

## Natural Heritage

**VISION:** The Town of Colchester thrives from an abundance of natural resources that have shaped the Town’s development and character and should be celebrated and embodied into its plans for the future.

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**GOAL:** To protect, preserve, and enhance Colchester’s air, water, wildlife, forests, and other natural resources to ensure a healthy environment and a viable working landscape for future generations.

**OBJECTIVE:** To identify and plan for Colchester’s natural resources as an integral part of its land use, while improving the ecological and environmental viability.

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**OVERVIEW:** From the shores of Malletts Bay and Lake Champlain to the adjacent wetlands, fertile uplands, and dry sandplains, Colchester has an abundance of diverse natural resources rarely found within the borders of a single town. The total land area of the Town is 24,000 acres. Approximately 12% of these lands are owned by local, state, or federal government or by other public or not-for-profit entities. In addition to these lands, another 20% of Town land is characterized as floodplain, wetland, significant habitat site or other natural area. Colchester also contains 2,662 acres of water resources just within Malletts Bay. These varied resources provide an attractive and healthy place to live and work yet can be challenging to manage and integrate into land use planning. Often our natural resources are impacted by actions taken outside of Colchester. Lake Champlain is a resource managed by the State of Vermont, State of New York, Province of Quebec, U.S. Army Corps and other federal entities. Colchester is at the mouth of the Lamoille and Winooski Rivers: two significant watersheds that span into most of northern and central Vermont. The quality of water in Colchester is not ours to control alone. Similarly, changes to the ~~earth’s~~ global climate impact Colchester but cannot be significantly ~~impacted~~ ~~effected~~ by the efforts of Colchester alone. This chapter will ~~detail~~ ~~describe~~ the Town’s natural resources and challenges facing Colchester’s environment while offering actions that can be taken over the term of this plan to improve and sustain these resources. Other chapters such as the Serving Colchester Chapter should be looked to for specific information on stewardship.

### WATER RESOURCES

Our water resources are an outstanding community ~~resource~~ ~~asset~~ that provides significant natural, economic, and recreational ~~resources~~ ~~opportunities from including~~ swimming, ~~and~~ boating, ~~to~~ fishing, and skating. In a preliminary town plan survey, a majority of 55% agreed the lake requires the most protection in Colchester compared to all other natural resources, such as prairies, forests, and wetlands. ~~While~~ Colchester will continue its efforts to improve water quality through its Development Regulations, localized stormwater and erosion control standards and permits, wastewater regulation and education, and infrastructure improvements such as the Malletts Bay Sewer project and stormwater utility. The Town will also need to work with other partner organizations to address upstream impacts to its waterways.

46 Lake Champlain

47 Colchester's single greatest asset is Lake Champlain. The Town has twenty-seven miles of  
48 shoreline which influences our economy, land use patterns, and everyday life in the  
49 community. Outstanding views can be enjoyed, both from the shoreline and from the water.  
50 Views of Colchester from the Lake generally belie the developed nature of the Town. Malletts  
51 Bay is renowned for its recreation including swimming, sailing, and boating in the summer as  
52 well as winter activities like ice-boating and the Vermont Pond Hockey Classic tournament each  
53 year. Fishing continues to play an important role in our recreation, economy, and environment  
54 as Malletts Bay is gaining recognition as a premier fishing destination. Fishing in 2018 brought  
55 \$500,000 to the Town through the usage of Malletts Bay for a Major League Fishing  
56 competition. Colchester has regulated ~~this a~~ Shoreland District, 250 feet back from the mean  
57 water mark, elevation 95.5 feet, of the Lake, since the 1980s to ensure that development is  
58 sensitive to the natural shoreline and intrusions into views from the Lake are kept minimized.  
59 The Shoreland Overlay District section of the Development Regulations encourages preserving  
60 natural vegetation around the Lake and limits disturbance within 100 feet of the mean water mark  
61 ~~(elevation 95.5')~~ which provides opportunities for preserving natural habitat, views, and filtering  
62 runoff. In 2015, the Town received delegation from the State of Vermont for its Shoreland  
63 Protection District, which gives permit authority to municipalities. Landowners in delegated  
64 municipalities do not need a state shoreland permit for creation of cleared area or impervious  
65 surface within the Protected Shoreland Area.

