purification services.

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Insect populations	Basic element of multiple ecosystems; pollination of natural vegetation; maintenance of biodiversity	Pollination of crops and residential vegetation
Maine soils	Nutrient supply; basic elements of multiple ecosystems	Essential to agriculture, timber industries