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67 Colchester's economy benefits from the non-structured recreation opportunities offered on  
68 Malletts Bay, such as boating. Colchester currently offers three state boat launches, with two on  
69 the Winooski River and one in Malletts Bay. During the summers, thousands of boaters visit  
70 Colchester and purchase goods and services such as moorings, storage, or repairs. In the winter,  
71 the Bay becomes a center for ice-fishing, snowmobiling, and skating. These recreational  
72 opportunities provide a welcoming atmosphere for tourists to enjoy Colchester, even if not  
73 directly involved with one of these activities. As lands along the Bay develop or redevelop, care  
74 should be taken to improve public access and keep the Lake available and attractive for future  
75 uses. Paddlers, sailors, and motorboat operators often struggle to coexist for open water on the  
76 Bay. Since the waters of the Lake is regulated by State and Federal entities, Colchester has little  
77 no control over number and location of moorings or docks. Colchester provides a seasonal police  
78 patrol unit in the Bay to help ensure safety as the Vermont State Police Marine Patrol and U.S.  
79 Coast Guard operations out of Burlington are responsible for the entirety of the Lake.

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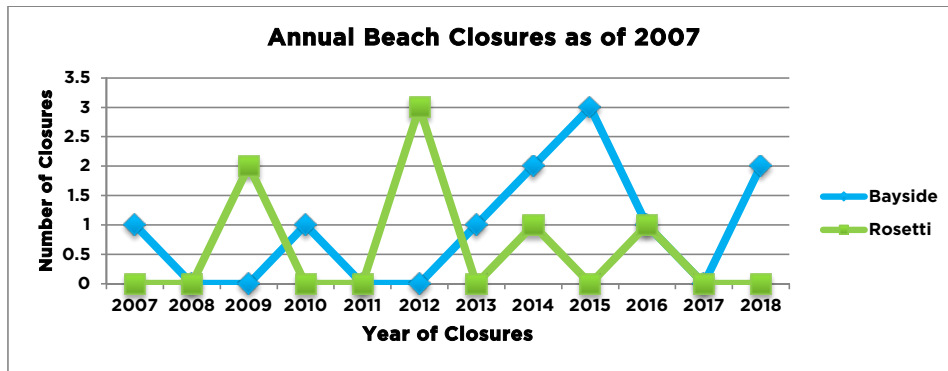
80  
81 The marinas in Malletts Bay are parts of private recreation industries that significantly impact  
82 tourism. Some of these marinas are small residential offerings and private clubs, while others are  
83 larger commercial offerings. Colchester provides most of the moorings for Northwestern  
84 Vermont, and the majority of these are reserved. Fifteen transient spaces are available for passing  
85 boaters to use so that they may stop and visit the Town. Over 130 boats use the transient slips  
86 seasonally with a majority of users coming from Quebec and staying three days on average.

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88 Water quality in Malletts Bay is a community-wide concern. The Lake has brought people to  
89 Colchester for hundreds of years and helped solidify Colchester as a recreation destination.  
90 Increasing pollution from storm water runoff, septic contamination, invasive species, blue-  
91 green algae and acid rain are some of the variety of water quality inhibitors that plague the

92 | greater Lake. The inner bay continues to have high bacterial (~~E.e.c~~E. coli) counts that close beaches  
 93 | to swimmers. The Town maintains a seasonal water sampling program to track water quality and  
 94 | notify the community when beaches should be closed. Outbreaks of blue-green algae have  
 95 | occurred in sporadic locations. The Integrated Water Resources Management Plan, completed  
 96 | in 2013, provides guidance ~~as to~~ on the water quality challenges facing Colchester. While the  
 97 | Lake provides for a diversity of wildlife species, bacteria such as cyanobacteria (blue-green  
 98 | algae) threatens the habitat of these animals. Exotic species such as Eurasian milfoil, Zebra  
 99 | Mussels, and Alewife fish have entered the Lake and are spread by unwitting boaters and  
 100 | fishermen. As of 2007, Colchester began testing water samples at a consistent set of locations  
 101 | and at the same frequency. While Malletts Bay has some of the lowest phosphorus  
 102 | concentrations in the Lake, elevated bacteria counts have caused public beach closures in recent  
 103 | years. Over the last 11 years, Bayside Park and Rosetti Park have been closed a total of 18  
 104 | times. During the term of this plan, Colchester will continue to perform these tests to ensure  
 105 | optimum water quality for public use.

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108 | The Lake Champlain Total Maximum Daily Load (TMDL) Plan provides a limit of how much  
 109 | phosphorus the Lake can take while still meeting water quality standards. Although the TMDL  
 110 | is not likely to be fully implemented during the term of this plan, its future impacts on  
 111 | Colchester's stormwater permits and practices are likely to be significant. During the term of  
 112 | this plan, Colchester will continue to look to its Integrated Water Resources Management Plan  
 113 | for guidance on sustaining and improving water quality.

116 | Winooski and Lamoille Rivers

117 | Colchester's southern border consists of about 9 miles of frontage on the Winooski River  
 118 | between the Lime Kiln Gorge and Delta Park. The river corridor in Colchester upstream of the  
 119 | City of Winooski is undeveloped, ~~and a~~ spectacular gorge and a hydro-electric dam exist  
 120 | between the Lime Kiln Bridge and I-89. Between the City of Winooski and River Road, the  
 121 | river bank consists of uninhabited flood plains. Between River Road and the confluence, there  
 122 | is a high, steep, eroding bank, with some structures close to the edge.

124 | Colchester has three miles of frontage on the Lamoille River. The shoreline of the river is  
 125 | forested, inaccessible, and sustains productive wildlife habitat. The Lamoille River Basin Plan  
 126 | identifies the top water quality issues for the 84 miles of river and its basin.

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129 State Watershed Planners are responsible for evaluating river and stream problems and threats  
130 and are continuously working on developing actions to address these issues through a tactical  
131 planning process. During the development of this plan, the Winooski River Tactical Basin Plan  
132 was being drafted with the Lamoille River Tactical Basin Plan already adopted in 2016. Both  
133 of these basin plans will provide water quality improvement recommendations for Colchester  
134 ~~as well as~~ along with the many other communities along these watersheds. While Colchester  
135 will do its part to implement these recommendations, the plans should be seen as needing the  
136 cooperative efforts of State, regional, and other municipal partners.  
137

138 The lower Winooski River is currently assessed as not fully fishable or swimmable under the  
139 criteria of the Clean Water Act. The lower Lamoille is rated as fully fishable and swimmable.  
140 Given the drainage basin characteristics, it is not likely that significant contamination enters  
141 either the Winooski or Lamoille River from Colchester. The State of Vermont created a Lower  
142 Winooski River Basin plan with objectives, goals, and action plans for treating stormwater,  
143 managing roads and parking lots, and stream crossings within this larger basin.  
144

145 ~~Colchester has three miles of frontage on the Lamoille River. The shoreline of the river is~~  
146 ~~forested, inaccessible, and sustains productive wildlife habitat. The Lamoille River Basin Plan~~  
147 ~~identifies the top water quality issues for the 84 miles of river and its basin.~~  
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149 Both the Lamoille and Winooski Rivers are protected by the Fluvial Erosion Hazard Overlay  
150 District in the Development Regulations. In addition, the majority of parcels along the rivers  
151 are restricted by the top of bank setbacks and Floodplain District requirements. Many  
152 properties along the Winooski River were developed prior to these regulations. New  
153 development and redevelopment of these properties address bank stabilization and meet  
154 setbacks.  
155

156 Colchester Pond

157 Colchester Pond is located in the far Northeast corner of Town and is one mile long and a  
158 quarter mile wide. The Pond is within the Shoreland Overlay District of the Development  
159 Regulations that restricts an area 250 feet back from the mean water mark. The Pond results  
160 from impounded drainage. Most of the shoreline of the pond is undeveloped woodland and  
161 pasture. The Pond is hydrologically isolated, has good water quality, and has no known exotic  
162 species. Colchester Pond and most of the surrounding land is owned by the Winooski Valley  
163 Park District. The State of Vermont has recognized Colchester Pond as an exceptional water  
164 resource and has excluded motor-boats.  
165

166 Floodplains

167 The Town of Colchester is situated between the mouths of the Lamoille River and the  
168 Winooski River along Lake Champlain. As a result of these significant features, fifteen percent  
169 of the land area in Colchester has been identified as wetlands or floodplains with the majority  
170 of the floodplain area in Colchester along Lake Champlain and the Winooski and Lamoille  
171 Rivers. Approximately 3,259 acres are identified as Special Floodplain Hazard Areas.  
172

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173 The fertile floodplain of the Winooski River, often referred to as the Intervale, is involved in  
174 active agricultural production and contains a substantial portion of the Town’s working lands.  
175 The 100 year flood elevation of Lake Champlain (Special Flood Hazard Area), as determined  
176 by the Federal Flood Insurance Program, is depicted on the FIRM maps. The Floodplain  
177 District ~~as well as~~ and the Town’s Shoreland District are identified on **Map XX herein**.  
178 Development within the Flood Zone has been prohibited in Colchester for several decades;  
179 however, significant development predated the regulations and there are many structures still  
180 located in the flood hazard zone. The majority of these structures are seasonal residences and  
181 accessory structures that are occupied during the summer months. The 2011 Lake Champlain  
182 flood exceeded all known historic floods with the lake level exceeding 102 feet above sea level  
183 ~~with~~ and flood damage up to 105 feet locally. The Town of Colchester’s Development  
184 Regulations ensured that damaged structures rebuilt were floodproofed to Federal standards  
185 and as a result of these standards Colchester was able to join the Community Rating System of  
186 the Federal Emergency Management Agency in 2016. This program and the Development  
187 Regulations should be maintained during the term of the plan, ~~as~~ through the Town’s  
188 proactive policies and education on flooding risk, the Town enjoys a higher rate of  
189 reimbursement in declared disasters and property owners are eligible for discounted flood  
190 insurance rates.

191  
192 Wetlands

193 Wetlands enhance water quality, are important wildlife habitats, attenuate flooding, and are  
194 recreational resources. The State of Vermont and Army Corps of Engineers provide oversight  
195 to Colchester’s many wetland and associated buffers. About 93% of Colchester’s wetlands are  
196 functionally significant (Class 2) according to the State Wetland Rules. Class 2 wetlands are  
197 identified on National Wetland Inventory (NWI) maps. These mapped wetlands, and any  
198 additional wetlands that are found to directly connect to NWI wetlands, are subject to both  
199 State and Federal regulations. Federal definitions of wetlands have expanded since the NWI  
200 maps were prepared. Additional “wet meadows” and other lands are also now considered  
201 wetlands (Class 3) under the federal definition; however, they remain largely unmapped.  
202 Several Natural Areas within Colchester contain significant wetland areas such as Half Moon  
203 Cove.

204  
205 Watercourses

206 Watercourses consist of named and unnamed streams, brooks, tributaries, and drainage ways.  
207 Mapped resources ~~also~~ do not accurately depict intermittent drainage ways and streams.  
208 Colchester has implemented the Water Protection Overlay District that requires an 85-foot  
209 setback from the centerline of watercourses. These buffers have been created with the intention  
210 of providing protection for the natural areas along the Town’s surface waters and to provide  
211 improved protection for water quality and the provision of open space areas and wildlife  
212 habitat. The State of Vermont also regulates most aspects of watercourses.

213  
214 River corridor planning in Vermont has evolved and communities are being asked to prepare for  
215 changes in stream and river locations ~~such as happened in 2014 due to storm events such as~~  
216 ~~Tropical Storm Irene and other storm events in 2011~~. Fluvial hazard areas take into account the  
217 dynamic nature of streams and rivers and note areas at risk of erosion due to river or stream  
218 movement. Colchester’s location between the mouth of the Winooski and Lamoille Rivers is

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219 characterized by broad channels that are typically slower moving and less dynamic. **Map XX**  
220 shows both Colchester’s existing district protections and the State’s River Corridors. During the  
221 term of this plan, Colchester’s current regulations should be examined to ~~possibly-potentially~~  
222 incorporate State recommended river corridor protections and fluvial erosion hazard zone areas.  
223

224 **FLORA & FAUNA**

225 Significant Habitat Sites

226 Colchester has a diversity of habitat that sustains a variety of both common and rare wildlife  
227 and plants. Significant habitats are sites where at risk or irreplaceable species can be found.  
228 ~~Additionally, s~~Sites may ~~also~~ be defined as significant if they consist of unusually large  
229 concentrations of wildlife and/or are habitats that are rare in the region. These habitat sites are  
230 regulated by the State and the Federal Governments and can carry the consequences of  
231 criminal prosecution for alteration or demolition. Much of Colchester’s data and mapping of  
232 significant habitat sites, endangered species sites, and biological natural areas has not been  
233 updated and cannot be relied upon to be site specific. While the State Act 250 permitting  
234 process can require onsite investigations, this creates piecemeal updates to statewide  
235 mapping.  
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238 Another aspect of maintaining habitat is the role of hunting. Hunting has had a role in the  
239 management of wildlife; however, it is in-the decline. Hunters have historically relied on the  
240 right to use private lands for this activity, while landowners have relied on the right to post land  
241 limiting use for hunting and other activities. Hunters have been left with few areas to ~~utilize-hunt~~  
242 in due to exclusions from private lands as infill development occurs and exclusions from parks  
243 and natural areas. In looking to sustain hunting in Colchester, opportunities for hunting should  
244 not be excluded from land conservation and landowners should be encouraged not to post  
245 property and developments.  
246

247 During the term of this plan, it is recommended to update the Town’s Open Space Plan and  
248 mapping of these resources. The Open Space plan guides the preservation of open space in  
249 the development review process as well as the conservation of resources in both site plan  
250 and subdivision projects. Through better recognition of these resources, management of  
251 them can be improved and steps taken to protect habitat through land conservation or  
252 avoidance in the development review process.  
253

254 Deeryards

255 Deeryards are critical winter habitat for deer and other wildlife. While some protection is  
256 provided to deeryards under State Act 250 permitting, there are no regulations regarding other  
257 wildlife habitat. The locations and boundaries of deeryards were determined using color  
258 infrared aerial photos by the State that are not accurate for development review and may be  
259 updated on a site by site basis. Habitat is dynamic and not static to fixed locations.  
260

261 Endangered Species Sites

262 The Nongame and Natural Heritage Program (NNHP) of the Vermont Department of Fish and  
263 Wildlife has identified a number of sites containing one or more rare, threatened, or  
264 endangered species or one or more significant natural communities within Colchester. The size

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265 | of these sites varies and State mapping is intentionally ~~not exact~~vague to hide the location of  
266 | these sites.

267 |  
268 | Biological Natural Areas

269 | Natural areas are biological communities made up of scenic, geologic, or ecologic significance,  
270 | which shall remain undisturbed, ~~with d~~development and maintenance in these areas are being  
271 | limited to that required for health and safety. More significant natural areas may have  
272 | management plans for important natural resources present on the site. The Vermont Nongame  
273 | and Natural Heritage Program’s (NNHP) “Biological Natural Areas of Chittenden County”  
274 | identifies 29 sites with statewide significance in Colchester that includes sandplains, vernal  
275 | woodland pools, peat bogs and other ecologically significant natural communities. Due to this  
276 | statewide significance, Colchester was recognized for supporting “one of the greatest biotic  
277 | diversities of any town in Vermont.”  
278 |

279 | An important subset of the Biological Natural Areas and ANR’s Natural Areas is sandplain  
280 | habitat. Colchester is the only area in Vermont with extensive areas of sandy well-drained  
281 | soils. The Pine/Oak/Heath plant community that inhabits these sandplains is largely unique to  
282 | Colchester. Sandplains are characterized by flat, well-drained soil (making it desirable for  
283 | development) that is acidic and nutrient-poor. They have an open canopy more characteristic of  
284 | woodlands than forest. Pitch pine, white pine, black oak, red oak, and heath shrubs  
285 | predominate. Sandplain areas often require controlled burns to encourage tree development.  
286 | Colchester’s sandplains are home to 27 rare plants, including 6 grasses, 4 sedges, 13 herbs, 3  
287 | shrubs, 1 tree and 2 rare animals. Less than five percent of the original sandplain habitat exists,  
288 | increasing State scrutiny of this resource in the development process.  
289 |

290 | Opinions differ on the minimum size of land necessary to sustain sandplain communities,  
291 | ranging from a low of 25-40 acres to a high of 2000 acres. It is generally believed that with  
292 | proper management, communities as small as 50 acres could preserve a large majority of the  
293 | natural community’s members. While Colchester lacks forestry operations and industry, the  
294 | active management of woodlands that does occur in Colchester stems from the need to manage  
295 | sandplains as these sites often require disturbance to sustain themselves. Since sandplains are  
296 | unique to Colchester, there are many challenges in how to manage these areas. No sandplain  
297 | community ies larger than 250 acres exists s in Colchester. Public and private development  
298 | occurring either prior to or after the 1991 report has significantly reduced the natural portion of  
299 | some mapped areas. Diminished sites include the Old Colchester Airport (fringes of sandplain  
300 | at the edge of town ballfields), Porters Point Road Sandplain (Crossfield subdivision) and the  
301 | Holy Cross Church Woodland (elderly housing complex).  
302 |

303 | Because the lowest estimate of minimum size needed is 25-40 acres, the Vermont Natural  
304 | Heritage program considers the following sites to be “Rare and Irreplaceable Nature Areas”:

- 305 | • Camp Johnson
- 306 | • Colchester High School Vicinity
- 307 | • Sunderland Brook
- 308 | • Holy Cross Vicinity

309 |  
310 | Other smaller parcels containing sandplains:

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- 311 • Smith Hollow Vicinity
- 312 • Sunny Hollow
- 313 • Winooski Bluff
- 314 • Little Gap Woods
- 315 • Twin Bridges
- 316 • Macrae Road

317  
318 Forests

319 The Town of Colchester has a variety of forested areas (see Map XX) with the most significant  
320 ~~previously noted as located~~ around Colchester Pond, ~~that~~ This includes Colchester’s town forest,  
321 ~~and within~~ and sandplain communities. Improved forestry mapping would also improve the  
322 management of these resources. Large tracts of connected forest ecosystems can provide for  
323 ~~both~~ wildlife habitat ~~as well as~~ and foster diversity of the biome. The majority of tracts in  
324 Colchester are fragmented, which presents challenges for forestry planning and stewardship.  
325 Commercial forestry operations are not present in Colchester with the exception of many small  
326 scale firewood operations as well as sugaring and small tree farms usually specializing in  
327 Balsams and other “Christmas” trees. These silvicultural uses are mostly exempt from current  
328 Colchester Development Regulations. With the need to have more sustainable fuel sources,  
329 opportunities for new sustainable harvesting of wood products may increase over the term  
330 of this plan and should be accommodated in the Development Regulations.

331 Although fragmented, many of these smaller forestry parcels can contribute to wildlife habitat,  
332 recreation, air quality, water quality, and scenic or aesthetic values. Connections between these  
333 fragments can promote the health, viability, and ecological functions for the forest. Forestry  
334 operations and other forestry management plans are encouraged and beneficial to sustaining  
335 our limited forestry resources. By encouraging the maintenance of such forest blocks and  
336 habitat corridors between them, ecosystems can be improved ~~to defend~~ against biodiversity loss.  
337 Landowners should be encouraged to develop and maintain forestry plans and implement  
338 recommended practices such as selective harvests and plantings. During the term of this plan,  
339 updates to the Open Space Plan should include forestry blocks and habitat corridors. Improved  
340 mapping and awareness of these resources could lead to better consideration of potential impacts  
341 in the Town’s development review.

342 Other Resources

343 The following areas ~~that~~ have been identified by the Town as sites of natural resource  
344 significance, ~~that, should~~ Should development be proposed within these areas, care should be  
345 taken to conserve these features and mitigate any long term adverse impacts to these resources.:

- 346 • Cave Island contained within parcel: 57-012002
- 347 • Cave West of Indian Brook contained within parcel: 08-014003
- 348 • Clay Point Road Caves contained within parcels: 16-057000 and 16-042000
- 349 • Colchester Bog contained within parcels: 33-056002, 33-058002, 34-100002, 34-101002, 44-  
350 004072, 43-034002, 43-026002, 44-045012, 44-007022, 44-007002, 43-009002, 31-007062,  
351 and 30-002002
- 352 • Colchester Point Rush meadow contained within parcel: 29-002002



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- 353 • Colchester Pond Ridge contained within parcels: 12-036000, 12-030000, 15-001000, 12-  
354 035000, and 15-011000
- 355 • Colchester Sea Caves contained within parcels: 14-007020 and 14-007010
- 356 • Devil’s Den Caves contained within parcels: 08-014003 and 08-014013
- 357 • Mallets Head contained within parcel: 56-004002
- 358 • Mallets Bay North Shore Headlands – From Niquette Bay State Park westwardly along the  
359 shoreline terminating on parcel 77-020000
- 360 • Mallets Creek Marsh – Munson Flat contained within parcels: 11-016020, 11-020000, 11-  
361 017010, 11-025000, 14-020000, 14-022000, 11-004003, and 14-026020
- 362 • Marble Island contained within parcel: 57-013002
- 363 • Parrot Jasper Mine contained within parcel: 13-003000
- 364 • Walnut Ledge Cave contained within parcels: 16-028000~~and~~
- 365 • Pine Island Flood Plain contained within parcels: 06-013002, 02-026052, and 02-006002
- 366

367 | **NATURAL AREAS**

368 The Town has a wealth of natural areas that, while often protecting significant natural resources,  
369 also provide recreation and a desirable community to live in. These are lands set aside for  
370 preservation of significant natural resources, open spaces, visual aesthetics, and buffering that may  
371 also include passive recreation such as walking paths or canoe launches. Most of these areas are  
372 permanently conserved through deed or easement. While there are no size requirements for  
373 natural areas, these areas must generally be of sufficient size to preserve the natural resources  
374 contained on site. The Colchester Bog maintained by the University of Vermont is such a natural  
375 area.

376 While development of these natural areas is generally prohibited, land management can require  
377 considerable disturbances. Recreational use of natural areas needs to be weighed against the  
378 need to manage and protect ~~the~~ ecosystems ~~present~~. The Winooski Valley Park District, State of  
379 Vermont, and Town of Colchester manage the majority of natural areas and often balance  
380 protections with passive recreation. It is important, where feasible, to maintain access for  
381 enjoyment of these areas even if only through trails or overlooks. Many natural areas of more  
382 limited and smaller size exist throughout Colchester on private land. Through the development  
383 review process or similar permitting, natural areas have been set aside on private land in  
384 perpetuity to protect resources. The primary function of many of these smaller sites is to  
385 preserve or maintain the resources and access should remain restricted. Whenever feasible,  
386 management plans for natural areas should be developed and deployed. Contained within **Map X**  
387 is an inventory of current natural areas that are ~~publically~~ **publicly** owned. The Town of  
388 Colchester owns and maintains the following natural areas:

- 389 ➤ *Porter Natural Area:* Porter Natural Area is a 56-acre parcel that has no master plan  
390 at this time.
- 391 ➤ *Rossetti Natural Area:* Rossetti Natural Area is a 47 acre natural area between  
392 Lake Champlain and Lakeshore Drive/Holy Cross Road/Church Road intersection.  
393 A boardwalk/trail and 50 car parking lot serve the property.
- 394 ➤ *Sunny Hollow Natural Area:* Sunny Hollow Natural Area is located off Hercules  
395 Drive. This 80-acre diverse area has limited parking and three miles of mountain  
396 biking, walking and x-country trails.
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**CLIMATE**

Vermont’s climate is changing. Average temperatures in Vermont have increased with winter starting later and spring arriving earlier according to the Vermont Climate and Health Profile released by the Vermont Department of Health in 2016. Annual precipitation has increased by seven inches over the past fifty years. Extreme weather events have become more frequent with 18 federally-declared disasters between 2007 and 2016—[resulting in](#) twice as many [disasters](#) as the previous ten years. While there are benefits that can be derived from a changing climate such as a longer growing season and a longer boating season, heavy rains increase stormwater runoff and warming waters can increase bacteria growth within these waters. The Department of Health has recommended the strategy of building resilience against climate effects. As extreme weather events increase, Colchester has already taken actions to build resilience against flooding. As hot weather increases, heat stroke and other health related issues are anticipated to increase state-wide. Hot weather emergency preparedness plans, increased [planting of](#) trees and vegetation, and modifying buildings to increase cooling can help communities adapt. In a preliminary town plan survey, 62% [of](#) those responding stated that we should focus more attention on natural resource protection and flood resiliency to protect the intrinsic values as well as improve the quality of life in Colchester. Improving resilience to increased heat and extreme weather events will position the community well to respond to changes in our climate.

The Vermont Climate Action Commission’s (VCAC) 2018 report offers recommendations on how Vermont can meet the reductions in greenhouse gas (GHG) emissions called for in the 2016 Vermont Comprehensive Energy Plan to combat climate change. There is a lot of overlap between energy strategies and GHG emission reductions. Increased weatherization, renewable energy resources, incentivizing electric vehicles, improving bike and pedestrian paths, and promoting dense mixed use development are all strategies that reduce GHG emissions and improve energy use. Other strategies recommended to reduce GHG emissions include land conservation, rebuilding soil health, and sequestering carbon in our forests. The 2018 VCAC report states that more than half of Vermont’s annual carbon emissions are being absorbed by the annual growth of these forests; however, that growth is declining. Promoting forested area for carbon offsets may [also](#) offer economic and environmental benefits.

**AGRICULTURAL LANDS**

Due to its location and resources, Colchester has a proud history of a working landscape. Situated between two rivers with relatively flat and rolling lands, the soils of Colchester have been conducive to agriculture. Historically, farms evolved out of necessity to provide settlers with sustenance. Throughout the nineteenth century commercial agricultural operations grew with dairy becoming a prominent use. In recent years, agriculture has transitioned and diversified to include vegetables, fruits, eggs, dairy products, livestock, horses, flowers and landscape plantings. Agricultural operations are becoming less dependent on traditional farming practices. Market demand for local food will sustain community supported agriculture operations, community, and backyard gardens. Farm stands and community sustained agricultural shares provide fresh produce within the community. Colchester’s large vegetable operations provide a great source of farm to table options that should continue to be supported and expanded upon. Hoop houses and other indoor operations are expected to continue to

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445 | expand during the term of this plan as these alternatives offer greater predictability in ~~the~~  
446 | harvesting and providing ~~for~~ a wide range of products. While it is anticipated that agriculture  
447 | will continue to transition during the term of this plan, Colchester's soil will continue to be  
448 | adaptable to a variety of uses.

449 |  
450 | Primary agricultural soils make up more than eighty percent of the lands of Colchester.  
451 | Primary agricultural soils are defined by the State in 10 VSA §6001 as important farmland  
452 | soils that the Natural Resources Conservation Service of the U.S. Department of Agriculture  
453 | has identified and determined to have a rating of prime, statewide, or local importance.  
454 | Physical or topographic barriers as well as wetlands and other constraints may make these soils  
455 | impractical to use for agriculture thereby reducing their value. As Colchester's agricultural  
456 | community continues to transition, it will be well served by its resources including its soil.

457 |  
458 | Livestock operations will continue to dwindle as horse ownership declines and dairy becomes  
459 | economically unviable. This will impact the need for hay and corn ~~and make~~ making it  
460 | increasingly difficult to maintain large open tracts of land for agriculture. The Town should  
461 | continue to work with organizations such as the Intervale Center to promote incubator farms,  
462 | succession planning, and business plans for new and existing farms. These plans may include  
463 | the sale and purchase of development rights. The Town should continue to be supportive of  
464 | land conservation and the use of prime agriculture mitigation money acquired through the  
465 | State's Act 250 process for local conservation projects. Development Regulations should  
466 | continue to allow for a variety of on-the-farm businesses and agri-tourism to support and  
467 | supplement agricultural operations. In revisiting the Open Space Plan, the Town should  
468 | actively engage farmers and other agriculture entrepreneurs in developing strategies for how  
469 | the community supports the changing face of agriculture.

470 |  
471 |  
472 | Colchester's natural heritage provides a diverse environment. These resources attract many to  
473 | travel, live, and preserve an unparalleled quality of life. Over the term of this plan, Colchester's  
474 | environment will face difficult challenges; as a result, new stewardship opportunities will  
475 | emerge. The Town of Colchester will work to continue a balanced approach to preserve and  
476 | protect these resources while encouraging their enjoyment.

477 | **POLICIES**

- 479 | 1. The Town will work with local, regional, and State partners to implement the  
480 | recommendations of the Lamoille and Winooski Basin Plans as well as the Lake  
481 | Champlain TMDL.
- 482 | 2. During the term of this plan, Colchester will continue to look to its Integrated Water  
483 | Resources Management Plan for guidance on sustaining and improving water quality.
- 484 | 3. The Town should continue its work to reduce flood insurance rates and improve flood  
485 | resiliency.
- 486 | 4. The Open Space Plan should continue to be used in the municipal development review  
487 | process.
- 488 | 5. Opportunities for hunting should not be excluded from land conservation and landowners  
489 | should be encouraged not to post property and developments.

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- 490 | 6. The maintenance of forest blocks and [the](#) habitat corridors between them is encouraged  
491 | and landowners are recommended to develop and implement forestry plans.  
492 | 7. Forested areas should be promoted for various environmental and economic reasons  
493 | including the use of carbon offsets that may offer economic and environmental benefits.  
494 | 8. The Town should continue to work with organizations such as the Intervale Center to  
495 | promote incubator farms, succession planning, and business plans for new and existing  
496 | farms.  
497 | 9. The Town should continue to be supportive of land conservation and the use of prime  
498 | agriculture mitigation money acquired through the State’s Act 250 process for local  
499 | conservation projects.  
500 | 10. Development Regulations should continue to allow for a variety of on-the-farm  
501 | businesses and agri-tourism to support and supplement agricultural operations.  
502 |

503

504 | **ACTIONS**

- 505 | 1. Maintain the FEMA Community Rating System.  
506 | 2. Colchester’s current regulations should be examined to consider additional river corridor  
507 | protections and fluvial erosion hazard zone areas.  
508 | 3. The Open Space Plan should be updated during the term of this plan and the mapping of  
509 | resources [should be](#) improved as feasible.  
510 | 4. Management plans for natural areas should be developed and deployed as feasible with  
511 | recreational uses ~~receiving provided~~ due consideration.  
512 | 5. The community should continue its efforts to building resilience against climate effects  
513 | by maintaining [flood and](#) hot weather emergency preparedness plans ~~and flood~~  
514 | ~~preparedness~~.  
515 | 6. The Town should actively engage farmers and other agriculture entrepreneurs in  
516 | developing strategies for supporting the changing face of agriculture.  
517 |